



SPOTLIGHT 2023
RESEARCH REPORT **MAGAZINE**



SYNERGIES





CONTENT

Editorial	4
Our Institute in Numbers	6
MPI for Human Development (Organization Chart)	8
Research Centers	10
Research Groups	12
Publication Highlights	14
New Synergies—Cross-Collaboration at the Institute	16
The Unread Stasi Files	18
Charting the Role of Dopamine in the Aging Human Brain	22
“The Berlin Aging Studies Are a Gift for Interdisciplinary Research”	26
Do Organ Donations Increase After the Switch to an Opt-out Default?	30
Pleasant Green or Deep Dark Woods: Do Forests (Still) Evoke Fear in Us?	34
Brain Plasticity During Skill Acquisition: Bridging the Gap Between Animal Models and Human Research	38
How People Know Their Risk Preferences	42
“New Technologies Have the Potential to Permanently Change the Fabric of Society”	46
International Research Cooperation Highlights	50
Honored	52
Collective Impact: Support Services at the Institute	54
Service Unit Structure	56
Dual Leadership	57
Research Data Management & Open Science	58
Introducing the Scientific Service Unit	60
Transforming the Central IT Unit	61
Establishing the Max Planck Dahlem Campus of Cognition (MPDCC)	62
Institute Events	64
Public Outreach	68

MPI FOR HUMAN DEVELOPMENT

Our goal is to understand how people develop in their setting, act in it, and are influenced by it. We explore the foundations of human behavior, our development and competencies in the context of our history, environment, society, and technology. For example, we study how people learn to make good decisions; how their emotions change throughout history and differ across cultures; how they manage to interact with artificial intelligence in a self-determined way; how everyone can realize their potential; what environments promote health, well-being, and cognitive performance; and how individuals and collectives alike can contribute to designing them. We want to make findings accessible and create knowledge to enable our society to shape the lifeworld effectively. Interdisciplinarity, cutting-edge research, and great intellectual freedom characterize our work.

Max-Planck-Institut für Bildungsforschung
Max Planck Institute for Human Development



Editorial

Reflecting on the years 2020 to 2023 at the MPI for Human Development, we must first acknowledge the profound impact of the COVID-19 pandemic, which rendered direct contact to study participants impossible, thus massively disrupting data collection for a long time. It also taught us invaluable lessons about the strengths and limitations of remote work: While we were all working from home, the virtual world provided an amazing and previously unimaginable alternative. Yet over time, it became clear that video conferencing alone could not match the benefits of face-to-face interactions and an on-site social network for our scientific work and overall well-being. This was particularly evident for predocs and postdocs, many of whom come from abroad or other parts of Germany and do not have family in Berlin. Once the pandemic situation allowed, the Institute made a concerted effort to strike a good balance between remote and on-site work, preserving some of the newfound flexibility of mobile work while harnessing the strengths of in-person collaboration: a sense of community and belonging, opportunities for informal conversations and gatherings, and a fertile ground for scientific innovation.

Fortunately, the pandemic has not been the sole transformational development of recent years. March 2023 marked a significant milestone, with the Max Planck Society acquiring the building next to our Institute. The new building will allow us to expand our lab facilities as our research agenda evolves over the coming years. The newly founded Max Planck Dahlem Campus of Cognition (MPDCC) holds immense potential for the Institute: It will offer new office space for independent research groups and visiting scientists, has become the Berlin site of the Max Planck School of Cognition, and, last but by no means least, provides a state-of-the-art laboratory infrastructure for behavioral and neuroscientific research. The building is currently undergoing extensive renovations, with a strong focus on environmental responsibility and resource efficiency.

The Institute also welcomed two new independent research groups in 2022. Headed by Bernhard Spitzer, the ERC-funded Adaptive Memory and Decision Making (AMD) Group investigates how the brain dynamically structures information in memory to enable adaptive behavior. Led by Laurel Raffington, the Max Planck Research Group Biosocial | Biology, Social Disparities, and Development investigates the influence of social disparities on child and adolescent development,

addressing critical aspects of education, health, and overall well-being across the lifespan.

Several structural changes have been made at the Institute to support our research activities and promote coordination and collaboration across the Research Centers and Groups. In 2022, the Institute created the Scientific Service Unit, which is dedicated to providing wrap-around support to researchers from all Centers and Groups—helping researchers from abroad to overcome the bureaucratic challenges associated with relocating to Germany, managing and controlling third-party funding, and establishing structures that support cross-collaboration and integration. The Unit streamlines numerous critical processes, ensuring that researchers can focus on their scientific work.

Engaging with the public has always been a core priority for the Institute. In 2022, we reopened our doors to over 500 visitors during Berlin's Long Night of the Sciences. After the lack of such outreach events during the pandemic, it was a wonderful opportunity to experience the community spirit that permeates our Institute. The success of the Long Night would not have been possible without the collective effort of numerous colleagues across our Centers, Research Groups, and Service Units. The genuine interest displayed by our visitors reflects the societal importance and relevance of our research.

This magazine complements the digital research report by giving readers a unique perspective into the inner workings of our Institute. In the pages ahead, we look under the hood of research projects that involve cooperation between Centers or Groups at the Institute, highlighting the interdisciplinary nature of our work. We also shine a light on organizational structures, behind-the-scenes operations, and various initiatives that have played a crucial role in supporting our work over the past three years.

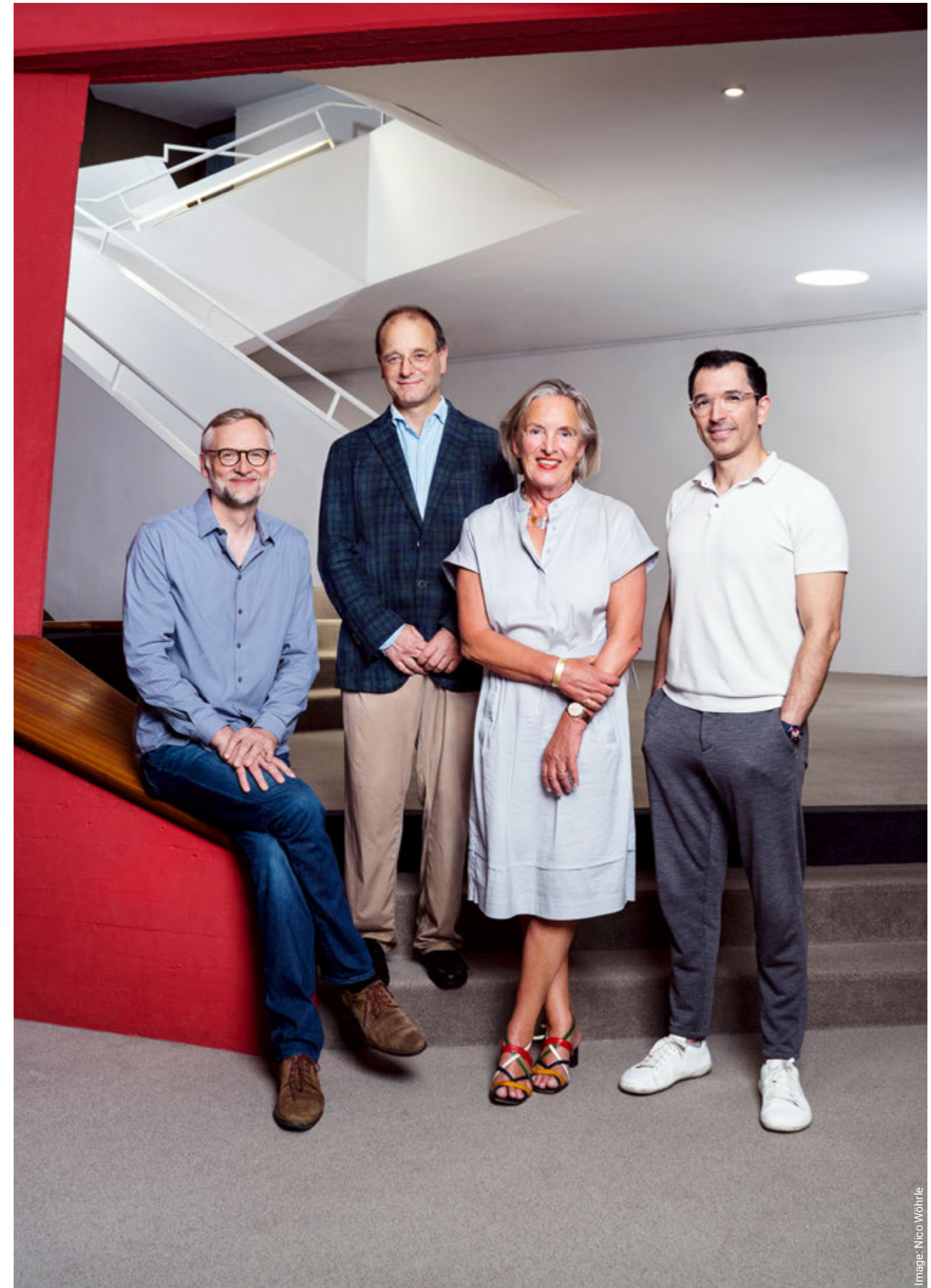
We hope to offer you an informative first glimpse into the research we are passionate about and how we work together. Despite the challenges of the last few years, the Institute continues to thrive as a vibrant hub of ideas, alive with exceptional and dedicated individuals, conducting research into diverse and fascinating dimensions of human development.

Berlin, July 2023
For the Board of Directors

Ralph Hertwig, Managing Director



Read the fully digital Research Report 2023
www.rr23.mpib-berlin.mpg.de

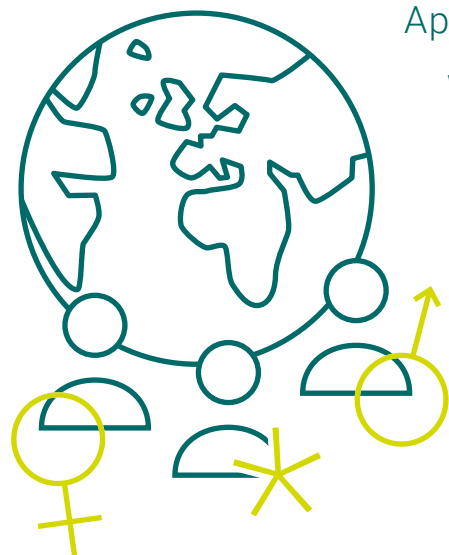


From left to right: Ralph Hertwig (Director, Center for Adaptive Rationality), Ulman Lindenberger (Director, Center for Lifespan Psychology), Ute Frevert (Director, Center for the History of Emotions), Iyad Rahwan (Director, Center for Humans and Machines)

Image: Nico Wöhrlé

Our Institute in Numbers

(Reporting Period: January 2020 to March 2023)



Approximately **345** staff members from **37** countries work at our institute.

Scientific staff: **136**, including PhD students

Non-scientific staff: **108**, including apprentices

Students, research/graduate assistants, and interns: **101**

61% women, **39%** men * the diverse category will be counted from 2023

29 Institute fellows have been awarded their **doctorates** in the reporting period.



21 Institute staff members have been appointed as **professors** in Germany and abroad in the reporting period.



We welcome about **40** **visiting researchers** per year.



Approx. **50** ongoing **third-party funded projects** per year.



Approx. **€ 8** million: **Expenditure of third-party funds** in the reporting period.



THE INSTITUTE'S LIBRARY OFFERS

895 journal articles
(incl. special issues and special sections)
2020–2023

Approx. **80%** of our journal articles in the reporting period are open access

approx. **870,000**
e-books

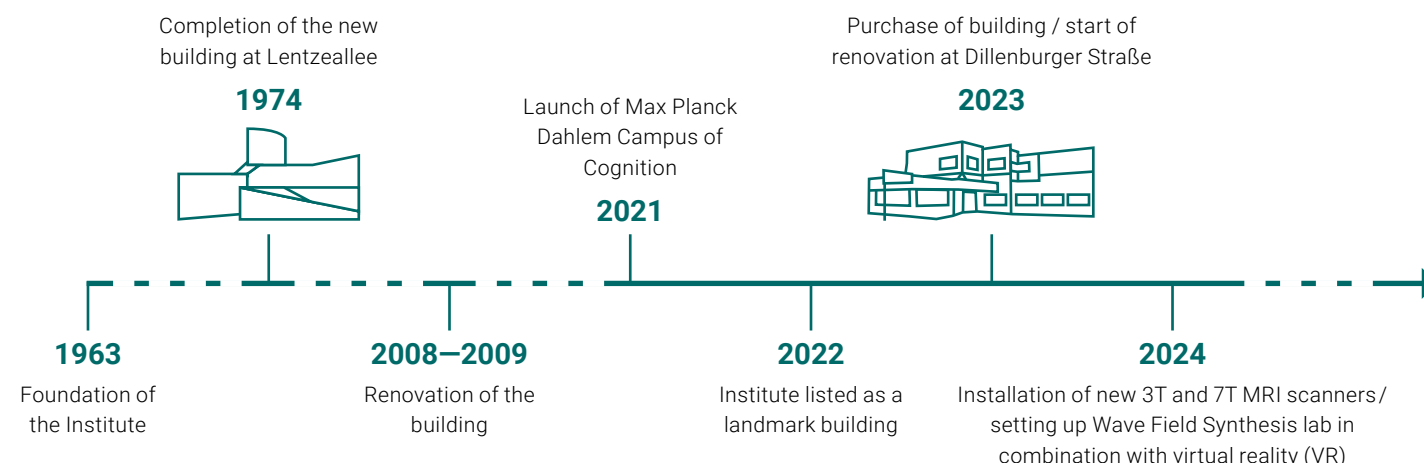


190
licensed databases

access to approx. **71,000**
online journals

including approx. **15,000**
current subscriptions

Our library stock (closed and open stacks) requires approx. **3,500** meters of shelving.



MAX PLANCK DAHLEM CAMPUS OF COGNITION (MPDCC)

The property at Dillenburg Straße is more than just an additional building. We have gained 3,600 m² that can be flexibly used as additional laboratory and working space by all Institute members, collaboration partners, and guests from other research institutions. A centerpiece of the building is the newly established Open Space on the first floor. It is an almost 100 m² conference room equipped with multi-use furniture and apparatus for various uses. It is a social space, meeting room, office, a space for concentrated work or events— in-person and hybrid. The new part of the Magnetic Resonance Imaging (MR) laboratory and the Wave Field Synthesis lab are being built in the 600 m² hall on the ground floor. We are about to extend the current VR lab in the basement to gain a fully fledged extended reality (XR) lab (see p. 62f.).



Image: MPB

MPI for Human Development

(Reporting Period: January 2020 to March 2023)

Board of Directors

Center for Adaptive Rationality Director: Ralph Hertwig	Lise Meitner Group Lise Meitner Group for Environmental Neuroscience Head: Simone Kühn	Max Planck Research Groups Biosocial Biology, Social Disparities, and Development Head: Laurel Raffington	Structured Graduate Education International Max Planck Research School on the Life Course (LIFE)
Center for the History of Emotions Director: Ute Frevert	Emmy Noether Group Lifespan Neural Dynamics Group (LNDG) Head: Douglas D. Garrett	iSearch Information Search, Ecological and Active Learning Research with Children Head: Azzurra Ruggeri	International Max Planck Research School on Computational Methods in Psychiatry and Ageing Research (COMP2PSYCH)
Center for Humans and Machines Director: Iyad Rahwan	ERC-Funded Research Group Adaptive Memory and Decision Making (AMD) Head: Bernhard Spitzer	Naturalistic Social Cognition Head: Annie E. Wertz	Max Planck School of Cognition (MPSCog)
Center for Lifespan Psychology Director: Ulman Lindenberger		NeuroCode Neural and Computational Basis of Learning, Decision Making, and Memory Head: Nicolas W. Schuck	

Max Planck Dahlem Campus of Cognition (MPDCC)

Core lab facilities, Open Space, flexible office space

Service Units

Administration, Cafeteria, Central IT, Central Services, Library and Research Information, Press and Public Relations, Scientific Service, Technical Services

Scientific Advisory Board 2023

Nicholas Christakis
 Yale University,
 New Haven, USA

David C. Parkes
 Harvard University,
 Cambridge, USA

Beatrice de Graaf
 Utrecht University,
 The Netherlands

Klaus Rothermund
 Friedrich Schiller
 University Jena,
 Germany

Mirta Galesic
 Santa Fe Institute,
 New Mexico, USA

Katherine Schofield
 King's College London,
 UK

Ellen Hamaker
 Utrecht University,
 The Netherlands

Michael R. Waldmann
 University of Göttingen,
 Germany

Matthias Kliegel
 University of Geneva,
 Switzerland

Anita Woolley
 Carnegie Mellon University,
 Pittsburgh, USA

Claire Langhamer
 University of London,
 UK

Jonas Obleser—Chair
 Universität zu Lübeck,
 Germany

Center for Adaptive Rationality (ARC)

Director: Ralph Hertwig

How do people make decisions in a complex and ever-changing world? Classic theories of rationality often assume that there is a single best, typically computationally complex, strategy for decision making. The Center has a different view: that people can draw on an “adaptive toolbox” of simple strategies that have evolved or been learned in response to environmental demands and the mind’s limited cognitive resources. Whether or not a simple strategy will succeed depends on the fit between that strategy and the statistical structure of the environment—that is, on its ecological rationality. Understanding how cognitive and environmental structures fit together is the key to explaining and predicting human decision making.

The Center studies three classes of cognitive strategies in the adaptive toolbox: ecologically rational heuristics, exploration and learning strategies, and strategies for harnessing the knowledge of others. Across these three classes, the

researchers at ARC aim to advance three major research goals. First, to describe these cognitive strategies and how they exploit the statistical structures of social and physical environments. Second, to unravel the developmental dynamics of the adaptive toolbox over the lifespan. Third, to help people make better decisions by boosting their competences, particularly in modern and highly engineered environments, such as digital media, which challenge autonomy, agency, and sound decision making.

The researchers at ARC come from a wide range of disciplines—including cognitive science, psychology, philosophy, economics, biology, anthropology, computational social science, and machine learning—and use a variety of methods, including behavioral experiments, computer simulations, mathematical and theoretical analyses, as well as systematic literature reviews and meta-analyses.



[Read more](http://www.rr23.mpgib-berlin.mpg.de/arc)
www.rr23.mpgib-berlin.mpg.de/arc

Center for the History of Emotions (HoE)

Director: Ute Frevert

The Center was established with the aim of exploring the various aspects of emotions within the context of time and space. In the beginning, HoE focused mainly on reconstructing the norms and standards of past emotions and on the widely differing perceptions former generations had of emotions. In a second phase, the attention shifted to concepts and knowledge of emotions, which were seen as being embedded in social, cultural, and political contexts and closely linked to practices. Finally, emotions were not conceived, as in an earlier tradition, as something that was passively felt. Instead, they were conceptualized as something actively done, involving the mind, the heart, and the body alike.

Linking emotions to the body, however, does not imply the return to a universal concept of the body: The body is not immune to historical change; in particular, it has been subject to a growing number of social interventions, by medicine, sports, and fashion as well as through work and leisure. Distinct from affect studies, which stress the significance of the body as a quasi-autonomous and non-representational site of feeling, the emphasis on the historicity of the body allows

us to investigate how it influences both the experience and expression of emotions.

Drawing on the expertise of historians, anthropologists, sociologists, musicologists, and scholars working on literature and art, psychology and education, the multidisciplinary group of researchers explores the historicity of emotions and the power of emotions to influence events and shape historical developments.

The Center makes use of a wide range of sources, among them printed texts and manuscripts retrieved from archives. HoE has consulted encyclopedias and philosophical reflections, historical medical research, political speeches and sermons, letters, autobiographies and diaries, and journals and magazines in many different languages. But the researchers also work with visual sources, including prints and paintings, films and interviews, just as they engage with music and undertake fieldwork to find out more about emotions, past and present.



[Read more](http://www.rr23.mpgib-berlin.mpg.de/hoE)
www.rr23.mpgib-berlin.mpg.de/hoE

Center for Humans and Machines (CHM)

Director: Iyad Rahwan

The Center conducts interdisciplinary science to understand, anticipate, and shape major disruptions from digital media and artificial intelligence (AI) to the way we think, learn, work, play, cooperate, and govern.

CHM’s goal is to understand how machines are shaping human society today and how they may continue to shape it in the future. The projects are organized in broad themes: Behavioral AI Safety & Ethics, Cooperative AI, AI-Mediated Communication, AI Governance, and AI-Driven Cultural Evolution.

While drawing on many scholarly traditions, the Center emphasizes three guiding concepts for studying the impact of AI and digitalization on human society, economy, and culture. These concepts capture the approach to generating, refining, and exploring research questions.

(1) Machine Behavior: Understanding machine behavior, including human perception of and reaction to such behavior, requires concepts and methodologies from across the behavioral sciences. (2) Science Fiction Science: To anticipate the impact of future technologies on humans, CHM combines the imagination of possible futures with a scientific approach to studying behavior. (3) Superminds: The future will be determined by competition between superminds: groups of humans augmented by culture, institutions, communication technology, and AI.

CHM employs scientists from three major groups of disciplines: Computer and data scientists, social (behavioral) and cognitive sciences, as well as physics and mathematical/statistical modeling.



[Read more](http://www.rr23.mpgib-berlin.mpg.de/chm)
www.rr23.mpgib-berlin.mpg.de/chm

Center for Lifespan Psychology (LIP)

Director: Ulman Lindenberger

How do children steadily acquire knowledge about the world they live in, even though their memories of specific events are often quite vague? Which factors promote the preservation of cognitive abilities in old age? How does the brain change while we learn a new skill? These are some of the research questions currently investigated at the Center for Lifespan Psychology (LIP).

LIP studies human development from infancy into old age. Using training studies, it explores hidden potentials by examining how brain plasticity is related to behavioral change. It participates in longitudinal studies to identify determinants and consequences of between-person differences in change.

LIP’s research program is guided by three interrelated theoretical propositions: (1) Lifespan changes in behavior can be regarded as interactions among maturation, learning, and senescence. (2) Lifespan theory and methodology need to integrate evidence across domains of functioning, timescales, and levels of analysis. (3) The exploration of age-graded dif-

ferences in brain plasticity is a powerful tool for identifying mechanisms of development.

LIP involves collaborating researchers from different disciplines, such as psychology, neuroscience, physics, and computer sciences. A central feature of LIP is methodological innovation to improve developmental science.

The Center participates in several international research networks. It hosts the Max Planck UCL Centre for Computational Psychiatry and Ageing Research, led by Raymond Dolan and Ulman Lindenberger, located in both London and Berlin. LIP is also involved in the longitudinal Cognition, Brain, and Aging (COBRA) study, which investigates the role of dopamine in cognitive aging (see pp. 22ff.).



[Read more](http://www.rr23.mpgib-berlin.mpg.de/lip)
www.rr23.mpgib-berlin.mpg.de/lip

Research Groups

Lise Meitner Group

The Max Planck Society has established the Lise Meitner Excellence Program to recruit and promote exceptionally qualified female scientists.

Lise Meitner Group for Environmental Neuroscience

Head: Simone Kühn

The research group studies how the physical environment affects human beings. To do so, the group uses observational studies where research scientists investigate normal living environments, like student housing, and extreme environments, such as Antarctica. Experimental studies serve to unravel underlying causal pathways, for example, by testing how variations of environmental factors, such as alterations of residential buildings, impact the brain as well as mental health.

Emmy Noether Group

The Emmy Noether Programme is funded by the German Research Foundation (DFG) and gives particularly qualified young scientists the opportunity to qualify for a university professorship over a period of 6 years by independently leading a junior research group.

Lifespan Neural Dynamics Group

Head: Douglas D. Garrett

The research group seeks to understand how and why the human brain fluctuates so markedly from moment to moment. It examines brain signal variability and dynamics in relation to six core research foci: lifespan development, cognition, neuromodulation, structural/functional connectivity, transcranial stimulation, and methods/modeling. The DFG's Emmy Noether funding for the group ended in 2022 and it remains affiliated to the Center for Lifespan Psychology.

ERC-Funded Research Group

The ERC Consolidator Grants are designed to support excellent researchers whose independent research group is still in its consolidation phase.

Adaptive Memory and Decision Making Group

Head: Bernhard Spitzer

Human cognition is perplexingly powerful, despite the known capacity limits of biological brains. The research group commenced its work in 2022 and examines this conundrum in core cognitive functions, including memory, learning, and decision making. A main focus of the group is how neural representations are dynamically structured in working memory to provide us with just the right information at just the right time, and in just the right format, to enable adaptive behavior. In addition to the ERC Consolidator Grant, the research group is funded by the German Research Foundation (DFG).

Max Planck Research Groups

While Max Planck Research Groups (MPRG) use the facilities and resources of a Max Planck Institute, they have their own staff and equipment, which enables their heads to pursue research projects independently, laying the foundations for a successful career. They are initially limited to 5 years, but can be extended. Four Max Planck Research Groups are currently working at the Institute.

MPRG Biosocial | Biology, Social Disparities, and Development

Head: Laurel Raffington

Human development unfolds in transactions between biology, including genetics, and environments. The research group commenced its work in 2022 and examines how social disparities affect child and adolescent development to shape differential outcomes of education, health, and well-being across the lifespan.

MPRG iSearch | Information Search, Ecological and Active Learning Research with Children

Head: Azzurra Ruggeri

By bringing together methods from developmental and cognitive psychology, philosophy, education, information theory, and computational modeling, the group's research program sheds light on the cognitive, social, and cultural mechanisms underlying children's ability to engage in ecological active learning and face uncertain—more or less expected—future challenges.

MPRG Naturalistic Social Cognition

Head: Annie E. Wertz

The research group explores social learning and cognitive development in infancy and early childhood from an evolutionary perspective. The group's primary research program investigates how infants learn about plants. Their work has established a novel area of inquiry within cognitive development and demonstrates that learning and evolution are not mutually exclusive processes.

MPRG NeuroCode | Neural and Computational Basis of Learning, Memory and Decision Making

Head: Nicolas W. Schuck

The research group investigates how the brain uses past experiences to guide decision making. It employs functional magnetic resonance imaging (fMRI) to study neural representations and replay of previous events, and uses reinforcement learning and neural network algorithms to model behavioral and neural data. This sheds light on our memory, on our choices, and on parallels between human and artificial intelligence.



[Read more](https://www.r23.mpib-berlin.mpg.de/groups)
www.r23.mpib-berlin.mpg.de/groups

Publication Highlights

Appelhoff, S., Hertwig, R., & Spitzer, B. (2022). EEG-representational geometries and psychometric distortions in approximate numerical judgment. *PLoS Computational Biology*, 18(12), Article e1010747. <https://doi.org/10.1371/journal.pcbi.1010747>



Brinkmann, L., Gezerli, D., Kleist, K. V., Müller, T. F., Rahwan, I., & Pescetelli, N. (2022). Hybrid social learning in human-algorithm cultural transmission. *Philosophical Transactions of the Royal Society A*, 380(2227), Article 20200426. <https://doi.org/10.1098/rsta.2020.0426>



Ciranka, S., Linde-Domingo, J., Padezhki, I., Wicharz, C., Wu, C. M., & Spitzer, B. (2022). Asymmetric reinforcement learning facilitates human inference of transitive relations. *Nature Human Behaviour*, 6, 555–564. <https://doi.org/10.1038/s41562-021-01263-w>



Dahl, M. J., Mather, M., & Werkle-Bergner, M. (2022). Noradrenergic modulation of rhythmic neural activity shapes selective attention. *Trends in Cognitive Sciences*, 26(1), 38–52. <https://doi.org/10.1016/j.tics.2021.10.009>



Frevert, U., Pahl, K. M., Buscemi, F., Nielsen, P., Arndt, A., Amico, M., Lichau, K., Malone, H., Wambach, J., Brauer, J., & Moine, C. (2022). *Feeling political: Emotions and institutions since 1789*. Palgrave Macmillan.

Garvert, M. M., Saanum, T., Schulz, E., Schuck, N. W., & Doeller, C. F. (2023). Hippocampal spatio-predictive cognitive maps adaptively guide reward generalization. *Nature Neuroscience*, 26, 615–626. <https://doi.org/10.1038/s41593-023-01283-x>



Gerdemann, S. C., & Wertz, A. E. (2021). 18-month-olds use different cues to categorize plants and artifacts. *Evolution & Human Behavior*, 42(4), 304–315. <https://doi.org/10.1016/j.evolhumbehav.2020.12.003>

Hertwig, R., & Wulff, D. U. (2022). A description-experience framework of the psychology of risk. *Perspectives on Psychological Science*, 17(3), 631–651. <https://doi.org/10.1177/17456916211026896>



Köbis, N., Bonnefon, J.-F., & Rahwan, I. (2021). Bad machines corrupt good morals. *Nature Human Behaviour*, 5(6), 679–685. <https://doi.org/10.1038/s41562-021-01128-2>

Köhncke, Y., Düzel, S., Sander, M. C., Lindenberger, U., Kühn, S., & Brandmaier, A. M. (2021). Hippocampal and parahippocampal grey matter structural integrity assessed by multimodal imaging is associated with episodic memory in old age. *Cerebral Cortex*, 31(3), 1464–1477. <https://doi.org/10.1093/cercor/bhaa287>



Kozyreva, A., Lewandowsky, S., & Hertwig, R. (2020). Citizens versus the internet: Confronting digital challenges with cognitive tools. *Psychological Science in the Public Interest*, 21(3), 103–156. <https://doi.org/10.1177/1529100620946707>



Kühn, S., Mascherek, A., Filevich, E., Lisofsky, N., Becker, M., Butler, O., Lochstet, M., Mårtensson, J., Wenger, E., Lindenberger, U., & Gallinat, J. (2021). Spend time outdoors for your brain: An in-depth longitudinal MRI study. *The World Journal of Biological Psychiatry*, 23(3), 201–207. <https://doi.org/10.1080/15622975.2021.1938670>

Månsson, K. N. T., Waschke, L., Manzouri, A., Furmark, T., Fischer, H., & Garrett, D. D. (2022). Moment-to-moment brain signal variability reliably predicts psychiatric treatment outcome. *Biological Psychiatry*, 91(7), 658–666. <https://doi.org/10.1016/j.biopsych.2021.09.026>

Nussberger, A.-M., Luo, L., Celis, L. E., & Crockett, M. J. (2022). Public attitudes value interpretability but prioritize accuracy in artificial intelligence. *Nature Communications*, 13(1), Article 5821. <https://doi.org/10.1038/s41467-022-33417-3>



Pernau, M. (2021). *Emotions and temporalities*. Cambridge University Press.

Pietraszewski, D. & Wertz, A. E. (2022). Why evolutionary psychology should abandon modularity. *Perspectives on Psychological Science*, 17(2), 465–490. <https://doi.org/10.1177/1745691621997113>



Pleskac, T. J., Conrath, L., Leuker, C., & Hertwig, R. (2021). The ecology of competition: A theory of risk-reward environments in adaptive decision making. *Psychological Review*, 128(2), 315–335. <https://doi.org/10.1037/rev0000261>

Raffington, L., Schwaba, T., Aikins, M., Richter, D., Wagner, G. G., Harden, K. P., Belsky, D. W., & Tucker-Drob, E. M. (2023). Associations of socioeconomic disparities with buccal DNA-methylation measures of biological aging. *Clinical Epigenetics*, 15(1), Article 70. <https://doi.org/10.1186/s13148-023-01489-7>



Raffington, L., Tanksley, P. T., Sabhlok, A., Vinnik, L., Mallard, T., King, L. S., Goosby, B., Harden, K. P., & Tucker-Drob, E. M. (2023). Socially stratified epigenetic profiles are associated with cognitive functioning in children and adolescents. *Psychological Science*, 34(2), 170–185. <https://doi.org/10.1177/09567976221122760>

Ruggeri, A. (2022). An introduction to ecological active learning. *Current Directions in Psychological Science*, 31(6), 471–479. <https://doi.org/10.1177/09637214221112114>



Sarioğlu, E. (2022). *The body unburdened: Violence, emotions, and the New Woman in Turkey*. Oxford University Press.

Shine, J. M., Lewis, L. D., Garrett, D. D., & Hwang, K. (2023). The impact of the human thalamus on brain-wide information processing. *Nature Reviews Neuroscience*, 24(7), 416–430. <https://doi.org/10.1038/s41583-023-00701-0>

Sudimac, S., Sale, V., & Kühn, S. (2022). How nature nurtures: Amygdala activity decreases as the result of a one-hour walk in nature. *Molecular Psychiatry*, 27, 4446–4452. <https://doi.org/10.1038/s41380-022-01720-6>



Tucker-Drob, E. M., de la Fuente, J., Köhncke, Y., Brandmaier, A. M., Nyberg, L., & Lindenberger, U. (2022). A strong dependency between changes in fluid and crystallized abilities in human cognitive aging. *Science Advances*, 8(5), Article eabj2422. <https://doi.org/10.1126/sciadv.abj2422>



Wittkuhn, L., & Schuck, N. W. (2021). Dynamics of fMRI patterns reflect sub-second activation sequences and reveal replay in human visual cortex. *Nature Communications*, 12(1), Article 1795. <https://doi.org/10.1038/s41467-021-21970-2>

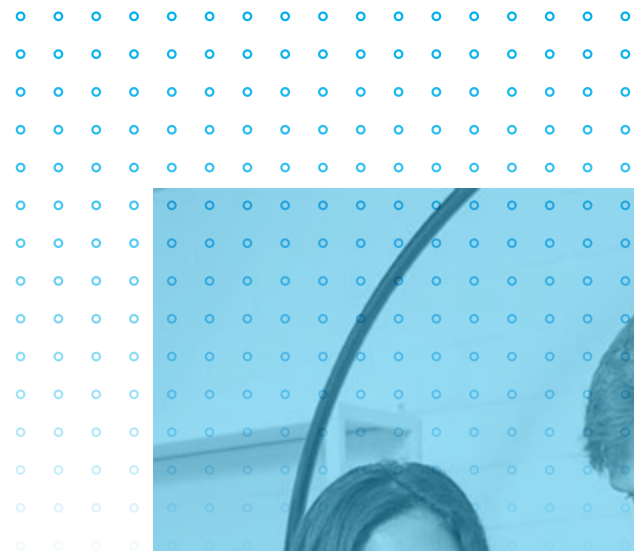


Zika, O., Wiech, K., Reinecke, A., Browning, M., & Schuck, N. W. (2023). Trait anxiety is associated with hidden state inference during aversive reversal learning. *Nature Communications*, 14, Article 4203. <https://doi.org/10.1038/s41467-023-39825-3>



Open access

See all publications
www.r23.mpib-berlin.mpg.de/publications



New Synergies—Cross-Collaboration at the Institute

The 2020 Report of the Scientific Advisory Board praised the Institute's scientific achievements. But it also made a key recommendation: "Although the Centers are all extremely productive and collaborate with researchers in their fields both in Germany and internationally, there is, with notable exceptions, little collaboration between the Centers within the Institute. We think this is a pity, because there seem to be promising points of contact." The Institute's management has taken this valuable advice to heart.

Following the Board's recommendation, the directors have taken a number of measures to unlock the full potential of the Institute's collective expertise and promote a research environment that supports collaboration between the Centers and Groups. The following pages showcase a variety of collaborative projects that illustrate the impact of these endeavors. The featured articles and interviews delve into the collaborative process, shedding light on the challenges of interdisciplinary research and revealing some of the inner workings of these collaborations.

Which steps have we taken to foster cross-collaboration at the Institute? We started by identifying a series of strategic levers to facilitate the cross-pollination of ideas, including implementing measures to promote effective communication and scientific exchange, establishing an Institute-wide data registration tool, forming an integrated IT Board, and setting up joint core research facilities.

Transparency and effective internal communication are crucial for enabling exchange and the development of joint projects. The twice-yearly Research Colloquium, introduced several years ago, gives predocs and postdocs from all Centers and Groups the opportunity to present their research to the entire Institute. We have taken three further steps to ensure that all members of the Institute community are engaged and informed. First, we now announce major lectures organized by the Centers and Groups to all Institute members, keeping researchers updated on the research agendas and ongoing discussions in other areas. Second, we publish an internal newsletter four

times a year, providing updates on important developments in the Institute as a whole, as well as within each Center and Group. Third, we have introduced a new Town Hall meeting format to promote a more inclusive and participatory discussion culture. (For more on Institute events, see pp. 64ff.)

In April 2023, we launched an Institute-wide trial registration tool (see p. 59). For the first time, researchers are now able to obtain information on past, present, and future studies at the Institute—including their ethics approval, measures, data, and analyses. This new tool will allow data collected by individual Centers or Groups in the context of one research question to be used to address new questions by emerging multi-center research teams.

Sometimes, new points of contact emerge by chance—for example, when looking into the cutting-edge methods that others are using to address their research questions. Recognizing this potential, we have set up an IT Advisory Board, bringing together IT staff from throughout the Institute (see p. 61). As a result, the scientific IT staff now have much better insights into methodological innovations in other areas, can discover synergies, and provide valuable feedback to researchers.

The concept of cross-group research is the cornerstone of the new Max Planck Dahlem Campus of Cognition. The research facilities and high-end laboratory infrastructure are open to the whole Institute. Each study is presented and discussed at the monthly Campus User Meeting, which brings together members of the various Groups and Centers, and serves as a platform for the cross-fertilization of ideas, sharing of findings, and exploration of potential collaborative projects (see p. 62f.).

Identifying and harnessing promising points of contact between our Centers and Groups—from both a research and an infrastructure perspective—is an ongoing process. We have worked hard to integrate this approach into the daily life of the Institute.



See a list of joint publications as a result of Institute-wide cooperations
www.rr23.mpgib-berlin.mpg.de/joint-publications

The Unread Stasi Files

Center for Adaptive Rationality & Center for the History of Emotions

Many people decide not to read their Stasi files*. Ralph Hertwig, Director of the Center for Adaptive Rationality, and Dagmar Ellerbrock, previously at the Center for the History of Emotions, have explored the reasons behind this choice. In this interview, they discuss the challenges and benefits of interdisciplinary collaboration, the first findings of their project, and the implications for societal and political transformation.

How did you come up with the idea for the joint research project?

Ralph Hertwig: I've been working on the phenomenon of deliberate ignorance for several years now. According to Aristotle and other great thinkers, humans have a boundless thirst for knowledge. But there are countless examples of people making a conscious decision not to know. And having watched films like *The Life of Others* (Henckel von Donnersmarck, 2006), I began to wonder what would happen if I had a Stasi file. Would I want to read it or not? That's when I approached Dagmar Ellerbrock, who was then at the Center for the History of Emotions, with the idea of studying deliberate ignorance in the context of the Stasi files. Her response surprised me...

Dagmar Ellerbrock: ...I was skeptical at first. The politics of memory holds a central place in historical research—particularly in Germany, where confronting a violent past is considered to be a crucial element in establishing stable democracies. Despite that, there have been calls—most prominently from the right of the political spectrum—to move away from research into the Holocaust and World War II. My concern was that research on a behavior that consists in closing one's eyes to history could have this kind of apologetic potential.

Ralph Hertwig: It certainly wasn't my intention to justify or excuse deliberate ignorance. As a behavioral scientist and psychologist, I'm interested in understanding the motivations behind people's behavior. And individual behavior may well influence collective memory culture, and vice versa. We agreed on that. By gradually coming to understand each other's approaches, we were able to bridge the gap between our respective terminologies and conceptual models,

and ultimately develop a research design that tapped into both disciplines.

Dagmar Ellerbrock: After hearing a radio interview with union leader Claus Weselsky in 2012, any worries I had that the research might be used for apologetic purposes were finally laid to rest. Weselsky mentioned that he had a Stasi file, but didn't want to read it—and the reasons he gave were exactly the ones Ralph had hypothesized. That's when I understood that we were dealing with an under-researched phenomenon that was worthy of investigation for a number of reasons. I wrote to Ralph the very same day to say that I was on board.

What challenges did you face when you joined forces?

Ralph Hertwig: Our first question was how common the phenomenon actually is. Might it only apply to a small minority of former East Germans? The problem is that neither we nor the Stasi Records Office knew how many files there are and how many people they cover. Since the files were opened in 1991, over two million people have accessed their file. But a back-of-the-envelope calculation suggests that even more people have not done so.

Dagmar Ellerbrock: On top of that, investigating something that people don't do presents a huge methodological challenge. You need to find ways of bringing to light things that are documented only indirectly. We invested a lot of time in the study design and had some intense discussions. As a psychologist working with quantitative methods and a historian taking a cultural historical approach, our approaches were quite different.

So how did you proceed?

Dagmar Ellerbrock: We decided to combine in-depth biographical interviews in the oral history tradition with quantitative methods, in this case surveys. We held an evening event at the Deutsches Hygiene Museum in Dresden, where we presented our project. We planned it as a citizen science evening; the attendees were able to give feedback on our design, suggest further reasons for not reading one's file, and volunteer to participate in interviews. There was a huge amount of interest!

Ralph Hertwig: Based on this feedback and our discussions, we developed a questionnaire covering the various reasons that seemed to play a role in people deciding not to read their file. We then used various channels to recruit people who were willing to talk about their reasons for not reading their file. We sent the questionnaires to this pool of volunteers and received 134 replies. We conducted in-depth biographical interviews with 22 of them. In addition, we conducted a larger, representative survey of 2,317 respondents to get a better idea of how many people believe they have a Stasi file and how common the various reasons for not reading it are.

What did you find out? Why don't people want to read their files?

Ralph Hertwig: There are basically four main reasons. The first, which we have also seen in other contexts, is to regulate emotions. Respondents anticipated that reading their file would lead to negative emotions. They were not sure that they could live with the anger or disappointment of knowing they had been spied on by someone they knew. This is related to the second reason: Some felt that the files are "no longer relevant," since the past cannot be changed. A third reason relates to people's self-concept. Respondents who were committed to the German Democratic Republic (GDR) and its worldview argue that the Stasi is not representative of the GDR as a whole and criticize how East German history was portrayed by West Germany. From their perspective, consulting their files would be an endorsement of the West German interpretation, which they reject. Fourth, many respondents raised concerns about trust and their ability to carry on functioning and trusting others after reading their file.

Dagmar Ellerbrock: A final reason, albeit one that wasn't mentioned as often, was a kind of criticism of the source material. Some respondents questioned the value and credibility of the information contained in the files. This touches on a central methodological challenge for historians: We are always careful to check the accuracy and value of a source, as well as the underlying contexts and interests. Official files—be they secret service files, government files, or criminal records—always present a specific perspective. For me, it was interesting to see who cited this reason for not reading their file, as it suggests a desire to retain control over their own personal history and interpre-



Dagmar Ellerbrock



Ralph Hertwig

In countless files, employees and collaborators of the Ministry for State Security—commonly known as the Stasi—reported in detail on the lives of GDR citizens and foreign nationals alike.



Image: Chris Stermitz / Pixabay

tation of events, rather than ceding that control to the Stasi.

Is it possible to say who is more likely to read their file?

Dagmar Ellerbrock: For people who experienced trauma and violence, reading the file is a necessary and important step in being able to move on with their lives. Our research confirms that. And it validates the decision to open the files to the public. But it's important to remember that reading one's file can also be a painful experience—especially for people who feel obligated to read it in order to start legal proceedings to seek compensation or justice.

Ralph Hertwig: Experience of victimization is a good predictor. People who faced severe hardships in the GDR are much more likely to say that they want to liberate themselves from that painful experience by reading their file. For those who did not experience

harsh oppression, in contrast, accessing the file may be perceived more as a threat for the reasons we have mentioned.

What were the benefits of working together?

Ralph Hertwig: For me, it was a great learning experience to see just how illuminating the in-depth interviews were. It was only through the interviews that we really came to understand what was behind some of the reasons given. Take the example of relevance. One respondent was adamant that their file had no relevance for them because there was no way of changing the past. But the interview showed that the anticipated content of the file was anything but irrelevant because of its potential emotional repercussions.

Dagmar Ellerbrock: I also see that as a huge interdisciplinary gain. The oral history interviews added background, layers of meaning, and a first-person perspective to the quantitative surveys. For example, there



Dagmar Ellerbrock has been Professor of Modern and Contemporary History at Technische Universität Dresden since 2014. She was previously head of the Minerva Research Group “Emotions, Violence, and Peace” at the Center for the History of Emotions at the MPI for Human Development. Her research interests include memory politics and transformation research, democratization, and the history of law, emotion, and violence.



Ralph Hertwig is Director of the Center for Adaptive Rationality at the MPI for Human Development. He has been researching the topic of deliberate ignorance for several years. He provides interesting insights into the topic in the volume *Deliberate Ignorance: Choosing Not to Know*, which he co-edited with fellow Max Planck Director Christoph Engel as part of the Strüngmann Forum Reports series.

Images (Hertwig, Ellerbrock): Arne Sattler, Klaus Gigga

are generational differences that reflect relationships to former East Germany, with the younger generation showing an interest in the files of their parents and grandparents. In other words, whether people want to know or not can change—not only on an individual level, but also on a societal level. At the same time, it is only possible to examine a limited number of files and individuals in such depth. Our combined

“Deliberate ignorance can accelerate or delay change, making it a productive factor in transformation processes.”

approach also allowed us to gauge the frequency of the various reasons people gave for not accessing their files. Above all, our interdisciplinary mix of methods and levels of analysis enabled us to consider both individual behavior and collective processes and to examine their mutual impact in a highly productive way.

What are the implications of your findings for societal transformation processes?

Dagmar Ellerbrock: The history of emotions has been largely overlooked in the study of the Peaceful Revolution and East German history. Transformation processes are always massive shaming processes. Our approach allows us to explore how people cope with these experiences and the shame involved. Moving from one society to another essentially means dismantling the emotional and knowledge structures of one society and replacing them by new ones. What was once taken for granted is suddenly no longer acceptable. People respond to this shaming process in different ways. Some feel liberated by it, others disoriented. Engaging in deliberate ignorance by not reading your Stasi file is a strategy for dealing with those emotions—and one by which individuals can moderate the pace of historical transformation. For me, that's fascinating: It's almost like an accelerator that

*A file of reports collected by the East German Ministry for State Security. Interview adapted from the German podcast “111 Kilometer Akten” by the Stasi Records Archive.

allows people to control how fast change occurs. Our research shows that deliberate ignorance has multiple functions: It can accelerate or delay change and play an active role in shaping it. This perspective offers a new way of understanding deliberate ignorance, not just as negation but as a productive factor in transformation processes.

Ralph Hertwig: Many societies go through this transformation process. Ultimately the question is: How can we organize knowledge cultures to best manage this transition process? It's an exciting question that has yet to be answered. Understanding the interplay between the collective and individual levels can help shed light on the issue.

And your conclusion...

Dagmar Ellerbrock: Our research project demonstrates the value of drawing inspiration from other disciplines. That can mean using the models and terminology of another discipline to address issues that your own discipline doesn't have the tools to deal with. Or seeing the findings of your own discipline from a new perspective.

Ralph Hertwig: I agree with Dagmar and would like to add one more thing: Understanding deliberate ignorance in the context of the Stasi files required us to have a healthy amount of curiosity. Both wanting to know and not wanting to know seem to be part of the human condition. Our efforts to understand the rationale and reasons for each have led to exciting answers—and our shared curiosity was the key.

Research Project in Brief

Topic: Deliberate ignorance and transformation processes

Researchers: Dagmar Ellerbrock (Chair of Modern and Contemporary History, Technische Universität Dresden), Ralph Hertwig (Director, Center for Adaptive Rationality, MPI for Human Development)

Duration: 2017–ongoing

Funding: Max Planck Society and Technische Universität Dresden

Publications:

Ellerbrock, D., & Hertwig, R. (2020). The complex dynamics of deliberate ignorance and the desire to know in times of transformation: The case of Germany. In R. Hertwig & C. Engel (Eds.), *Deliberate Ignorance: Choosing not to know* (pp. 19–38). MIT Press.

Hertwig, R., & Ellerbrock, D. (2022). Why people choose deliberate ignorance in times of societal transformation. *Cognition*, 229, Article 105247. <https://doi.org/10.1016/j.cognition.2022.105247>

Listen to the German podcast “111 Kilometer Akten,” which has now received over 4,000 hits via Spotify and iTunes.



Listen to the podcast <https://t1p.de/h1kyd>

If the secret police had a file on you, why wouldn't you want to see it? Study picked up by *The Guardian*.



Read more <https://t1p.de/gq1xx>

Press release about the study.



Read more www.mpib-berlin.mpg.de/the-unread-stasi-files

Charting the Role of Dopamine in the Aging Human Brain

Center for Lifespan Psychology & Emmy Noether Group:
Lifespan Neural Dynamics Group

The COBRA study is an international collaboration between three institutions in Sweden and the Institute. It has attained the world's first longitudinal evidence in humans on the role of dopamine in the aging of brain and behavior.

The Cognition, Brain, and Aging (COBRA) project is a longitudinal study of 181 adults who were between 64 and 68 years of age when they were assessed for the first time in 2012 (Nevalainen et al., 2015). It currently consists of three measurement occasions, each separated by five years. COBRA examines the links among the dopamine (DA) system, other brain parameters (such as grey- and white-matter volumes, white-matter microstructure, cerebral blood flow, and functional activation patterns during rest and task), and cognitive performance. The main focus is on longitudinal changes in "DA capacity" and how they relate to cognitive changes. To measure DA, participants are injected with the ligand raclopride (which binds specifically to DA D2 receptors) while undergoing positron emission tomography (PET) imaging; we then take the resulting estimates of DA binding as a proxy for DA capacity.

COBRA is an international collaboration involving Umeå University, the Karolinska Institutet in Stockholm, the University of Gothenburg, and the MPI for Human Development. All sites have longstanding expertise in the lon-

gitudinal study of changes in brain and behavior. Umeå University and Karolinska Institutet contribute specific expertise in dopamine imaging using PET. The MPI for Human Development contributes specific expertise in the analysis of brain dynamics (Lifespan Neural Dynamics Group) and multivariate modeling (Formal Methods project of the Center for Lifespan Psychology). Combined, the scientists of the four sites provide the synergy required to conduct a multi-modal, longitudinal study of this scope.

The main objective of COBRA is to delineate the average pattern of DA system changes in normal aging as well as the range of between-person differences in this pattern. Given the central role of DA in cognitive, motor, and motivational aspects of behavior, gaining knowledge about DA changes in normal cognitive aging, and about the magnitude of individual differences therein, is of fundamental importance for research on human cognitive aging. We hypothesize that DA decline is exacerbated in some individuals, and that these individuals will be characterized by pronounced cognitive decline.

SOME FACTS AND FIGURES



International collaboration



10-year
longitudinal study



Funding was obtained from a variety of international sources



181 participants (64–68 years old)

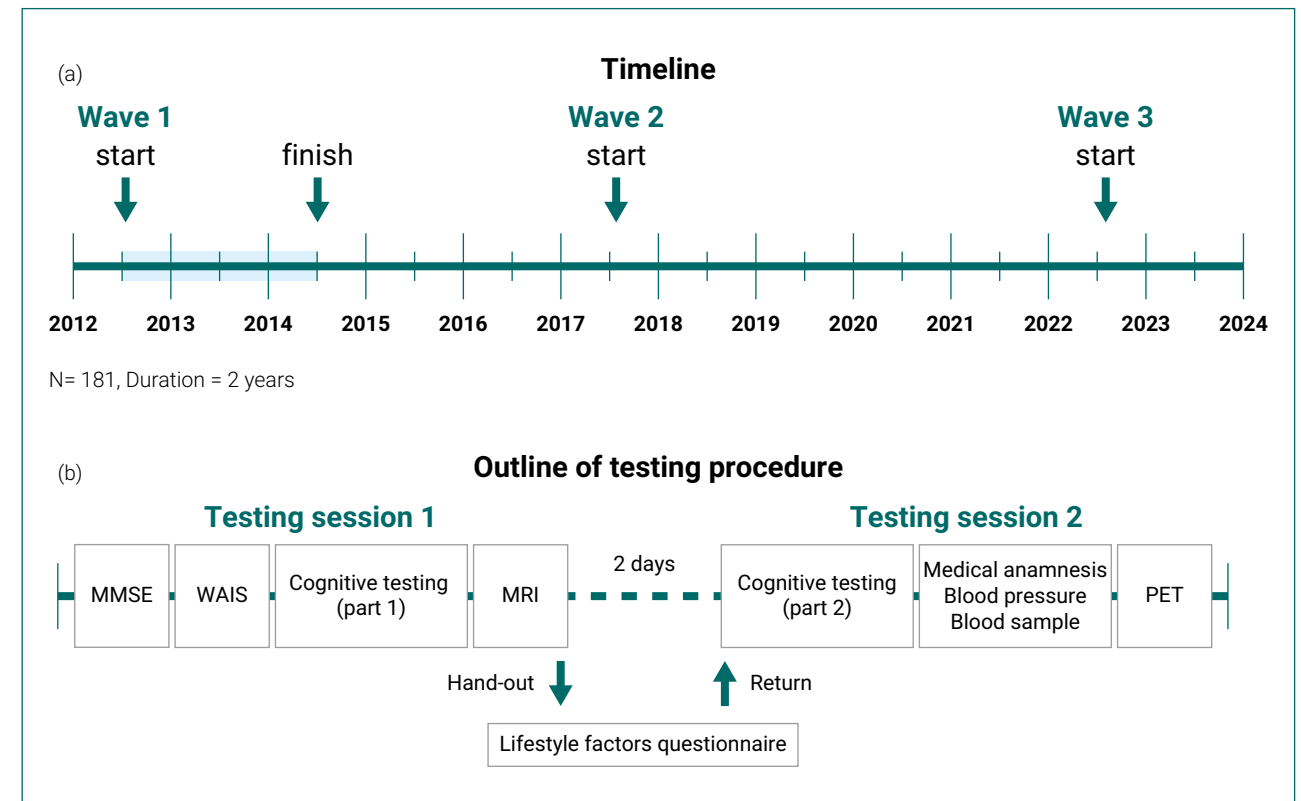


Figure 1. Timeline and testing procedure of the COBRA project. MMSE = Mini-Mental State Examination; WAIS = Wechsler Adult Intelligence Scale; MRI = magnetic resonance imaging; PET = positron emission tomography. Adapted from Nevalainen et al. (2015), original image licensed under CC BY-NC-ND 3.0.

Specifically, COBRA seeks to shed light on four central questions of cognitive aging research:

1. The average degree, regional distribution, and between-person differences of age-related changes in DA capacity.
2. The shared and unique contributions of changes in DA capacity, grey matter, and white matter to cognitive change in old age.
3. The lead–lag relations between different neural and vascular correlates of cognitive decline. To assess such relations, which may differ between individuals, more than two longitudinal measurement occasions are imperative.

4. The modulatory and possibly ameliorative effects of lifestyle factors, assessed by cognitive, physical, and social activity patterns, on changes in brain and behavior.

The first wave of data collection in COBRA began in 2012 and involved 181 healthy adults between 64 and 68 years of age. The second wave started 5 years later, when 129 of the original participants returned for repeated testing. Recently, a third wave has been added (see Figure 1). Current work focuses on data of the 10-year follow-up as well as analyses and documentation covering all three measurement occasions, allowing for unprecedented investigations of lead–lag relations of the aging brain and their links to individual differences in cognitive change.



“For over two decades, colleagues from Sweden and I have been collaborating to elucidate the role of dopaminergic neuromodulation in cognitive aging, using computational, pharmacological, genetic, and brain–imaging techniques. With the COBRA study, we continue this collaboration.”

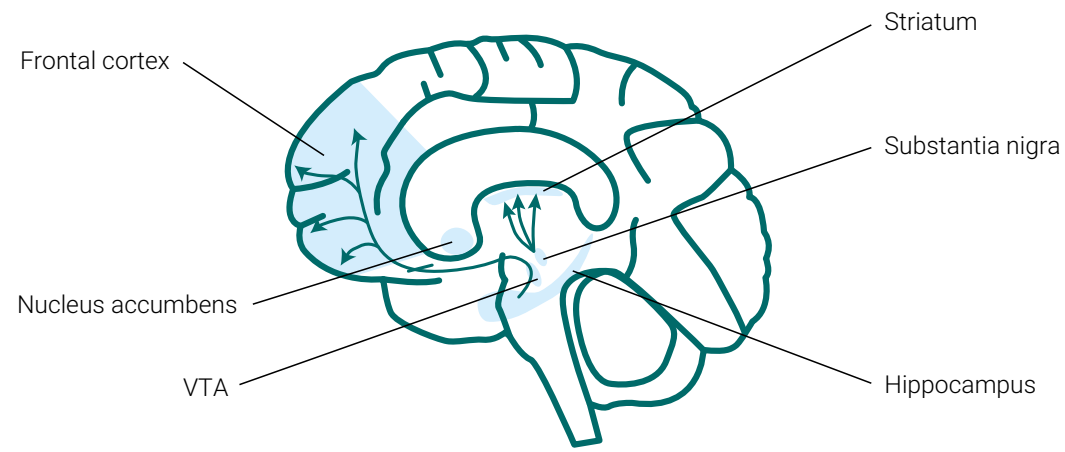
Ulman Lindenberg | Director, Center for Lifespan Psychology



“Degradation of the dopamine system has long been proposed as a primary basis for cognitive and brain aging. For the first time, the COBRA project allows us to address this proposition head–on—by testing whether within–person changes in dopamine are truly at the heart of it all.”

Douglas D. Garrett | Head, Lifespan Neural Dynamics Group

Figure 2. Dopamine pathways. In the brain, dopamine plays an important role in the regulation of reward and motor activity. As part of the reward pathway, dopamine is synthesized in nerve cell bodies located within the ventral tegmental area (VTA) and is released in the nucleus accumbens and in prefrontal cortex. Its motor functions are linked to a separate pathway, with cell bodies in the substantia nigra that produce and release dopamine into the striatum.



Dopamine Capacity, Neural Variability Regulation, and Cognitive Performance in Old Age

We now turn to an on-going, broad-scale COBRA effort led by the Berlin side (Garrett et al., 2023). In this data analysis project, we examine individual differences in the ability to regulate moment-to-moment neural variability in response to changes in cognitive demands. In the context of working memory, we consider three “lenses” through which neural variability regulation can be understood: (a) DA capacity, which is known to push neural variability in different directions (see Garrett et al., 2015); (b) network-level functional integration, implying that brain regions expressing greater variability may also “work together” more efficiently; (c) adaptation in decision-making processes to changing task demands (see Figure 3). We find that, under greater working memory load, increased neural variability is indeed associated with elevated DA capacity and heightened functional integration, and that these effects are dominantly expressed in the striato-thalamic system rather than in cortex. Behavioral

modeling reveals that working memory load evoked substantial decision biases during evidence accumulation, and that those individuals who jointly expressed a more optimal decision bias and had higher dopamine capacity were also more likely to express increased striato-thalamic variability under load (Figure 4). These findings are consistent with the hypothesis that the ability to tune striato-thalamic variability to the level of cognitive demand may be a hallmark of a well-maintained older adult brain that allows for high levels of cognitive performance (Nyberg et al., 2022).

This complex data analysis project was based on first-occasion data from COBRA. In follow-up work, we will investigate links of longitudinal changes in DA capacity, functional integration, and decision-making processes to changes in neural variability regulation, using all three measurement occasions currently available in COBRA.

Author: Douglas D. Garrett

Figure 3. Probing individual differences in neural variability modulation with increasing cognitive load from three complementary perspectives. Older adults who express increased neural variability under greater load (green) are expected to exhibit (a) greater dopamine capacity, (b) higher functional integration between brain regions (here, between thalamus (node a) and striatum), and (c) more effective decision-making. Adapted from Garrett et al. (2023), original image licensed under CC BY-NC-ND 4.0.

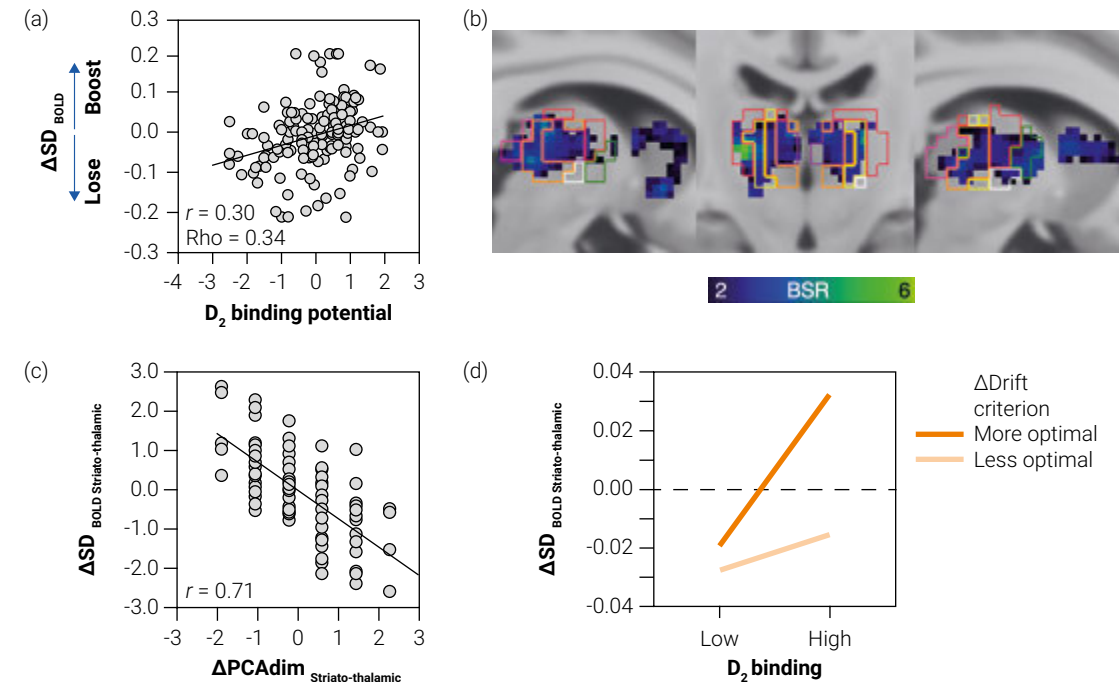
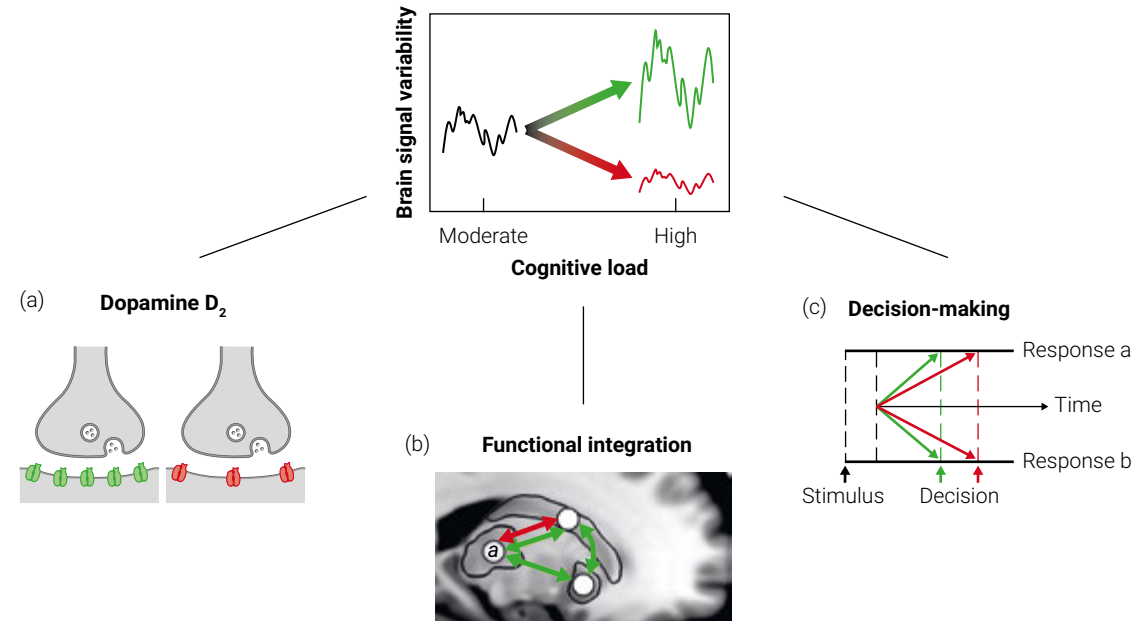


Figure 4. Moment-to-moment brain signal variability (SD_{BOLD}) in the striato-thalamic system under working memory load and its association with dopamine (DA) capacity. (a) Those who increase SD_{BOLD} under load also have higher DA capacity. (b) Overlay of the Morel nuclei atlas showing key results for the intralaminar, medio-odorsal, and “motor” (ventro-medial, -lateral, and -anterior) thalamic nuclei. BSR = bootstrap ratio (higher values = more robust effects). (c) Bivariate correlation between working memory load-related changes in functional network integration ($\Delta PCAdim$) and ΔSD_{BOLD} in the striato-thalamic system; those who increase functional integration also elevate SD_{BOLD} under load. (d) Participants expressing greater increases in SD_{BOLD} under load also have higher DA capacity and better maintain an optimal decision criterion under load. Adapted from Garrett et al. (2023), original image licensed under CC BY-NC-ND 4.0.

Research Project in Brief

Topic: The Cognition, Brain, and Aging (COBRA) project

Principal Investigators: Lars Bäckman (Professor, Aging Research Center, Karolinska Institutet, Sweden), Ulman Lindenberger (Director, Center for Lifespan Psychology, MPI for Human Development, Berlin, Germany), Martin Lövdén (Professor, University of Gothenberg, Sweden), Lars Nyberg (Professor, Center for Functional Brain Imaging, Umeå University, Sweden), and Katrine Ricklund (Pro-Vice-Chancellor, Umeå University, Sweden).

Researchers at Berlin site: Douglas D. Garrett (Head, Lifespan Neural Dynamics Group, MPI for Human Development, Berlin, Germany), Ulman Lindenberger (Director, Center for Lifespan Psychology, MPI for Human Development, Berlin, Germany)

Period: 2012–ongoing

Funding: e.g., Swedish Research Council, FORTE, Umeå University, the Umeå University–Karolinska Institutet Strategic Neuroscience program, Knut and Alice Wallenberg Foundation, Torsten Söderberg Foundation, Ragnar Söderberg Foundation, a donation of the Jochnick Foundation, Swedish Brain Power, Swedish Brain Foundation, Västerbotten County Council, Strategic Innovation Fund/Max Planck Society, the Gottfried Wilhelm Leibniz Prize 2010 of the German Research Foundation (DFG), and the Swedish National Infrastructure for Computing (SNIC) through the Abisko computer cluster at Umeå University.

Selected COBRA Publications:

- Garrett, D. D., Kloosterman, N. A., Epp, S., Chopurian, V., Kosciessa, J. Q., Waschke, L., Skowron, A., Shine, J. M., Perry, A., Salami, A., Rieckmann, A., Papenberg, G., Wählin, A., Karalija, N., Andersson, M., Riklund, K., Lövdén, M., Bäckman, L., Nyberg, L., & Lindenberger, U. (2023). Dynamic regulation of neural variability during working memory reflects dopamine, functional integration, and decision-making. *bioRxiv*. <https://doi.org/10.1101/2022.05.05.490687>. Ms. under review.
- Karalija, N., Johansson, J., Papenberg, G., Wählin, A., Salami, A., Köhncke, Y., Brandmaier, A. M., Andersson, M., Axelsson, J., Riklund, K., Lövdén, M., Lindenberger, U., Bäckman, L., & Nyberg, L. (2022). Longitudinal dopamine D2 receptor changes and cerebrovascular health in aging. *Neurology*, 99(12), e1278–e1289. <https://doi.org/10.1212/WNL.000000000000200891>
- Korkki, S. M., Papenberg, G., Karalija, N., Garrett, D. D., Riklund, K., Lövdén, M., Lindenberger, U., Nyberg, L., & Bäckman, L. (2021). Fronto-striatal dopamine D2 receptor availability is associated with cognitive variability in older individuals with low dopamine integrity. *Scientific Reports*, 11, Article 21089. <https://doi.org/10.1038/s41598-021-00106-y>
- Nevalainen, N., Riklund, K., Andersson, M., Axelsson, J., Ögren, M., Lövdén, M., Lindenberger, U., Bäckman, L., & Nyberg, L. (2015). COBRA: A prospective multimodal imaging study of dopamine, brain structure and function, and cognition. *Brain Research*, 1612, 83–103. <https://doi.org/10.1016/j.brainres.2014.09.010>
- Nyberg, L., Karalija, N., Papenberg, G., Salami, A., Andersson, M., Pedersen, R., Vikner, T., Garrett, D. D., Riklund, K., Wählin, A., Lövdén, M., Lindenberger, U., & Bäckman, L. (2022). Longitudinal stability in working memory and frontal activity in relation to general brain maintenance. *Scientific Reports*, 12, Article 20957. <https://doi.org/10.1038/s41598-022-25503-9>
- Papenberg, G., Jonasson, L., Karalija, N., Johansson, J., Köhncke, Y., Salami, A., Andersson, M., Axelsson, J., Wählin, A., Riklund, K., Lindenberger, U., Lövdén, M., Nyberg, L., & Bäckman, L. (2019). Mapping the landscape of human dopamine D2/3 receptors with [¹¹C]raclopride. *Brain Structure and Function*, 224(8), 2871–2882. <https://doi.org/10.1007/s00429-019-01938-1>
- Vikner, T., Karalija, N., Eklund, A., Malm, J., Lundquist, A., Gallewicz, N., Dahlin, M., Lindenberger, U., Riklund, K., Bäckman, L., Nyberg, L., & Wählin, A. (2022). 5-year associations among cerebral arterial pulsatility, perivascular space dilation, and white matter lesions. *Annals of Neurology*, 92(5), 871–881. <https://doi.org/10.1002/ana.26475>

“The Berlin Aging Studies Are a Gift for Interdisciplinary Research”

Lise Meitner Group for Environmental Neuroscience & Center for the History of Emotions

The individual and societal conditions necessary for successful aging are examined in the Berlin Aging Study II (BASE-II). Many aspects studied are relevant not just for psychologists, but for historians, too, and historical methods can yield new perspectives on this large dataset. Psychologists Simone Kühn and Johanna Drewelies, and historian Kerstin Maria Pahl talk about their joint project.

What is your project about?

Johanna Drewelies: We collected data on day-to-day activities as part of the Berlin Aging Study II (BASE-II), conducting so-called “Yesterday Interviews” with study participants of an average age of 75. The BASE-II participants were asked to look back on what they did on the day before, from the time of getting up until going to bed. These interviews were not conducted in order to factually document the day’s occurrences, but rather to get the participants’ own reconstruction of what they did throughout the day.

Simone Kühn: We are generally interested in what older people do in their day-to-day lives. And what they are then able to relate about it. We conducted these Yesterday Interviews in two studies, the first being BASE, starting in 1990–1993, and then more than 20 years later in BASE-II. This allows comparisons between the participants in the two studies.

What was the original idea behind the Yesterday Interviews?

Simone Kühn: We are investigating the interviews to add some “meat” to the numerical data. Most data we normally collect is quantitative in nature: how high is a participant’s blood pressure, how much do they weigh, or how many words from a list can they remember? For example, Johanna is currently working with a colleague, Gustav Lauridsen, to investigate whether the speed at which cognitive tasks are completed is correlated with the number of activities participants mention in the Yesterday Interview.

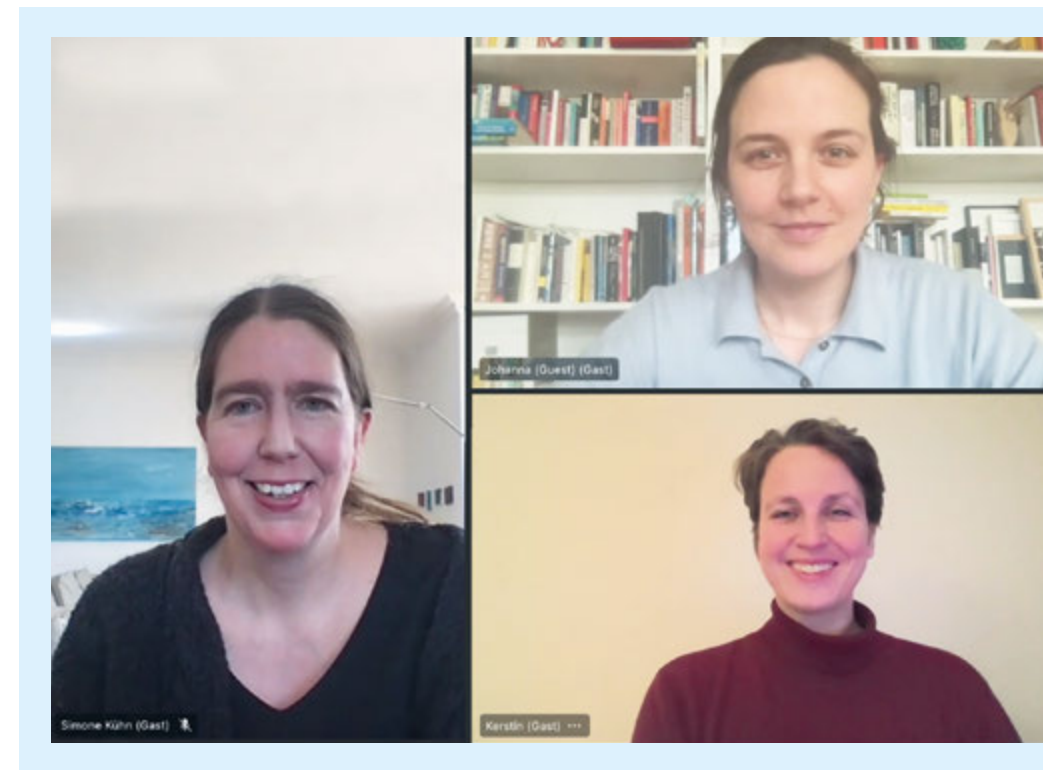
Johanna Drewelies: The advantage of the interviews is that, in contrast to standardized surveys, there are no pre-defined lists of activities to go through. We found that older BASE-II participants in particular perceive things like “waiting,” “arriving,” and “observing” (looking out of the window, watching birds or the sunset) as activities. These would not usually be found in standardized activity lists.

Why did you bring Kerstin as an historian on board?

Johanna Drewelies: In the field of psychology, context is often ignored. In the Lise Meitner Group, we examine the environment’s influence, but not historical context. We work with data collected many years ago, and rarely think about potential changes in the participants’ life contexts. However, the data available from the two Berlin Aging Studies enable us to compare life contexts over time.

Kerstin Maria Pahl: This contextualization is not just about comparing the two cohorts with each other. What we want to do is a close reading of the interview content, to put forward a careful interpretation of what we are told. I find “arriving” or “arriving home” to be the most intriguing activity that you noted. How is it that those of the post-war generation see arriving as an activity? And why is that fact relevant to your work? This has quite a lot to do with the fact that “forms of life” undergo change: the relevance of everyday activities varies and is impacted by the respective historical period. Hallways, for example, used to be an important place. You took off your outdoor clothing, hung it up, put your shoes away, even put on an apron to not soil your clothing before doing anything else. Guests were welcomed there. Arriving was something that took place over a longer time-span: it took time to arrive. That is one striking example of how perceptions differ on how the day is structured, and how people organize individual processes and activities throughout the day. Such historical contextualizing of what is understood as an activity in the first place, and how an activity in itself is structured, formed the starting point for our collaboration.

Simone Kühn: I find it quite fascinating to look at what people do not mention. Thus far, we have focused on frequency analysis, but refocusing our attention on what specific activities are not mentioned was a new idea for us. And as I have learned, that is an essential part of historical textual analysis.



Simone Kühn (left), Johanna Drewelies (top right), Kerstin Maria Pahl (bottom right)

How did your collaboration get started?

Simone Kühn: It was an initiative of mine. The interviews provide subjective descriptions, but that is the only thing we have. To me this seems like a problem historians have to a similar extent, which therefore could yield methodological input on how to make use of the information. I then presented our work at a colloquium held by the Center for the History of Emotions, soliciting feedback.

Kerstin Maria Pahl: I afterwards approached Simone about a potential collaboration. I wrote my doctoral thesis on biographies and autobiographies, and have been reading what we call “ego documents” for years. I attempt to find out how people construct their lives through narratives, and how events and experiences can be accessed through a close reading of certain sources, while also factoring in the general culture and mentality of the time. The research done by Simone and Johanna is closely akin to mine in several ways. These BASE and BASE-II interviews are a goldmine for historians. They really provide source material for two separate fields of inquiry.

What is the current status of your project?

Kerstin Maria Pahl: We don’t have any results to show at this time, the ball is in my court. I was given access to the BASE-II data and briefed, and received plenty of material to read. Now I am going to start looking at the data qualitatively, more closely studying the activities and the categories they fall into. For example, we talked about all the things that are associated with “walking” and “going.” Not just the aspect of walking itself, but rather going to a place as well. That is, for some people this means “going for a walk” while for others it means something more purposeful. I aim to take a closer look at this distinction.

As psychologists, what exactly are you looking to gain through this historical perspective?

Johanna Drewelies: We hope Kerstin’s input will afford greater specificity in our evaluation and allow us to identify further categories. When somebody says, “I’ll go eat something,” that falls into the category of Eating. Information like eating together, eating with, or eating alone can get lost. We make use of machine learning algorithms to analyze such large volumes of text. Such methods do not always make the relevant distinction.

Kerstin Maria Pahl: Our work unites strong qualitative and quantitative analysis; first, categories are defined through qualitative analysis, which are then utilized in the quantitative analysis. The act of interpretation is like casting a net. Some fish always pass through. But then you can go back and make your net finer.

Kerstin, you are the one responsible for the fine tuning. What is your approach?

Kerstin Maria Pahl: I’m applying quite a classic approach, combining close reading and contextualization. I’ll start with reading a few dozen interviews to get into the material. Usually, overarching themes will emerge very quickly because people of a given generation share frameworks of references and ways of thinking and expressing. A period’s culture affects how people write and speak. I usually make notes of themes, phrasings, or tropes to then be able to identify the rules and exceptions, both of the activities and of the ways of talking about them. Afterwards, I skim other texts to find out if there are similarities there or what the differences are. To broaden the focus, I draw on other texts from the period, such as autobiographies, letters to the editor, or newspaper articles. It gives me hints on what things are talked about or not.

What else does this collaboration give you, beyond the methodological extension?

Johanna Drewelies: When psychologists examine differences between cohorts, the work is highly quantitative. In many cases we limit ourselves to counting frequency of occurrence and simply describing differences. Questions of 'why' and about historical context often remain unanswered in any detailed way.

Simone Kühn: I find it quite refreshing to see how such information is methodologically treated in a different research field. I also see it as a challenge for us to be bold enough to include such information in the interpretative process. In a way, psychologists seem to be afraid of context and rather want to convert information into numbers.

Kerstin Maria Pahl: I agree that such methodological cross-fertilization is very fruitful. The study of history is highly qualitative in nature, especially when working on a micro-level, and we often have the opposite problem: quantitatively supported arguments very rarely play a role in my area. You mentioned a fear of context; we're a bit afraid of numbers. Historians can learn quite a lot from frequency analysis, be it words or activities.

What challenges have you encountered?

Simone Kühn: The vocabulary is difficult. Often you can't be sure you are even talking about the same thing. But otherwise, I don't see any other major hurdles.

Kerstin Maria Pahl: Yes, that is the biggest challenge in my experience, also within the Max Planck Society more broadly. When I took part in the MPG "Sign Up!" career building program I was one of only a few scholars representing the humanities, and the sole historian. It really made me realize that to engage in dialogue with colleagues from other dis-

ciplines, you need, before all else, a multilingual dictionary. You need to verify whether you're actually talking about the same thing. This language barrier really shouldn't be underestimated as it can kill a potential collaboration before it even gets started because you can't be certain you're working on the same thing.

Simone Kühn: It is often a problem that people talk to each other in the abstract. Actually having data or other very concrete material on hand is very helpful, as you can then understand the other person's approach.

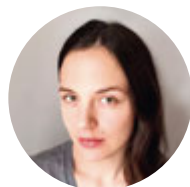
The way you have described it, interdisciplinary connections go undiscovered in many projects. What could be done to improve dialogue?

Simone Kühn: I got to know Kerstin at a meeting where the objective was to do just that, by talking very specifically about our research in a manner accessible to colleagues working in other fields. I gained the insight there of how valuable it is to expose one's work to potential criticism from individuals working in other fields and take heed of that criticism—for instance, finding out why the way we assess affect in psychology seems strange to historians.

Kerstin Maria Pahl: Exactly. Our meetings got really interesting when we were able to work with actual data. We often engage in dialogue about topics and methods. But perhaps the source material should really form the basis for the collaboration. When we ask you what you are working on, you say 'interviews.' And that is where our historians come in, who focus on "oral history." Several of us would say, "Hey, I use interviews in my work as well." I usually work with material from the eighteenth or nineteenth centuries, but people recorded their daily activities or anecdotes of what happened then as well. Psychology and history have a lot to learn from each other as fields of inquiry.



Simone Kühn is Head of the Lise Meitner Group for Environmental Neuroscience. Interdisciplinary dialogue is important to her work. In 2019 she and Tamara Turner (Center for the History of Emotions) formed the *Cross-Disciplinary Research Initiative* to promote interdisciplinary dialogue and understanding of methodological differences.



Johanna Drewelies is a postdoc at the Lise Meitner Group for Environmental Neuroscience. She is member of the BASE-II Steering Committee. This includes, for example, responsibility for the psychosocial assessment battery for studying questions of well-being and affect, personality and stress.



Kerstin Maria Pahl is a researcher at the Center for the History of Emotions and a visiting professor at Humboldt-Universität zu Berlin (June 2023 to March 2024). Starting with her PhD, she has worked extensively with (auto-)biographical documents from before 1900, such as diaries, letters, and memoirs. She has a special interest in the way different disciplines explore personal experience and cultural change.

Images (Pahl, Drewelies, Kühn): Miranda de Gunzburg Center for European Studies, personal, C. D. Ketels

OVERVIEW OF THE BERLIN AGING STUDIES (BASE & BASE-II)

The multidisciplinary Berlin Aging Study (BASE), initially directed by the late Paul B. Baltes and Karl Ulrich Mayer, directors at the MPI for Human Development, was started in 1989. Ulman Lindenberger, director of the Center for Lifespan Psychology, is the current BASE speaker. The study spans eight measurement occasions spaced over 18 years. Its distinguishing features include (1) a focus on the very old (70 to 100+ years); (2) a locally representative sample, stratified by age and sex; and (3) a broad-based interdisciplinarity (involving Psychology, Sociology/Social Policy, Internal Medicine/Geriatrics, and Psychiatry). From 1990 to 1993, a core sample of 516 men and women aged 70 to 100+ years from the western districts of Berlin completed the Intensive Protocol comprising detailed measures from all four research units. Seven longitudinal follow-ups involving different depths of assessment were completed at approximately 2-yearly intervals. The Yesterday Interview (Moss & Lawton, 1982) was carried out three times in the course of the study.

BASE-II, led by a Steering Committee including Ulman Lindenberger, Johanna Drewelies, Sandra Düzel, Simone Kühn, and Gert G. Wagner at the MPI for Human Development, also follows a longitudinal design. At the first wave of measurements (T1), the BASE-II sample consisted of 1,600 participants aged 60 to 80 years and 600 individuals aged 20 to 35 years. Data collection of the first wave, which included many instruments already used in BASE, was completed in 2014. Led by Simone Kühn, eligible BASE-II participants ($n = 445$) were additionally invited for a magnetic resonance imaging (MRI) assessment of the brain. In 2015, this MR subsample was reinvited for further cognitive and psychosocial assessments and a second MRI session ($n = 327$). In November 2017, the older cohort of 1,600 men and women from the original BASE-II sample was re-invited in the context of the project, Sex- and Gender-Sensitive Prevention of Cardiovascular and Metabolic Disease in Older Adults in Germany (GendAge), which includes most of the medical and biological assessments of T1, along with a third wave of cognitive and psychosocial assessments. In addition, accelerometers are used to track participants' physical activity and sleep for a week. A further data collection wave is currently underway.



Image: Robert Kneschke - Fotolia.de

Reference

Moss, M. S., & Lawton, M. P. (1982). Time budgets of older people: A window on four lifestyles. *Journal of Gerontology*, 37(1), 115–123. <https://doi.org/10.1093/geronj/37.1.115>



www.r23.mpi-b-berlin.mpg.de/berlin-aging-studies

Research Project in Brief

Topic: Analyzing BASE-II data from an historical perspective

Period: 2022–ongoing

Researchers: Johanna Drewelies (Postdoctoral Fellow, Lise Meitner Group for Environmental Neuroscience), Simone Kühn (Head, Lise Meitner Group for Environmental Neuroscience), Kerstin Maria Pahl (Researcher, Center for the History of Emotions)

Funding: Max Planck Society

Do Organ Donations Increase After the Switch to an Opt-out Default?

Center for Adaptive Rationality & Center for Lifespan Psychology

To address the shortage of organ donors, many countries have changed, or are debating changing, the organ donation default from opt-in to opt-out. A longitudinal study by the Center for Adaptive Rationality and the Center for Lifespan Psychology suggests this change in default may not be the effective solution health care systems have hoped for.

The global shortage of donated organs means that many people die waiting for a life-saving transplant. Proponents of the nudging approach to behavioral public policy have proposed what many—from researchers to policymakers to prominent politicians—hail as an effective and cost-efficient nudging intervention to increase rates of consent to posthumous organ donation: changing the legal default from an opt-in or explicit-consent system to an opt-out or presumed-consent system (see Box 2., p. 32).

As good as the opt-out policy is at increasing effective consent rates, it is crucial to investigate whether it reaches its ultimate goal of increasing posthumous organ donation rates. An increase in consent rates does not necessarily result in increased rates of donation owing to the many reasons preventing registered potential donors from actually donating. These include dying outside of the hospital (organs need a supply of oxygen-rich blood to remain suitable for transplantation), families objecting to the consent of the



“In the field of organ donation, a few studies have already shown that a presumed-consent default is not associated with higher donation rates. Through our cooperation and by combining our expertise, we were able to take a novel approach and analyze variations in change across different countries.”

Mattea Dallacker | Associate Research Scientist, Center for Adaptive Rationality

The evidence for this intervention originally came from a groundbreaking study published in the journal *Science* 20 years ago. The researchers compared effective consent rates across 11 European countries. This rate is the number of people who opted in (in explicit-consent countries) or the number who did not opt out (in presumed-consent countries). The researchers found an enormous disparity between the two policies: In seven opt-out countries, the effective consent rate was on average 90%, whereas in four opt-in countries the consent rate was only about 10%. This gap in consent rates has often been attributed to inertia; in this interpretation, most people stick with the default status in their country because doing so requires no effort.

deceased, doctors' hesitancy in using a default option, a mismatch with potential recipients, and the absence of a transplant coordination network or trained medical staff, not to mention religious issues.

Twenty years after the initial default policy analysis, reliable data on default policies and organ donation rates have become more readily available. Overall, cross-sectional studies comparing donation rates across countries have found no robust evidence that an opt-out default has a considerable impact on donation rates. A systematic review published in the *British Medical Journal* in 2009 reported effects ranging from no significant effect to a mere six more organ donors per million population.

Image: personal

BOX 1. WHAT ARE NUDGES?



Image: MPiB

Nudges are nonregulatory and nonmonetary interventions that steer people in a particular direction while preserving their freedom of choice. Examples include automatic (presumed) consent in organ-donation schemes and pension plans unless individuals specifically choose to opt out (rather than having to actively opt in if they want to enroll), the redesign of cafeterias such that healthier food is displayed at eye level, and the use of social norms to increase tax compliance. The nudge approach has also prompted critical debates about its underlying political philosophy of libertarian paternalism, the ethics of nudging, the empirical success of nudging interventions, as well as the approach's starting proposition that deficits in human decision-making competence are pervasive and difficult to alter.

One limitation of cross-sectional comparisons such as these is that countries vary substantially on a range of factors that are likely to affect donation rates, such as culture, religiosity, and health infrastructure. Even though most studies controlled for some of these factors, statistical control is limited by the knowledge of measurable factors; therefore, a risk of residual confounding will remain.

To tackle these issues, Mattea Dallacker and Ralph Hertwig, behavioral scientists from the Center for Adaptive Rationality, and Andreas M. Brandmaier, an expert in longitudinal data analysis from the Center for Lifespan Psychology, analyzed within-country organ donation rates over time. The collaboration across Centers enabled the researchers to apply longitudinal methods from lifespan psychology to measure the

change in organ donation rates within countries over time. The researchers used data from five countries that switched from an opt-in to an opt-out default policy: Argentina, Chile, Uruguay, Sweden, and Wales. The data were analyzed with a Bayesian regression model, which estimated the odds of organ donation relative to nondonation within each population across time, as well as the effect of the policy switch.

The model fit the data well. It predicted an average annual increase in the odds of organ donation relative to nondonation, and it did so independent of the change in default policy. That is, the change in default did not lead to a credible effect. Furthermore, the COVID-19 pandemic was associated with a drastic decrease of the odds of donation.



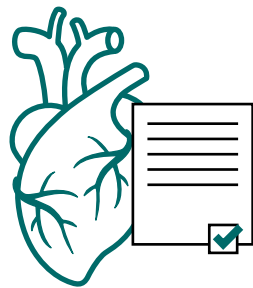
“We applied methods that we normally use to model individual differences in human development to model individual differences in change across countries. The unique dataset allowed us to disentangle the effect of general change over time and the effect of a new policy because policy change occurred at different points in time in each country.”

Andreas M. Brandmaier | Senior Research Scientist, Center for Lifespan Psychology

Image: Bogdan Hinrichs

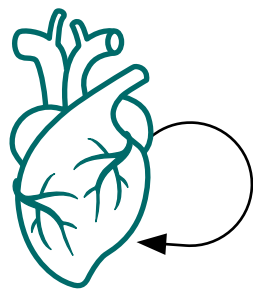
BOX 2. ORGAN DONATION DEFAULTS

Most public policy choices have a no-action default, that is, a condition that is imposed when an individual fails to make a decision. In the case of organ donation, countries typically have one of two default policies:



Opt-in or explicit consent

Nobody is considered an organ donor without actively registering to be one. The aim of such a default is to prioritize individual agency and autonomy. Countries such as Canada, Ireland, and Denmark have an opt-in system.



Opt-out or presumed consent

All adult citizens are automatically considered organ donors unless they explicitly register otherwise. Such a default aims to increase sign-up rates while preserving the choice of individuals to withdraw their consent. For example, France, Italy, and Finland have an opt-out system.

IN A NUTSHELL

- European countries employing an opt-out system for posthumous organ donation have significantly higher sign-up rates compared to countries using an opt-in system.
- Yet cross-sectional studies have found that an opt-out default does not significantly increase actual organ donation rates.
- The latest longitudinal study addressed the limitations of previous cross-sectional analyses and found that changing the organ donation default to an opt-out system indeed does not lead to a substantial increase in organ donation rates.
- There was also strong evidence that the COVID-19 pandemic was linked to a decrease in the likelihood of organ donation.

The authors also investigated if economic prosperity and death by transport accidents were associated with the number of donations using a model that also included gross domestic product (GDP) per capita and the number of deaths by transport accident as predictors. There was weak evidence for the inclusion of GDP and strong evidence in favor of the inclusion of accidents. In this model, there was still strong evidence against the inclusion of policy as a predictor.

These results suggest that a policy change from an explicit-consent (opt-in) to a presumed-consent (opt-out) default hardly increases effective donation rates. Although these findings do not dispute previously observed effects of defaults on effective consent rates, they show that a change in default alone is not the game changer it has often been thought to be.

According to the authors, there is an alternative to opt-in and opt-out defaults: mandated choice. In New Zealand, for instance, individuals are required to choose between being a donor or a nondonor when they register for a driver’s license. This both circumvents the problem of inertia and avoids conveying an implicit recommendation as when setting a default. Additionally, experimental evidence suggests that, compared to an opt-out system, mandated choice makes it easier for next of kin to infer a family member’s preference.

Author: Ana Sofia Morais

Research Project in Brief

Topic: Do organ donations increase after the switch to an opt-out default?

Period: 2022–2023

Researchers: Lisann Appelius (Student Research Assistant, Center for Adaptive Rationality), Andreas M. Brandmaier (Senior Research Scientist, Center for Lifespan Psychology), Mattea Dallacker (Associate Research Scientist, Center for Adaptive Rationality), Ralph Hertwig (Director, Center for Adaptive Rationality)

Funding: Max Planck Society

Publication:

Dallacker, M., Appelius, L., Brandmaier, A. M., & Hertwig, R. (2023). *Opt-out defaults hardly increase organ donation*. Ms. submitted for publication.

Pleasant Green or Deep Dark Woods: Do Forests (Still) Evoke Fear in Us?

Center for the History of Emotions & Lise Meitner Group
for Environmental Neuroscience

Forests and natural environments are increasingly valued for their curative and therapeutic effects on humans. However, the forest has historically also been associated with negative emotions such as fear. This interdisciplinary study brings together researchers in environmental neuroscience and in the history of emotions to jointly investigate forest anxiety today.

Forests have envired human history nearly everywhere our species has migrated—from equatorial tropical jungles through temperate latitudes to the great boreal forests circling the planet's northern hemisphere. Sedentary forms of human living have been carved and hewn out of vast arboreal expanses. In the shadow of such "sylvan fringes," humans have known forests as ambiguous domains: as opaque and obscure regions populated by the beasts of the wild and animated by human imagination. We have seen our forests as sacred and enchanted, tallied them unownable or under dominion, experienced them as terrifying and strange, or romantic and beautiful.

German history in particular is densely entangled in sylvan scapes. In an early source from the first century CE, Roman historian Tacitus described Germania as covered in "hideous forests and foul swamps." It was not until the 18th century and the onset of Romanticism, however, that such accounts were enshrined as works of history at the core of an emerging national consciousness tied to a renewed mythologization of the German forest. Though sylvan domains had largely been conquered and domesticated by this point, cultural imaginations once again cast the forest as deeply ambiguous, populated with druids and witches, kings and hermits, and of course bandits, but also with an emerging urban bourgeoisie in search of the natural sublime.

A myriad of emotions characterize the long history of human–forest relations. Cultural history hands down a wealth of sylvan stories and arboreal images, many of which we still grow up with today, in the form of fairytales, myths and stories, or visual art. But as humans as a species are leaving the post-glacial climates of the Holocene that enabled forests to thrive across the planet, trees are beginning to occupy a new place in our minds. At the dawn of the Anthropocene, they have become objects of worry and concern, symbols of the endangered nature we now strive to protect. At the same time, a plethora of economic interests are tied to imagery of lush green landscapes, selling us products, experiences, and promises of well-being.

Environmental neuroscience, at the forefront of disciplinary innovation, attempts to probe these assumptions in human participants. Plenty of research from this field now suggests that green spaces and trees in particular contribute to human well-being. Have forests, on the apparent brink of their planetary collapse, thus finally become unambiguously positive in our minds? Have our fears of the forest been replaced by anxieties for the forest and its survival? The study investigates precisely this point: namely, whether emotional relations to forests are entirely positive today, or if instead we can still find traces of



"This project offers an exciting chance to gain new insights across very different disciplines, and it is more than just a glance over a disciplinary fence: Our collaboration has the potential to provide unique contributions to propel each other's work forward in new ways."

Frederik Schröer | Researcher, Center for the History of Emotions

Image: MPIB



Image: Pexels - Jaymantri

the forest fears and arboreal anxieties of the deep history of human psycho-cultural history.

The idea for this interdisciplinary project on Forest Anxiety first emerged in late 2020. While designing his postdoctoral research project on Environment and Emotions, Frederik Schröer of the Center for the History of Emotions approached Simone Kühn of the Lise Meitner Group for Environmental Neuroscience, who pursued a similar interest in the affective dimension of human–environment relations. In early discussions, Kühn described her interest in unexpectedly anxious responses of test subjects exposed to urban forests in Berlin. This resonated strongly with Frederik Schröer, since fear was crystallizing as a key research focus in his own work. Forest anxiety or German Waldangst, he had found, echoed as far as ancient India, where Buddhist monks in the first century BCE wrote of the "fear and terror" that may overcome those meditating in the depths of wild. Likewise in the Lise Meitner Group for Environmental Neuroscience, Kühn and colleagues were already planning to follow up on the topic. Thus, the focus on forest anxiety emerged as a mutually beneficial meeting

of trajectories. Following the repeated calls for more interdisciplinary collaboration, Kühn and Schröer saw a fortuitous opportunity in this project. Even so, both were aware of the difficulties interdisciplinarity entails, and agreed that targeting concrete results must be their guiding principle.

In the first half of 2021, a mutual collaboration was formally begun among the core team of Simone Kühn, Djo Juliette Fischer, and Frederik Schröer. Together, the team designed a study to assess implicit and explicit indicators of semantic and visual associations between the concept of forest and the affective state of anxiety. To this end, standard tests such as Semantic Priming, the Affect Misattribution Procedure, and the Approach–Avoidance Task were selected. At these points, interdisciplinarity became productive as it made visible some of the underlying heuristic assumptions on both sides, and the moments in which they chafed. Discussions over deductive or inductive methods exemplified disciplinary differences, but also the potential for synergetic engagement. Staying true to their focus on operability, the team chose to work with a standard model of emotions. This, however, was expanded,

informed by both environmental neuroscience and cultural history, in order to probe for more diverse potential affective states.

Beyond linguistic categories, images were to play a key role in the study. Therefore, the team assembled an extensive catalog of reference photographs of houses, parks, and forests. While environmental neuroscience often argues for the benefits of human exposure to “green spaces” more generally, the team agreed that different kinds of “green” environments needed to be differentiated. Artificially constructed “natural” environments such as urban parks might be perceived generally positively, but wild forests and other undomesticated natural environments can also elicit opposite affective reactions. The visual materials were therefore jointly evaluated with regard to criteria such as “naturalness,” blue/green and light/shadow ratios, but also the social connotations of specific urban locales. Photographs were then selected to represent diversified “ideal types” of the three categories, targeting the study’s primary participants in northern German cities (see Illustrations 1–3).

With the design and preparation of the online study complete, data have now been collected from a total of 256 participants and are currently being processed. First results point to differentiations in implicit safety and anxiety ratings between parks and forests, with implicit fear lower and safety higher for park

images than for forest images. Further investigation may probe deeper, such as into gender differentials between affective responses to urban versus natural environments. Building on previous studies, the relatively small differences in reactions to the categories park and forest call for a follow-up study on exposure, in order to test for differences between mediated natural environments and bodily or sensorial immersion.

A first publication is currently being finalized, integrating the discussion of the gathered data with the project’s interdisciplinary perspective. Our ambitions, however, do not stop there. In 2022, the project entered into a collaboration with the Indian Institute of Technology, New Delhi. Together with two colleagues at IIT New Delhi, a sister-study in South Asia was developed, leveraging the collaboration between the Lise Meitner Group and the Center for the History of Emotions in adapting the existing German study to a very different social and cultural context. Piloting was undertaken in New Delhi in 2022, with data collection and analysis planned for 2023. This international and cross-cultural collaboration promises to further enrich the overall study on forest anxiety by supplying results from a non-European context, allowing us to further investigate the cultural specificity or sharedness of affective responses to natural environments.

Author: Frederik Schröer



Illustration 1. Image in the study’s “forest” category, selected for its representation of a natural environment free of man-made structures.



Illustration 2. Image of a park, contrasting to the “forest” category by the presence of man-made structures and tended greenery.



Illustration 3. Image of a house, not used in the final study due to the large presence of greenery and a visual overlap with the “park” category.

Research Project in Brief

Topic: Forest anxiety

Period: 2021–ongoing

Researchers: Djo Juliette Fischer (Predoctoral Fellow, University Medical Center Hamburg-Eppendorf [UKE]), Simone Kühn (Head, Lise Meitner Group for Environmental Neuroscience, MPI for Human Development), Frederik Schröer (Researcher, Center for the History of Emotions, MPI for Human Development)

Funding: Max Planck Society

Brain Plasticity During Skill Acquisition: Bridging the Gap Between Animal Models and Human Research

Center for Lifespan Psychology & Lise Meitner Group for Environmental Neuroscience

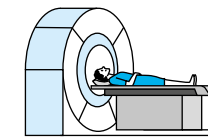
In this collaborative project, which involves three Max Planck Institutes, we investigate experience-dependent brain plasticity during motor skill acquisition. By carrying out coordinated experimental research with humans and mice and by using multimodal neuroimaging methods, we seek to gain a more mechanistic understanding of human brain plasticity.

In everyday life, humans show skilled performance on many tasks such as grasping an object, using a tool, or riding a bike. Typically, such tasks are learned by practicing them repeatedly over extended periods of time until they can be performed fluently and with little effort. This process of skill acquisition is put into operation by experience-dependent plasticity, which refers to the brain's capacity to form lasting and behaviorally relevant structural and functional changes in neural connections that allow individuals to adapt to changing environmental demands.

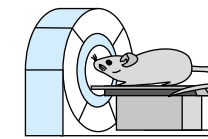
In humans, plasticity in the course of motor skill acquisition has been observed at the macroscopic level in the form of grey-matter volume changes in primary motor cortex. In line with the exploration–selection–refinement (ESR) model of brain plasticity (Lindenberger & Lövdén, 2019; Lövdén et al., 2020), a non-monotonic macroscopic pattern was observed, consisting of tissue expansion followed by renormalization (Wenger et al., 2017). According to the ESR model, several sets of competing neuronal microcircuits potentially capable of implementing the computations needed to execute the to-be-learned skill are widely probed early in learning, and eventually structurally altered. This phase of exploration is followed by phases of experience-dependent selection and refinement of reinforced microcircuits, which lead to the concomitant gradual elimination of novel structures associated with unselected circuits, presumably resulting in macroscopically observable renormalization of tissue volume.

Unfortunately, it is not yet possible to study changes at the cellular level non-invasively in humans. Thus, to further validate the predictions of the ESR model, there is a dire need to map insights from microscopic measurements in animals onto macroscopic findings obtained in humans. The closer alignment of these two strands of research requires a systematic overlap in methodology across species. To accomplish this goal, researchers at the MPI for Human Development (MPIB) in Berlin, the MPI of Psychiatry (MPIP) in Munich, and the MPI for Biological Intelligence (MPIBI) in Martinsried near Munich have teamed up to coordinate their complementary expertise. Researchers at MPIB are well-versed in conducting human longitudinal studies investigating brain plasticity at the macroscopic level using magnetic resonance imaging (MRI). Researchers at MPIP obtain high-resolution anatomical brain scans from mice using a small-animal MRI system to identify brain structures involved in learning processes. Researchers at MPIBI are experts in investigating neuronal plasticity using in-vivo two-photon microscopy. The coordinated use of macroscopic and microscopic methods in humans and mice can provide new insights about the relationship between macroscopically observable volume changes and cellular processes in the context of experience-dependent brain plasticity.

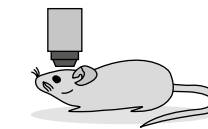
One challenging precondition for the successful implementation of the project was to establish analogous behavioral protocols that are likely to elicit brain plasticity in both mice and humans. This requires explicit efforts to synchronize and



Max Planck Institute for Human Development,
Berlin, Germany (MPIB)



Max Planck Institute of Psychiatry,
Munich, Germany (MPIP)



Max Planck Institute for Biological Intelligence,
Martinsried, Germany (MPIBI)

adjust the learning tasks for humans and mice to enable comparable observations across species. We decided to set up protocols for motor skill acquisition, given that the behavioral assessment of a motor task and the localization of expected brain plasticity in motor regions are relatively straightforward in both species.

Both rodents and humans are capable of acquiring motor skills in the form of complex grasping movements. In mice, we used the well-established single-pellet reaching task to train skillful forelimb movements over several days. In this task, mice are trained to grasp a millet seed by reaching through a narrow slit and retrieve it to their mouth. We adapted this training regime to humans by designing a reaching task with chopsticks, in which participants need to grasp a single M&M (i.e., a chocolate-coated peanut) with chopsticks, transport it, and put it

down in a bowl. Thus, both mice and humans learn to reach for and grasp a small food item that needs to be transported over a short distance.

In the main study, human participants trained the grasping task with chopsticks for 70 days in total. Each day, they needed to successfully grasp and transport 30 M&Ms. During the training period, participants were invited to the Institute on seven occasions to obtain structural and functional MR measurements. In the companion experiment in Munich, mice were trained to grasp 30 millet seeds for 25 days and underwent structural MRI on three occasions.

Another prerequisite for the project is to coordinate analysis pipelines of brain data suitable for rodent and human brains. Usually, in humans, the analysis of volume changes requires

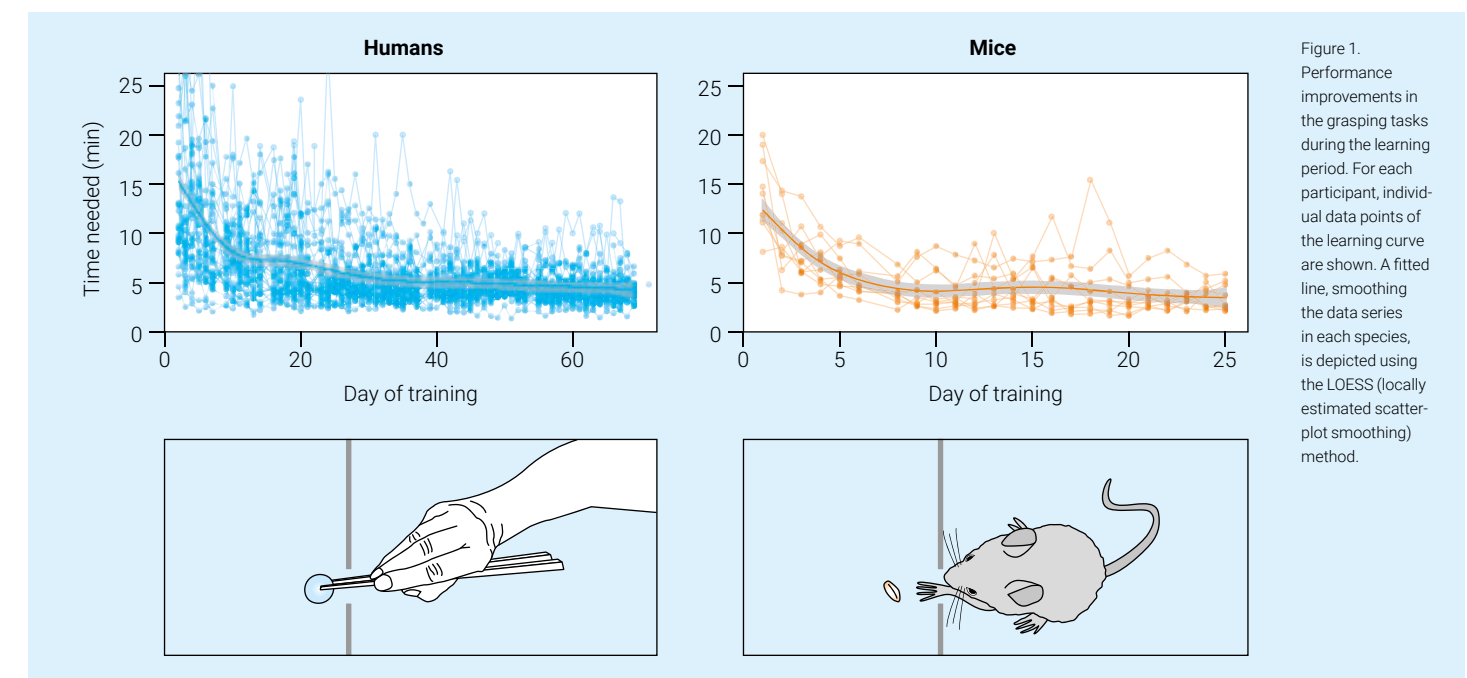


Figure 1. Performance improvements in the grasping tasks during the learning period. For each participant, individual data points of the learning curve are shown. A fitted line, smoothing the data series in each species, is depicted using the LOESS (locally estimated scatterplot smoothing) method.



“Research on transfer and generalization of skill training in humans has been hampered by exaggerated expectations and conceptual vagueness. The field needs better data and theories to delineate the potential and limits of plasticity across the lifespan. The species-comparative study of motor skill acquisition is a good place to start.”

Ulman Lindenberger | Director, Center for Lifespan Psychology

Image: Arne Sattler



“Being part of the interdisciplinary team in this collaborative project is very exciting. While it is challenging to find common ground among different methods used across species, the project may help to better understand neuroscientific phenomena such as human brain plasticity.”

Maïke Hille | Predoctoral LIFE Fellow, Center for Lifespan Psychology & Lise Meitner Group for Environmental Neuroscience

the segmentation of the brain into different tissue classes using established toolboxes. Segmentation of mice brains is generally more difficult, reflecting differences in image contrasts and less clearly defined brain structures (e.g., absence of cortical gyration). To establish common ground across species, we searched for processing pipelines that can be applied to both human and mice brains such that comparisons across species are warranted. Currently, we are using deformation-based morphometry in addition to voxel-based morphometry; the former method has the advantage that it does not depend on brain segmentation.

The two motor tasks resulted in comparable learning curves across species (Figure 1). Initially, human participants took about 16 minutes to grasp 30 M&Ms with chopsticks. Within the first four weeks of training, there was a steep decrease in the time needed, followed by stable asymptotic performance

in most participants. Specifically, participants’ performance reached a mean duration of about 5 minutes and 23 seconds to grasp 30 M&Ms on Day 30. Mice showed a similar decrease in time required to successfully grasp 30 millet seeds, starting with a mean duration of 14 minutes on day 1 and stabilizing their grasping time around day 8, with a mean duration of 4 minutes and 10 seconds.

Currently, project members are performing morphometric brain analyses with the acquired brain data from humans and mice to investigate brain changes over time during motor skill learning at the macroscopic level. Further analysis will entail two-photon microscopy processing of mouse brain data and estimation of microstructural tissue properties in human brains using MRI-based in-vivo histology.

Author: Maïke Hille

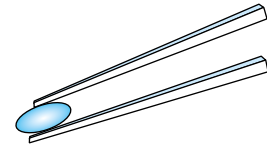
Image: MPIB

SOME FACTS AND FIGURES

> 75 human participants



> 250 bags of M&Ms ≈ **> 60,000** M&Ms grasped with chopsticks



70 training days per participant



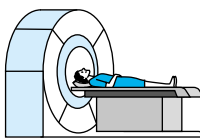
22 mice



€ Funding: Max Planck Society



> 470 MRI sessions in total for humans (~7 sessions per participant)



> 60 MRI sessions in total for mice (3 sessions per mouse)

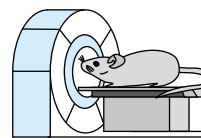



Figure 2. Participants in the Ringberg conference.

From left to right: Ju Lu, Yi Zuo, Constance Scharff, Amos Pagin, Andreas Lüthi, Jörn Diedrichsen, Manfred Gahr, Martin Lövdén, Iris Odstrčil, Tibor Stark, Daniel Vosberg, Warsha Barde, Geoffrey Delamare, Mallar Chakravarty, Maïke Hille, Jason Lerch, Kristen Delevich, Adam Hantman, Elisabeth Wenger, Sara Zocher, Frederic Ullén, Maria Spolidoro, Robert Zatorre, Mark Hübener, Tomáš Paus, Claudia Buss, Takao Hensch, Nora Moog, Gerd Kempermann, Agnieszka Kulesza, Tobias Bonhoeffer, Simone Kühn, Ulman Lindenberger, Sandra Schmidt

Not in the photo: Pico Caroni, Claudia Clopath, Ania Majewska, Miriam Mosing, Tomás Ryan, Daniela Vallentin, Linda Wilbrecht

Ringberg Conference: Understanding Neural Plasticity: From Animal Models to Human Individuality

Inspired by this collaborative project, Tobias Bonhoeffer (MPIBI), Simone Kühn (MPIB), and Ulman Lindenberger (MPIB) organized a conference to discuss ways of bridging the gaps between animal models of brain plasticity and human research. The conference included 40 participants from 7 different countries and took place in September 2022 at Castle Ringberg, Bavaria. The conference fostered close interactions among researchers studying brain plasticity in different species and at different levels of analysis, and helped to generate new research ideas and experimental paradigms to advance comparative research on brain plasticity.

Research Project in Brief

Topic: Training-induced brain changes during motor skill learning in humans and mice

Researchers: Tobias Bonhoeffer (Director, Synapses – Circuits – Plasticity, MPI for Biological Intelligence), Michael Czisch (Head, Core Unit Neuroimaging, MPI of Psychiatry), Maïke Hille (Predoctoral LIFE Fellow, Center for Lifespan Psychology & Lise Meitner Group for Environmental Neuroscience, MPI for Human Development), Lena Justus (Postdoc, Synapses – Circuits – Plasticity, MPI for Biological Intelligence), Simone Kühn (Head, Lise Meitner Group for Environmental

Neuroscience, MPI for Human Development), Ulman Lindenberger (Director, Center for Lifespan Psychology, MPI for Human Development), Tibor Stark (Postdoc / Staff Scientist, Core Unit Neuroimaging, MPI of Psychiatry; now at Department Emotion Research, MPI of Psychiatry), Sarah Zocher (Postdoc, Synapses – Circuits – Plasticity, MPI for Biological Intelligence; LIFE Alumna; now at DZNE Dresden)

Period: 2019–ongoing

Funding: Max Planck Society

References

- Lövdén, M., Garzón, B., & Lindenberger, U. (2020). Human skill learning: Expansion, exploration, selection, and refinement. *Current Opinion in Behavioral Sciences*, 36, 163–168. <https://doi.org/10.1016/j.cobeha.2020.11.002>
- Lindenberger, U., & Lövdén, M. (2019). Brain plasticity in human lifespan development: The exploration–selection–refinement model. *Annual Review of Developmental Psychology*, 1(1), 197–222. <https://doi.org/10.1146/annurev-devpsych-121318-085229>
- Wenger, E., Kühn, S., Verrel, J., Mårtensson, J., Bodammer, N. C., Lindenberger, U., & Lövdén, M. (2017). Repeated structural imaging reveals nonlinear progression of experience-dependent volume changes in human motor cortex. *Cerebral Cortex*, 27(5), 2911–2925. <https://doi.org/10.1093/cercor/bhw141>

How People Know Their Risk Preferences

Center for Adaptive Rationality & Max Planck Fellow

Previous work found that laboratory lotteries used to reveal people’s risk preferences are less stable and predictive of real-world risk taking than survey-based stated preferences. How can stated preferences, often criticized as “cheap talk,” be so informative? Together with Max Planck Fellow Gert G. Wagner, researchers from the Center for Adaptive Rationality have investigated this question in a study published in *Scientific Reports*.

People’s willingness to take risks is a key factor in many decisions they make about their health, finances, and careers. Risk preferences have been widely investigated under two distinct measurement traditions. The first one is the revealed-preference approach, common in economics. Two hundred years ago, it began with observational studies of real behaviors (e.g., consumptive and saving behaviors) which can be used—based on strong assumptions—to infer preferences from people’s behaviors. However, this approach cannot control for the countless different circumstances in the real world and therefore only permits very general conclusions such as that most people behave in a risk-averse manner. In order to control for the impact of context and situation, incentivized laboratory experiments, where participants make choices between monetary lotteries became popular. These experiments are not affected by unknown circumstances and so the choice behavior in the experiments allows researchers to draw quantitative conclusions about underlying (“revealed”) preferences. At the same time, many psychologists, as well as some economists, have used an alternative method: a stated-preference approach in which people are simply asked to state their willingness to take risks.

The validity of stated preferences has often been called into question, particularly when respondents perceive a benefit in self-serving answers. Ironically, previous work found that the behavioral measures used in the revealed-preference approach generally underperform relative to the stated-preference measures in terms of convergent validity, temporal stability, and predictive validity. For instance, whereas revealed preferences in experiments do not correlate strongly across measures, meaning that they did not capture a clear latent preference that drives behavior, the stated risk preferences correlated across measures and suggest the existence of a general risk factor.

How can stated preferences, often criticized as “cheap talk,” be more valid and predictive than controlled, incentivized experiments? To better understand this question, psychologists Ralph Hertwig and Ruben C. Arslan (former research scientist at the Center for Adaptive Rationality), together with Gert G. Wagner, economist and Max Planck Fellow at the Institute, examined the cognitive processes behind stated preferences. The authors analyzed stated risk preferences collected as part of two large studies in Germany: the Berlin Aging Study II (BASE-II) and the German



“As a researcher who was responsible for a major research infrastructure and its content, the research impulses I got, and still get, as a Max Planck Fellow are particularly important. And vice versa, two Centers (Adaptive Rationality and Lifespan Psychology) and two Research Groups (Biosocial and Environmental Neuroscience) can benefit from my experience.”

Gert G. Wagner | Max Planck Fellow

Image: MPFI

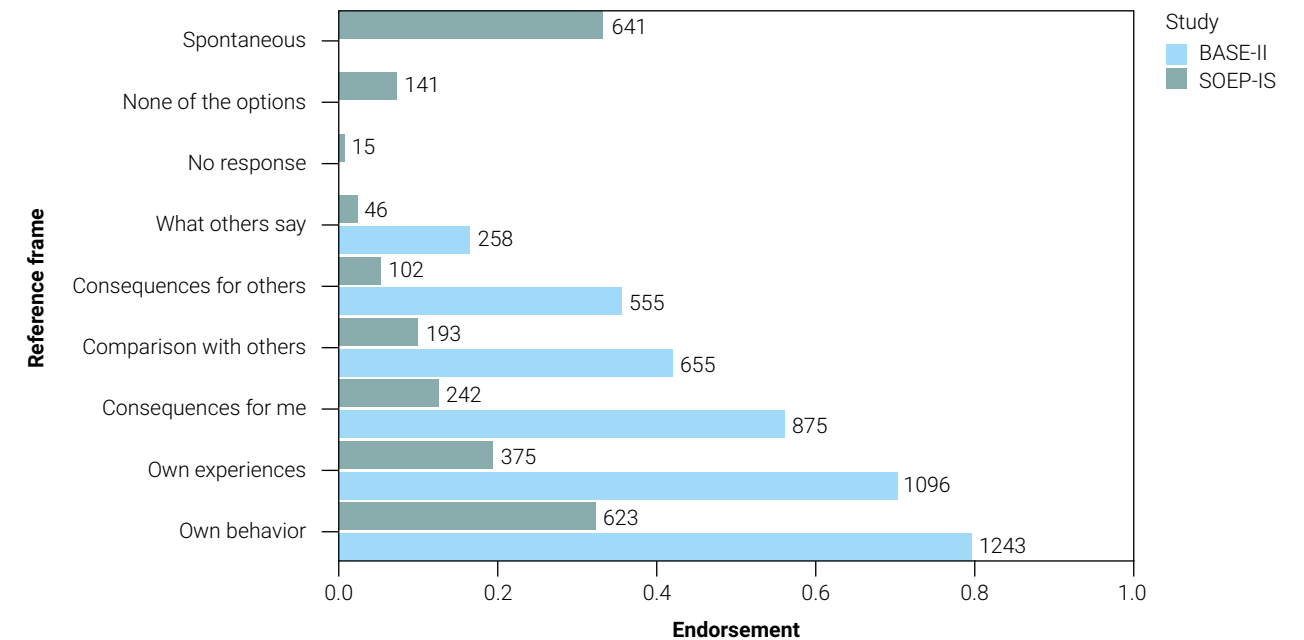


Figure 1. Social reference frames. The Berlin Aging Study II (BASE-II) participants endorsed more options than did the German Socio-economic Panel Innovation Sample (SOEP-IS) respondents and did not have the option to say they responded spontaneously or based on something else. The options that were common to both studies were similar in rank. Adapted from Arslan et al. (2020); original image licensed under CC-BY 4.0.

Socio-Economic Panel Innovation Sample (SOEP-IS; Box 1). These analyses were enabled by the theoretical and methodological expertise of the psychologists from the Center for Adaptive Rationality, combined with Gert G. Wagner’s background in economics, his experience in directing the SOEP for 22 years, and his role in spearheading the inclusion of measures of personal traits in the SOEP. It is a role that was recognized by the Association for Psychological Science, which elected Wagner as a Fellow in 2022.

Drawing on the literature on self-perception, the authors investigated how people infer their own risk preference by reflecting on their own behaviors and experiences, thus rendering their

stated preferences informative. To this end, SOEP and BASE-II participants first answered a general risk question—a widely used measure of stated risk preferences that is predictive of real-world risk taking. Next, participants explained how they answered that first question by answering a series of follow-up questions. All questions are presented in Box 2.

In preparation for the data analysis, participants’ free-text responses were coded for the presence of risk domains, such as investments or health, as well as more specific hazards, such as cycling or divorce. Next, the coded hazards were presented to an online sample of different respondents who rated

BOX 1. THE GERMAN SOCIO-ECONOMIC PANEL INNOVATION SAMPLE AND THE BERLIN AGING STUDY II

The German Socio-Economic Panel (SOEP) is a representative multi-cohort study of private households in Germany. Individuals in households are interviewed about topics such as personal and political attitudes, income, employment history, education, personality, and health. In 2011, the SOEP established an innovation sample (SOEP-IS) to explore particularly innovative research questions.

The Berlin Aging Study II (BASE-II) is an extension and expansion of the longitudinal Berlin Aging Study (BASE). Developed by the Center for Lifespan Psychology together with Max Planck Fellow Gert G. Wagner and others, it was designed to investigate age-related changes in physical health, cognitive performance, and psychosocial dimensions among a convenience sample of younger and older adults. For more information on BASE-II, see p. 29.

BOX 2. STATED PREFERENCE MEASURES

General risk question:

How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?

(Answered on a scale of 0 = unwilling to take risks to 10 = fully prepared to take risks)

Question about social reference frame (multiple choice):

What events, behavior, or people did you think about when you indicated a number for your risk preference?

Answer options: *own experiences; own behavior; my behavior compared to others; the consequences of my behavior for me; the consequences of my behavior for others; and what people around me say about my risk preference.*

In the SOEP-IS, three additional nonresponse options were used (see Figure 1).

Free-text questions:

What concrete experiences or behaviors—yours or others’—did you think about?

In what situations in the last 12 months were you prepared to take risks?

And were the risks worth it?

those hazards on several characteristics, including voluntariness, newness, and immediacy of consequences.

The results showed that when thinking about their risk preferences, respondents focused on risks that were familiar, that they took voluntarily, that had consequences known to those exposed, and that they could control and prevent. Furthermore, respondents focused on episodic health risks such as surgery and other interventions with immediate consequences and referred less to risks that have cumulative and delayed effects, such as smoking. Most respondents mentioned risks they took—say, whether to marry, divorce, move, quit a job, or study a particular field—and only a minority mentioned risks they avoided. Respondents almost never mentioned hazards that were dreadful, such as nuclear war. Among BASE-II participants who indicated having taken a risk in the previous year, the majority reported that taking the risk had been worthwhile.

The authors further examined the social reference frame people used, using a multiple-choice question (Box 2). Most respondents stated that they thought of their own experiences and behavior or the consequences of their actions; a substantial minority also mentioned comparison with others or what others say (Figure 1). The authors also found that the risks people invoked in their explanations differed by age and gender. On average, men were more likely to mention risks of injury such as sports risks. Women mentioned relationship and travel risks more often, and career risks less often, than men did. Older people—women and men alike—rarely mentioned career and education or sports but increasingly mentioned traffic, health, and safety risks. Young men were more likely to

mention gambling; otherwise age trends were largely parallel for men and women.

Another insight from the study is that the coders, third-party readers of respondents' brief memories and explanations, could—solely on the basis of participants' texts—estimate the stated risk preference of a text's author (Figure 2). The coders—all between 23 and 36 years old—were even equally accurate when inferring the preferences of older respondents and those of the opposite gender. The correspondence between coder ratings and stated preferences highlights the validity of self-perception in shaping stated preferences. People's brief memories and explanations of their experiences do provide diagnostic cues for inferring their risk preferences. Finally, the authors also found that the coders agreed not only with the respondents but also with one another, indicating that people's explanations of their experiences contain valuable information about their risk preferences and that these preferences can be reliably inferred from these explanations.

Far from “cheap talk,” stated risk preferences are based on informative and diagnostic cues that enable intersubjective agreement about how people's experiences reveal their preferences. The process of self-perception, in which people infer their risk preferences from their remembered experiences, enables otherwise unobservable risk preference to reveal itself to researchers. Ironically, the revealed-preference approach appears to have found new significance in research on stated risk preferences.

Author: Ana Sofia Morais

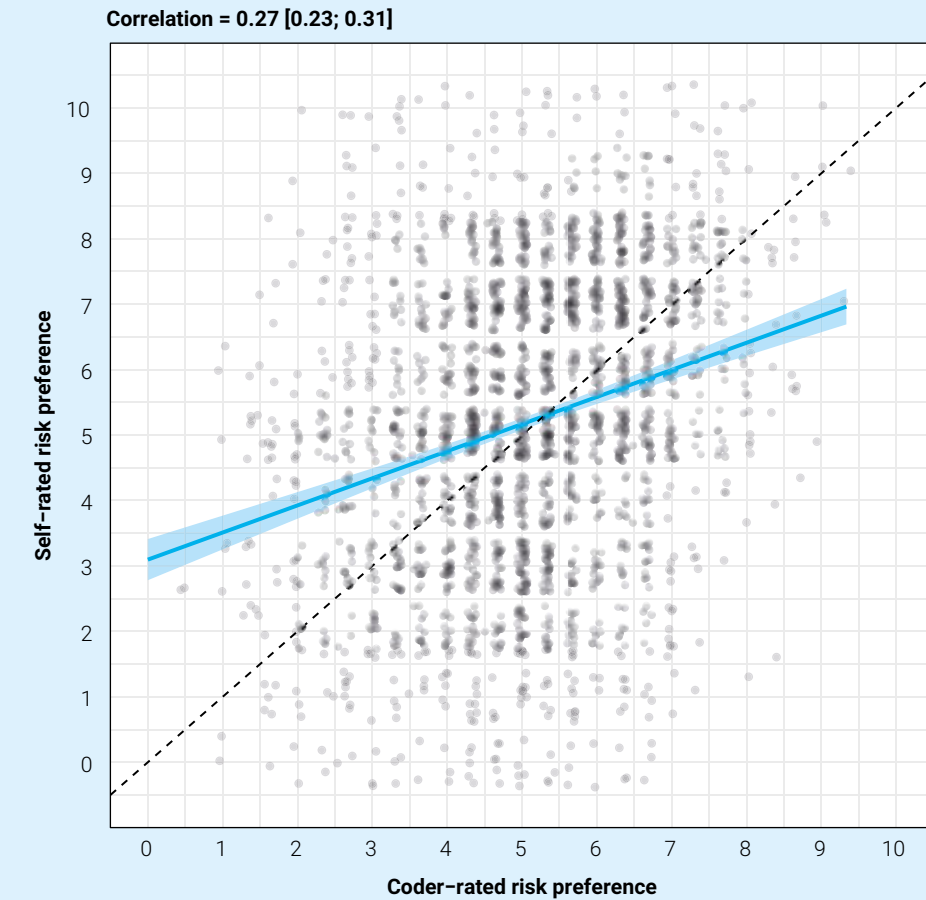


Figure 2. Coder accuracy. The blue line shows a linear regression fit with the 95% confidence interval shaded. Along the dashed line, coder ratings and self-ratings matched. Points were jittered slightly to reduce overplotting. Adapted from Arslan et al. (2020), original image licensed under CC BY 4.0.

Image: Arne Sattler



“For me, working with Gert has been an absolute pleasure as he is one of the most curious, open-minded, and least dogmatic people I know. Tongue in cheek, I can say that I often forget that he is an economist.”

Ralph Hertwig | Director, Center for Adaptive Rationality

Research Project in Brief

Topic: How people know their risk preferences

Funding: Max Planck Society

Researchers: Ruben C. Arslan (Research Scientist, Center for Adaptive Rationality/Max Planck Fellow), Ralph Hertwig (Director, Center for Adaptive Rationality), Gert G. Wagner (Max Planck Fellow)

Publication: Arslan, R. C., Brümmer, M., Dohmen, T., Drewelies, J., Hertwig, R., & Wagner, G. G. (2020). How people know their risk preference. *Scientific Reports*, 10(1), Article 15365. <https://doi.org/10.1038/s41598-020-72077-5>

Period: 2018–2020

References

- Frey, R., Pedroni, A., Mata, R., Rieskamp, J., & Hertwig, R. (2017). Risk preference shares the psychometric structure of major psychological traits. *Science Advances*, 3(10), Article e1701381. <https://doi.org/10.1126/sciadv.1701381>
- Hertwig, R., Wulff, D. U., & Mata, R. (2019). Three gaps and what they may mean for risk preference. *Philosophical Transactions of the Royal Society of London: B, Biological Sciences*, 374(1766), Article 20180140. <https://doi.org/10.1098/rstb.2018.0140>
- Mata, R., Frey, R., Richter, D., Schupp, J., & Hertwig, R. (2018). Risk preference: A view from psychology. *Journal of Economic Perspectives*, 32(2), 155–172. <https://doi.org/10.1257/jep.32.2.155>

“New Technologies Have the Potential to Permanently Change the Fabric of Society”

Center for Adaptive Rationality & Center for Humans and Machines

In this interview, Philipp Lorenz-Spreen from the Center for Adaptive Rationality and Nils Köbis from the Center for Humans and Machines talk about their “science fiction science” project, the transformative power of new technologies, and the need for regulation.

The two of you teamed up for the Blurry Face project. What’s it about?

Nils Köbis: We’re investigating how a technology that’s currently in its infancy might develop in the future. Specifically, we’re looking at filters that can be applied to people’s faces. We’ve probably all been in a video call where someone has put on a silly mustache or turned into a cat. In the Blurry Face project, we’re interested in how depersonalizing filters might affect people’s social behavior. These filters make it possible to blur or obscure a face in a video conference—and in the near future they may be a feature of augmented reality glasses. This kind of technology has the potential to permanently change the fabric of society.

child’s development. Filters like the ones we’ve studied can theoretically be used for the same purpose—especially in combination with augmented reality glasses, which many people expect to replace smartphones.

So the inspiration for the study was a science fiction story. Why are you interested in science fiction?

Nils Köbis: Because science fiction offers glimpses into possible future scenarios. Modern technologies are developing so fast that research can’t keep up—a technology is often already outdated by the time studies on it are published. In science fiction science, we try to stay one step ahead by looking into the future and experimentally investigating how technologies will develop.

“In science fiction science, we try to stay one step ahead by looking into the future and experimentally investigating how technologies will develop.”

Why is the topic so important?

Philipp Lorenz-Spreen: I’ve been working on how technology is changing communication and social behavior in the context of social media. Although millions of us use social media, the psychological and social effects are only slowly becoming clear. Information technologies are developing at lightning pace and we need to be prepared for the consequences. Looking into the future can help. Once a technology has found its way into everyday life, it’s difficult to control.

Nils Köbis: We were inspired by the *Black Mirror* episode “Arkangel.” It’s about a child who is implanted with a technology that allows her mother to monitor her movements—and that automatically also blurs any distressing images the child might see. The episode shows the huge impact that the technology has on the

How did your joint project come about?

Philipp Lorenz-Spreen: It started back in the pandemic. Iyad [Rahwan] invited us to a video call to brainstorm ideas for a science fiction science project investigating digital filters and communication. So the impetus for the project came from the Center for Humans and Machines. At the Center for Adaptive Rationality, we have a wealth of experience with experimental setups and put a particular focus on obtaining representative measurements so that the situation in the lab was as realistic as possible.

Nils Köbis: We soon agreed on the research idea, who would do what, and how we would organize it. For me, that was impressive, especially as Philipp and I had only met over Zoom. It was a really cool experience.



From left to right: Nils Köbis, Philipp Lorenz-Spreen

What are the challenges of this joint project?

Philipp Lorenz-Spreen: What I sometimes find difficult in interdisciplinary collaboration isn’t so much the terminology. It’s often said that you need to start by finding a common language. But if all sides are open to it, that’s relatively easy. What’s more difficult is agreeing on a common research question. Perspectives on a topic vary from one discipline to the next. For example, our colleagues at the Center for Humans and Machines are more interested in the aspect of science fiction science. And we from the Center for Adaptive Rationality are more interested in the underlying psychological mechanisms. We decided on a version of the experiment that is somewhat more controlled, which allowed us to draw clearer conclusions about what is happening on the psychological level. But the compromise was that we’ve not been able to venture so far into the future, and haven’t yet included augmented reality in the design.

Despite the compromise, what are the benefits?

Nils Köbis: One benefit is the emergence of a group that really works well together. That’s worth a lot in science. It was never a top-down thing dictated from above. We had several meetings where we brought the general idea back to the table and had long discussions about it. Based on that, we developed a design that we all liked.

Philipp Lorenz-Spreen: It always mixes things up when people from different fields work together—that’s why I’m a firm advo-

cate of interdisciplinarity. As a physicist, I’ve already stepped out of my comfort zone—and benefited hugely from doing so. Our research centers are inherently interdisciplinary. After all, there’s no point in social scientists thinking about the social impact of new technologies without understanding how they work. And it doesn’t help to have computer scientists developing new technologies without putting any thought into how they will affect our societies. That’s why collaboration is needed.

So what did you do in the Blurry Face project?

Nils Köbis: We conducted two studies. In both, participants played two economics games with another player, and we studied the possible positive and negative effects of depersonalizing filters. One game was a classic Dictator Game, originally designed to study altruism. Participants were given a sum of money and had to decide how much of that money to share with another person. Some participants were shown a normal photo of the potential recipient, the others were shown a blurred version of the photo.

Our working hypothesis was that participants would probably share less money when the recipient’s face was blurred; that the depersonalization filter would decrease their empathy. That would be a negative effect of such filters on human behavior. But depersonalization filters may also have positive effects in some situations. In job interviews, for example, it’s important not to let certain physical characteristics of the applicants

Figure 1. Dictator Game in which participants see a blurred photo of the potential recipient.

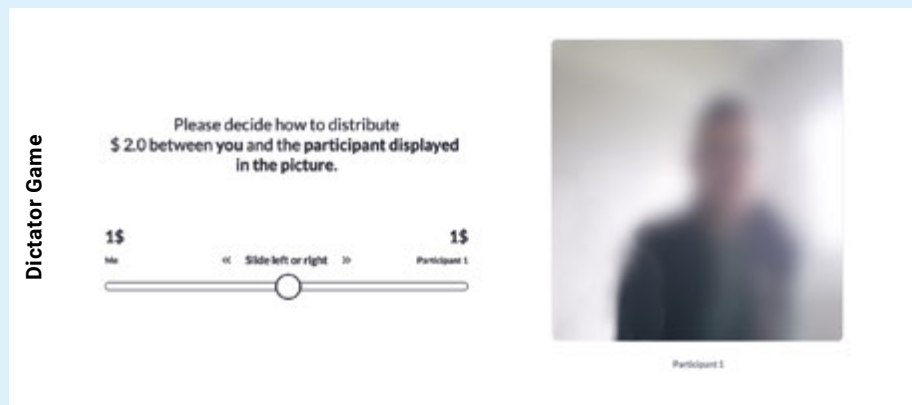
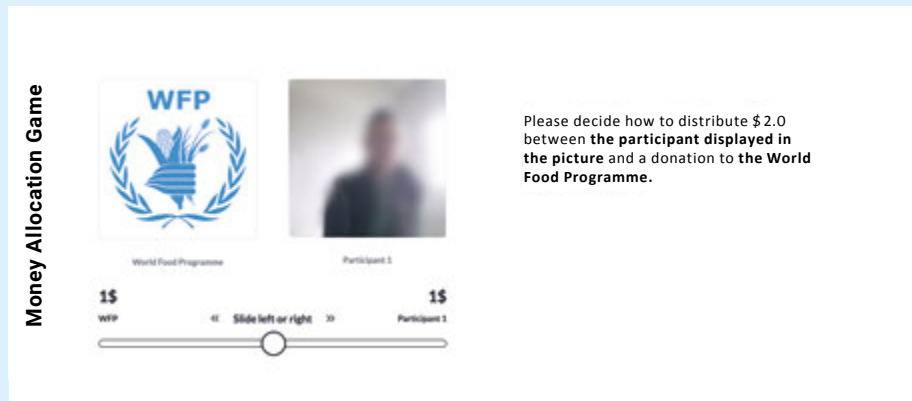


Figure 2. Money Allocation Game with the potential recipient's photo blurred.



influence the decision process. In the second game, the Money Allocation Game, players had to decide whether they would give money to an individual or an organization—in our case, the World Food Program. Again, some participants were shown a normal photo of the individual, while others saw a blurred version. We wanted to see whether depersonalization filters would lead to money being donated to an organization rather than given to an individual.

Philipp Lorenz-Spreen: The next study followed on from that. We used the same two games, but this time the participants saw a video of the recipient rather than a photo. We conducted the experiment live, which was quite a technological challenge. We had to program the filters and create a platform that allowed participants to interact and in which we were able to control which faces were blurred. Although we conducted the experiment without sound, it brought us one step closer to a situation that we all know from video calls, where the filter technology can already be implemented.

What did you find out? Were your concerns about this new technology confirmed?

Nils Köbis: We see support for our concerns, yes. In both experiments, participants playing the Dictator Game were less willing to share money with people whose faces were blurred. So the depersonalizing effect of the filters can result in people behaving less altruistically. In terms of whether the filters can

have a positive effect, the results are less clear. In fact, we observed different effects across the experiments.

Philipp Lorenz-Spreen: To be able to draw clearer conclusions, we need to run follow-up experiments to investigate the effect further—potentially using augmented reality glasses or virtual worlds. In the future, augmented reality glasses may change reality by using filters to alter people's perception of the environment in real time. Our studies showed that the effect of blurring people's faces is stronger for video than for photos. Another possibility for a follow-up study would be to try out other filters—a beauty filter, for example, or one that makes it look as if you're maintaining eye contact with the camera all the time. There are all kinds of possibilities.

What are the implications for the regulation of new media?

Nils Köbis: Tools of this kind are typically developed and launched by companies with economic interests in mind. And the mindset in Silicon Valley is to innovate first and ask for forgiveness later. ChatGPT is a prime example. It was rolled out without any form of impact assessment and people are already using it by the millions, even though some of the output it produces is absolute rubbish. So the question is, what do we do now?

Philipp Lorenz-Spreen: I've been looking into regulation issues in the context of the Digital Services Act—a new

Images (Köbis, Lorenz-Spreen): MPIB



Philipp Lorenz-Spreen is a Research Scientist in the Center for Adaptive Rationality at the MPI for Human Development. As a network scientist, he studies self-organized online discourse and how democratic and autonomous decision making can be empowered by platform design and boosting.



Nils Köbis is a Senior Research Scientist in the Center for Humans and Machines at the MPI for Human Development. His research investigates corruption, (un)ethical behavior, social norms, and artificial intelligence.

European Union regulation intended to control the influence of online platforms. For social media, at least, companies will have to submit risk reports—but only after the fact. They'll be required to report what has happened on their platform, which new functionalities they've introduced, and the effects they have had on user behavior. What's missing is prevention. In medicine, drugs have to be tested rigorously before being released to the market. In the same way, I argue, we need to test the potential harms of at least some technologies before allowing them to be introduced on a broader population level.

Nils Köbis: For example, there's the question of how social media impacts the mental health of teenagers. What are the effects of a like button on the teenage mind? If we had looked ahead from the outset and done research on the topic, we could have intervened earlier.

What other science fiction science topics are you interested in?

Philipp Lorenz-Spreen: I'm interested in the algorithms used by social media to determine which content is displayed first. At the moment, I'm running

experiments to try out alternative sorting algorithms. I'm taking the science fiction science approach, that is, stepping away from the status quo for a moment and considering how the algorithms could be better designed in the future.

Nils Köbis: In the Center for Humans and Machines, that's already one of our basic principles: A lot of our research starts in the here and now and looks to the future. The Blurry Face project is part of a larger research area on AI-mediated communication. We're looking at AI systems that are increasingly acting independently, such as online text tools. What does it do with people when they communicate through texts that they didn't actually write themselves? What could a regulation framework look like? For example, should there be an automatic notification that the text wasn't written by a human being?

What's next for the Blurry Face project?

Philipp Lorenz-Spreen: We're going to try to bring the idea to an even more realistic setting and have participants interact with each other in three-dimensional space, with filters changing their appearance.

Research Project in Brief

Topic: AI-mediated communication and its impact on interpersonal trust and cooperation

Funding: Max Planck Society

Researchers: Nils Köbis (Senior Research Scientist, Center for Humans and Machines), Philipp Lorenz-Spreen (Research Scientist, Center for Adaptive Rationality)

Publication:

Köbis, N., Lorenz-Spreen, P., Ajaj, T., Bonnefon, J.-F., Hertwig, R., & Rahwan, I. (2023). Artificial intelligence can facilitate selfish decisions by altering the appearance of interaction partners. *arXiv*, 2306.04484. <https://doi.org/10.48550/arXiv.2306.04484>

Period: 2020–ongoing



Read more
www.rr23.mpiib-berlin.mpg.de/ai-mediated-communication

International Research Cooperation Highlights

Human Foraging Dynamics in the Wild: Icefishing

Center for Adaptive Rationality

Period: 2022–ongoing

Partner: The University of Eastern Finland

Funding: German Research Foundation (DFG)

This project investigates human decision making in the wild, studying human foragers in natural conditions, focusing on icefishing. The project takes an integrative approach, combining longitudinal analyses of a unique data set (spanning 45 years and comprising over 100,000 records) with fieldwork. One hundred foragers were monitored in the field using tracking devices, head cameras, and heart rate monitors. The overarching goal is to better comprehend how synergetic effects between individuals and environments shape human decision making in natural conditions.



Image: Ralf Kurvers/MPIB

Cross-Cultural AI Mind

Center for Humans and Machines

Period: 2021–ongoing

Partners: Toulouse School of Economics, France; University of British Columbia, Vancouver, Canada

Funding: TSE-Partnership Foundation; French National Research Agency (ANR); SFI-IRC Pathway Programme

How does the implementation of artificial intelligence in certain professional groups trigger fears and concerns? For this project, researchers interviewed respondents from 20 countries. The findings indicate that fears regarding AI stem from a mismatch between the expectations of professional groups and the perceived potential of AI. Addressing this discrepancy could aid the development and communication of AI in a culturally sensitive manner.

The Misperception of Randomness: A Developmental Study

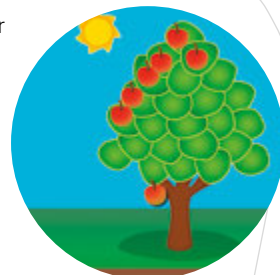
MPRG Naturalistic Social Cognition

Period: 2021–2023

Partner: Clarkson University, Potsdam, USA

Funding: National Science Foundation (NSF)

The project advances understanding of the development of the cognitive mechanisms underlying 3- to 10-year-old children's perception of randomness. Previous research suggests that a tendency to over-perceive illusory streaks or clumps in random sequences may be a human universal, tied to an evolutionary history of foraging for clumpy resources. This project provides a crucial piece of the developmental picture and a platform for studying misperceptions of randomness across the lifespan.



Pedersen, S., & Han, B.-G., & Wilke, A. *The Tree Task* [computer software]. Clarkson University, USA.

Insight in Humans and Neural Networks

MPRG NeuroCode

Period: 2020–2023

Partners: University College London, UK; University of Oxford, UK; École Normale Supérieure, Paris, France

Funding: IMPRS COMP2PSYCH; Wellcome Trust; Royal Society; Sainsbury Wellcome Centre; Gatsby Charitable Foundation; European Research Council; Max Planck Society

Aha moments are a remarkable phenomenon of human thought. The project explored whether simple machine learning algorithms can also show insight-like behavior. Researchers trained humans and algorithms on the same insight task and found that insight-like behavior arises in simple neural networks if they have regularized gate modulation (akin to limited attention). Simulations and mathematical analysis show that insights depend on noise and are preceded by "silent knowledge" that is not yet expressed.



Image: AI-generated image by Anika T. Löwe/MPIB

Baby's First Years

MPRG Biosocial

Period: 2023–ongoing

Partner: Columbia University, New York, USA

Funding: National Institutes of Health; Jacobs Foundation; Bill & Melinda Gates Foundation; W.K. Kellogg Foundation; private donations

The Baby's First Years study is a unique randomized controlled study assessing the impact of monthly unconditional cash gifts to 1,000 low-income mothers and their children in the first 4 years of the child's life. The research collaboration will identify whether these cash gifts affect children's epigenome. Further information: www.babysfirstyears.com

Brain Changes in Response to Long-Duration Antarctic Expeditions

Lise Meitner Group for Environmental Neuroscience

Period: 2012–ongoing

Partners: Charité Universitätsmedizin, Berlin, Germany; University of Pennsylvania, Philadelphia, USA

Funding: Max Planck Society and German Aerospace Center (DLR)

Our environment influences our brain and thus our abilities. The project has been studying scientists before, during, and after a 14-month Antarctic expedition and has found that the brain regions responsible for long-term memory, cognitive processes, and emotional experiences are decreasing. The barren landscape and limited number of varied tasks mean that these brain regions are used less and become smaller. This can affect learning and social interaction.



Image: Alexander Stahn/Charité

Franco-German Autumn School Bayonne

Center for the History of Emotions

Period: 2021–2023

Partner: ARI – Basque Anthropological Research Institute on Music, Bayonne, France

Funding: Franco-German University, Saarbrücken, Germany; ARI – Basque Anthropological Research Institute on Music, Emotion, Human Societies, Bayonne, France; Max Planck Society

Hosted by Denis Laborde, director of the ARI, and Karsten Lichau, researcher at the MPI for Human Development, a series of two Franco-German autumn schools took place in October 2021 and 2022 in Bayonne, France, each bringing together 20 master's students, PhD candidates, and postdocs with a team of established scholars. Both events provided participants with the opportunity for network building that they had lacked for so long through concentrated in-depth discussions on-site.

Emotions in History, Book Series by Oxford University Press

Center for the History of Emotions

Period: 2010–ongoing

Partner: Queen Mary University of London, UK

Funding: Max Planck Society

In 2010, Ute Frevert and Thomas Dixon, director of the London-based Centre for the History of Emotions (Queen Mary University of London), joined forces to establish a monograph series, Emotions in History. Their goal was a coherent intellectual agenda and broad coverage in a burgeoning field, exploring emotions through the histories of manifold disciplines including science, medicine, psychology, and politics. To date, the resulting OUP series has published over 20 well-received volumes.

International Max Planck Research School on the Life Course (LIFE)

Period: 2002–ongoing

Partners: Freie Universität Berlin, Germany; Humboldt-Universität zu Berlin, Germany; University of Michigan, Ann Arbor, USA; University of Virginia, Charlottesville, USA; University of Zurich, Switzerland

Funding: Participating institutions; Jacobs Foundation; Max Planck Society

LIFE, a highly successful transatlantic graduate program involving the Centers for Lifespan Psychology, Adaptive Rationality, and Humans and Machines as well as all research groups at the MPI for Human Development, takes an integrative and interdisciplinary approach to understanding human development in a changing world and connects evolutionary, ontogenetic, and institutional perspectives. LIFE celebrated its 20th anniversary with predoctoral fellows, faculty, and first-cohort alumni at the LIFE Fall Academy 2022 in Berlin. Further information: www.imprs-life.mpg.de

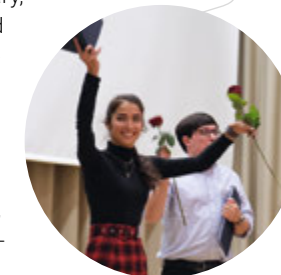


Image: Steve Boker, LIFE

Lifebrian

Center for Lifespan Psychology

Period: 2017–2021

Partners: Region Hovedstaden, Denmark; Universität zu Lübeck, Germany; Amsterdam University Medical Centers, the Netherlands; Frisch Centre, Norway; Norwegian Institute of Public Health, Norway; University of Oslo, Norway; Vitas AS, Norway; University of Barcelona, Spain; Umeå University, Sweden; University of Geneva, Switzerland; University of Oxford, UK; University of Cambridge, UK

Funding: EU Horizon 2020, European Commission

Many environmental, social, occupational, and lifestyle factors influence brain health. Lifebrian integrated data from 6,000 research participants, collected in 11 European brain-imaging studies in seven countries, to identify these factors and understand how they influence brain development, cognitive function, and mental health across the lifespan. The Center's Berlin Aging Studies (BASE and BASE-II) participated in this project, which has resulted in more than 80 publications. Further information: www.lifebrian.uio.no



Cooperation is of enormous importance in research. The MPI for Human Development is constantly involved in about **150 international projects** with universities and other research institutions. We showcase a small selection here.

Honored

The work of our researchers is recognized both nationally and internationally. This is only a small selection, you can view the entire list on our website.

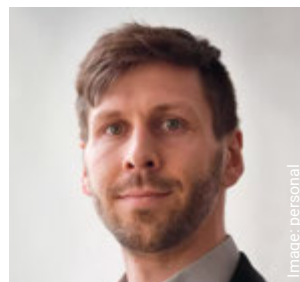


Image: personal

Martin Dahl

Research Scientist at the Center for Lifespan Psychology, recipient of the Margret and Paul Baltes Award in 2021 for an outstanding dissertation on how the structural and functional changes of the locus coeruleus, a small nucleus in the brainstem, influence attention and memory in older age.



Image: Andreas Reeg

Ute Frevert

Director of the Center for the History of Emotions, appointed President of the Max Weber Foundation (MWS) from March 2023. The first woman to head the MWS, she plans to strengthen transnational cooperation among the institutes abroad and increase the foundation's visibility in the political arena.



Image: Arne Sattler

Gerd Gigerenzer

Director emeritus and Director of the Harding Center for Risk Literacy, University of Potsdam, appointed as a member of the Scientific Council of the European Research Council (ERC) in 2020. The Scientific Council heads the ERC and defines the scientific funding strategy.



Image: Arne Sattler

Ralph Hertwig

Director of the Center for Adaptive Rationality, appointed a new member of the Social Sciences class of the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) in 2022. The BBAW is a learned society with a 300-year-old tradition of uniting outstanding scholars and scientists across national and disciplinary boundaries.

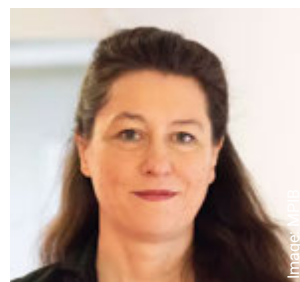


Image: MWS

Bettina Hitzer

Minerva Research Group Leader at the Center for the History of Emotions until 2020, recipient of the Leipzig Book Fair Prize 2020 in the non-fiction and essay category for *Krebs fühlen. Eine Emotionsgeschichte des 20. Jahrhunderts (The History of Cancer and Emotions in Twentieth-Century Germany)*. The jury praised how she "traces the history of this disease more comprehensively than ever before: she writes a social history, a history of emotions, and a media history."



Image: personal

Julian Kosciessa

Postdoctoral Fellow in the Lifespan Neural Dynamics Group (LNDG) until 2022, recipient of the 2022 Otto Hahn Medal of the Max Planck Society in the Human Sciences Section. Kosciessa's fundamental contributions to the measurement and functional characterization of rhythmic and aperiodic activity components of the human brain were highlighted.



Image: C.D.Ketels

Simone Kühn

Head of the Lise Meitner Group for Environmental Neuroscience, recipient of a 2022 ERC Consolidator Grant for her research project BrainScope, which will investigate if and how the physical environment that surrounds us every day affects our brain, well-being, and mental health.

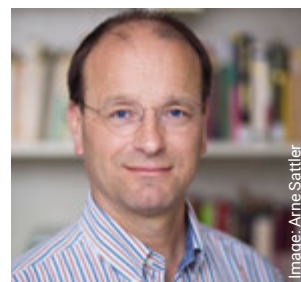


Image: Arne Sattler

Ulman Lindenberger

Director of the Center for Lifespan Psychology and Vice President of the Human Sciences Section of the Max Planck Society, elected foreign member of the Royal Swedish Academy of Sciences in the Class for Social Sciences in 2023. The members are involved in the Academy's committees and panels, as well as in the process of selecting candidates for the Academy's prizes—including the Nobel Prizes.

Honored

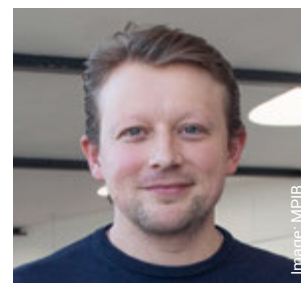


Image: MPIB

Philipp Lorenz-Spreen

Research Scientist at the Center for Adaptive Rationality, recipient of the Leopoldina Prize for Junior Scientists 2021. His research focuses on human behavior in online environments and his research goal is to explore how behavioral sciences can promote democratic discourse in a networked society.

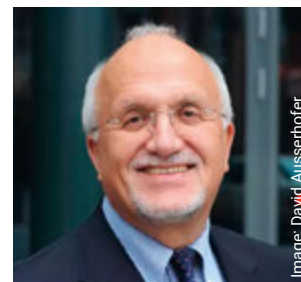


Image: David Auserhofer

Karl Ulrich Mayer

Director emeritus, was awarded the University Medal 2021 by the University of Mannheim. He received the medal for his outstanding work as a former chair of the University Supervisory Board.



Image: Zoe Ngo

Chi (Zoe) Ngo

Postdoctoral Fellow at the Center for Lifespan Psychology, recipient of the Jacobs Foundation Research Fellowship 2022–2024. With the fellowship, she is charting the multivariate developmental profiles of memory and linking them to patterns of brain maturation as children transition from early to middle childhood.

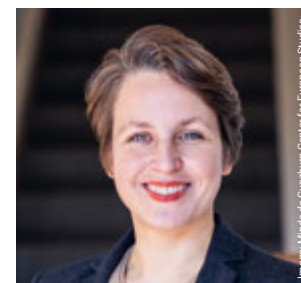


Image: Max Planck Society Center for European Studies

Kerstin Maria Pahl

Researcher at the Center for the History of Emotions, elected as one of ten new members to Die Junge Akademie in 2022 and to its board in 2023. A joint initiative of the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) and the German National Academy of Sciences Leopoldina, Die Junge Akademie fosters interdisciplinary dialogue between outstanding early and mid-career researchers.



Image: MPIB

Marit Petzka

Postdoctoral Fellow in the Max Planck Research Group NeuroCode until 2023, recipient of the Brain Products Young Scientist Award 2022, in recognition of her outstanding publication in the field of EEG-based psychophysiological research. The prize is awarded by the Deutsche Gesellschaft für Psychophysologie und ihre Anwendung (DGPA).

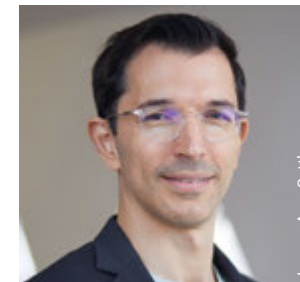


Image: Arne Sattler

Iyad Rahwan

Director of the Center for Humans and Machines, named one of the Thinkers50 Radar Class of 2020. The Thinkers50 Radar identifies a yearly cohort of 30 up-and-coming thinkers whose ideas are likely to shape the future. It provides an early alert system for managers, publishers, speaker bureaus, and others in the thought-leadership industry.

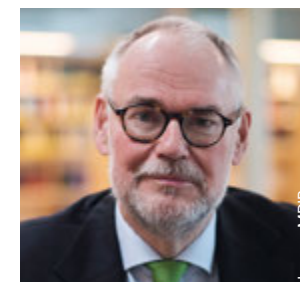


Image: MPIB

Gert G. Wagner

Max Planck Fellow, named Fellow of the Association for Psychological Science (APS) in 2023. APS Fellows are honored for their sustained outstanding contributions to the science of psychology. The APS is an international organization that is committed to supporting academic psychology across disciplinary and geographic borders.

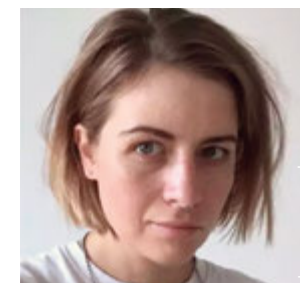


Image: personal

Veronika Zilker

Postdoctoral Fellow at the Center for Adaptive Rationality until 2022, recipient of the German Psychological Society's Heinz Heckhausen Prize 2022 for her dissertation on the effects of different theoretical and methodological approaches to the scientific understanding of decision making under risk.



See all awards
www.rr23.mpiib-berlin.mpg.de/honors



Collective Impact: Support Services at the Institute

Support services play a vital role in the smooth running of the Institute. The four non-scientific service units—Administration, Central Services, Press and Public Relations, and Technical Services—are led by the Head of Administration. The scientific service units—previously comprising Central IT and Library and Research Information—report to the Managing Director. In March 2022, the Scientific Service Unit was established, headed by the newly appointed Institute Research Coordinator (see pp. 60f.). This development reflects the management’s commitment to centralizing infrastructure, meeting the demands of an increasingly interdisciplinary workplace, and enhancing the professionalization of the services provided.

Collaboration and collective impact is becoming increasingly important for all service units. In recent years, the units have joined forces to advance several Institute-wide projects that benefit all Centers and Groups. Two stand-out initiatives respond to changes in the research landscape both within and beyond the Institute.

The first initiative centers around the development and professionalization of the Institute’s Research Data Management (RDM) services, which have been incorporated into the portfolio of the Library and Research Information Unit. This process began with a working group on RDM set up by the directors in 2018, leading to the appointment of an RDM Coordinator in March 2021. In 2022, the RDM team successfully integrated the Castellum project as an Institute-wide tool, including the development of a data protection-compliant participant database. In 2023, the RDM team launched an Institute-wide study registration tool. Recognizing the growing importance of Open Science, the RDM Coordinator has engaged in various activities to facilitate easy and open access to research results (e.g., publications, data, software) and to promote transparency within the research process as a whole (see pp. 58f.).

The second area of major Institute-wide change is the establishment of the Max Planck Dahlem Campus of Cognition (MPDCC) as a core facility in Dillenburger Straße. Over the past decade, the Institute has transitioned from a predominantly humanities-focused research institution to one that emphasizes experimental approaches. This shift has fueled a growing demand for laboratory infrastructure and innovative imaging techniques. In 2017 and 2018, the Max Planck Society approved the construction of a wave field synthesis audio lab, as well as the purchase of a second 3T MRI scanner and a 7T MRI scanner. With the recent acquisition of the Dillenburger Straße building, the Institute is now in a position to set up a core facility with the necessary laboratories. The Max Planck Dahlem Campus of Cognition was launched in 2021 as the organizational umbrella for this core facility (see pp. 62f.).

Networking and transparent internal communication across all areas of the Institute is also gaining importance (see pp. 64ff.). New formats have been introduced to foster Institute-wide discussion and exchange. One example is the newly-established Town Hall meeting format, which aims to actively involve employees in shaping responses to overarching challenges, such as sustainable business travel, meeting culture, and the proactive integration of international colleagues.

As the following pages will illustrate, collaboration is crucial not only among researchers but also among the service units that support them. This challenge presents a tremendous opportunity to shape the Institute in an innovative way by creating synergies, streamlining processes, pooling resources, and cultivating an open and constructive mindset.



Read more
www.rr23.mpib-berlin.mpg.de/services

Service Unit Structure

Scientific Service Units Head: Managing Director		
Central IT Head: Moataz Elmasry • Infrastructure • Service Desk	Library and Research Information Head: Sebastian Nix • Information Provision • Publication and Impact Support • Research Data Management	Scientific Service Head: Imke Kruse • Graduate Education • International Office • Office of the Managing Director • Office of the MPDCC • Research Group Support • Scientific Editing • Third-Party Funds
Non-Scientific Service Units Head: Jennifer Apel		
Administration Head: Jennifer Apel • Accounting • Personnel • Procurement • Traveling Expenses and Cashier	Central Services Head: Jürgen Rossbach • Chauffeur • Gardener • Graphics Department • Reception • Stationery Issuing Point and Mail	Press and Public Relations Head: Maria Einhorn Technical Services Head: Jörg Tellmann Cafeteria Head: Arno Schneider



The heads of the service units regularly meet to provide updates on their respective areas and address shared concerns, ensuring a coordinated approach throughout the Institute. This practice allows for diverse perspectives to contribute to discussions and enables efficient planning of overarching projects. By fostering open communication and collaboration among the units, we leverage expertise and work towards effective solutions that benefit the entire Institute.

Image: MPIB

Dual Leadership

In line with developments at German universities and on the recommendation of the Max Planck Society's Head Office, the Institute's leadership decided in 2021 to replace the position of general manager with a dual leadership model that distinguishes between administrative and research management. The chief aim is to improve the interface between science and administration across the Institute.

In 2022, the Institute implemented a new dual leadership structure. What form does your collaboration take and what structural changes have resulted for the Institute?

Jennifer Apel: We work together closely, with the common purpose of supporting research at the Institute as effectively as possible. This allows us to optimize the allocation of resources, facilitate an innovative research infrastructure, and cultivate a collaborative working environment. One significant structural change that has resulted from the new leadership model is the introduction of a Research Coordinator position: Imke Kruse is now responsible for all research areas at the Institute.

Imke Kruse: All administrative and administrative-technical matters are the responsibility of Jennifer Apel as head of administration, while all matters directly concerning research fall within my purview. Together, we also provide conceptual and strategic support to the Institute's management; here, we benefit from our collaborative approach and holistic view of the Institute. As Institute Research Coordinator I maintain close contact with the Institute's researchers to understand their working methods, the framework they work within, and their research support needs.

Your collaboration began amid the unprecedented changes brought about by the COVID-19 pandemic. One notable change at the Institute is the introduction of remote work and flexible working hours. How do you support and facilitate this transformation process?

Imke Kruse: Our work culture has changed substantially—remote work was not common practice before 2020. When the pandemic hit, we had to equip the entire staff with mobile technol-

ogies overnight. All areas of the Institute did an incredible job while the Institute was essentially shut down and as we gradually returned to the new normal. Together with the Works Council, we have developed and implemented a modern working time model. Analog, hybrid, and virtual meeting formats are now part of our daily routine, and we have developed new formats for meeting and participation, such as Townhall Meetings, to actively shape our new work culture.

Jennifer Apel: The pandemic has accelerated "New Work" and the digitization of work processes. This transformation process requires a fundamental change in management and leadership practices at the Institute. We have established strategic task forces to address the most significant challenges and continuously enhance our new work culture. These four task forces, each led by a director and including representatives of all areas of the Institute, are dedicated to rethinking crucial aspects of our operations, such as administration processes, strategic positioning, identity and culture, and digitalization.

What are your primary concerns for the next three years?

Jennifer Apel: We need to lead change, strengthen the Institute's identity, and prepare ourselves to tackle future challenges. It is crucial that we approach these challenges with an open mindset, and with innovation and integration as guiding principles. Our aim is to attract the best researchers from around the world to work with us, and the market is increasingly competitive. Innovative recruiting strategies and a collaborative work culture that nurtures creativity and excellence can help our Institute address this challenge head on.

Imke Kruse: We need to drive the digitization of work processes and adopt agile ways of working. Processes still take too long, both within our Institute and across the Max Planck Society. And we need more flexibility and creativity, especially as we expand our core facility at Dillenburger Straße: the Max Planck Dahlem Campus of Cognition.



Jennifer Apel has headed the administration of the MPI for Human Development since January 2021. For over a decade, she worked in science management positions at the Technical University Munich (TUM) and the Hermann von Helmholtz-Zentrum für Kulturtechnik at Humboldt-Universität zu Berlin. In her last position, she was the Managing Director at the Munich Center for Technology in Society at TUM before she joined the MPI for Human Development.



Imke Kruse has been the Institute Research Coordinator since 2021 and heads the Scientific Service Unit. She was head of the Humanities Section office at Max Planck Headquarters before she started working as Research Coordinator for the Center for Lifespan Psychology and the Center for Humans and Machines.

Images (Kruse, Apel): MPIB

Research Data Management & Open Science

Against the background of an increasing volume of (digital) research data and efforts to promote openness and transparency in research, effective Research Data Management (RDM) has emerged as a cornerstone of good scientific practice. In 2018, the directors set up a working group on RDM, which led to the establishment of a central RDM service unit and the appointment of an RDM Coordinator in March 2021. A crucial task for the new team—which is located in the Library and Research Information Unit—is to implement an institutional approach to RDM, including training and awareness-building initiatives. A further staff member was hired in July 2022 to support the implementation of RDM-related software. As participant recruitment and management are key aspects of RDM in the field of human sciences, the Castellum software and team were integrated into the RDM team in May 2022.

Research Data Management & Open Science Working Group

The Institute-wide Research Data Management & Open Science Working Group is dedicated to the collaborative development of RDM and Open Science practices. It includes representatives of various research areas, organizational units, and career stages. Given the multidisciplinary nature of the Institute's research and the highly diverse data sets produced, a broad variety of perspectives seems ideal. The group consists of approximately 20 members and meets every 6–8 weeks to discuss new developments, generate workshop topics, and share insights from relevant events.

Training

The growing emphasis on Open Science practices, driven by funding agencies, journals, and research organizations, has underscored the importance of educating young scientists, in particular, on data and code sharing practices. If projects (including research data and code) are properly named, structured, and documented from the start, the effort of openly sharing them is negligible. A key focus has therefore been to organize workshops on relevant topics, such as version control with Git, computational reproducibility, and the Brain Imaging Data Structure (BIDS). Due to the COVID-19 pandemic, most of these workshops took place online, with video recordings and slides being made available on the intranet.

Additionally, the RDM team has developed a half-day workshop tailored specifically to the Institute's needs and covering aspects such as data organization, documentation, and storage, as well as challenges associated with publication (e.g., anonymization, licenses). The workshop is held at regular intervals; the content is also presented in condensed form on the intranet.

Open Science Innovation Award

To promote awareness, foster exchange, and encourage collaboration in the realm of Open Science, the Institute

has established an annual Open Science Innovation Award, starting in 2023. The award will recognize and celebrate innovative ideas to enhance the accessibility, transparency, and reproducibility of the Institute's research. Each year, two award winners (one individual and one team) will be invited to present their work in a designated event.

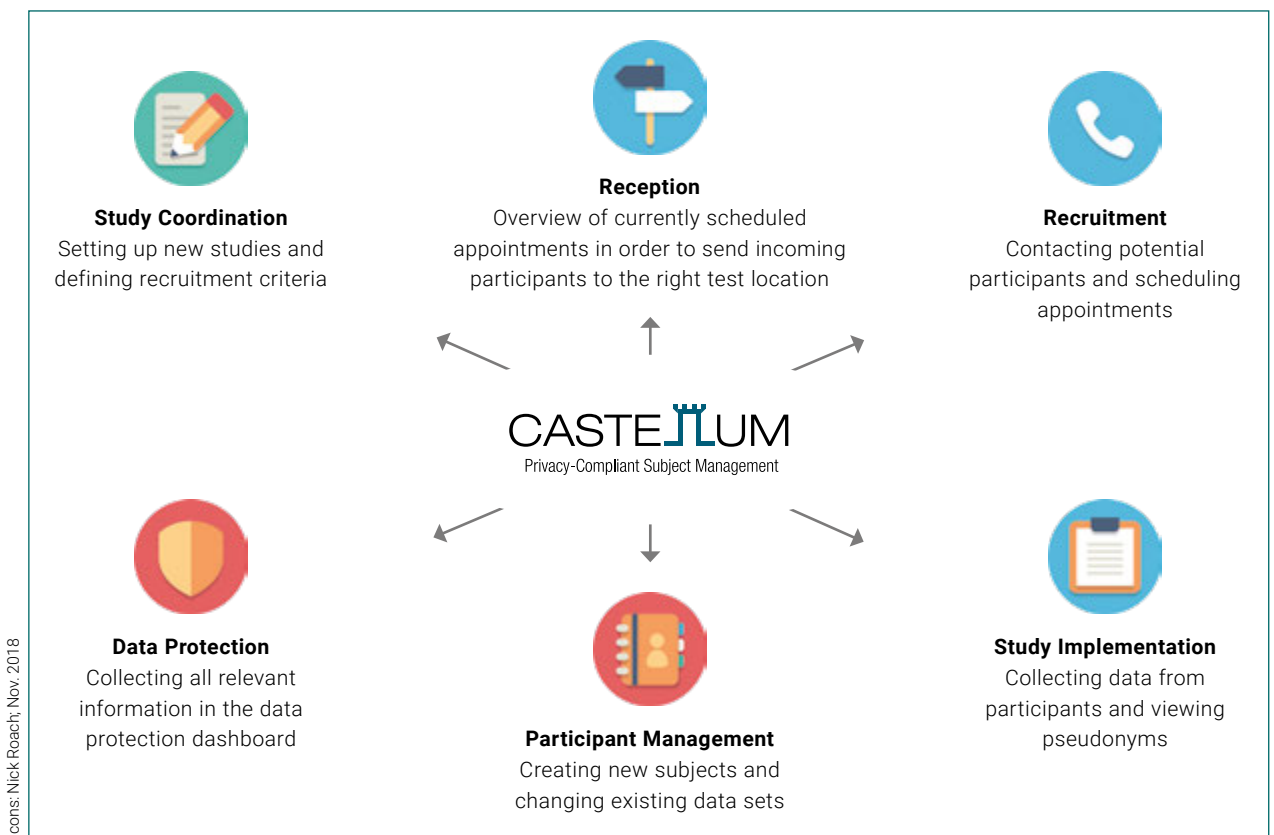
Castellum

As the amount of data collected from each participant grows, data protection is becoming increasingly challenging. The Max Planck Society's project "Castellum – A Privacy-Compliant Subject Management for Scientific Research" sets standards in terms of technical solutions that meet both data protection and research requirements. The new platform ensures that participant data are properly protected and managed in accordance with the General Data Protection Regulation (GDPR). It received funding from the Max Planck Society's Advisory Board for Core Provision of Software and Online Services.

Castellum was developed in close collaboration with researchers: Feedback was actively sought and integrated into the software in an iterative process. In regular meetings, representatives from various Centers and Groups examine applications, processes, and functions, with a focus on the joint development of solutions. A Mattermost channel serves as a platform for mutual support and general exchange among all in-house users, including the communication of feature releases.

As an Open Source project, Castellum can also be used by other institutions; it is designed to be adaptable to different workflows and processes. It is already being used by many of the Institute's Centers and Groups, as well as by other institutions within the Max Planck Society. Other research institutions, such as the Universities of Helsinki and Hamburg, have recently also expressed an interest.

Castellum is a Web application developed at the Institute. It was designed specifically to protect sensitive participant data, ensure compliance with the General Data Protection Regulation (GDPR), and implement robust IT security measures. Geared primarily toward the life cycle of human studies, Castellum provides a clear structure for handling participant data. It stores both contact information and recruitment characteristics (e.g., age) and process information (e.g., consent forms) and supports pseudonymization. If external tools such as calendars or databases are used, the pseudonyms generated specifically for that purpose can be used. This feature simplifies the process of responding to requests for data disclosure or deletion in accordance with the GDPR. In addition, Castellum can be used for recruiting participants, scheduling appointments, and running studies. The focus of all functions is to enable effective collaboration.



Study registration
My Studies
About
Contact

Register study
Login

Filters ▾ Search

sleepplay_online

Marit Petzka · June 30, 2023

behavioral sequential memory reaction times

Learning exploration strategies in a lockbox task

Florian Bolenz · June 27, 2023

behavioral exploration haptic device lockbox

Sequential Memory Task

Xiangjuan Ren · June 13, 2023

aging transitional sequence sequential memory neural replay

RIDER_3 Experiment

Frieda Josefine Born · June 12, 2023

online working memory attention long-term memory

COMIC Battery

Elisa Buchberger · June 7, 2023

developmental memory episodic memory registered report

Study Registration Tool

A particular challenge of managing research data at the Institute is the multidisciplinary nature of research and the heterogeneity of the data produced. The sheer number of research projects further complicates the data management process. To address these challenges, the RDM team, with strong support from the Central IT Unit, worked closely with all research Centers to develop an internal study registration tool, building on a tool piloted by the Center for Adaptive Rationality. By collecting a set of meta-information, the tool provides insights into all empirical studies conducted at the Institute. It thus has great potential to promote scientific exchange between researchers from different Centers and Groups and to facilitate the reuse of existing data. It grants badges for openness (preregistration, open data, open materials) to acknowledge the use of Open Science practices. Moreover, it helps the Central IT Unit to manage the storage requirements of the various projects and the Institute as a whole. The tool was successfully rolled out in April 2023.

Introducing the Scientific Service Unit

Recognizing the increasing need for science management, the directors created the position of Institute Research Coordinator in 2021, leading to the establishment of a new Scientific Service Unit in March 2022. The Research Coordinator and Scientific Service Unit work at the interface between researchers and administration, providing the former with full specialist support as they navigate administrative requirements.

Research Coordination

As head of the Scientific Service Unit, the Research Coordinator assumes both strategic and operational responsibilities. On the strategic level, the Research Coordinator provides conceptual and strategic support for the Institute's management, assists the directors in coordinating and developing the Institute's research profile, and fosters cooperation with local, national, and international universities. On the more operational level, the Research Coordinator maintains close contact with both the Institute's researchers and the administration. This affords the necessary insights into the scientists' working methods, the framework they work within, and their research support needs.

The Scientific Service Unit provides a range of services to all researchers at the Institute. It seeks to create synergies throughout the Institute in order to save resources and professionalize the services provided. These include support for international colleagues, management of third-party funding, support for PhD students in the graduate programs, access to the Institute's core facility at the Max Planck Dahlem Campus of Cognition, scientific editing, and a new administrative office for the Research Groups. In 2023, the Office of the Managing Director was established within the Scientific Service Unit, in direct response to the challenge of rotating management among directors. Its purpose is to ensure continuity and transfer of knowledge of cross-institutional operations.

The three areas of the Scientific Service Unit presented here illustrate the advantages of the new centralized structure.

International Office

The International Office supports international researchers and doctoral students in all non-academic matters. Given the increased international competition in research, facilitating the relocation and onboarding of international colleagues has become increasingly important. The International Office helps researchers to prepare for their stay, guides them through the necessary formalities before and after arrival, and offers practical information about life in Berlin. These services save scientists significant time, stress, and expense, and enhance their overall experience at the Institute and in Berlin. Cultivating a welcoming and inclusive atmosphere at the Institute is also a priority. In line with this objective, the head of the International Office has recently become a trainer for intercultural qualification at universities. The goal is to gradually provide all Institute employees with training in intercultural skills.

Third-Party Funding

Third-party funding is of central importance for our research. In March 2022, the Institute established a dedicated Third-Party Funding Office, responsible for identifying suitable national and international funding opportunities, providing scientists with individual guidance through the application process, and helping them make effective use of the Institute's third-party funds. The Funding Office advises scientists on budget planning and the principles of the various third-party funding sources, coordinates with the third-party funders, reviews project budgets, prepares budget plans and allocations, monitors costs, and ensures compliance with contractual conditions in accordance with fund usage guidelines. This includes fund disbursement and invoicing, preparing detailed

PHASES OF THIRD-PARTY FUNDED PROJECTS

PROJECT IDEA	APPLICATION	APPROVAL	PROJECT IMPLEMENTATION	PROJECT COMPLETION
<ul style="list-style-type: none"> • Research content • Project budget • Contract design options 	<ul style="list-style-type: none"> • Project plan, particularly cost calculation • Signing of application according to funding body's requirements • Submission 	<ul style="list-style-type: none"> • Third-party funding notification • Legal review of contracts • Signing of contracts 	<ul style="list-style-type: none"> • Installing a third-party cost center • Payment request/ Invoicing • Interim reports/ Statements of expenditure 	<ul style="list-style-type: none"> • Budget review • Final report/ Statement of expenditure • Closing the third-party cost center

Transforming the Central IT Unit

financial reports for the funding organizations, and advising scientists on reporting and documentation requirements. The Third-Party Funding Office is also responsible for cooperation with auditors and the internal audit department of the Max Planck Society. The Funding Office recently developed a comprehensive guide that walks scientists through the process of applying for third-party funding.

Graduate Education

Graduate education has always been a top priority at the Institute. The International Max Planck Research Schools (IMPRS) have been an integral part of the Max Planck Society's doctoral education program since 2000, offering exceptional conditions for talented students to pursue their doctoral studies. Common features include comprehensive curricula with seminars, academies, and workshops as well as close cooperation with universities. As the Institute is involved in several programs and currently hosts two IMPRS, the coordination of graduate training has been centralized in the Scientific Service Unit since 2022.

The Office for Graduate Education is specifically responsible for coordinating the IMPRS on the Life Course (LIFE) and the IMPRS on Computational Methods in Psychiatry and Ageing Research (COMP2PSYCH), both hosted by the Institute. It supports the entire PhD process, from selection and recruitment to thesis submission and defense at one of the partner universities. As a central point of contact, the Office provides comprehensive support and assistance with any concerns or queries that doctoral students may have during their studies.

In 2019, the Max Planck Society established a new format for graduate education: the Max Planck Schools. The Institute is participating in one of these schools, namely, the Max Planck School of Cognition (MPSCog). Lab rotations are a key component of the MPSCog program, and the Office for Graduate Education coordinates these rotations for our Institute. It also serves as the central point of contact for MPSCog students at the Institute.

The Central IT Unit plays a critical role at the Institute by ensuring that all IT operations run smoothly. The Unit consists of two teams: Infrastructure and Service Desk. The Infrastructure team is responsible for constructing and maintaining crucial elements of the Institute's IT systems, including the Internet infrastructure, WiFi, networks, and data storage. The Service Desk team provides indispensable support to the Institute staff in their day-to-day work, serving as a one-stop point of contact for any IT issues, including troubleshooting, technical support, and service requests. In 2022, the Institute established an IT Advisory Board to facilitate the exchange of expertise and knowhow across all Centers and Groups. The Board brings together scientific IT staff from throughout the Institute to discuss and make important decisions in consultation with Central IT. All IT staff members benefit from better insights into developments in other areas of the Institute and from the opportunity to identify and leverage synergies.

When lockdown hit in early 2020, the great challenge was to support users working from home. The Central IT Unit procured and configured a significant amount of equipment to enable mobile work and support users in these unusual circumstances. One key area of focus was the VPN infrastructure, which was not designed to sustain the Institute's entire user base simultaneously. The Service Desk also benefitted from significant upgrades, starting with the move to a new software platform, Atlassian. The team worked on improving documentation, automating processing workflows, and building different request types to ensure that users could get assistance as quickly as possible. In addition, several new hardware components were installed, including a new Dell Isilon storage cluster with a capacity of about 800 Terabytes, a state-of-the-art WiFi controller, and a new firewall. Together with colleagues from the Gemeinsames Netzwerkzentrum (GNZ), the team upgraded the Institute's Internet gateways. These initiatives have improved the network infrastructure within the Institute and Internet connectivity in general.

For the Infrastructure team, one event clearly stands out: the decommissioning of the outdated Citrix environment and the implementation of a comparable setup in the Microsoft Azure Cloud—with cost savings of some 70%. Several new software programs have been introduced to enhance the management of the IT landscape. Two notable additions are Baramundi and JAMF—mobile device management software programs that simplify the orchestration and management of over 600 personal devices at the Institute, while increasing the Central IT Unit's ability to push important security updates. Finally, Macmon, a network segmentation software program, helps to compartmentalize the Institute network—a crucial security measure to mitigate potential damage in the event of a network breach or cyberattack.

Establishing the Max Planck Dahlem Campus of Cognition (MPDCC)

Over the past 20 years, the spectrum of empirical methods used at the Institute has expanded systematically. This development has been driven by a shift in the Institute's research profile from the humanities and social sciences toward the behavioral sciences and cognitive neuroscience. As the Institute transitioned, securing adequate lab space became a pivotal concern to safeguard its scientific future.

It came as a great relief when the Max Planck Society was finally able to purchase the building at Dillenburger Straße 53 in March 2023. This building, located right next to the Institute, offers approximately 3,600 m² of laboratory and office space. It is ideally suited for housing delicate and heavy pieces of equipment that need to be operated in a low-vibration environment, such as MRI scanners. The acquisition of the building was the final step in a gradual process over the past 10 years, during which the Institute progressively rented more and more of the building for lab space. Renovating, developing, and operating

the building in a sustainable and effective way will require a collective effort from the entire Institute in the coming years.

Named the Max Planck Dahlem Campus of Cognition (MPDCC), the new lab and office space was officially inaugurated in June 2023. As a research facility for the entire Institute, the MPDCC offers a high-end laboratory infrastructure for behavioral and neuroscientific research with human participants of all ages. The labs and office space will be managed as a common good. The Campus is also open to collaboration partners and guests from other research institutions in and beyond Berlin, with an emphasis on international exchange and cooperation.

The Institute has introduced guidelines for conducting research at the MPDCC, and defined a workflow for the typical life cycle of a study—from the initial idea, potential pre-registration, and participant recruitment to data collection, analysis,

and storage. Studies are discussed and approved at weekly User Meetings, which were introduced in September 2022. Participant recruitment is facilitated by Castellum, a data base and recruitment tool that is fully compliant with German and European data protection regulations (see pp. 58f.). A team of research assistants supports participant recruitment, study organization, and data collection.

The MPDCC also provides an attractive social environment for scientific exchange across research units, groups, and institutions, especially for graduate students and junior researchers. Open office spaces, with desks being used flexibly, promote collaboration; social areas facilitate informal meetings and exchange. The MPDCC is the Berlin base of three international doctoral programs: the Max Planck School of Cognition (MPSCog), the International Max Planck Research School on Computational Methods in Psychiatry and Ageing Research (IMPRS COMP2PSYCH), and the International Max Planck Research School on the Life Course (IMPRS LIFE). The graduate schools offer joint curricula and workshops, with a particular focus on methods training. In September 2022, they organized the first MPDCC PhD Day, where students from the various groups and schools met and exchanged ideas.

CURRENT AND FUTURE LABS AT MPDCC

Current

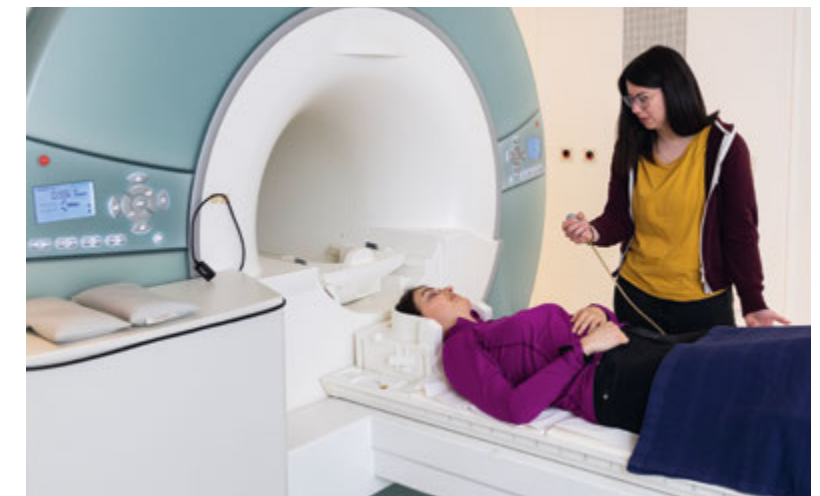
- Magnetic resonance imaging (MRI): 3 Tesla Siemens Trio
- Electroencephalography (EEG): 4 shielded cabins, polysomnography, mobile EEG
- Virtual reality (VR)
- Functional near-infrared spectroscopy (fNIRS)
- Collective intelligence lab
- BabyLab
- Other behavioral labs

Future

- Magnetic resonance imaging (MRI): two more scanners, a second 3T and one 7T
- Augmented reality/extended reality (XR)
- Wave field synthesis system
- Robotics



The new building is an important contribution for the cognitive neurosciences at the MPI for Human Development. The official handover by representatives of the district office took place on 31 March 2023.



Images pp. 62–63: Jordis Antonia Schloesser

Institute Events

The Institute calendar is full of events. In addition to numerous formats specific to the Centers and Research Groups, we hold several Institute-wide events that aim to foster scientific exchange and encourage cross-group collaboration. The following pages introduce some overarching formats and present highlights from recent years. After a COVID-19-related break from 2020 to 2022, familiar event formats were gradually resumed, and new ones were added.

REIMAR LÜST MEMORIAL LECTURE, 15.03.2022



After a long break of almost two years due to the COVID-19 pandemic, our directors could finally welcome guests to the MPI for Human Development again. In March 2022, Ute Frevert hosted the Reimar Lüst Memorial Lecture, "Kepler in Relation: Emotion and Science in a New Age of Knowledge" by Ulinka Rublack (University of Cambridge, UK). There was much online interest in this special event as well. It was part of a lecture series honoring Reimar Lüst, a former President of the Max Planck Society.



Watch the video
<https://t1p.de/tg8ny>

JÜRGEN BAUMERT FESTIVE SYMPOSIUM, 17.06.2022



On the occasion of Jürgen Baumert's 80th birthday in 2021, a festive symposium on "Digitization in Education" was held at Harnack House in Berlin. Ulman Lindenberger, Olaf Köller (IPN—Leibniz Institute for Science and Mathematics Education), and Simon Sommer (Jacobs Foundation) hosted the festivities. After a welcoming speech by Iyad Rahwan, Bettina Stark-Watzinger, Federal Minister of Education and Research, also honored the life work of Jürgen Baumert with a tribute. Pierre Dillenbourg, Associate Vice-President for Education at École polytechnique fédérale de Lausanne, held the keynote, which was followed by a lively discussion on current challenges and fields of action.



Read more
www.mpib-berlin.mpg.de/festive-symposium-baumert



WOLFGANG EDELSTEIN MEMORIAL LECTURE, 24.06.2022

The Memorial Lecture in memory of Director emeritus Wolfgang Edelstein, who passed away in February 2020, was hosted by Ute Frevert at the Institute. Heinz-Elmar Tenorth, Humboldt-Universität zu Berlin, gave the memorial lecture entitled "Educational Research—Analysis and Criticism, Reflection and Action. Wolfgang Edelstein in Context." After a subsequent documentary film screening, Ulman Lindenberger honored Edelstein's work.

In May 2023, the previously unpublished manuscript by Wolfgang Edelstein *Struktur, Prozess, Diskurs. Vorüberlegungen zu einer strukturellen Curriculumtheorie, Berlin 1973* was published by the MPI for the History of Science with a preface by Heinz-Elmar Tenorth and Benjamin Edelstein. The foreword is based on the Heinz-Elmar Tenorth's Memorial Lecture.



Further information
www.mpib-berlin.mpg.de/memoriamedelstein

SYMPOSIUM ON OCCASION OF THE HUMBOLDT MEDAL AND THE MAX PLANCK RESEARCH AWARD CEREMONY, 03.11.2022

The award ceremony for the Max Planck-Humboldt Research Awards and the Max Planck-Humboldt Medals for the years 2021 and 2022 took place at Harnack House in Berlin. The award ceremony was preceded by a public symposium at the MPI for Human Development, involving all award winners.

Speakers included political scientist Margaret Roberts, who received the 2022 Max Planck-Humboldt Research Award for her research uncovering how the Chinese state uses information technology for censorship, and physicist Pablo Jarillo-Herrero, who received the 2021 Max Planck-Humboldt Research Award for his work on two-dimensional quantum materials.



Read more
www.mpg.de/19191561/max-planck-humboldt-award-2022

FESTIVE SYMPOSIUM ON OCCASION OF GERD GIGERENZER'S 75TH BIRTHDAY, 15.09.2022

Gerd Gigerenzer, Director of the Center for Adaptive Behavior and Cognition (ABC) at the MPI for Human Development until 2017, celebrated his 75th birthday in September 2022. To mark the occasion, Ralph Hertwig invited guests to a festive symposium. The former Governor of the Bank of England, Lord Mervyn King, gave a virtual keynote lecture. The event was streamed live so that all interested Institute members could participate.



Regular Institute Events



PHD NETWORKING DAY AT THE MPDCC

Twice a year, the PhD Networking Day takes place at the Max Planck Dahlem Campus of Cognition (MPDCC) to allow the PhD students of the different groups at the MPDCC to network and strengthen collaboration. During the event, the groups introduce themselves, work on joint projects and new ideas for cooperation in groups and workshops, and have time to network and get to know each other better.

INSTITUTE RESEARCH COLLOQUIA

During the internal Institute Research Colloquia, which take place twice a year, predoctoral and postdoctoral fellows as well as research assistants who are about to renew their contract give a five-minute presentation in English on their diverse research topics. The hybrid event offers a good overview of the current research topics at the Institute.



OPEN-INSTITUTE EVENT SERIES OF THE RESEARCH CENTERS AND GROUPS

After the COVID-19-related break, all Centers and Research Groups now give weekly insights into their work again and organize lectures, colloquia, and seminars. These events offer the opportunity to learn about our Institute's latest research and exchange ideas across departments.



INSTITUTE COMMUNITY EVENTS

In addition to the Center-specific events, some formats are cross-divisional and topic-specific. These provide opportunities to shape our work environments.

In addition, topic-specific committees and working groups offer regular exchange formats focusing on improving everyday working life. For example, interested staff members can contribute ideas on how we can make our work more sustainable at the meetings of the Sustainability Group. On the Institute-wide Sustainability Day in May 2023, the working group presented various events dealing with topics like waste separation, sustainable business trips, and our Institute garden. Another regular space for exchange is the EquiTea of the Equal Opportunity Team. This format is open to all, takes place about every six weeks, and tackles topics around diversity and gender equality. Issues like "Diversity at the Institute," "Balancing work and care responsibilities," and "Queerness at the Institute" have already been discussed in this framework. And the Research Data Management & Open Science working group regularly invites colleagues to the monthly Open Science Lunch, an informal discussion of matters to do with Open Science.



In 2022, Ute Frevert initiated the first Town Hall Meeting on "Climate Protection and Business Travel at the MPI for Human Development." During the meeting, a working group came together to develop a policy proposal for dealing with the issue at the Institute. This format has now been established as a regular event at the Institute. Each meeting is led by a director, addresses a current Institute topic and is an excellent way for all employees to help shape the framework of our day-to-day work at the Institute. The points discussed are documented and incorporated into the planning of our Institute.

Ralph Hertwig addressed the topic of "Meeting Culture" in the first Town Hall Meeting in 2023. Iyad Rahwan will lead another meeting on the subject of "Internationality" in 2023.

EVENT COORDINATION TEAM

The Institute has plenty of experience with organizing events. Up to now, however, this knowledge was distributed across various departments within the Institute. Therefore, at the end of 2022, a small project team from the Scientific Service and PR units set itself the goal of centralizing this extensive knowledge and making it available to everyone. Furthermore, this will create a point of contact for advice on organizing events.

INTERNAL NEWSLETTERS

To keep our Institute community up to date and involved, we distribute an internal newsletter on a quarterly basis. This newsletter includes both updates on significant developments within the Institute as well as community news to ensure everyone is well-informed. Additionally, we have recently introduced a weekly event newsletter that serves as a centralized hub for event communication. This newsletter is designed to keep researchers aware of all major talks and colloquia organized by our Centers and Research Groups. It includes details such as abstracts and background information on the speakers, thereby informing researchers about ongoing discussions and research agendas in various fields.



Public Outreach

LONG NIGHT: EXPERIENCE. UNDERSTAND. KNOW

It is impossible to imagine the annual calendar of events in the Berlin area without the Long Night of the Sciences, which has been held every summer since 2001 (except during the COVID-19 pandemic). In 2022, the Institute took part again and made good use of the opportunity to present itself to the public. But it was also an event that brought our staff back together after a long break due to the COVID-19 pandemic and that strengthened the feeling of togetherness.

More than 50 program points—including lectures, demonstrations, hands-on activities, and guided tours—awaited the visitors who flocked to the Institute on this Saturday evening in July in summery temperatures. Exciting and diverse lectures by representatives of all Centers and Research Groups provided insights into central research questions. For example, Director Ulman Lindenberger spoke on the topic of aging research, Director Ralph Hertwig on deliberate ignorance, Director Iyad Rahwan on artificial intelligence, and Director emeritus Gerd Gigerenzer on how we maintain control in a digital world. The Long Night of the Sciences is also a suitable setting for newer communication formats. For example, researchers from the Center for the History of Emotions offered a very well-attended history slam entitled “Emo-

tions—A Question of Good Taste?” In addition, they took us on a journey around the world in 80 emotions and posed the question of the globality of feelings. The Center for Humans and Machines showed an exhibition of Iyad Rahwan’s Evil AI cartoons and, as part of the kids’ program, had children draw comic strips about artificial intelligence and put together paper robots.

“The talks were awesome!”

Visitor

We also created places for exchange at various locations in the Institute to enable visitors to engage in deeper conversation with the researchers. During the guided tours, visitors could get to know the fascinating architecture of the building, the diversity of plants in the Institute’s garden, the stacks of the Library, or our BabyLab. Many children went on a journey of discovery through our Institute in a rally and collected stamps that they could exchange for a surprise afterwards. Due to the internationality of our researchers and non-German-speaking visitors, we offered a program in English throughout.

“It was a great program! There was something interesting for all age groups (even for small kids). Everyone was very friendly. Thank you very much—we’ll be back next time.”

Visitor



“I liked the variety and the good balance between knowledge transfer and general comprehensibility in the talks.”

Visitor



Radioeins of Rundfunk Berlin-Brandenburg (rbb) reported live from the Institute as part of its special program for the Long Night. Listeners learned more about whether it will be possible to read minds with the help of electroencephalography (EEG) any time soon and heard the latest news from sleep research.

The entire Institute was involved in the six-month preparations—managed by a specially formed project team with coordinators from every Center and Research Group. More than 130 staff members were involved on the day of the event. The more than 550 visitors very much appreciated our varied program, the different formats, and the good and friendly atmosphere. The event thus continued the success of the previous Long Nights of the Sciences. On average, the Institute takes part in this large-scale event every two years. The Long Night of the Sciences is largely organized and funded by the participating scientific institutions themselves. It is also supported by numerous partners.



Read more

www.mpiib-berlin.mpg.de/long-night-22



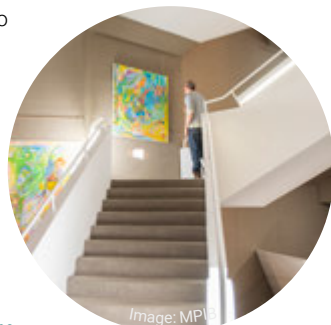
BERLIN RESEARCH 50 (BR50)

The MPI for Human Development is a member of the Berlin Research 50 (BR50), a joint initiative by the city's non-university research institutions with the goal of strengthening Berlin's standing as an international scientific hub. BR50 seeks to promote the dialogue among research institutions that are not part of the universities and offers a central point of contact for cooperation with the Berlin universities. It is also intended as a platform for an exchange of ideas with stakeholders in society and politics. The Institute has been a member of the network since its foundation in 2020. Among other activities, BR50 produces the podcast "Berlin Research—Research in Berlin" that is well worth a listen. The Institute contributed to the first episode entitled "Who are you—human or machine?"



ART EXHIBITIONS

Art exhibitions open to the public have been part of the Institute's life for many decades. On average, about five exhibitions a year are presented in the Institute's foyer. Art disappeared from the Institute's walls during the COVID-19 pandemic. Since 2023 it has returned. As before, this is thanks to the voluntary activities of our Art Commissioners.



Read more
www.mpib-berlin.mpg.de/exhibitions

More than **5,700** followers @mpib_berlin
+ **100%** followers since 2020

Since 2015, the Press and Public Relations Unit provides information about current research results, news about our researchers, events, and job offers on Twitter (@mpib_berlin). Furthermore, Twitter is used to disseminate special content formats contributing to image communication and positioning the Institute as a potential employer. In May 2023, we had about 5,700 followers @mpib_berlin and posted about one tweet per working day. Over the last three years, the number of followers has doubled. The Centers @arc_mpib, @Max_Planck_CHM, @EmotionsMpib, and @lip_mpib, as well as the Max Planck Dahlem Campus of Cognition @mpdcc_berlin, are also active on Twitter. These accounts follow and promote each other, and the Institute account is also connected to the Max Planck Society's Twitter account and actively networks with other Max Planck Institutes.



Read more
Twitter (@mpib_berlin)

MS WISSENSCHAFT



Every summer, the MS Wissenschaft goes on a grand tour as a floating science center. The exhibition ship is on the move for five months, docking in more than 30 cities in Germany and Austria. The theme of the 2023 exhibition is "Our Universe" and two exhibits from the Lise Meitner Group for Environmental Neuroscience are on board. Further information: www.ms-wissenschaft.de

MEDIA LIBRARY

More than 5,500 media reports about our researchers and the Institute have been published worldwide in print, online (excluding social media), video, and audio since 2020. We link to selected contributions in the Media Echo and the Media Library pages on our website. This collection represents a good overview of the range of our research and shows how up to date and relevant to the public our findings are. Visitors of our website can watch, for example, Director Iyad Rahwan discussing the use of artificial intelligence in a talk about the multi-award-winning sci-fi romantic comedy *Ich bin dein Mensch* (Schrader, 2021) at the Pergamon Museum in Berlin, or the video podcast with Annie E. Wertz, Head of the MPRG Naturalistic Social Cognition, about how children learn about plants, listen to our Director Ute Frevert talk about the soldiers' fears and their possible consequences on the Deutschlandfunk radio station, or to Elisa Buchberger, predoc at the Center for Lifespan Psychology, explaining how remembering works in a radio format specifically for kids.



Further information
www.mpib-berlin.mpg.de/media-library



Further information
www.mpib-berlin.mpg.de/media-echo

YOUTUBE

The MPI for Human Development also presents itself on Youtube, where you can mainly find selected recordings of our events, for example, the CHM Seminar Series or lectures held during the annual Summer Institute on Bounded Rationality.



Further information
www.youtube.com/
@maxplanckinstituteforhuman360/
playlists

MAX PLANCK SOCIETY

We regularly contribute to the Max Planck Society's communication formats. In the MaxPlanckResearch magazine, for example, the focus article "Nine per square meter" (in issue 02/2022) presents research by Mehdi Moussaïd from the Center for Adaptive Rationality. He studies how individuals orient themselves in a crowd and observe people in motion, and why this sometimes leads to catastrophes.



Read more
www.mpg.de/mpresearch



In the German podcast series "Ach, Mensch" by the Max Planck Society and the Internet radio station detektor.fm, Max Planck researchers talk about their passion for their topics, everyday lives, and personal motivation. The first season in 2021 kicked off with Simone Kühn from the Lise Meitner Group for Environmental Neuroscience. Ralph Hertwig from the Center for Adaptive Rationality and Kerstin Pahl from the Center for the History of Emotions have meanwhile participated, too.



Listen to the podcast
www.mpg.de/podcasts/ach-mensch

In the past three years, members of the Institute have contributed to about **20 official statements, reports, and expert opinions**. Particularly noteworthy are the contributions by Ute Frevert, Ralph Hertwig, Ulman Lindenberger, Karl Ulrich Mayer, and Gert G. Wagner to the ad-hoc statements on the COVID-19 pandemic by the National Academy of Sciences Leopoldina. These dealt with the medical, psychological, social, ethical, legal, educational, economic, and health and education policy aspects of the pandemic. Ralph Hertwig was also an independent member of the council of 19 experts (Corona-ExpertInnenrat) advising the German Federal Government during the COVID-19 pandemic.



Read more
https://t1p.de/fe2c2

Even though press activities have diversified considerably in recent years due to the ever-increasing number of channels, press releases remain an essential part of our outreach mix, especially on current and relevant research results. **Since 2020** we have published **45 press releases** in German and English, on average about one per month.



Read more
www.mpib-berlin.mpg.de/
press-releases

IMPRINT

PUBLISHED BY

Max Planck Institute for Human Development
Press and Public Relations Unit
Lentzeallee 94, 14195 Berlin
Telephone +49 30 82406-0 (Reception)
Fax +49 30 8249939
Email: presse@mpib-berlin.mpg.de

LEGALLY RESPONSIBLE FOR CONTENT

Maria Einhorn

CONCEPT

Maria Einhorn, Imke Kruse, Sebastian Nix, Nicole Siller

EDITORS-IN-CHIEF

Maria Einhorn, Nicole Siller

CONTRIBUTORS TO THIS ISSUE

Jennifer Apel, Julia Delius, Johanna Drewelies, Maria Einhorn, Dagmar Ellerbrock, Moataz Elmasry, Douglas D. Garrett, Ralph Hertwig, Maïke Hille, Maïke Kleemeyer, Nils Köbis, Imke Kruse, Simone Kühn, Philipp Lorenz-Spreen, Ana Sofia Morais, Sebastian Nix, Kerstin Maria Pahl, Carolin Rissel, Frederik Schröer, Nicole Siller

LAYOUT

Sarah Otterstetter

TRANSLATION & PROOFREADING

Julia Delius, Susannah Goss, Françoise Hamonic, Emma C. Lawson, Ana Sofia Morais, Daniela Petrosino, 24translate

SCIENTIFIC COORDINATORS

Yvonne Bialek, Julia Delius, Anastasia Kozyreva, Imke Kruse, Judith Oberhauser, Katharina Schmalen, Daniil Serko, Kerstin Singer, Eva Wunsch

DATA PROVISION

Anja Ballenthin, Anja Berkes, Susanne Kassung, Helena Maravilla, Chiara Müller, Katja Münz, Judith Oberhauser, Joanna Olejnik, Daniela Petrosino, Carolin Rissel, Karola Rockmann, Grecia Elizabeth Almaguer Saldivar, Silke Schäfer, Katharina Schmalen, Sandra Schmidt, Katja Seehaus, Daniil Serko, Yayouk Willems, Eva Wunsch

PHOTOS & ILLUSTRATIONS

Cover image: MPIB; image p. 16: Jan Zappner;
image p. 54: Jordis Antonia Schloesser

PRINT

Druckerei Javitz GmbH
July 2023



See fully digital Research Report 2020–2022/23
www.rr23.mpiib-berlin.mpg.de



See website of the MPI for Human Development
www.mpiib-berlin.mpg.de/en