

The First

10

Years

BERLIN
SCHOOL OF
MIND AND
BRAIN

Tenth
ANNIVERSARY
Issue

Newsletter
N^o VIII

Editorial — 2

PERCEPTION, ATTENTION,
AND CONSCIOUSNESS

Professor Niko Busch — 8

Philipp Czech — 10

Julian Q. Kosciessa — 13

Dr Joerg Fingerhut — 14

Professor Jesse Prinz — 16

Martina Lutz — 18

Dr Laura Kaltwasser — 20

Chantal Miller — 22

DECISION-MAKING

Professor Ray Dolan — 26

Dr Radosław Martin Cichy — 28

Kathrin Tertel — 30

Richard Wundrack — 32

Professor Thomas Schmidt — 34

Gina Eickers — 35

Sean Kallsen-Mackenzie — 36

Luke Tudge — 38

Arezoo Pooresmaeili — 40

LANGUAGE

Professor Manfred Krifka — 44

Professor Vittorio Gallese — 45

Professor Elke van der Meer — 48

Dr Nora Fieder — 50

Dr Richard Moore — 52

Tomás Goucha — 54

Dr Lena Kästner — 56

BRAIN PLASTICITY
AND LIFESPAN ONTOGENY

Professor Carsten Finke — 60

Professor Peter Hammerstein — 61

Philipp Haueis — 64

Professor Christine Heim — 66

Maurício Martins, MD PhD — 68

Julia Rodríguez Buritica — 71

Dr Michael Gaebler — 72

Professor John-Dylan Haynes — 74

Professor Gabriel Curio — 75

BRAIN DISORDERS
AND MENTAL DYSFUNCTION

Professor Andreas Heinz — 78

Dr Sanneke de Haan — 79

Professor Hellmuth Obrig — 81

Yelyzaveta Kramarenko — 82

Lucia Reuter — 84

Michael Goldberg — 86

Laura Schlingloff — 87

Professor Felix Bermpohl — 89

HUMAN SOCIALITY
AND THE BRAIN

Professor Isabel Dziobek — 92

Katharina Bergunde — 94

Professor Martin Fischer — 96

Dr Anne Weigand — 97

Jing Jiang — 98

Professor Tania Singer — 100

Professor Henrik Walter — 102

Irene Trilla — 104

Contact — 105

Imprint — 105

Professors MICHAEL PAUEN and ARNO VILLRINGER,
Academic Directors of the Berlin School of Mind
and Brain

In 2006 a group of neuroscientists, psychologists, linguists, and philosophers from the Berlin metropolitan area teamed up to write a proposal for an interdisciplinary graduate school. Back then we could not foresee that this new entity, the “Berlin School of Mind and Brain”, would really get off the ground, grow and prosper and reach its 10th anniversary in 2016!

The Berlin School of Mind and Brain (M & B) was a response to a number of important developments: most significantly, rapid technological advances in the study of brain structure and function, the rise of computational approaches, and new insights into neurological and psychiatric disorders, which all raised new theoretical questions. It was clear that researching complex topics such as consciousness, free will, ontogenetic development, perception or language called for a new generation of scientists who had enjoyed an interdisciplinary training from early on in their careers!

From the very beginning of the M & B venture it was decided that doctoral candidates should apply with their own research projects. In addition to their primary discipline, successful project proposals have to draw on findings from the complementary side of mind and brain research as well. This approach requires junior scientists to acquire sufficient expertise in more than one field of research. The

graduate school, in turn, set up a research-related education and training program covering the whole spectrum of mind and brain research.

As a graduate school not only do we feel responsible for laying the appropriate foundations for interdisciplinary research by means of our training program, but to a greater extent we also want to ensure that our doctoral candidates are able to pursue a scientific career in the field of their chosen area of research. For this reason, over the years we have continually modified and improved both our intensive student advisory services and our discipline-specific and interdisciplinary training program, in order to take into account the individual needs and wishes of doctoral students. International lecture series, workshops and joint retreats with our cooperation partners complete the training. They offer opportunities to make direct and personal contact with top-class scientists from all those research areas relevant to mind and brain and guarantee feedback regarding the progress of international research.

In this way we have – by any conventional standards – built a highly successful graduate school. Since the start of the doctoral program in 2007 our doctoral candidates and doctoral alumni have submitted more than 500 publications and been appointed to distinguished posts in Germany and abroad after graduation.

In 2012, after winning Excellence Initiative funding for a second time, the school added to the portfolio a structured postdoctoral program with currently 17 very active and prolific postdoctoral researchers. A two-track Master's program "Mind and Brain" followed in 2013. Last week we proudly welcomed the 4th cohort of Master's students and the 10th cohort of doctoral candidates!

We deem our graduate school very lucky to have the very generous financial backing of the Excellence Initiative and the German Research Foundation (DFG). The Humboldt-Universität zu Berlin and the Charité – Universitätsmedizin Berlin, in conjunction with our other university and non-university partners, were essential for establishing and sustaining this new institution. Of our external partners we would particularly like to thank the Einstein Foundation Berlin. Thanks to the Einstein Foundation's continuous support since 2011, we have been able to host three world-renowned scientists as Einstein Visiting Fellows at the Berlin School of Mind and Brain: Ray Dolan, Director of the Wellcome Trust Centre for Neuroimaging, University College London; Jesse Prinz, from the Graduate Center, City University of New York, and Vittorio Gallese, from the School of Medicine, University of Parma, Italy. Together with their groups and our many other national and international guests and long-term visitors, these Einstein Visiting Fellows enrich the neuroscience research community in Berlin tremendously.

As academic directors, we are very grateful to head such a committed and hard-working "family" of Master's students, doctoral candidates and postdoctoral researchers, backed by an excellent faculty who act as supervisors, teachers, advisors, committee members and mentors. All of the above are bolstered by the Humboldt-Universität's and Charité's capable administration and rely on an m & b manage-

ment team that aims to make the impossible possible. Without everyone's dedication we would not have been able to realize and maintain this interdisciplinary adventure called the Berlin School of Mind and Brain.

In our anniversary newsletter issue No 8 we present all kinds of *m & b* researchers: Master's students, doctoral candidates, postdoctoral researchers, associates, Einstein Visiting Fellows, and faculty ... and all six *m & b* research topics. Many thanks go to our interview partners for their contributions.

Finally, we wish to thank all *m & b* friends for their goodwill and belief in our common cause over the past ten years. We look forward to the next decade!

October 2016





PERCEPTION,
ATTENTION, AND
CONSCIOUSNESS

Silent Interview

Professor NIKO BUSCH

was a junior professor and faculty member at the Berlin School of Mind and Brain 2009–2015. He is now professor for experimental psychology at the Westfälische Wilhelms-Universität Münster.



What is your field of research?



Interdisciplinarity –
a comment, please!



What characterizes a good scientist?



What do you like most about your work?



What do you like about Berlin/
What is typical of Berlin?

10 years
Berlin School
of Mind
and Brain ...



Which is your
favorite brain
region?

Last but not least:
Mind or brain?



PHILIPP CZECH

is a Master's student and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A During my BA studies in Philosophy, I developed an interest in the metaphysics and epistemology of phenomenal consciousness. I couldn't accept physicalism's main premise, which is to suggest that higher order entities (e.g. mental states) have to be reducible to and explicable by lower processes (e.g. within the brain) and that raw feelings (i.e. qualia) do not exist as they cannot be expressed in terms of physical, chemical, or biological realities. I developed an argument to propose epistemological progress assuming phenomenal consciousness exists, i.e. we know less about the world without experiencing qualia. However, the argument did not falsify the physicalism but rather stated that we have to rethink the ontic distinction between the mind and the brain to conceptually clarify 'qualitative mental states' in such a way as they can be operationalized. This analysis

finally founded the starting point of my engagement in the study of the mind and the brain.

Q *What questions are you trying to answer in your work?*

A I am trying to better understand the relationship between human altruism and social fairness. I am interested in how far this relationship might be essential to stabilize a social system's functionality in the long term. Thus, I am asking questions assigned to theories from economics proposing that decision-making in a social context is reducible to self-regarding preferences. These theories are inconsistent with evidence suggesting the existence of other-regarding interests. Therefore, I use methods of game theory and experimental psychology to investigate the emotional impact on cognitive and behavioral states and processes in social decision-making. In my current work, I am investigating third parties' feelings regarding unfair economic behavior, their

punishment behavior as well as their feelings about their own punishment behavior in the context of dyadic interactions about the distribution of material goods (i.e. money). Moreover, I examine the effect of time on third parties' punishment behavior and their feelings. The project aims to shed light on the relationship between these variables and to what extent they might change over time (due to the fact that third parties are repeatedly confronted with unfair distribution behavior).

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Entrenching a scientific terminology that sufficiently covers an intensional framework of meanings of entities and proper-



PHILIPP CZECH

ties of mental states that everyone in the interdisciplinary scientific community is able to grasp conceptually in the same manner.

Q *What do your family and friends think you do?*

A They do not really have a clear idea and they actually get slightly overwhelmed if they try to express their thoughts within a sentence. In general, they think I am trying to better understand human cognition and behavior on the basis of activities within the body and the brain.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I have to admit I struggle to really internalize a behavior someone could call a healthy 'work-life balance' and, therefore, I often lose myself within my studies. Nevertheless, I do a lot of sport (powerlifting and running). Moreover, I recently started to look at moral concepts developed by classical German philosophers again, not with any scientific purpose but because they trigger so many creative thoughts and ideas about myself and the society I am used to living in. Furthermore, I am an enthusiastic fan of industrial techno and you can usually find me at Berghain on a Sunday afternoon.

Q *What is your biggest hope for the future of science/research?*

A Generating scientifically valid and reliable knowledge about the complex cultural and social nature of human beings in order to offer arguments for political decisions, which promote tendencies toward a more peaceful world population because of an overall increased level of socioeconomic fairness.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A In my opinion, the biggest surprise in science started with the Copernican Revolution, i.e. the paradigmatic shift from the Ptolemaic to the Heliocentric model of the heavens, as it triggered the kind of thinking responsible for the transition to the Age of Enlightenment, which again founded basic laws of modern scientific thinking and discourse.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Ten years of M & B because this school successfully brings together philosophical ideas and empirical evidence by offering an interdisciplinary platform for open-minded and enthusiastic people who want to promote a better understanding of the relationship between the mind and the brain.

JULIAN Q. KOSCIESSA

is a Master's student and member of cohort 2014.

It is safe to say that after a decade the goal of the M & B program – to facilitate an exchange between different specializations within cognitive science – is as relevant now as it was at its conception. With an ever-increasing knowledge base and novel impulses from STEM fields (Science, Technology, Engineering and Mathematics) into how the brain might give rise to the mind (assuming that it does), getting an overview is not going to get any easier.



JULIAN Q. KOSCIESSA

The M & B program is well positioned to reduce misunderstandings in the cross-talk and highlight fruitful avenues with regard to the big conceptual issues. In addition, its research funding, events and outreach greatly contribute to Berlin's current role in the cognitive and neuroscience network.

Personally, M & B helped me to sharpen my scientific path and further develop my interests, while giving me a good indication of which discussions I can and should engage in and which fights I might want to stay away from. The philosophical approaches in particular introduced me to new styles of thinking about fundamental issues, while reinforcing the fact that some debates will likely not be resolved any time soon. Lessons learned all round. Congratulations on ten successful years and all the best for the future!

DR JOERG FINGERHUT

is a postdoctoral researcher at the Berlin School of Mind and Brain working with Einstein Visiting Fellow Jesse Prinz (since 2015).

Q *What got you interested in studying the mind and brain?*

A While studying philosophy I became more and more frustrated by a reliance on self-reports and intuitions that were presented as truisms in certain areas of philosophy. On the other hand, I was fascinated by some clever psychological designs that assessed mental states below this level of reportability (e.g. the Sperling experiments on the contents of perception). Looking at the functioning of the brain is one further way to explore this level in order to get a good theory of our mind going.

Q *What questions are you trying to answer in your work?*

A After having worked on the role of action and movement for perception and other mental states in my doctoral thesis, I started to wonder what art and cultural artifacts do to our mind and how we could address them in an empirically oriented philosophy of mind. Architecture, for example,

constrains our perception and experience by having direct impacts on our bodily experience. Film captures our imagination as a medium and explores fictional worlds for us by engaging our perceptual system in a very specific way. And art is this very strange thing that humans – at the individual and institutional level – invest a lot into even though it doesn't have a clear function. What do we value in art? How do we engage with it? What makes a good artwork? These are some of the questions I try to answer.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A There are challenges in terms of understanding the other's expertise and regarding the ways one is best able to complement this expertise with one's own background. But those challenges are rather minor once one acknowledges that for most questions that are worth addressing there is no

alternative to collaborations. As a philosopher involved in the project of the Einstein Visiting Fellow Jesse Prinz, I work with a cognitive neuroscientist (doing EEG studies) on film, with visual scientists on art perception, and a psychologist on architecture. Each of these collaborations shows me my limits, but also rewards me by providing other heuristics for problems and therefore presenting novel answers that a purely philosophical account could never come up with.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The insight that nothing in the environment is perceived without context and that a focus on this context reveals the profound ways in which we are embodied and situated beings.



JOERG FINGERHUT

Q *What do your family and friends think you do?*

A I don't really know. But I do know that it feels much easier to explain what I do to the children and adolescents in my circle of friends and acquaintances than to the adults. I definitely have to improve my communication skills in this respect.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I recently became a tv-series junkie and added that to my previous tendency to watch too many movies. One of the happenstances of my work on art is that I can look at art and architecture a lot – but I do not see that as something that I do “when not studying the mind and the brain”...

Q *What is your biggest hope for the future of science/research?*

A That it will become more and more accessible to all those who are interested.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A That the brain is not just there to cool the blood (as Aristotle thought it was) but also helps a bit in getting us to navigate our way through our worlds.

Silent Interview

Professor **JESSE PRINZ**

is Einstein Visiting Fellow at the Berlin School of Mind and Brain (since 2015) and Distinguished Professor of Philosophy at the City University of New York.



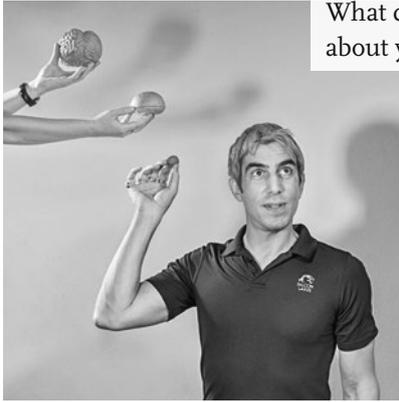
Interdisciplinarity –
a comment, please!



What is your field
of research?



What characterizes
a good scientist?



What do you like most about your work?



What do you like about Berlin/
What is typical of Berlin?



Which is your favorite brain region?



10 years
Berlin School
of Mind
and Brain ...



Last but not least:
Mind or brain?

MARTINA LUTZ

is a Master's student and member of cohort 2015.

Q *What got you interested in studying the mind and brain?*

A I was fascinated by the extent to which my mindset can alter my perception and the world I see. Therefore I wanted to look inside, rather than outside.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Throughout recent centuries, empirical research has adopted a prominent role in modern society, shaping the way we perceive ourselves and the world around us. It is well respected and claims to offer an objective picture of reality. However, it has become apparent that empirical research may have boundaries, especially in the research area of the mind. How do we investigate a first-person perspective (phenomenal consciousness) if the measures we apply are supposed to be objective, implying a third-person perspective? Will we be able to understand the brain by reducing it to lower-level features and sub-

dividing it into distinct categories? These are fundamental questions asked in philosophy that make us step back from our seemingly self-evident scientific methods. Today's brain research, in particular, is mainly built on the theory of functionalism. However, philosophy of mind points out that there are many other theories besides functionalism and calls the main assumption of brain science into question. Therefore, I think it is a real challenge for today's widely acknowledged brain science to let philosophy in and shake its foundations, which needs to happen if the two disciplines are to interact and influence each other "transdisciplinarily" and not just coexist in parallel in multidisciplinary.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The greatest development of recent years for me is not any particular finding of a single study but rather the growing openness to

interdisciplinarity and the fact that institutions such as M & B are brought into being. If we are to deal with topics like “the self” or “consciousness” we should not limit ourselves to one way of investigating and we should be aware of the presuppositions and boundaries that our approach implies.

Q *What do your parents/friends/children think you are doing?*

A My friends ... a Master’s program that combines psychology, neurobiology and philosophy? Pretty cool, some kind of fancy program tackling interesting questions.

My mum ... seems to ignore the interdisciplinary aspect and thinks that I am counting neurons and slicing brains into pieces.



MARTINA LUTZ

My dad ... just wishes that I would do something serious.

My neighbor ... is afraid of me because I am studying psychology.

Q *What is your biggest hope for the future of science/research?*

A That open access becomes the rule. That cooperation is valued more and competition stays at a healthy level. That the main drive behind science is the aim to find things out and not just to publish something in order to make your living as a researcher. That I am not too naïve.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A The mass–energy equivalence concept formulated by Albert Einstein.

Q *Is there anything we forgot to ask? Is there a question you always wanted to answer but were never asked?*

A It’s more the case that I have questions that I always wanted to be answered.

Silent Interview

DR LAURA KALTWASSER

is a doctoral alumna of cohort 2012. She is a postdoctoral researcher working with Einstein Visiting Fellow Vittorio Gallese (since 2016).



What is your field of research?



Interdisciplinarity –
a comment, please!

What characterizes
a good scientist?





What do you like about Berlin/
What is typical of Berlin?



Which is your favorite
brain region?



What do you like most
about your work?



10 years
Berlin School
of Mind
and Brain ...



Last but not least:
Mind or brain?

CHANTAL MILLER

is a Master's student and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A I always have been interested in the mind and the brain. I remember discussing questions about perception with my family when I was only in primary school. There is one particular memory I have: I was in a sports shop with my mum and a friend of hers, and there was a phony horse's head hanging on the wall in order to showcase a bridle. I recollect saying that it wasn't a real horse's head. My mom's friend asked me how I could be so sure that it wasn't a real one. Since then I have not stopped wondering about questions of perception and consciousness.

Right now I am about to finish the M & B Master's program (Track 'Brain'). Here, I was finally able to bring together what I had learned about phenomena of the mind and my keen interest in correlating brain mechanisms as the embodiment of the mind. This gave me a whole new perspective on the topic, which I really appreciate!

Q *What questions are you trying to answer in your work?*

A I am currently contributing to an fMRI study at John-Dylan Haynes' Lab, in which we are investigating the neural correlates of recognition memory for real-world scenes and trying to predict whether a participant has been to a certain place or not.

After finishing the Master's program, I would like to do research on cognitive processes of creativity and idea generation, considering the underlying neural representations of those phenomena. I did my Magister's degree in philosophy and history of art, and have always wondered how the mind creates extraordinary, new and creative ideas. Basically this is exactly what you find, everywhere, over millennia, when you deal with the history of art: creativity. I am convinced that if you consider the underlying brain mechanism of idea generation you can get closer to the phenomena of the creative mind.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A ... that people of distinct disciplines are not familiar with the methodologies of the other field. In this regard it might be difficult to understand the point of view from which questions are asked and research is conducted, and finally what answers and explanations can be given at all within the realms of methodological possibility.

Q *What do your family and friends think you do?*

A Well, my two-and-a-half-year-old son thinks I go to work. My boyfriend has a pretty good idea of what I do, since he has to listen to my questions and ideas all the time (besides which, he is a

radiologist specializing in MRI). I guess most of my family and friends more or less think that I look at these colorful pictures of the brain and try to infer what people think ...

Q *What is your biggest hope for the future of science/research?*

A That negative results will be published as well!

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A One of the biggest surprises in science has to be the discovery of penicillin by Alexander Fleming.

For me personally, the most interesting discovery of the last 100 years is spacetime and gravity as curved spacetime, known as the theory of general relativity by Albert Einstein.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Congratulations! I love M & B; it is a conglomerate of interested and interesting people, all working intensively on topics of mind and brain. I hope this exceptional place lasts for a very long time!



CHANTAL MILLER





PROFESSOR RAY DOLAN

Einstein Visiting Fellow at the Berlin School of Mind and Brain 2011–2014, is a Honorary Professor (since 2015) at the Institute of Psychology of Humboldt-Universität, Mary Kinross Professor of Neuropsychiatry, and director of the Max Planck Centre for Computational Psychiatry and Ageing, University College London.

Q *What got you interested in studying the mind and brain?*

A I got interested through psychiatry. I grew up in a tiny village in the west of Ireland at a time when there was only rudimentary psychiatric care. There were many people I encountered with mental illness who were subject to varying degrees of prejudice, discrimination and neglect, and I was all too aware when one of these people would commit suicide. These types of experience do not happen so overtly in the anonymity of a town or city. This experience of the tragedy of mental illness has remained with me to this day and was the prime motivator for me to study, and continue to study, the brain.

Q *What questions are you trying to answer in your work?*

A Fundamentally I am trying to understand how the experiences

of being mentally ill, for example feeling low, lacking motivation, being unable to see a future, having no sense of self-worth, relate to the function and dysfunction of the brain.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A The biggest gap, in my opinion, is the lack of a good theoretical account of neural function that can account for even the simplest forms of mental experience that in turn could provide the building blocks for a rich neural account of what we call mental experience.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The emergence of an approach to cognition that is more quantitative and a greater emphasis on formal models.

Q *What do your family and friends think you do?*

A My children, who are both in their teens, know pretty well what I do. They often invoke the concept of prediction error when I lose my keys and find them where I have sworn they could not possibly be. My closest friends know fairly well too, and one of them who is a novelist has incorporated some of our conversations about neuroscience into his work.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I have a number of pleasures I pursue. I read a lot, especially novels. In fact I have just finished (for the first time) Effi Briest. I hike a lot in the mountains and have just returned from a week



RAY DOLAN

in Bavaria, which was sublime (and the weather too). I listen to a lot of music, especially blues and jazz, and still like to go to the odd gig. In another lifetime I would want to be a singer.

Q *What is your biggest hope for the future of science/research?*

A That governments and funding agencies never lose sight of the importance of discovery science for its own sake. The danger for the future is that a drive towards translation or immediate pragmatic payoffs will stifle creativity.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A The Darwin/Wallace theory of evolution is the biggest, as it changed how we have to think of ourselves and our place in the universe more than any other discovery. I think we are still only grappling with its profound ramifications across all aspects of our culture.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Ten years means it is now a permanent fixture like the Brandenburg Gate or Clärchens Ballhaus.

DR RADOŚLAW MARTIN CICHY

is a doctoral alumnus of cohort 2007. He is the leader of the “Neural Dynamics of Visual Cognition” research group at the Center for Cognitive Neuroscience Berlin, Freie Universität Berlin.

Q *What got you interested in studying the mind and brain?*

A After finishing high school, I was at a loss as to which course to choose. I was interested in too many things, pondering at the same time whether to study German literature, Philosophy, Biology, Chemistry, Anthropology and Indology. I figured all these phenomena are facets of human cognition in the end, so why not study cognition directly? That is how I ended up doing a BSc in Cognitive Science in Osnabrück, and that is how I ended up studying the mind and the brain.

Q *What questions are you trying to answer in your work?*

A I want to answer three simple questions: what is happening where and when in the human brain when we see. In other words, I want to gain a spatio-temporally resolved and algorithmically explicit account of human vision.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A To work well, interdisciplinarity must be done right at different levels of complexity, from the personality of the scientists involved, to the make-up of the academic system in which they work. That is, it needs the right spirit, impetus, framework, incentive structure and institutional embedding. Making all this happen requires a sustainable commitment and large-scale investment.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The advent of deep neural networks in computer vision, and its application to understanding the representations and algorithms that the brain uses to solve visual tasks in cognitive science. Deep neural networks provide a completely new framework of how to

think about cognition, and it challenges current prevalent ideas of what it means to explain something in a brain with a model.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Basically anything that does not involve a screen. Berlin offers great opportunities to enjoy the outdoors, in particular on the water. After coming back from the us, I took up kayaking again and started rowing. Having to concentrate on not falling in the water makes it very easy to forget all about work!

Q *What is your biggest hope for the future of science/research?*

A I will comment only on my field of study. I hope the way



RADOŁAW MARTIN CICHY

science is practised will change. I would love to see a move from a microscale style, i.e. a single-scientist- or single-lab-based effort, to a mesoscale style, i.e. international collaborations between labs having similar interests, without ending up at the macroscale, i.e. huge institutes where the scientist is a mere cog in the machine, and which just might not be the right scale at which to tackle the problems in neuroscience we have today.

Q *What do your family and friends think you do?*

A I try to tell them rather honestly what I do and what my work looks like. To do that I try to take the perspective of an outside observer following me mutely through the day observing behavior. Usually it boils down to staring at screens, talking to people, more screen-staring, some typing, and even more screen-staring. Concerning content, they all know what I am working on; the questions are so simple!

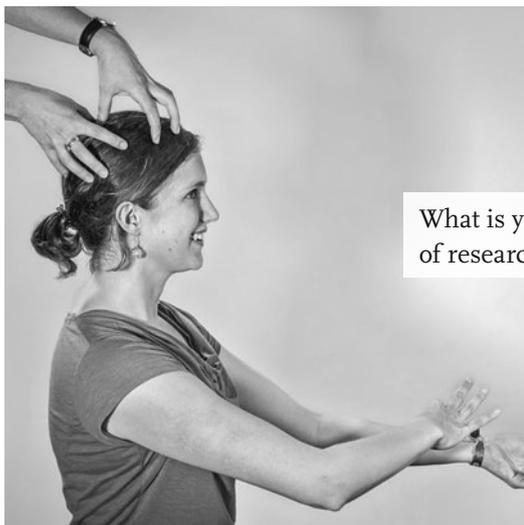
Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Congrats!

Silent Interview

KATHRIN TERTEL

is a doctoral candidate and member of cohort 2013.



What is your field
of research?



Interdisciplinarity –
a comment, please!

What characterizes
a good scientist?



What do you like most about your work?



What do you like about Berlin/
What is typical of Berlin?



Which is your favorite brain region?

10 years Berlin School of Mind and Brain ...



Last but not least:
Mind or brain?

RICHARD WUNDRACK

is a Master's student and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A Once upon a time, I figured out that I didn't actually want to work in the financial sector. I turned to the next obvious field of studies: ancient Greek philosophy and the philosophy of mind – looking for answers from great thinkers regarding a happy life and how it comes about. After I gained a satisfyingly superficial understanding of their answers, I decided to turn to the mushy thing that worries enough to come up with the question and answer in the first place, the brain.

Q *What questions are you trying to answer in your work?*

A I am trying to make sense of what a self-determined agent is and how controlled and automatic processes play together in establishing and undermining the autonomy of such agents. To do so, I look into research in psychology and neuroscience from my rather philosophical point of view. I theorize about and translate

ideas from one field of research to the other, looking for links between the sciences concerned with agents.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A First, you have to acquire an understanding of as many disciplines as you are interested in. Second, you have to figure out how the different terminologies of the different disciplines relate to each other. Third, you have to have interdisciplinary insights deep enough that they become relevant to experts of the individual disciplines that make it worth having scientific cross-talk.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The motivation to create platforms to facilitate open science.

Q *What do your family and friends think you do?*

A Those not involved in science themselves think I do some kind

of science-y stuff. Those involved in science themselves think I just *think* about science-y stuff. I am not sure who or whether any of them is right.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Explore all kinds of things and gather experiences of all kinds: from vagabonding to couch-potato-ing and partying to philosophizing. You may see me wandering the streets of Berlin quite often.

Q *What is your biggest hope for the future of science/research?*

A I wish scientists could be more open about null results in the future. I hope science opens up and funding and publishing



RICHARD WUNDRACK

alters in ways appropriate to proper scientific investigation. I'd like to see future academics free of the worries of having to sell their results to make a living. In a way philosophers have an advantage here because their thoughts and arguments can be rather easily replicated by everyone without any fancy equipment (if you don't consider your brain pretty fancy already) and massaging of the data. But obviously philosophers face other challenges.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A Evolution ... obviously evolution ... volution ... volition ...

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A God, I hope I manage to finish my studies before the next anniversary. No, really, I think Mind and Brain offers a great platform for scientists and interested laymen to come together in a variety of conferences and workshops to exchange ideas and results, questions and answers, and I hope M & B can make this possible for much longer than ten years.

Professor THOMAS SCHMIDT

is a faculty member and professor of philosophy at the Institute of Philosophy, Humboldt-Universität zu Berlin.

I am interested in questions about *normative phenomena*, such as the fact that some considerations are *reasons* to act in a certain way or to believe something, or that one *ought* to do or believe certain things rather than others. Normative phenomena lead to *normative questions*, most importantly: what do we have reason to do or believe, and why? They also lead to *metanormative questions*, such as: what is it for something to be a reason for something else? What is it for something to be such that one ought to do or believe it? How are reasons and “oughts” related to each other, and to other normative features such as values?

In my research, I pursue both normative and metanormative questions. Normative phenomena are closely linked to us as agents, who actively shape aspects of the world, and as beings who believe certain things by responding to the way the world is. Since we are part of our natural world, normative phenomena can be subjected

to empirical research, e.g. by neuroscientists. There are, however, limits to this. Neither normative nor metanormative questions can be settled by empirical means alone – rather, they are philosophical questions.

Some philosophers think that empirical research does not have anything to contribute to the study of normative phenomena. They are wrong. Some empirical scientists, e.g. some neuroscientists, think that philosophical questions can and should be transformed into empirical questions. They are wrong as well. When it comes to bringing philosophers and neuroscientists together to study normative phenomena, things are most interesting and productive when both acknowledge the limitations of their respective perspectives and try to complement one another’s ideas, methods and results. Then, true progress can be made. This is what we try to do at M & B.

GINA EICKERS

is a doctoral candidate and member of cohort 2015.

Q *What got you interested in studying the mind and brain?*

A I started reading philosophy in my youth. I was hooked, and doomed to spend my life wrestling with abstract questions.

Q *What questions are you trying to answer in your work?*

A I am trying to understand the sociality of humans – where it comes from, why it exists, how it is manifested.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A Ten years? You should definitely expand the time frame for philosophers!

Q *What do your family and friends think you do?*

A I have been wondering about that too.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Studying the mind even more, making art, looking at art. I have also been trying to merge mind and brain studies with art – that is what motivated me to organize the exhibition *Embodiments* in August 2016 together with other M & B researchers.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A Thought.



GINA EICKERS

SEAN KALLSEN-MACKENZIE

is a Master's student and member of cohort 2014.

Q *What got you interested in studying the mind and brain?*

A I studied psychology (major) and education – ESL (minor) in my undergrad. I went on to earn a certificate in wilderness medicine, and I realized the interaction between the mental and the physical, or the psychological and the biological was one of the most important relationships we can learn from. The power of the mind to overcome physical hardship is, at times, unbelievable.

Q *What questions are you trying to answer in your work?*

A I am interested in emotion perception in others.

Reading facial emotion, the role of in-group bias, stereotypes, and gender on emotion recognition and emotion intensity recognition.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Challenges, problems, confrontations, or is it more like an

invitation? The acceptance that we can learn from others, and gain new insights into what we've taken for granted throughout the course of our studies. I appreciate learning in an interdisciplinary environment. I have always been a supporter of alternative education, and reform in public education.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The biggest development, that's hard. The discovery of mirror neuron, maybe? A number of interesting research techniques have come into vogue over the past decade. One that I hope to see applied in neuroscience is the CRISPR/CAS9 gene-editing tool. As controversial as it may be, there-in lies an enormous potential to cure illnesses that have plagued us for centuries.

Q *What do your family and friends think you do?*

A Haha. They are very happy to hear about my studies. Unfortu-

nately they don't understand much of what we do at M & B. But when I tell them about some of the research projects they are fascinated.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A My free time is filled up with riding my road bike, cooking vegan food, rock climbing, and spending time in the wilderness with my wife, Silja, and our dog, Lanai. In my down time I like reading the works of Thoreau, Poe and Lawrence – they call for a life of simplicity, a return to nature.

Q *What is your biggest hope for the future of science/research?*

A That it inspires the next generation to live responsibly.



SEAN KALLSEN-MACKENZIE

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

Oh, gosh, I don't know, there are too many that we cannot simply dismiss in light of the others. For example: *lex parsimoniae*, also known as Occam's Razor in the early fourteenth century, in the seventeenth century we had Galileo's observations of the heavens and Newton's laws of motion, the nineteenth century gave us most notably Darwin and Wallace's theory of evolution by natural selection, but also Mendel's work on inheritance – the basis for genetics. The twentieth century was by far the most chaotic and perhaps most fascinating: we have everything from Einstein's relativity, to Crick and Watson's helical structure of DNA.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Success! Apparently, the world needed M & B, bringing experts together to learn, collaborate and ultimately create a new school of thought.

LUKE TUDGE

is a doctoral candidate and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A I'm afraid I'm a terrible narcissist, and psychology seemed like an excellent way of learning more about myself. After all, I have a mind, and I have a brain (as some of my colleagues have kindly helped me verify). Of all my organs, these seem to be the most important to my particular identity. To study the mind and the brain is, in a roundabout way, to study oneself.

Q *What questions are you trying to answer in your work?*

A A lot of what our brains accomplish a lot of the time, they accomplish without our being aware of it or having any control over it. For example, the brain commands the muscles of our chest to contract and relax so as to keep air flowing in and out of our lungs. However, sometimes we reflect and 'take control' of these otherwise automatic processes, for example when we deliberately hold our breath. I am trying to find

out how our 'reflective' mind intervenes in automatic processes, why it evolved a capacity to do so, and why this intervention occasionally fails. The particular automatic process that I am focusing on in my doctorate is the movement of our eyes from one piece of visual information to the next. When we 'force ourselves' to look at something, or to look away from it, what are we doing differently from when we simply let our gaze wander freely without thinking about it?

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Perhaps the biggest challenge is recognizing and overcoming discipline-specific prejudices. I appreciate that academic disciplines have their uses; it makes sense to organize our investigations into clusters of related questions. But when left to their own devices for too long, a small enough group of academics will tend to converge on an arbitrary ideology.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I am interested in the natural world, so when I can get out of the city I go walking and wildlife-watching. When I can't get out of the city, I stock up on a few German beers, then go on Wikipedia to read as much as I can about the history of a particular country. At the moment I'm reading about the Democratic Republic of the Congo. I also write some fiction, mostly short stories, and also one longer writing project that I plan to finish off after my doctorate.

Q *What is your biggest hope for the future of science/research?*

A My most grandiose hope for the future of science is that we



LUKE TUDGE

will one day understand the mind well enough to be able to create artificial minds. But I think we are further away from this goal than some futurists and science fiction authors would have us believe.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A I am more of a biologist than a physical scientist, so my example comes from biology. There I think the most surprising discovery of the last 100 years must surely be the striking sophistication of animal cognition. It was once widely assumed that humans possess a whole array of special abilities not found anywhere else in the animal kingdom; self-awareness, toolmaking, understanding other minds, and so on. Careful study of animal behavior has shown that many animals can do these things too, and do them remarkably well. Neither is it only our closest relatives, the primates, that show abilities like ours; meerkats teach their young, fish learn from one another, and birds make tools and understand speech. Humans today are considerably less special than they thought they were 100 years ago.

AREZOO POORESMAEILI, MD PhD

was a postdoctoral researcher with Einstein Visiting Fellow Ray Dolan 2011–2014 and is now a research group leader at the Georg-August-Universität Göttingen

It is my great pleasure and honor to have the opportunity to share with you my M & B experience. It was on a lovely early spring day in March 2011 when I got to know M & B. I was taking a bus from an fMRI facility near the Mediterranean Sea back to the town of Pisa, looking nostalgically at the beautiful scenery I had to leave very soon: my two-year postdoc contract was about to end and this was perhaps one of the last few times I was taking this beautiful route. But luckily and thanks to technology I had a cellphone with me and I was able to look for jobs rather than only nostalgically at the sea. Scrolling up and down in Nature Jobs, I came across this sentence: ‘post-doctoral fellowships in cognitive neurosciences, to work with Ray Dolan, Berlin School of Mind and Brain’. This was a real game changer at that moment since I had no choice but to feel thrilled and excited by the three names I was seeing in front

of my eyes: Berlin (exciting for obvious reasons, not excluding its cool clubs), Ray Dolan (also exciting for obvious reasons, and I had never managed to check out *all* the items on his long list of publications), and Mind and Brain: an exhilaratingly vague title that just left me in awe. Back home in Iran when I was a medical student I heard for the first time about mesmerizing topics such as the mind–body duality problem, or consciousness. Attending these lectures was my first encounter with the so-called Neurosciences (a term unknown to me at that time) and was so attractive to me that I decided to break with medicine for good and become a full-time neuroscientist. So my first mental image of the Berlin School of Mind and Brain was a place similar to that lecture hall in Iran: a lot of cool lectures and smart people discussing hard problems.

I was lucky enough to get the postdoctoral job with Ray Dolan

and move to Berlin and see for myself that cool lectures are only but a part of the great experience one can have at M & B. On the first day I was shown my room which I shared with “philosophy of mind” postdocs. This was fantastic: I learned that philosophers write books (something I knew but I had not seen with my own eyes), which inspired me to also take notes of my ideas, a tool that helped me a lot for future applications and grant writing. I got to know how up to date philosophers are about the experimental findings in neurosciences (since after each discussion with them it was *me* who was looking up relevant experimental studies mentioned by them) and I learned a bit about the importance of critical thinking and reasoning which may take away the need for doing many of our studies and therefore could substantially reduce one’s workload. So all in all this was awesome. Later, I sat together with other brain (or experimental) postdocs, which was no less educational and also as exciting as sharing office with the philosophers. I think the mere fact that researchers with different topics and research foci sit together is very enriching and is part of the interdisciplinarity the school is taking pride in.

It will be impossible for me to list all the unique features of M & B in such a short time, so I will just highlight a few of them which were particularly interesting and important to me: 1. The so-called “speed-dating” events where newcomers met older doctoral students and postdocs: they gave me the opportunity to talk about my research in an informal setting and get feedback from fresh minds just entering the field. 2. Numerous excellent workshops which brought together researcher from all over the world. 3. Einstein Clubs organized by our group where doctoral students and postdocs presented their preliminary results and got critical feedback before it was too late. 4. “Café Interface Lunch Edition”, where we could eat in a group, drink tea or coffee and talk leisurely about science. 5. The monthly M & B Newsflash – which I still eagerly read each time it is released! 6. Informal meetings aimed at empowering female scientists: an excellent initiative which was extremely helpful for me.

Therefore, checking out your cellphone while being in a beautiful surrounding is not always so bad, particularly if you are lucky and happen to bump into an even more beautiful place called Mind and Brain.





PROFESSOR MANFRED KRIFKA

is a faculty member, director of the Center for General Linguistics and professor of linguistics at the Institute of German Studies and Linguistics, Humboldt-Universität zu Berlin.

My own background is in linguistics, which I consider a rather special subfield in the M & B field. Our language faculty seems to be more accessible to our reasoning than other aspects of our cognition, and so detailed and explicit theories about language were available earlier than they were about other parts of the human mind. But these theories mostly looked at language as formal structure, not as process and behavior, and for this reason it was not at all easy to relate our linguistic knowledge about language to what became known about how the mind and brain work. My own research area – formal semantics and pragmatics, language typology, field work in East Africa and Melanesia – was decidedly more on the traditional linguistic side, even though I had studied psycholinguistics as one subfield and tried to keep up with the literature in that area. I once even took part in a mini-course at the MPI for Psycholin-

guistics, where I had the chance to dissect a human brain together with Daniel Dennett!

M & B has decidedly broadened my own knowledge and abilities by bringing me into intense contact with mind and brain researchers, both colleagues and students. Having arrived at Humboldt-Universität just a couple of years before from Austin, Texas, it brought me into contact with many



MANFRED KRIFKA

more people than I would have encountered otherwise. It was particularly instructive to co-supervise students who graduate with a broader knowledge than their supervisors – and I mean both “knowing that” and “knowing how”.

My own research methods increasingly include experiments, as in my project in the DFG program XPrag.de. It is a well-known secret that one learns the most when teaching, and so the tasks of teaching mini-courses or whole seminars with colleagues like Angela Friederici or Friedemann Pulvermüller to students with diverse backgrounds and interests have been at least as instructive for me as they have (hopefully) been for the students. And, yes, I admit that I still become most excited when brain scientists identify aspects that linguists have described before with their paper-and-pencil methods, e.g. the special place of recursivity in syntactic processing, or the identification of neurons responsible for specific phonological features that make up the regular sound system of a language.

Professor VITTORIO GALLESE is an Einstein Visiting Fellow at the Berlin School of Mind and Brain (since 2016) and professor of physiology in the Department of Neuroscience, Section of Physiology, at the University of Parma.

- Q *What got you interested in studying the mind and brain?*
- A When I started my MD curriculum as an undergraduate student I initially thought I wanted to become a psychiatrist. However, I soon realized that I was far more interested in becoming a neuroscientist. My first research activity dealt with multimodal integration within the cortical motor system, in relation to the mapping of space and objects. Then we discovered mirror neurons. After this discovery I focused my research entirely on social cognition. I simultaneously began to collaborate with philosophers, cognitive linguists and scholars in the humanities. I began to investigate the neural and bodily correlates of aesthetic experience, applying it to the visual arts and cinema, and of psychopathology, investigating

autism, schizophrenia, trauma and neglect. All of these topics are still at the heart of my current research.

Q *What questions are you trying to answer in your work?*

A I think that cognitive neuroscience ought to address far more than it has so far the domain of experience. Thus, I am trying to phenomenologize cognitive neuroscience, trying to better understand to what extent our brain-body enables us to experience the world we live in. I do not think that we will ever be able to build a 1:1 map between the concepts we use to describe our mind and cognition and the brain networks underpinning them. I think cognitive neuroscience can be extremely useful in deconstructing those very same concepts, shedding new light on where they come from and what they are made of. More specifically, I am trying to understand, for example, the mechanisms enabling our immersion in, on the one hand, social reality and, on the other, parallel worlds of fiction, allowing us to experience art and films as if they were real, in spite of the fact that we know them to be patently false. I am also trying to better understand what it means to be psychotic or traumatized: what are the mechanisms that prevent individuals from experiencing

a coherent sense of self and appreciating the natural evidence of the world.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A The biggest challenge is language. Even when we rely on non-verbal cues we always inhabit language, and language entirely shapes our relationship with the world. Nevertheless, when we study the brain we rely on a level of description that speaks of neurons, neurotransmitters, action potentials and connecting fibers. Neurons are not epistemic agents, although they enable our knowledge of the world. The most challenging issue I see is how to find bridges between these different levels of description, and how to eventually converge upon a possible shared language.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I like to listen to music, from rock to opera. I am a big fan of Verdi and Wagner. I promised myself I would never apply neuroscience to music, and I must say that so far I have kept this promise. I should also add, though, that my love for music is not entirely detached from my work. Having spent almost all my career

exploring the non-verbal aspects of the human mind, perhaps it is no coincidence that I am so fond of music, the least language-related form of human creative expression.

Q *What is your biggest hope for the future of science/research?*

A I really do hope that science and research will eventually be instrumental in offering better life conditions to human beings. The progress of technology is rapidly changing not only our lifestyle but also the job market. Many jobs we are familiar with will probably disappear within the next few decades. This could have a potentially negative impact on our societies. My hope is that science and research will allow more and more people to develop



VITTORIO GALLESE

new skills and know-how, granting them better life opportunities. Cognitive neuroscience in this respect can be crucial, and I hope that our politicians will realize that we need to invest more in science and research, far more than we are doing now.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science ever...?*

A The most interesting discovery/invention of humans has definitely been the creation of symbols. The ability to externalize symbols, moving them outside of the body, allowing them to survive beyond the time of their making. This was probably the biggest revolution, which triggered all other ensuing inventions and discoveries.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A A successful bet. It was and still is a very smart idea to create an institution whose main goal is to foster the joint study of mind and brain. I hope that in the next ten years the school adds the body as a third interrelated domain of investigation!

Silent Interview

Professor ELKE VAN DER MEER

is a faculty member and professor of cognitive psychology
at the Institute of Psychology, Humboldt-Universität zu Berlin.



What is your field of research?



Interdisciplinarity –
a comment, please!



What characterizes a good scientist?

What do you like most about your work?



What do you like about Berlin/
What is typical of Berlin?



Which is your favorite brain region?



10 years Berlin School of Mind and Brain ...

Last but not least:
Mind or brain?



DR NORA FIEDER

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Institute of Psychology, Humboldt-Universität zu Berlin.

I returned to Germany and started my postdoctoral work earlier this year in May 2016 after having worked in research with international colleagues from all over the world in Australia for seven years. Unsurprisingly, the initial weeks in Germany came as a cultural shock, as I had to battle with the authorities and the rigid German administrative system in order to reintegrate into German society. Only after letting go of the typically Australian mentality and “Hi, how are you going?” friendliness and adding a bit of hostility and irritation to my tone of voice did I manage to achieve some level of reintegration.

Once I had resolved the administrative issues, it was with a feeling of disillusionment that I made my way to M & B to register as a new postdoctoral researcher. In contrast to the aforementioned German experience, M & B gave me a warm

welcome. With its internationally experienced managers and international researchers, M & B made me feel as if I was entering an Australian island within Germany. The large variety of workshops, seminars for female researchers and for career planning, talks, conferences and student retreats that were offered by M & B reminded me immediately of the Cognitive Science



NORA FIEDER

Centre I worked at in Australia. All of these early impressions got rid of most of my initial doubts about being able to and wanting to work as a researcher in Germany.

When I look to the two years of postdoctoral work at M & B ahead, I see them as a chance to reintegrate professionally within Germany. For me, as an early career researcher, the two years of funded research represent an incubation period during which I can develop my own, competitive research profile. Ideally this will increase my chances of research funding and collaborations for future projects and leave no doubts about wanting to work as a researcher in Germany.

DR RICHARD MOORE

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Institute of Philosophy, Humboldt-Universität zu Berlin.

Q *What got you interested in studying the mind and brain?*

A I'm an identical twin, and when my brother and I were three we spoke a language (or, at least, dialect) that only we understood. For all that language seems, then, to be a cognitively demanding and uniquely human achievement, it's also one that young children can spontaneously invent. Since my days as an undergraduate student, I have wanted to understand how that could be.

Q *What questions are you trying to answer in your work?*

A The central questions of my work are: What are the cognitive abilities that enable humans to acquire language? What are the phylogenetic changes that have arisen since the split of the Pan (i.e. chimpanzee and bonobo) and Homo (human) clade that have led to the emergence of language in humans but not in other species of great ape? What further cognitive achievements in humans

(e.g., thinking about other minds, and syllogistic reasoning) are made possible by the acquisition of language?

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Interdisciplinary work is hard. It's not good enough to know a little bit about the fields that overlap with your own. As a philosopher, you can no longer cite a few key empirical studies and get away with pretending that your work is empirically informed. You have to be an expert in both your own and cognate fields. Or, at least, you need to know enough to know whom to ask, to know what it is that you need to ask them, and then to be able to evaluate their answers.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The development of eye-tracking has given us a whole new

way of evaluating the cognitive abilities of verbal and non-verbal subjects. The data are sometimes difficult to interpret, but it's a hugely exciting development.

Q *What do your family and friends think you do?*

A My friends and family know what I do. But when it comes to children and strangers, I tell them I work with orangutans. It's true, and it's much easier to understand than if I tell them that I'm a philosopher.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I go to the gym a lot, and (like most people) spend significant amounts of time each day refreshing the internet. However,



RICHARD MOORE

I don't really understand the concept of free time, or of switching off and leaving work behind. I'm answering these questions at 2 am, while putting the finishing touches to a conference talk. Since my work is also the thing I care about most, I'm not complaining.

Q *What is your biggest hope for the future of science/research?*

A Totally unrelated to my work, I would like to think we can fix the mess we have made of the planet. I'm sure we can. Or, at least, I'm sure that once it becomes profitable enough, a small group of people will be able to fix enough of the planet to save themselves.

My hope would be that those people would also try to save others less fortunate than themselves, but I'm not optimistic that science can change human nature.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A I look forward to the 20th anniversary. I'd love to see what we'll have accomplished by then.

TOMÁS GOUCHA

is a doctoral alumnus of cohort 2011 working at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.

The story that brought me to M & B sounds like something from one of those annoying self-help books. I had completed medical school with an exchange position in Berlin and had completely fallen in love with the city. Also I had just figured out that I didn't want to follow the usual path of a medical doctor and instead wanted to do research. I knew it was a bold move and most people warned me that I would likely regret it afterwards.

I can still vividly remember the evening I found out about M & B while going through the graduate schools of the Humboldt-Universität zu Berlin. It sounded so exciting, but somehow also so far removed from everything I had been doing up until then. When I read that one of the topics of the school was language, I just knew that a mere coincidence had brought me to something I could picture myself doing for the rest of my life. The fact that interdisciplinarity was put in

such an important position made M & B even more appealing to me. That night, I felt I had to celebrate this feeling of promise. Obviously, this is not only a story of serendipity – I came to Berlin, met Inken, completely fell in love with the school and its atmosphere and then had to go back to my home country, Portugal, to start working as a doctor. Meanwhile, I followed Inken's valuable advice – for which I will be forever



TOMÁS GOUCHA

grateful – and started studying linguistics seriously, attended courses, and at the same time tried to contact faculty members in order to fine-tune my ideas for research. All in all, it was a lot of hard work, but also so much fun because I was finally doing something I was genuinely interested in.

Joining the school was extremely exciting, and meeting the people was the most exciting part. Above all M & B is about a combination of people with varied interests, who are particularly interested in the different facets of the human mind and would also like to figure out how the brain gets its job done. Interdisciplinarity is the key in a world of extremely specialized people who often lose track of the big picture. It was so refreshing to see how we could jump from cognitive psychology to philosophy and in the meantime discuss something about brain research methods. Among all these interesting people, I made great friends – the kind you want to keep for the rest of your life. I wouldn't hesitate for a split second if I had to make this choice all over again.

Silent Interview

Dr LENA KÄSTNER

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Institute of Philosophy, Humboldt-Universität zu Berlin.



Interdisciplinarity –
a comment, please!



What is your field
of research?



What characterizes
a good scientist?

What do you like most about your work?



What do you like about Berlin/
What is typical of Berlin?



Which is your
favorite brain region?



10 years Berlin School
of Mind and Brain ...



Last but not least:
Mind or brain?







BRAIN
PLASTICITY
AND LIFESPAN
ONTOGENY

Professor CARSTEN FINKE

is a faculty member and assistant professor in clinical and cognitive neuroscience (since 2014) at the Berlin School of Mind and Brain and Charité – Universitätsmedizin Berlin.

BERLIN

Summer _____
_____ Winter

INTERDISCIPLINARITY

Essential, challenging
and rewarding _____
_____ Much more
difficult than staying in the comfort
zone of your own research area

INTERNATIONALITY

You get to drink ouzo,
pastis and raki _____
_____ International
headache

COOPERATION

Working together with people
you like _____
_____ Talking about
work with people you like

TIME

No appointments _____
_____ Deadlines

CONFERENCE TRAVEL

The conference is in Rome
or Jerusalem _____
_____ The conference
is in Mannheim or Orlando

BRAIN

You can think about
the brain _____
_____ Consumes
lots of glucose



CARSTEN FINKE

PROFESSOR PETER HAMMERSTEIN
 is a faculty member and professor of theoretical biology
 at the Department of Biology, Humboldt-Universität zu Berlin.

Q *What got you interested in studying the mind and brain?*

A I approach the mind from the perspective of behavioral ecology. The reason for this is that evolution has shaped animal features, including their brains, so that they may succeed in evolutionary competition with others. This is the key to understanding the functional (as opposed to mechanistic) properties of nervous systems and it sheds a lot of light on the mind and brain issue. Neuroscience helps us reveal the brain's mechanisms but behavioral ecology tells us what brains 'are made for'. In particular, we can get insights from behavioral ecology as to what 'purposes' our learning machinery serves and how evolution has strongly biased and pre-structured learning as a tool for dealing with environments that mattered in evolutionary history. Interestingly, the neurobiological concept of synaptic plasticity with 'long-term potentia-

tion and depression' is far from capturing any of this functionality. Let me emphasize at this point that brains are not blank slates that can be molded in any direction. Development is robust with respect to many perturbations, and organisms are capable of performing many complex tasks without any practice. Some birds, for example, know how to fly when they first take off from a nest way above the ground. Of course, in humans the process of socialization plays an enormous role but I think that this process is biologically pre-structured and we would do better to find out about the biological properties of this process instead of invoking omnipotent 'social construction'. The tension between biology and the social sciences is a fascinating subject to think about.

Q *What questions are you trying to answer in your work?*

A I am a theoretical biologist. My work is mainly on conflict

and cooperation at the level of genes and organisms. Let me first mention two somewhat exotic examples of our research. From an evolutionary point of view there is – it is fairly generally assumed – a hidden conflict between mothers and their offspring even at the fetal stage, that is, when the offspring is still well protected and nourished within the mother’s body. The question is how this conflict manifests itself in phenomena such as microchimerism (after giving birth there remain fetal cells in the mother) and maternal diseases during the peripartum period. We are able to partially answer this question. The second example is the antagonistic relationship between plants and herbivores. In order to avoid herbivory, plants manipulate the nervous systems of animals in ways that resemble what hackers do when they manipulate computers. This area of research is of interest to mind and brain because it helps us understand the effect of drugs like nicotine on the mesolimbic dopamine system. And in a third area of our research, we study intracellular bacteria (*Wolbachia* and *Cardinium*) that are vertically transmitted through eggs from mother to offspring and treat male hosts almost as if they were the Amazons known from Greek

mythology. Why? Once these bacteria find themselves in a male host they are ‘buried alive’ because – unlike eggs – sperm do not transmit them into the next generation of hosts. As a result, some of these bacteria feminize males, kill them, or induce parthenogenesis (mothers then forget about sex and produce daughters only). We analyze the evolutionary battle between these bacteria and their arthropod hosts. While the bacteria under discussion cannot infect humans, they teach us a lesson about selective forces that act on mitochondria (former bacteria!) because the latter are also transmitted cytoplasmically. In plants certain mitochondria do indeed act like Amazons. One last thing: throughout my academic career I have been working on conceptual issues in evolutionary game theory and on its applications.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A As explained in my answer to the first question, it seems important to create a profound dialogue between neuroscience and behavioral ecology. A few years ago I edited a book on “Evolution and the Mechanisms of Decision Making”, which describes the beginning of this dialogue.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A Biologists are now able to sequence large numbers of entire genomes at a very low cost – a revolution.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A The little spare time I have I spend cooking and playing pipe organ. I tend to play music from the Renaissance to the Romantic rather than something like ‘A Whiter Shade of Pale’ by Procol Harum, though I like the latter kind of music too. Playing an instrument teaches me a lot about how the brain works but, frankly speaking, I only do it for my own personal enjoyment.



PETER HAMMERSTEIN

Q *What is your biggest hope for the future of science/research?*

A Given the high degree of specialization in contemporary science, most researchers dig into details. As much as I am convinced that this is necessary, I believe that true progress also needs scientists who pull the strings together and integrate scientific knowledge. This is one of the tasks theoretical biologists can help fulfil.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A Darwin’s discovery that a ‘blind’ process that is not goal-directed can explain the facts for which others felt the necessity to invoke a ‘creator’.

Q *Is there anything we forgot to ask? Is there a question you always wanted to answer but were never asked?*

A Let’s stop here. I wish M & B all the best for the future and will always be available for advice when there are questions relating to evolutionary and theoretical biology.

Silent Interview

PHILIPP HAUEIS

is a doctoral candidate and member of cohort 2014.



What is your field of research?



Interdisciplinarity –
a comment, please!



What characterizes a good scientist?



What do you like most about your work?

Which is your favorite brain region?



What do you like about Berlin/What is typical of Berlin?



10 years
Berlin School
of Mind
and Brain ...



Last but not least:
Mind or brain?

Professor CHRISTINE HEIM

is a faculty member and director of the Institute for Medical Psychology, Charité – Universitätsmedizin Berlin.

BERLIN

Pulsating city with excellent research community – it's the place to be. _____
_____ Bad weather, sometimes moody people

INTERDISCIPLINARITY

Necessary for understanding complex mechanisms in disease, providing both depth and breadth. _____
_____ Challenging to understand each other's ideas or methods and integrate approaches to answer focused questions – an art in itself.

MIND

Enables happiness _____
_____ Enables depression

INTERNATIONALITY

Broadens the scope of individuals and programs, necessary for exchange of knowledge and dissemination. _____
_____ Lost in translation?

RESEARCH COMMUNITY

A large interdisciplinary and international research community facilitates collaborations and networking within M & B _____
_____ There is too little time or capacity to interact with everyone

COOPERATION

Basis for successful research, enables more than a single person or group could accomplish, prerequisite of interdisciplinarity/ internationality

Requires you to “give and take” and be flexible when it comes to reward, you should have the right attitude – it is called social cooperation ...

CONFERENCE TRAVEL

Essential for dissemination, inspiration, information on cutting-edge developments, networking. Plus you get to see nice places.

It means time away from my child and cramped airplanes.

BRAIN

It will always be the subject of exciting studies. I am particularly intrigued by the potential of early programming of brain development to promote healthy lives in children.

The brain is far from being understood.



CHRISTINE HEIM

MAURÍCIO MARTINS, MD PhD

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.

Q *What got you interested in studying the mind and brain?*

A I was inspired as a teenager by the works of Roger Penrose, Douglas Hofstadter and Antonio Damasio. The first two offered mechanistic models of the mind, compatible with general frameworks of physics. The latter offered theories of human decision-making based on feelings and emotions, and grounded on deep biological processes shared with other species. My first motivation to study cognitive neuroscience was to close this gap between physics and biology.

Q *What questions are you trying to answer in your work?*

A I focus on the question of how humans combine simple elements to build complex hierarchies. Mathematically, there are many ways to build the kind of complex structures that we use in language, music and action sequences. However, it is important to

investigate which strategies are actually available for different cognitive systems (visuo-spatial, auditory, motor) and how these are instantiated in the brain. In my research, I ask people to detect and generate recursive fractals while inside an fMRI scanner. My work suggests that the representation of complex hierarchical structures is grounded on the semantic memory system.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A The greatest challenge, in my opinion, is the early integration between theory and empirical work. On the one hand, looking at the anatomical and functional structure of the brain is meaningless if we do not have a theory. It is like looking at a book written in a language that we don't understand. A cognitive theory about the architecture of the brain is notably absent.

On the other hand, theorizing is cheap and often unconstrained. Imagining a mechanism does not make it true, even if it is elegant. We often see elegant theories being adopted without empirical validation, or based on very biased literature reviews.

Thus, the challenge is to let theoreticians and empiricists communicate from early on, at several steps of the research process, in order to make it truly co-evolutionary.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The integration between modelling techniques and brain imaging techniques has opened the door to new ways to understand the empirical data mechanis-

tically. Now we can say not only if a parameter is important, but also by how much. We can also compare quantitatively different possible mechanisms and cognitive architectures. This is a big step for the study of human cognition, as measured through brain imaging.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A I like to read about politics, history and anthropology. I like to play guitar and video games.

Q *What is your biggest hope for the future of science/research?*

A My biggest hope is that a more scientific approach to politics will emerge. That political decisions will one day be made according to rational principles, informed by empirical research, and towards the goal of maximizing justice and fair access to resources. Politics is another domain that clearly needs better theories to make sense of the empirical reality. Often decision-makers say that the reality is wrong when the theory fails to predict reality. That is not the way to go ...



MAURÍCIO MARTINS

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A I would say Einstein's general relativity and Darwin's evolution.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A This school has the mission to integrate theory and experimentation, philosophy and psychology, discussion and methodology. I would say that there has been an improvement in the communication between the different areas of knowledge, but I hope that this communication starts translating into joint papers.

JULIA RODRÍGUEZ BURITICA
is a doctoral candidate and member of cohort 2011.

INTERNATIONALITY

Goes hand in hand
with science _____
_____ Is there one?

RESEARCH COMMUNITY

Happy to be part of it _____
_____ Still not where
we should be.
Science should
be open to all

COOPERATION

The most important
experience, inspiring like
a new relationship ... _____
_____ ... but as in every
relationship it is also
a challenge.

CAREER

What should that be?
If you can do what
you like, go for it. _____
_____ Outdated German
system regarding
the so-called “scientific
career”.

CONFERENCE TRAVEL

Best inspiration ever ...
Conference-maniac!!! _____
_____ The “after-
conference-high” could
last longer ...

BRAIN

Great hardware _____
_____ We can't exchange
the hard drive.



JULIA RODRÍGUEZ BURITICA

Dr MICHAEL GAEBLER

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.

Q *What got you interested in studying the mind and brain?*

A I enjoyed thinking about the big questions that are often tackled in the humanities (“how can we know what we know?”). So as not to discuss these questions endlessly, I wanted some empirical grounding on which to base the answers. The brain and mind sciences were an ideal umbrella for such an approach. (Since then, I’ve become much more humble about wanting to answer big questions.)

Q *What questions are you trying to answer in your work?*

A Conceptually: How do mental processes arise from brain-body-environment interactions? Practically: How can we measure and analyze the mutual influences of brain and body in the best way?

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A One question that often comes up towards the end of a discussion between brain and mind scientists is: “How do we test that in an experimental setup?” Considering the practical aspects from very early on is probably helpful.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A Without really grasping their scope and possibilities, I think that portable devices (bringing the lab into the real world) and virtual reality devices (bringing the real world into the lab) can be tremendously helpful for empirical research.

Q *What do your family and friends think you do?*

A Brain stuff.

Q *What is your biggest hope for the future of science/research?*

A More openness and more cooperation, less envy and less tedious protectionism among scientists.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A Quantum theory and Gödel's theorem. I think both – empirically and conceptually – shook the ground on which our modern worldview and scientific methods are built. The former by showing that there are phenomena that can't be measured objectively and the latter by logically deducing that there can be no complete truth.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Congratulations! I'm looking forward to celebrating many more of its anniversaries. Funnily enough, I also remember helping to proofread its original grant proposal in April 2006 (as a student assistant at the Charité).



MICHAEL GAEBLER

Professor JOHN-DYLAN HAYNES is a faculty member and professor at the Bernstein Center for Computational Neuroscience, Berlin.

Questions such as “How does the brain give rise to consciousness?” or “Do we have free will?” are absolutely fascinating. They define the very essence of our existence: Who are we as thinking creatures? Many of the best first-year students immediately grasp the importance of these questions and want to address them in their research. But then they often get discouraged: many established researchers in our field – in more traditional academic departments – consider these topics too exotic for a field of specialization. “Consciousness is a topic we discuss over a glass of wine, but it’s not a viable field for a career in cognitive neuroscience,” they might say. It’s great that M & B is here to prove these naysayers wrong and to provide an academic home for young talents who are not willing to give up asking these burning questions.

M & B brings the best students together from very different disciplines ranging from psychology,

neuroscience, medicine, computer science and physics all the way through to philosophy. It provides a melting pot of different models, approaches and techniques that are needed if we are to advance in this challenging field. I am happy to contribute to raising a generation that might finally stand a chance of solving the big puzzles of the human mind.



JOHN-DYLAN HAYNES

PROFESSOR GABRIEL CURIO

is a faculty member and head of the neurophysics group,
Department of Neurology with Experimental Neurology,
Charité – Universitätsmedizin Berlin.

Q What got you interested in studying the mind and brain?

A Reading the Popper/Eccles treatise on *The Self and its Brain*, and quarrelling with both attitudes.

Q What challenges do you see in the interdisciplinary study of the mind and the brain?

A Agreeing on shared terminology for exchange of arguments.

Q What, in your opinion, is the biggest development in the last ten years in your area of research?

A Mind–Brain–Computer Interfacing.

Q What do your family and friends think you do?

A Trying to see what seems obvious.

Q What do you like to do in your free time, when not studying the mind and the brain?

A @day: Roaming nature.

@dusk: Touring artwork. @night: Star-gazing.

Q What is your biggest hope for the future of science/research?

A Mind mastering matter.

Q Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to your mind?

A So many scientists so broadly trained – be the future theirs.



GABRIEL CURIO





BRAIN
DISORDERS AND
MENTAL
DYSFUNCTION

PROFESSOR ANDREAS HEINZ
is a faculty member and head of the Department of Psychiatry
and Psychotherapy, Charité – Universitätsmedizin Berlin.

A wish for M & B

M & B has been very successful in bringing together human and natural sciences and increasing discourse. Specifically, it is the first time I have encountered such work groups, philosophy on the one hand and molecular biology on the other, joining forces to select some of the brightest students for this graduate school. Trying to bridge the gap between different disciplines can be quite difficult, with concepts and even single terms not matching and researchers from different areas of understanding first having to search for common ground. However, only when different points of view are linked together can a comprehensive picture of human behavior and its challenges emerge.

In this tradition, I am hoping that this kind of research will continue in the future with the support of stable funding perspectives not only for doctoral students, but also for postdocs, which in my

view is the funding area that most urgently needs further support. It is highly unfortunate if excellent doctoral students run out of funding shortly after obtaining their degree; in fact, quite often there is an abundance of data left and a host of new questions ready to be explored. Therefore, funding that allows postdocs to embark on their own research for at least a year in order to enable them to obtain further funding is particularly necessary and helpful.



ANDREAS HEINZ

Dr SANNEKE DE HAAN

is a postdoctoral researcher at the Berlin School of Mind and Brain and Charité – Universitätsmedizin Berlin.

Q *What got you interested in studying the mind and brain?*

A I am interested in how people make sense of themselves, the world, and others – how that works, and how it sometimes breaks down. In psychiatry, the edges of sense-making come to the fore. But how can we understand what is happening when one's sense-making gets out of tune? Working in psychiatry, I found that one of the biggest challenges is to connect the very diverse factors at stake in the development and treatment of psychiatric disorders: is someone depressed because of a marital conflict, or because of a lack of serotonin? Or could these two somehow be related? But how then? In psychiatry, the classical philosophical question of how to relate body and mind is thus at stake in daily practice: when thinking about possible causes, and when considering different treatments. For understanding the mind includes understanding the brain – and,

importantly, their relationship to each other.

Q *What questions are you trying to answer in your work?*

A What makes the idea that psychiatric disorders are brain diseases so attractive; what can be said for and against this idea; and what holistic alternative conceptions of psychiatric disorders have to offer to psychiatric practice and research.



SANNEKE DE HAAN

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A It starts with identifying which questions are relevant and why and by what means they could in principal be answered. Interdisciplinary studies easily run the risk of talking at cross purposes and of arriving at different understandings of key concepts. But interdisciplinary studies are also hugely interesting, and fruitful, and rewarding – and curiosity can get you a long way in overcoming their difficulties!

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The growing recognition that the mind cannot be understood by looking at the brain alone: that being minded crucially depends on being bodily creatures in a (social) environment.

Q *What do your family and friends think you do?*

A My grandmother is a bit worried that I am *still* studying. Some friends assume I spend my days staring at the ceiling and thinking, but most friends and relatives correctly assume that I spend a large amount of time at a computer.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Move! Preferably in the vicinity of trees or hip hop music.

Q *What is your biggest hope for the future of science/research?*

A That content, quality and curiosity-driven research will matter most.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A We might need another ten years to unravel all the mysteries of the mind and brain.

Q *Is there anything we forgot to ask? Is there a question you always wanted to answer but were never asked?*

A Yes.

Professor HELLMUTH OBRIG

is a faculty member working at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.

BERLIN

Berlin is the new Leipzig! _____
_____ Curry – worst

INTERDISCIPLINARITY

I am sure there is huge potential in exploring the interface between agronomics and neuroscience! _____
_____ Less is more

MIND

MINDestens until we get to the BRAIN _____
_____ ... the GAP (Circle Line London).

INTERNATIONALITY

There is no place less exciting than home _____
_____ There is no place like home

RESEARCH COMMUNITY

There are some really nice rats ... _____
_____ Rat race par excellence

CAREER

When I grew up, 'Karriere' was only for the famous. _____
_____ Now it's open to everyone. Yippee!

CONFERENCE TRAVEL

How would you have got to Dundee otherwise? _____
_____ Why would you go to Dundee in the first place ...?



HELLMUTH OBRIG

YELYZAVETA KRAMARENKO

is a Master's student and member of cohort 2015.

Q *What got you interested in studying the mind and brain?*

A After reading Oliver Sacks's "The Man who Mistook his Wife for a Hat" I knew I wanted to find out as much as I could about the brain. I was instantly fascinated by its mysteries and it looks like it will be a lifelong passion.

Q *What questions are you trying to answer in your work?*

A As a master student I am not yet bound to a specific project or research area. But I can tell you about a project I worked on in my gap year that is my favorite to date. We used animal models of ocd to see whether the optogenetical manipulation of a specific pathway in their brains would stop their symptoms (with the hope of one day translating this research into human practice).

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A I feel like the barriers between these two fields are both in our

heads and in the methodology. It is still difficult for some scientists to accept philosophy as a discipline worth spending time on and working with. Some people are reluctant to abandon their primary research focus. It is also sometimes hard for experts to present their knowledge in a way that is understandable for people coming from other fields, in order to create a common knowledge base.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The development of optogenetics.

Q *What do your family and friends think you do?*

A My boyfriend likes to think I am learning how to perform mind control with lasers. My mom knows I'm doing "brain stuff".

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Writing about it. I have a blog in which I talk about neuroscience

in a simple way. Also hiking, a lot of hiking, sports, singing karaoke, and reading.

Q *What is your biggest hope for the future of science/research?*

A I am mostly interested in clinical research so I hope we will be able to decipher all the heterogeneous factors contributing to diseases like depression and find how to deal with them (and ultimately find a cure).

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A If I took 1000 years then the list would never stop – I can't choose between Darwin, Newton and Curie. For the last 100 years I'd go with Rosalind Franklin and

DNA or with the growing knowledge that the universe is made of stuff we cannot even begin to imagine.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A It's almost as old as Berghain. Also, congratulations!



YELYZAVETA KRAMARENKO

LUCIA REUTER

is a doctoral candidate and member of cohort 2015.

As a lawyer, to be interested in the brain is a rare thing. Most lawyers care about mergers and acquisitions, antitrust law, damages, white-collar or corporate crime, procedural law, administrative law, human rights, and so on, just to name a few – in short, purely legal disciplines. The law, generally speaking, is a closed universe built on a long tradition of arguments, reasoning and logic, that continue to be elaborated and refined. Other disciplines, like philosophy, sociology or natural sciences, are present, but play a marginal role in the legal world.

I discovered *m & b* after I had come back from Paris, where I studied European Union and International Law, and had decided that those “pure” disciplines of the legal profession weren’t for me. I originally decided to go to law school due to my fascination with logical thinking as well as culture, history and how they shaped a complex system of legal regula-

tions to organize humans living together. Ultimately, new policies are the result of human sociality, which lit my interest for neuroscience. I remember surfing on the website of the Berlin School of Mind and Brain for the first time and thinking “this is the right place for me”. And, luckily enough, I found people who shared my broad interests and enthusiasm for interdisciplinarity, and who encouraged and helped me to set foot in the thriving world of the mind and the brain.

After one year of doctoral studies at *m & b*, I am still convinced that interdisciplinary research is the most seminal and promising academic work; but it is also the most challenging one. Different disciplines speak different “languages”, work with different methods and at different paces. And as a doctoral student who just started the journey in the scientific community it is not always easy to communicate with all of them. For me, in particular, it was difficult to evaluate how

much of the scientific underpinnings, i.e. neuroscience, medicine, psychology, statistics and computational science, I needed to understand in order to develop a good legal argument. But it is also the excitement of constant new input from all the different disciplines that spurred me not to give in to the feeling of being overwhelmed, but to accept the challenge and to learn novel things and to grow professionally and personally.

Not so long ago, I sat on the grass behind the the school with two friends, a philosopher and a social neuroscientist, and we studied for our exam in “Language and the Brain”, a topic that none of us had studied before, and one that none of us particularly needed for her thesis. But sitting there

and explaining to each other how phonemes are processed in the brain made it an afternoon I won't forget – both knowledge- and friendship-wise.

I hope that M & B stays this intellectually inspiring and connecting place and that the M & B community continues to be a melting pot for creative ideas and innovative science!



LUCIA REUTER

MICHAEL GOLDBERG

is a doctoral candidate and member of cohort 2014.

Q *What got you interested in studying the mind and brain?*

A Originally, I wanted to study astronomy and philosophy. The philosophy part went fine, but the mathematics in the physics studies was just too dull and I couldn't handle the amount of formulas. So I turned to study the brain instead of the universe. I think it's the same, but on the micro scale.

Q *What questions are you trying to answer in your work?*

A How does time perception shape our sense of agency? What are the neurocognitive mechanisms that underlie our seamless feeling of control and causality? What implications does it have on the interactions with other human beings or with computers/machines?

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Consciousness and its derivations! I think it's a mystery that

could only be truly understood once we have the means to be in another person's shoes, both mentally and physically. Then we could know through direct personal experience what is it like to be someone/something else.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A It's a pretty young area that has only existed for around fifteen years, so I would say that maybe



MICHAEL GOLDBERG

the realization that the sense of agency could be studied empirically and not only within the theoretical realm of philosophy is in itself a big step.

Q *What do your family and friends think you do?*

A Something with recording brain activity, something with clocks, something with data, numbers and theories.

Q *What is your biggest hope for the future of science/research?*

A That it will bring world peace. Or at least that it will enhance happiness and reduce suffering for human beings, animals and nature.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A Hmm, that's hard to say. I guess quantum mechanics? The idea that physical matter follows laws of superposition and probability is fascinating and so hard to fully grasp.

LAURA SCHLINGIOFF
is a Master's student and
member of cohort 2013.

I wrote my philosophy bachelor thesis about Dennett's work on the self, and realized that trying to find the neural basis of things we take for granted in everyday life ("self", "memory", "consciousness") is an extremely messy business, but also an interesting one. That is why I was happy to see the new Mind and Brain Master's program announced in 2013. I remember finding out that I had been accepted while I was somewhere in the jungle in Nepal – when I saw the course descriptions, I couldn't wait to go back and start the program.

Initially, my mom told all my relatives that I was studying neurology. (Wishful thinking?) Every time I tell people the name of my program, it is met with a lot of raised eyebrows, and they start talking about their drug experiences, or ask whether we have a free will. It definitely is a great conversation starter at parties: "So mind ...? AND brain?"

I'm very happy and grateful that I got to study at M & B – I learned so much, met wonderful people, had great experiences and a lot of fun. This despite (or because of?) some desperate nights spent with my “brain coloring book”, trying to memorize the basal ganglia for a neuroanatomy exam ... not an easy task for someone with a philosophy degree.

I'm especially happy about having had some really great teachers, and about having discovered an area of research which has really gripped me, and which I will now get to pursue in a doctorate at the CEU in Budapest. My master thesis work was on the evolution of norms, and why they are probably uniquely human. Generally, I am interested in how the entanglement of biology and culture, mind and (social) environment shapes who we are and how we think. This requires integrating fields like evolutionary biology, anthropology and comparative / developmental psychology. In my doctorate, I will do empirical research on young children's social cognition.

What will definitely stick with me from these years of being a part of M & B is how close-knit and connected this school is. One of my favorite moments was a M & B end of semester picnic on the lawn outside the Humboldt Graduate School building. There was such a great atmosphere in the air, and so many interesting conversations taking place at the same time.

Congratulations on your tenth anniversary, M & B! I hope the next ten years will be just as good. Maybe by then someone will finally have solved the hard problem ...?



LAURA SCHLINGLOFF

Professor FELIX BERMPOHL is a faculty member and head of the research group **Affective Disorders (Depression and Mania)** at the **Charité – Universitätsmedizin Berlin.**

BERLIN

Tolerance, multiculturalism _____
 _____ Virulent social
 problems, violence

INTERDISCIPLINARITY

Open-minded,
 smart M & B students _____
 _____ Hard to teach

MIND

One of the most fascinating
 topics in philosophy _____
 _____ Can be lost

COOPERATION

Fun, opportunity to learn _____
 _____ Time-consuming
 meetings

TIME

Development, progress _____
 _____ Vanitas

CAREER

Research opportunities _____
 _____ Bureaucracy

CONFERENCE TRAVEL

Time for research _____
 _____ Away from my girls,
 accumulating work
 in my office

BRAIN

The most fascinating
 human organ _____
 _____ Prone to illness



FELIX BERMPOHL





HUMAN SOCIALITY
AND THE BRAIN

Silent Interview

Professor ISABEL DZIOBEK

is a faculty member and professor for social cognition (since 2014) at the Berlin School of Mind and Brain and the Institute of Psychology, Humboldt-Universität zu Berlin.

What is your field of research?



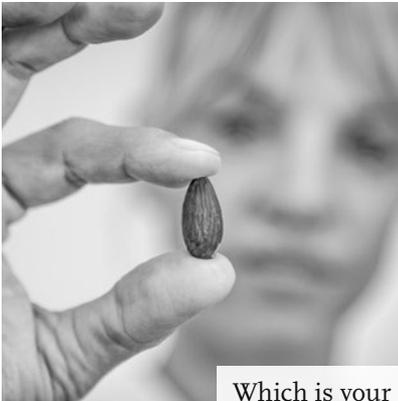
Interdisciplinarity –
a comment, please!



What characterizes a good scientist?



What do you like most about your work?

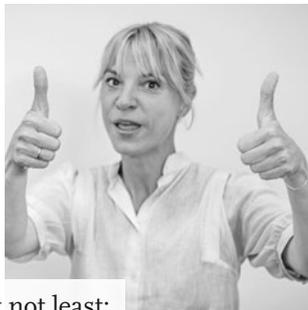


Which is your favorite brain region?

What do you like about Berlin/What is typical of Berlin?



10 years Berlin School of Mind and Brain ...



Last but not least:
Mind or brain?

KATHARINA BERGUNDE

is a master's student and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A When I finished high school, I originally wanted to enroll in Psychology, but shied away from the heavy load of statistics in the first semesters and went for literature and philosophy instead. Keeping up my interest during my BA studies, it seemed like an incredibly lucky coincidence to hear about the soon-to-be-established master program Mind and Brain just when it became time for me to apply.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A The challenges in the interdisciplinary study of mind and brain are two-fold: differentiating priorities as well as the tendency to be too specialized. People from sciences and humanities tend to show quite different approaches to their work and place their focus on different parts of it. While that might be positive for the result, it makes the process incredibly

difficult. The same goes for specialization – mind and brain studies are a huge and very new field that is very interconnected. Openness and wide ranges of knowledge in the field are important for its growth as a whole.

Q *What do your friends and family think you do?*

A My parents and friends are quite well informed about what I do, while my grandparents have never noticed me shifting the topic towards neuroscience. The words 'psychology' and 'philosophy' sound very similar and I have never successfully explained to them what philosophy is, so they ended up assuming it was psychology. Beyond my (in this case) poor explanatory skills, I find it amusing that this ends up supporting monism, which I have come to believe in.

Q *What is your biggest hope for the future of science/research?*

A My biggest hope for the future of science and research is inter-

disciplinarity, meaning a deeper intertwinement and entanglement of all sciences and humanities, like a network of disciplines complementing each other. Scientists of the world, unite! To say it with Marx and Engels.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A 'Ever' is a hard question – but one discovery in science that I am particularly fond of is the finding that for quite a few mental conditions like PTSD, it is not genetics alone that determine an outbreak, but a combination of genetics and environmental stimuli. Likewise the influence of lifestyle or fear conditioning in mice on the genetic setup of their offspring.



KATHARINA BERGUNDE

Philosophically speaking, it might give us hope to make a change by living a good life and it also states what that would mean.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A Thank you. Thank you for making this great step into interdisciplinarity happen and letting me be part of it.

Q *Is there anything we forgot to ask? Is there a question you always wanted to answer but were never asked?*

A I am lucky enough to be surrounded by curious people who ask all the questions I want to be asked, so thank you, but no :).

Professor MARTIN FISCHER

is a faculty member and professor of cognitive sciences at the Department of Psychology, University of Potsdam.

I think that M & B is an excellent training opportunity for tomorrow's cognitive scientists. This is a result of a great concept (pairing dual expertise in the supervision) and the involvement of a large group of external experts. Over the years I have continuously been impressed with the high quality of students and the prestigious international visitors' program of the school. These features have also enriched the work of the Potsdam Embodied Cognition Group and have in turn led to many interesting interactions, internships and even co-taught Master classes. Congratulations on this anniversary and many happy returns!



MARTIN FISCHER

Dr ANNE WEIGAND

is a postdoctoral researcher at the Berlin School of Mind and Brain and the Institute of Psychology, Humboldt-Universität zu Berlin.

BERLIN

Cool _____
_____ Too cool

INTERDISCIPLINARITY

One world _____
_____ Different languages

INTERNATIONALITY

Cultural exchange _____
_____ Misunderstandings

RESEARCH COMMUNITY

Motivating _____
_____ Coordinating efforts

COOPERATION

Increases knowledge
capacity _____
_____ Slows things

TIME

A precious resource _____
_____ A stress generator

CAREER

A personal
challenge _____
_____ Not the only
thing in life

CONFERENCE TRAVEL

Travel _____
_____ Conference



ANNE WEIGAND

JING JIANG

is a doctoral candidate and member of cohort 2013.

Q *What got you interested in studying the mind and brain?*

A Six years ago, when I was choosing a field of research for my master's studies, I found that none of the research fields except cognitive neuroscience was interdisciplinary. Six years of master and doctoral studies has demonstrated that this research field really is interdisciplinary, because you have to learn everything, i.e. computational programming (e.g. writing scripts to run experiments and analyze data), interpersonal communication (e.g. how to effectively invite participants to take part in an experiment), marketing science (e.g. reporting your research by means of paper, poster, talk; appealing to your clients, oh no, your audiences and readers).

Q *What questions are you trying to answer in your work?*

A How our brain works during eye contact in face-to-face verbal communication, e.g.

1) The brain network involved in eye contact when listening to another person talking;

2) How information is transmitted dynamically in the brain network during eye contact;

3) Whether the brain network involved in eye contact can predict autistic traits in both clinical and typical populations.

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A 1) More funding is required to support this field;

2) More cooperation is required to develop alongside other disciplines;

3) Having to learn knowledge from different disciplines.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A Studies are conducted in a more natural environment, so participants have an easier life than before. In addition, the

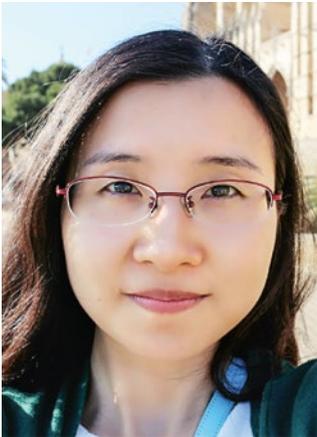
findings are much closer and better reveal what human beings really do in natural daily activities.

Q *What do your family and friends think you do?*

A 1) Dissecting the brain;
2) Looking into what others are thinking about in their brain.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Looking into what others are thinking about in their brain :p
No, I do not have any free time (crying).



JING JIANG

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever...)?*

A The biggest surprise or most interesting discovery would be the detection of gravitational waves this year. This is a big discovery of the century since it was proposed by Albert Einstein in 1916. It can help us to understand the origin of the universe. Additionally, if people understand it better, it could also make a great contribution to improving people's daily life, just as electromagnetic radiation is doing for us.

Q *Ten years of the Berlin School of Mind and Brain – what's the first thing that comes to mind?*

A He/she is very young, in the transition stage between childhood and adolescence. He/she will gain more knowledge from different disciplines and has a very promising future.

PROFESSOR TANIA SINGER

is a faculty member and director of the Social Neuroscience Department, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.

Q *What got you interested in studying the mind and brain?*

A Ever since I was young I have been passionate about the psychology of humans and was also exposed to a neuroscientist during my childhood: my father. After exploring the human mind through artistic approaches in theater and opera I decided to study psychology and then the social and contemplative neurosciences and thus have always been bridging mind and brain.

Q *What questions are you trying to answer in your work?*

A Within the field of social neuroscience we are trying to answer how humans are able to understand each other. I am especially interested in understanding the psychological and neuroscientific underpinnings of empathy, compassion, and cognitive perspective-taking and their plasticity. How do we understand other people's

emotions, beliefs, and intentions and how does the training of social emotions and skills influence prosocial behavior and cooperation?

Q *What challenges do you see in the interdisciplinary study of the mind and the brain?*

A Really closing the gap between the different disciplines in a meaningful way. A skillful integration of first-person and third-person perspectives and approaches is still a particular challenge.

Q *What, in your opinion, has been the biggest development in the last ten years in your area of research?*

A The first evidence and understanding of the plasticity and malleability of the social brain. The emerging cooperation with other disciplines, such as economics, and the translation of scientific findings into societally relevant and helpful strategies such as the development of scientifically

based mental training programs in healthcare, educational and political systems.

Q *What do your parents/friends/children think you are doing?*

A Some think I am meditating the entire day, while others think I am a brain surgeon. Others think I am a commercial traveler who is always on the road or a psychoanalyst studying their minds. Sometimes people even think that I am a real economist.

Q *What do you like to do in your free time, when not studying the mind and the brain?*

A Having new experiences of all sorts: new countries, cultures, cultural events; exploring the malleability of consciousness; nature, music, and food.



TANIA SINGER

Q *What is your biggest hope for the future of science/research?*

A I hope that people will step down from their “ivory towers” and “scientific silos” and help to solve the problems of global society in an interdisciplinary and engaged manner ... and have fun while doing it.

Q *What, in your opinion, has been the biggest surprise or most interesting discovery in science (of the last 100 years, last 1000 years, ever ...)?*

A Brain plasticity and epigenetics.

Q *Ten years of the Berlin School of Mind and Brain – what’s the first thing that comes to mind?*

A May it last for another 100 years!!!

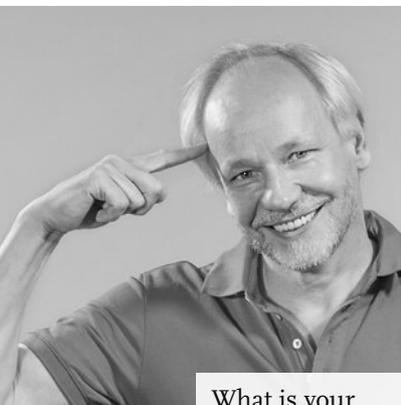
Q *Is there anything we forgot to ask? Is there a question you always wanted to answer but were never asked?*

A ... why are you asking all these questions :-)?

Silent Interview

Professor HENRIK WALTER

is a faculty member and professor of psychiatry, psychiatric neuroscience and neurophilosophy, Charité – Universitätsmedizin Berlin.



What is your
field of research?



Interdisciplinarity –
a comment, please!



What characterizes
a good scientist?

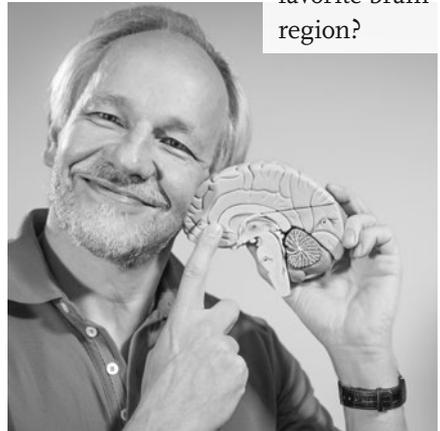


What do you like most about your work?



What do you like about Berlin/What is typical of Berlin?

Which is your favorite brain region?



10 years Berlin School of Mind and Brain ...



Last but not least:
Mind or brain?

IRENE TRILLA

is a doctoral candidate and member of cohort 2015.

BERLIN

The place to be if you don't want
to get bored. _____

_____ There is no way
around the Bürgeramt.

INTERDISCIPLINARITY

It shows you other important
ways to approach the topic
you are studying. _____

_____ Interdisciplinary
communication may
sometimes be difficult.
(And ... you might end
up becoming friends
with philosophers :P)

MIND

It makes everyone unique. _____

_____ It's difficult to access.

INTERNATIONALITY

It makes you aware
of your own cultural
biases. _____

_____ You may start making
the typical mistakes speakers
of other languages make
when speaking English.

TIME

You really appreciate
time when doing
a doctorate. _____

_____ It flies too fast!

BRAIN

It allows us to enjoy
ice cream. _____

_____ Sometimes it freezes
when eating ice cream.



IRENE TRILLA

Contact

If you would like to talk to us about research at the Berlin School of Mind and Brain and our programs, please get in touch!

Humboldt-Universität zu Berlin
Berlin School of Mind and Brain
10099 Berlin, Germany

E-mail mb-admission
@hu-berlin.de
Telephone + 49 30 2093-8105
Fax + 49 30 2093-1802
www.mind-and-brain.de
www.neuroschools-germany.com

FIND US ON
Facebook
Twitter
ResearchGate
Academia.edu



Imprint

V.I.S.D.P.
Annette Winkelmann

CONCEPTUALIZATION
AND REALIZATION
Dr Inken Dose

EDITORS
Dr Inken Dose, Laura Viefhues,
Annette Winkelmann

PROOFREADING
orangesandlemons.de, Dr Inken
Dose, Annette Winkelmann

PICTURE CREDITS
Photo interviews: Laura Viefhues
All other pictures: private or Laura
Viefhues

LAYOUT AND TYPESETTING
Sebastian Lehnert, Leipzig
www.deskism.com

FRONT COVER
Laura Viefhues

PRINTING
FIBO Druck, Neuried

PUBLISHED
October 2016

Finding a job
does not have
to be ~~rocket~~
science...

brain
... even
if your
work is.

academics.com offers jobs in research and higher education. Whether you are looking for a phd programme, a postdoc placement or a professorship - or perhaps considering a career in industry or research companies in Germany - academics has all the answers.

You can also find information on salaries, how to find funding and other topics relevant to your career.

Sign up for free
to receive your
weekly job alert.