

The Brainstorm



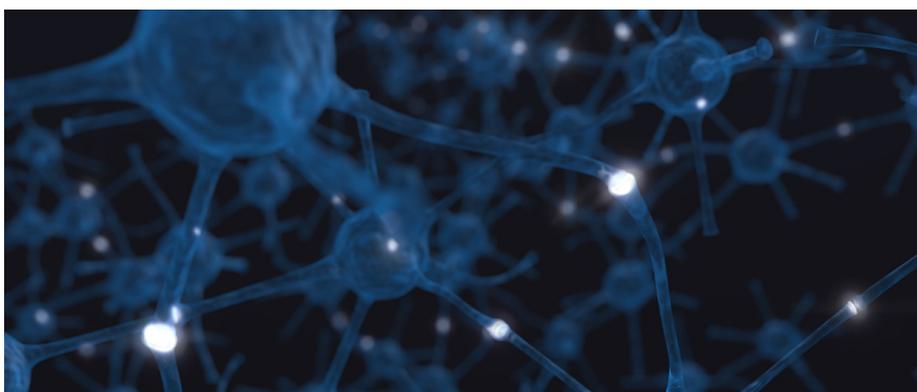
SPECIAL ISSUE
10 YEARS OF NCP

31. MARCH 2014

STORY

10 YEARS OF NCP

CHALLENGES, ACHIEVEMENTS AND THE FUTURE



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In October 2004, NCP “Cognitive Neuroscience” (→ *The Achievements* below). However, before NCP become the very first M.Sc. programs at LMU Munich. 2004 a number of challenges had to be met, the most striking one being: the funding decision by the Elite Network Bavaria (ENB) in May 2004, we designed, implemented, and continually developed a course program that is now firmly placed within contemporary

ences into what we refer to as “Neuro-cognitive Psychology”. While this may sound simple from today’s perspective (with cognitive-neuroscience courses abounding rather than being the exception), initially this goal translated into a series of short- and long-term pursuits, some which are ongoing until today (→ *Future developments*, page 6). **TG & HJM**

EDITORIAL

Dear Reader

The Editors are pleased to present a new issue of *The Brainstorm*, which, in 2014, places particular emphasis on the 10-year anniversary of NCP. Coming from Cognitive Psychology, we are proud to have established a brain-science-oriented psychology M.Sc. program which, in 2004, was the first of its kind in Germany. Implementing this course came along with numerous challenges which we managed to address head-on,

as evidenced by the success of the program (see this and the following pages). The current issue of *The Brainstorm* further includes a number of interviews with NCP Alumni (and new collaborators), in which they share their views about the program from

a more distant perspective. Given the overall very positive opinions expressed, as well as the recent formal academic accreditation of the NCP program, we look forward to, at least, the next 10 years of NCP at LMU Munich!



Thomas Geyer Marian Sauter Dejan Draschkow Hermann J. Müller

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Elite Network
of Bavaria



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IN SHORT

A welcome and a farewell

In October 2013, the 10th NCP cohort started their studies at the brand new NCP floor in Leopoldstr. 44. As in previous years, one half of the students comes from Germany and the other half has an international background. This year, we are proud to have a big variety including students from Armenia, Hong Kong, Greece, Romania and the USA.

The Brainstorm took the opportunity to ask the new students why they chose NCP and what they were expecting from the program. "I chose the NCP program because it strongly emphasizes methodological coursework for research technology", said Joshua Yudice (USA), representative of the most frequently mentioned reason. The program's inherent network character, with its "variety of institutions and researchers from different academic backgrounds involved," was also much appreciated, as for instance pointed out

by Tanja Müller (Germany). Students who came from abroad heard of Germany's international reputation: "Germany simply has some of the best programs I've come across," explained Lavinia Uscatescu (Romania). Having completed their first semester, the new students especially praised the flexibility and intimacy of the program. Although for some "it was challenging to start a new life as a student in Germany", nobody felt left to their own devices. "I have found a rich learning environment," said Gloria Benson (USA). Overall, the students were very pleased with their choice, and we hope that the curriculum of the next semesters will meet their expectations even better.

Welcoming a new cohort means to also say farewell: we say goodbye to our graduates of 2013 (the 9th cohort) and wish them all the best for their future.

MS



The new NCP students. From top left to bottom right: Gloria Benson, Tanja Müller, Johanna Weiske, Benedict Wild, Marion Stopyra, Jasmin Kajopoulos, Natalie Christner, Joshua Yudice, Joe Miller, Lina Willacker, Shalaila Haas, April Moeller. *Missing: Erika Kuenstler, Tsz Fung Siu, Lavinia-Carmen Uscatescu, Mariam Kostandyan, Gordon Dodwell & Zhe Huang*



Most of the NCP alumni of 2013 with state secretary Bernd Sibling at the graduation ceremony of the Elite Network of Bavaria in the Prinzregententheater, Munich. (Photo by Florian Freund)

10 YEARS OF NCP The Challenges

Establishing the NCP program involved a number of challenges, as we had only five months between the final funding decision (in May 2004) and the arrival of our first cohort of students in October 2004 to get the program off the ground.

Although a fixed-term W2 professorship was part of the NCP “endowment” by the ENB, actually making a professorial appointment is a complex process which takes time to conclude. Thus, we had to set up the course without an NCP professor in place. This meant that the then NCP core staff – Peter Bublak, Kathrin Finke, Thomas Geyer, Anna Schubö, and Ignacio Vallines (besides Hermann Müller) – had to take on additional administrative and teaching duties to make NCP happen in the academic year 2004/05.

In September 2005, Professor Werner X. Schneider entered

NCP as the new professor on a fixed-term contract. However, this meant that when a “tenured” – i.e., a permanent and thus more attractive W3 – professorship became available at the University of Bielefeld, Werner Schneider left the program already again in 2008. Since then, the fixed-term position was occupied only temporarily (2008–2009: Kathrin Finke; 2009–2011: Thomas Geyer; 2011–present: Patrick Khader) – the uncertainty regarding the continuation of the program first beyond the initial ENB funding period (2004–2009) and then beyond the end of the ENB funding in 2014 being a major reason for why we were unable to make a more enduring appointment. However, in light of the impending accreditation of the study program, we are now optimistic that NCP will continue beyond September 2014 with the support of the LMU Munich. This will enable us to recruit a top sci-

Accreditation of NCP

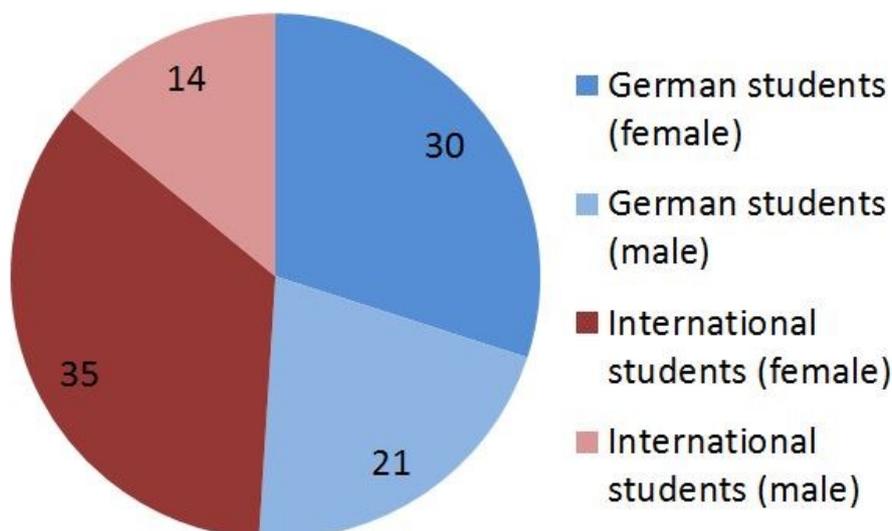
In November last year, NCP underwent the now mandatory academic accreditation procedure, that is, the quality of the program – in terms of course composition, inter- / national recruitment, gender equality, course evaluation, etc. – was assessed by an LMU-external accreditation committee. Although we have not yet received an official statement of accreditation, based on the overall very complimentary comments made in the committee’s draft report, there is no doubt that NCP will soon be granted the status of an accredited M.Sc. program.

entist and academic teacher to the new NCP professorship, which is planned to be created at Department of Psychology by re-denominating the W2 professorship “Experimental Psychology of Cognition”.

Despite the staffing and workload issues, back in 2004, we had to rapidly design the NCP curriculum and establish an appropriate teaching network, offering a research-oriented education in the fundamental methodological and theoretical approaches of neuro-cognitive psychology, with applied extensions in neuropsychology (e.g., advanced, experimentally based diagnostics) and neurocognitive ergonomics.

This required, in 2004, the compilation – and since then the continuous updating / improvement – of the NCP curriculum covering this range of subjects. The current curriculum is two-staged: the first two semesters of the program are intended to provide students (from a variety of academic backgrounds) with a broad, fundamental-knowledge base, with semesters 3 and 4 offering stu-

**NCP students:
Nationality and Gender (%)**



dents opportunities to deepen their knowledge and specialize in particular “focus” areas. To realize this broad curriculum, we had to invite in external colleagues from a variety of disciplines, including (besides biological, developmental, and neuro-psychology) biology, psychiatry, neurology, philosophy, mathematics (neuro-computational modeling), etc., and we had to schedule the courses to suit our external contributors’ availability (most of whom contributed their teaching on a voluntary basis, over and above their contractual teaching obligations). This made it necessary to allow for a degree of freedom, such as delivering some modules as block courses, sometimes scheduled on weekends.

It is worth noting that, right from its inception, NCP was designed as a “network” program, with some 45% of the courses being contributed by external colleagues sympathetic to “neuro-cognitive psychology”. Back in 2004, the challenge was to identify and “engage” top scientists within the “neuro” disciplines enumerated above to cover the curriculum. Taking a look at the composition of NCP teaching network in 2014 (see webpage of NCP: www.psy.lmu.de/ncp), NCP now comprises of an (inter-)national teaching community numbering more than 50 colleagues: approx. 50% of them are based at the LMU (faculties of psychology, biology, and medicine) and the remaining 50% at renowned national and international universities (including TU Munich, faculties of medicine and mechanical engineering; Harvard University, USA; University of Oxford, UK; University College London, UK, etc.). Maintaining and

INTERVIEW

Emil Ratko-Dehnert

THE ALLURE OF MODELING BEHAVIOR



Emil graduated from the LMU with a degree in Mathematics and then completed his PhD studies supervised by PD Dr. Michael Zehetleitner. He is currently a Post-Doc research scientist at the LMU Chair of Experimental Psychology.

Emil, you successfully defended your dissertation last summer – congratulations! Can you tell us shortly what you investigated in your thesis?

My thesis had two foci: One test theoretical part, where I performed a large scale Monte Carlo Simulation to investigate the statistical performance of a classical cognitive architecture test (the Race Model Inequality test) and a modeling part, where I fitted models reflecting different cognitive architectures to empirical data of a bimodal redundant signals paradigm.

You seem to be putting a strong emphasis on modeling behavior. Do you think this is a trend in neuro-cognitive research?

Well, it is definitely hard to speak for a whole scientific discipline, particularly such a cluttered and heterogeneous one as the field of neuroscience. I would however subscribe to the statement that efforts to formalize and numerically capture human and/or brain behavior have significantly increased over the last dec-

ades. This is epitomized by two heavily funded, prestige research projects by the US (Brain Initiative) and the European Union (human brain project), which focus on neuro-informatics and brain simulation.

Which courses do you teach in NCP? Tell us something about them.

Currently I am giving the tutorial for computational neuroscience. There I accompany Heiner’s [N.B.: Prof. Heiner Deubel] part of course G by using a neural network simulator (Simbrain) to give NCP students hands-on experience with setting up neural networks and studying their dynamics and behavior.

Additionally, I teach an applied neuro-cognitive research course. This time, we used stochastic binomial graphs to model accuracy data of visual search experiments. The experimental ideas were devised by the students as well as the modeling and fitting in R.

If you would study again, which field would you choose?

Phew, that is a tough one (the grass is always greener on the other side). Let me phrase it this way: In the pre-Bologna era, I would first study maths again and then psychology. In the current Bologna era I would most probably choose either maths or statistics.

Is there any advice that you would like to offer current NCP students?

The neurosciences still lack an overall theoretical framework and paradigm, so never cease to ask fundamental and critical questions. On a sociological level, try not to get exploited by the “scientific system” and learn to say “no”.

further enhancing this network – for instance, to reflect new developments in cognitive neuroscience – remains an ongoing challenge.

But the most important challenge back in 2004 – and ever since – was the recruitment of a select group of highly motivated and gifted (“elite”) students with a keen interest in cognitive neuroscience. As NCP was designed to be an interdisciplinary course, we also wanted this to be reflected in the composition of our student group, with applicants coming from a wide range of academic backgrounds (besides psychology: cognitive science, philosophy, biology, medicine, etc.). In 2004, between May and the application deadline in August 2004, recruitment was done mainly via personal contacts with national and international colleagues / collaborators and special recruitment events for prospective students in and outside Munich. However, as the years progressed, we increasingly generated international interest by world-

wide advertising, based on our website, but also through the distribution of information materials / posters to international colleagues and institutions, in addition to presenting the program on academic internet sides, such as that of the German Academic Exchange Service (www.daad.de) and career portals, such as [e-fellows.net](http://www.e-fellows.net) (www.e-fellows.net). Currently, some 200 prospective students apply each year, which compares with 45 applicants in 2004. From amongst these 200 applicants, we select around 20 using a rigorous, three-stage selection process (see www.psy.lmu.de/ncp). Of course, the selection procedure itself needed to be developed in 2004 and since then continuously improved in light of experience.

As an integral part of our teaching delivery, we had to set up, right from the start of NCP, an advanced course evaluation scheme. One part of this scheme consists of the standardized, quantitative and qualitative, assessment by the students of all

lectures, tutorials, seminars, debating clubs, methodology courses, and lab-based work modules at the end of each semester; the second part is the discussion of the evaluation results in “feedback” meetings at the start of each term, at which the students and lecturers meet face-to-face. Students’ constructive feedback over the years has been invaluable for us to identify the strengths and weaknesses of the curriculum, and implement changes accordingly. Finally, given that NCP was the first program of its kind at the LMU Munich, implementing it required mild “revolutions” of LMU procedures, such as the development of new (M.Sc.) study and examination guidelines, a new, internet-based system for course and grading management (i.e., HISLSF), in addition to the development of new academic documents, such as transcripts of records. NCP was a catalyst in moving these developments forward.



10 YEARS OF NCP

The Achievements

Thus, in 2014, NCP is an internationally recognized M.Sc. program that is interdisciplinary in scope and based on a proven, two-stage curriculum, with the first stage transmitting basic-science knowledge and the second stage allowing for optional specializations, with one focus in a basic-science area and one in an applied field. The program is inherently research-oriented: it is intended to equip students with the conceptual knowledge and methodological skills for a career

among these functions. Importantly, these functions are approached not simply from a psychological, but from an integrative neuroscientific perspective. That is, in NCP, cognitive functions are inherently considered with reference to their implementation in the brain and how this can be revealed by advanced neuroscientific techniques. Thus, with regard to the latter, in addition to courses on “behavioral” techniques such as psychophysics and mental chro-

the program also includes – and has done so right from its inception – modules concerned with philosophical issues, enabling students to address, for instance, ethical questions arising from experimental neuroscience and / or the application of new neuroscientific methods.

In a similar vein, the NCP curriculum also incorporates relatively novel courses that are intended to foster students’ ability for assessing (“evaluating”) the quality of published cognitive-neuroscience studies, in addition to students becoming able to present and critically discuss original research articles (the relevant course formats being tutorials and scientific debating clubs).

Finally, applying basic-science knowledge acquired in the various courses in hands-on research is afforded by two research projects, each 7 weeks in duration, in the lecture breaks between the first / second and the second / third semester. With reference to research projects, it is also worth noting that in our weekly research seminars, students have the opportunity to meet international guest speakers (who provide an overview of their very latest work) and discuss potential research projects and / or the possibility for Ph.D. work at the speakers’ labs. In this way, NCP also serves one important aspect in science: network-building.

There are a number of indices attesting to how well NCP has



in the basic and applied sciences, whether at academic institutions or in industry (see page 99 of this newsletter for an interview with an NCP alumnus working in the IT sector).

In terms of the syllabus, the program covers central functions across the whole “perception-cognition-action loop”: perception, attention, executive control, learning and memory, and motor control, as well as interactions

in the basic and applied sciences, whether at academic institutions or in industry (see page 99 of this newsletter for an interview with an NCP alumnus working in the IT sector). In terms of the syllabus, the program covers central functions across the whole “perception-cognition-action loop”: perception, attention, executive control, learning and memory, and motor control, as well as interactions among these functions. Importantly, these functions are approached not simply from a psychological, but from an integrative neuroscientific perspective. That is, in NCP, cognitive functions are inherently considered with reference to their implementation in the brain and how this can be revealed by advanced neuroscientific techniques. Thus, with regard to the latter, in addition to courses on “behavioral” techniques such as psychophysics and mental chro-

Besides basic-science courses,

Heisenberg fellowship

Dr. Simone Schütz-Bosbach, who is currently leading the research group “Body and Self” at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig and will be joining the LMU Psychology Department and NCP later on this year, has been awarded a prestigious Heisenberg Fellowship from the DFG. Dr. Schütz-Bosbach’s research interests include self-perception, in particular, how humans represent their own body (and the body of others), how body representation is implemented in the brain, and how sensory and motor information is combined in body representation. (Heisenberg Fellowships are a funding scheme with which DFG supports young, post-doctoral researchers with an excellent scientific record.)

developed well over the last 10 years and to its growing reputation both nationally and internationally. Examples are: **(1)** in 2008, NCP received one out of a total of ten “top ten international graduate programs made in Germany” awards by the German Academic Exchange Service (DAAD); the top ten programs were selected out of some 80 programs from 63 universities across Germany. **(2)** In 2007, the director of the NCP program, Professor Hermann Müller, was awarded an LMU-excellent research professorship acknowledging his scientific achieve-

ments, but also supporting his efforts in establishing the NCP-related research network, including state-of-the-art research laboratories and their “use” in NCP projects. **(3)** Two NCP alumni, PD Dr. Michael Zehetleitner and Dr. Donatas Jonikaitis, were awarded the renowned dissertation prizes of the “Münchener Universitätsgesellschaft” (2012) and, respectively, the General Psychology Section of the German Association for Psychology (“Deutsche Gesellschaft für Psychologie – Fachgruppe Allgemeine Psychologie”; 2013). **(4)** As mentioned above, since the establishment of NCP in 2004, a growing number of prospective students have applied to the program (9 cohorts in the period 2004-2012: n=976 applications, with 67% by female applicants and 65% applicants from abroad; of these, n=166 students were selected, with 65% being female and 49% being international students). Other measures of the success of the research-oriented NCP teaching program are **(5)** that within a year after graduating, each student has published 1.2 articles, on average, in peer-reviewed scientific journals (usually based

on research projects and the MSc thesis), and that **(6)** a large majority of the NCP graduates (83%) continue with their education by embarking on doctoral studies (43% in Munich, i.e., LMU / TU; 22% at other German universities and 18% at interna-

Outline proposal for DFG Research Unit “Active Perception”

In March 2014, a team of researchers centered around the unit of General and Experimental Psychology / Neurocognitive Psychology submitted an outline proposal to the DFG (German Research Foundation), making a case for the establishment of a new, multi-disciplinary research group on “Active perception”, that is, in the main predictive perceptual coding (currently one of the most prominent approaches in the neurosciences). The aim of the group (N=11 proposed projects) is to integrate concepts from the neurosciences and experimental psychology (in addition to integrating the environmental and individual perspectives) and thus contribute to an understanding of predictive coding in relation to a central topic in cognitive psychology: selective attention and search performance.

tional universities). The last point also highlights another prime achievement of NCP: strengthening the links between education at the M.Sc. and Ph.D. levels – which, at the LMU Munich, has now been “institutionalized” within the framework of the LMU-excellent “Graduate School of Systemic Neuroscience” (GSN-LMU). Given this, within the wider network of the neurosciences in the Munich region (“Munich Center for Neuroscience” (MCN)), NCP has come to be seen as a partner program for a host of empirical-science initiatives.



INTERVIEW Markus Goldbach: On starting a business



© Markus Goldbach

He graduated from the NCP program in 2006. Today, **Markus Goldbach** is CEO and owner of PlagScan, a company which compares documents with billion other texts in order to find plagiarism.

Markus, what made you start with NCP?

I originally studied Cognitive Science in Osnabruck, a program with a large interdisciplinary focus. I liked that NCP was not purely Psychology but incorporated a little philosophy and modeling as well. In a research internship in the USA, I worked in a Neuroscience lab. While I liked it at first, I found the biology-based lab work to be a little tedious after some time. So NCP really fit into my interdisciplinary thinking.

In this context, at which time did PlagScan start to be a thing?

As son of entrepreneurs, I always toyed with the idea of starting something of my own. There were many ideas over the years, but I didn't start most of them due to necessary starting investments. The idea of a plagiarism checker was in my mind since 2007. We started to develop the idea and were able to release PlagScan commercially in 2009. When the zu Guttenberg plagiarism affair generated an enormous interest in the German public in early 2011, the interest in PlagScan grew big enough for me to live off it. That means that while I already had the idea in mind during NCP, I did not really start it until several years later. In fact, at that time, I was doing my PhD which I paused to work on PlagScan full-time.

How is it working out today?

It is great to have achieved something myself and make my own money. I am not rich but I cannot complain about business and we are growing. Currently, we are a small team of eight people of which two are employed full-time. We also have several student employees who are responsi-

ble for web design or public relations.

What exactly is PlagScan? How does it work?

It is a plagiarism checker for businesses, universities and private persons. It works dead simple. You upload your document and after a short time you get a report. That is firstly a percentage how much of your text is contained in other texts. An alarming number would be 10%, for example. Additionally, you get a list outlining all overlapping excerpts. If you like, you can also review these excerpts marked in your document as well.

“If you combine the softskills acquired when studying NCP with a basic technical understanding, you can act as a communicator between different disciplines in a corporation quite well.”

What did you take from NCP for your current job?

To be honest, had I known that I would end up with my current job, I would have taken a different master. Nevertheless, I learned some usability design during NCP, which obviously also helps at PlagScan. Besides, presenting, scientific reasoning and basics of statistics are always important.

What was your reason to leave academia?

On the one hand, I have a content-related problem with psychology. I dislike to see how modeling of cognitive processes, something I find quite important, to get more and more into the background. On the other hand, I didn't expect that academia involves this much marketing. I don't like selling myself. Everyone should pay what the product is worth. Unfortunately, in academia it is often not paid what the research is worth but rather how the people are perceived.

Despite these reasons, is there a possibility for you to get back into academia?

I can picture myself as a teacher or professor at a University of Applied Sciences. But it is unlikely that I'll do fundamental research again, only as a funder perhaps. Don't get me wrong, I generally like research and I would organize or lead a team, only the research itself should be done by someone else.

How do you see the students' chances, not to go into research after graduating from NCP? What else is there on the job market?

I think it is perfectly possible not to go into academia after NCP. I am not sure whether it is easier than with other programs, but one is not strictly bound to academia. If you combine the softskills acquired when studying NCP with a basic technical understanding, you can act as a communicator between different disciplines in a corporation quite well. The keyword *neuro* sells exceptionally well, too. People will instantly get impressed if you tell them you studied *brain sciences*. If you truly want to do something, a lot of jobs are possible. Otherwise, there is always human resources, of course.

What would your personal conclusion be?

I am very pleased to have decided against science and for PlagScan. In science, there is a lot of talking, but I am a doer, so I am better off now. Speech is silver, silence perhaps golden, but doing is platinum.

New view on time perception

Z. Shi et al. recently suggested a new account of contextual calibration in time perception, based on Bayesian inference (Shi et al., 2013, TICS, 17: 556-564). Under ordinary circumstances, subjective time, often not veridical, is 'calibrated' by various forms of temporal contexts. The core idea of Bayesian inference is that subjective time is based on weighted integration of actual sensory timing and prior knowledge of the related event, scaled by the precision of the respective timing signals.

New professorship

Paul Sauseng will take up the W2 professorship in "Biological Psychology" at the LMU Department of Psychology in October this year and thus strengthen neurocognitive psychology at the department. He is an expert in the electrophysiology of visual perception, including working memory, with a particular interest in the analysis of oscillatory brain activity and cross-frequency coupling of neural networks.

EU Project „INDIREA“

H. Müller, K. Finke and colleagues were awarded funding (2 + 1 doctoral positions) within an EU Marie Curie International Training Network (ITN) project named "INDIREA": "Individualised Diagnostics and Rehabilitation of Attentional Disorders". As the name indicates, this project ITN is dedicated to basic and translational research on attentional dys-/functions in neuropsychological patients. The projects lead university is Oxford (UK); further cooperating partners, besides LMU Munich, are the Universities of Barcelona (Spain), Copenhagen (Denmark) Magdeburg, and Trinity College Dublin (UK), as well as Brain Products Ltd. (Munich).

INTERVIEW

KILIAN SEMMELMANN



After finishing his Bachelor in Cognitive Science at the University of Osnabrück, Kilian joined NCP. He gathered international experience in renowned Harvard and MIT labs and has recently started his PhD.

Kilian, could you tell us something about your current tasks and projects in your PhD?

My PhD project is titled "Is the Internet suitable for psychological research?" and will be about the question whether we could use the web as a research method to complement – or substitute – classical in-lab testing. We will be using a systematic investigation through five experiments to consider technical (classical vs. web) and environmental (in-lab vs. online) differences. Right now, it is a lot of programming, literature research and orientation, through the sparse information in this field.

What are the problems when creating such an online platform?

It is a huge combination of problems. First, there is nearly no basis on trying to obtain behavioral performance (aside from questionnaires) through the Internet. That means a lot

of improvising, tinkering and validation. Second, there are many unknown variables. Having participants in your lab, under your observation, is a big difference to them being at home in front of their computer and doing the same task. And third, we are about to find out, whether web-technology is accurate enough to record reaction times to such a high sensitivity that is needed in science.

"A healthy work-life balance is more important than wasting yourself for these last 3 points in an exam."

Do you think NCP was helpful for starting your PhD? Are you applying knowledge you have gained during your time here?

It definitely was. Thanks to the broad training in various scientific methods, I felt well prepared for a scientific career. Especially through the research projects and the thesis I was able to pursue my own interest, learn additional, very relevant skills and concentrate on the applied part of the education. Everything we learned about the scientific process, from asking the right questions, over designing and conducting experiments up to putting the results into a paper has helped me already.

Which things do you miss from NCP? Which not?

While I most certainly don't miss exams and the studying-system that bases on memorization, I miss the whole "being together" part. Having fellow students and colleagues to discuss science or life; hanging out

before or after classes and going for a drink after exams or talks forges people together. Especially students still can and should enjoy this part of their training.

Did you have time to engage in extracurricular activities during your studies?

Time is always an issue, more so if you are participating in a competitive program like NCP. You will always have something on your TODO-list, always some deadline in the back of your head or a course you should study for. But in my opinion, a healthy work-life balance is more important than wasting yourself for these last three points in an exam. Plus: participating in other activities with unknown people will give you input and creativity that can't be found by sitting in university all day long.

Do you have any tips for current NCP students?

First, try to use the opportunities that NCP offers you. Let it be workshops, talks, colloquia, or becoming a student assistant – you are here to learn, so behave like it. Second, pursue your own interests. You have a lot of possibilities through research projects and your thesis to follow the topics that you want to learn more about – invest the time and energy to do so. And third: Get out. Go abroad (or in another city) for your projects, try to go to conferences and meet new people from all backgrounds. All of these combined should allow for an amazing experience at NCP.

10 YEARS OF NCP

Future Developments

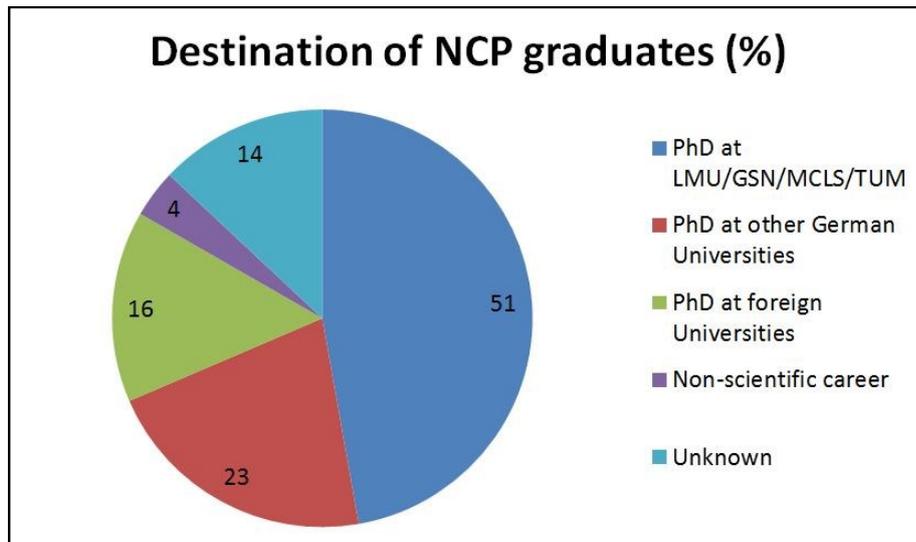
There are a number of points that need our attention in the immediate and nearer future.

The first – and most important – issue concerns the continuation of the NCP program beyond the end of the ENB funding, in September 2014. We are highly optimistic that NCP will pass the M.Sc. accreditation procedure (based on the overall very pleasing comments we received from the accreditation committee). As part of this process, LMU Munich has already confirmed its commitment to funding of NCP beyond 2014. However, the extent of the funding has not been specified yet, and we very much hope that LMU will support NCP in such a way that it can maintain its “elite” status.

New professorship

Steffen Gais has been named as new W3-professor of Behavioral Neurobiology at the Dept. of Psychological Medicine of the University of Tübingen intended to strengthen the universities position at the intersection of biological, medical and psychological topics. Steffen Gais spent several years at the Department of Psychology conducting EEG, fMRI and behavioural studies on learning and memory, in particular on the relationship between sleep and memory consolidation.

Furthermore, we will deepen NCP's links with the “Graduate School of Systemic Neuroscience” (GSN-LMU), first, by introducing an NCP fast-track option (in line with our “M.Sc. in Neuroscience” sister ENB program) and, second, by realizing syner-



gies through greater integration in teaching (e.g., joint course options) and administration (e.g., coordinated application procedures).

Additionally, we will attempt to foster stronger links with the master programs at the Department of Psychology, specifically, the (German-language) “M.Sc. in Clinical Psychology and Cognitive Neuroscience”. This will involve increased exchange between the two programs – for instance, by opening courses offered exclusively in one program to students on the other program as well as by streamlining examination procedures (e.g., PD Dr. T. Geyer is currently head of the examination committees for both the NCP and the Clinical Psychology & Cognitive Neuroscience programs).

We are also considering opening up a number of NCP courses to advanced (3rd-year) students of the Psychology Department's B.Sc. program. In any case, the experiences gained on the NCP program are already informing

our research-oriented teaching at the bachelor level (an aim stated explicitly in the LMU's successful application for the 3rd line of Excellence funding). For example, our re-designed B.Sc.-level courses are intended to equip students with fundamental knowledge and basic research skills (i.e., how to read / evaluate an original research article? how

SHORT FACTS

- In 2008, NCP received a “**Top 10 international graduate programs** made in Germany” awards by the German Academic Exchange Service (DAAD)
- PD Dr. Michael Zehetleitner and Dr. Donatas Jonikaitis, were awarded the renowned **dissertation prizes** of the “Münchener Universitätsgesellschaft” (2012) and, respectively, the General Psychology Section of the German Association for Psychology (“Deutsche Gesellschaft für Psychologie – Fachgruppe Allgemeine Psychologie”; 2013)
- Within a year after graduating each NCP student has **published 1.2 articles** in peer-reviewed scientific journals on average.

INTERVIEW

Saurabh Dhawan: A life of thought

Saurabh, you studied NCP at the LMU Munich (Department of Psychology) and then stayed on for your PhD. What were the reasons behind picking Munich and your particular lab?

After receiving my Bachelor's degree in biology from the University of Delhi, I wanted to move to psychology and was reading a book titled 'Introduction to Psychology', and in the first half of that book just about everything took place in Germany (or the broader German-speaking world). So, when I was picking my next destination, Germany just seemed like a natural choice to do psychology. After NCP, I decided to stay on for my PhD, mostly because of the people I wanted to work with: Heiner [Deubel] and Donatas [Jonikaitis]. And I am extremely happy that I decided to stay.



How do you find the German academic environment?

I find it very stimulating, full of interesting people, with easy access to the required resources, amongst other things. Especially, with the recent efforts at internationalizing German universities, such as international Master's programs, structured graduate

"Being a scientist has very little in common with careers like working in a bank but much more with what we normally consider a calling, like being an artist or a writer."

What should someone hoping to pursue a scientific career have learned when graduating from NCP?

There are two sides to this. First, you must, of course, know enough about the various facets of cognitive psychology, including theory and methods, so you have the mental equipment needed to read and understand new research. But just being technically good and well-read will only take you so far in science. The second and often ignored part is developing a perspective onto the state of cognitive neuroscience in general: what are the most interesting questions, why are they interesting, which of those are novel and unexplored but at the same time approachable issues using the methods available. Don't just dig, dig for gold, and you might just find it!

schools, it has only gotten better and more enriched.

How would you rate career opportunities as a scientist in Germany?

Not very well, I am afraid. The scarcity of job opportunities in German science once you have finished your PhD and postdoctoral research is absolutely staggering, especially given the amount of money Germany spends on research. The career structure in German science needs immediate reform and there's a pressing need to divert some of the available resources away from established hierarchies and towards helping young scientists establish themselves. But there's no sign that things are going to change anytime soon. So my advice would be to get your scientific training here and then leave as soon as possible. It might come as a surprise to you but,

in my estimate, going back to India will afford me better opportunities at becoming an independent scientist than staying in Germany.

Could you tell us something about your chosen field of research?

Relatively little of our behavior results from careful, conscious thought; most of it is heavily influenced by environmental stimuli, habits, innate desires, reflexes, and impulses. At the same time, we have an unparalleled capacity to inhibit behavior that our volition and conscious thought deem inappropriate. Thus, inhibitory processes help us to adaptively control our thought and behavior and create the feeling of choice and freedom. But, as a cognitive process, inhibition is inherently hard to access for a behavioral scientist as, by its very nature, successful inhibition leaves no overt measurable behavior – and for this reason, amongst others, it has remained relatively unexplored. We are developing some new ways to approach this problem using inhibitory control of eye movements as a model.

If you were advising us NCP students at the cusp of deciding for or against a scientific career, what, in your opinion, is the most important thing that one should consider?

I would say, at your stage, one of the important things, surely, is to recognize early on that being a scientist has very little in common with careers like working in a bank, but much more with what we normally consider a 'calling', like being an artist or a writer. The nonexistent job security till you make it big, low salaries, long hours make science a really hard vocation. The only way it's going to appear worth all this trouble is if you get some personal satisfaction in living off your wit, in living a life of thought. So, in trying to decide whether to pursue a scientific career, you have to ask yourself at the very start: do you get that satisfaction and how much is that satisfaction worth to you?

to conduct experimental research? which methods are appropriate to address specific questions?) that they can try out “hands-on” in the NCP laboratories. We will extend these efforts in the future.

Finally, we are currently compiling new “NCP Study and Examination Guidelines”, in order to fully comply with the various new regulations stipulated by the “Kultusminister-konferenz”, the Bavarian State Ministry of Education, Science, and the Arts, and LMU Munich. In this context, we will further strengthen NCP’s research orientation by introducing highly competitive in attracting

novel course formats, such as “scientific workshops” where students prepare, organize, and participate in real scientific meetings on currently debated issues.

Conclusions

Taken together, we can today look back at 10 years of a successful M.Sc. program in the cognitive neurosciences, with special emphasis on the genuine “psychological” approach, that has stood the test of time and has adapted with the times. The program is going strong and remains highly competitive in attracting

applications from top students nationally and internationally – despite the fact that similar course offerings can nowadays be found at many universities in Germany and abroad. This attests to the reputation that the program has acquired, and is no doubt aided by being part of the larger Munich Neuroscience network (MCN, GSN-LMU) which has developed tremendously in the past 10 years. We are pleased and proud to state that NCP is now seen as one of the central academic components of this development.



Elite Network of Bavaria

