Degrees of freedom
IN THIS ISSUE

From the Board Room 3
An interview with Lenny Marapin 4
Book review 8
An interview with Tassos Sarampalis 10
Mindwise, Better together?! – Creativity in a group project 14
BCN master student column 17
Mindwise, Online misunderstandings can also result from excessive clarity 18
Alumnus column 20
BCN Retreat 22
The Art of Science 28
Grand stuff 29
PhD Column 30
PhD and other news 32
New BCN PhD Council Member! 33
News from the BCN PhD Council 34
PhD Column 36
Intro new copy editor 38
Inaugural Lectures 39
BCN thesis defences 40
Cool links in Neuroscience 53
Do you enjoy reading the BCN magazine? 54
Colophon 55
Dear friends,

It’s a late November evening as I’m sitting down to write these words for what will be my first contribution to this column as BCN board member and I’m somewhat startled to look back and realise it’s been more than half a year since I joined this board. We’ve certainly been very busy through this period and, looking back, time seems to have travelled at lightspeed. As I piece together my recollections, they seem fittingly blurry, much in the say way lightspeed is often portrayed in popular media: broad strokes are present, but try to focus on details and they are elusive. So I take this opportunity to reflect on my own experiences and to share with you the progress we’ve been behind the scenes.

Self-reflection is in many ways the theme for the BCN in recent months (years, perhaps.) The BCN Research Masters programme has recently been audited for re-accreditation and, to that end, has engaged in a long process of self-reflection. Under the leadership of its director, Jean-Christophe Billeter (a position held by Robbert Havekes since September), the programme’s teachers, students, and administrators considered its objectives and vision for interdisciplinary research training in the neuroscience fields. Crucially, this became an opportunity for prospective as well as retrospective reflection and the analysis took on a development orientation, focusing on how the programme’s strengths and weaknesses create opportunities for future improvements or threats in several areas. In all of these, the visiting committee evaluated the programme positively and with further recommendations for improvement.

As Robert Schoevers mentioned in the previous column, the Research School itself is currently in the midst of its own reaccreditation process, something that has occupied the lion share of the board’s time in recent months, as we prepare the foundations for the committee’s visit and discussions with various members of the BCN. The word opportunity is the one that has most frequently been on my mind as I grapple with this task. Such exercises, besides their formal reports and outcomes, are most useful as opportunities to re-evaluate priorities, directions, and methods of work; indeed they are opportunities to re-establish and re-imagine an organisation’s very identity and the participations and contributions of its members. Though I have been a member of the BCN community for over a decade now, I realise that in the past few months my own sense of membership evolved more than it had in years previous. As others have said before in the pages of this magazine, the BCN is a very unique community and is difficult to capture on paper. Finding ways to harness its potential, accentuate strengths, create opportunities, plant new seeds, create and strengthen connections... well, these are the tasks that the board is always busy with.

Speaking of seeds, the recent round of interdisciplinary seed grants has also been completed, with three new winning teams that will be formally announced in the Winter meeting after the holiday break. Being in the team of people who evaluated the applications—alongside Gloria Araiza Illan, Merel Keijzer, and Roelof Hut—was yet another opportunity to see how such connections can be initiated and flourish within this vibrant community. I look forward to seeing the outcomes of this new work, hopefully also in the pages of this magazine.

Finally, we are in the thick of creating the programme for next summer’s Nothing But The Truth conference, itself an opportunity to rethink the way we define, understand, and communicate the notion of truth in science, academia, and society. You’ll learn more about the conference programme in the coming months, but I can say with great confidence that you won’t want to miss it, so pencil that in your calendars already: July 6 and 7, 2023!

For now, and on behalf of the entire board, I wish you all a truly beautiful holiday break!

• BY TASSOS SARAMPALIS
• PHOTO BY SANDER MARTENS
The Noorderzon Lectures: An interview with Lenny Marapin

The Noorderzon Flash Lectures was a series of lectures given by junior scientists from the University of Groningen. This event was held from August 18th to the 22nd and was held at the Callisto (formerly known as the Podium op Zuid) at the Noorderplantsoen. Lenny Marapin is a fourth-year M.D./Ph.D. candidate at the Neurology Department of the UMCG. He is part of the Movement Disorders Expertise Centre and works with resting-state functional magnetic resonance imaging to gain insight into the underlying brain networks of hyperkinetic movement disorders to potentially pave the way for improved diagnostic and treatment modalities.
How were you invited to provide this lecture?

I am part of the Marvelous Mind organization, an initiative of the Research School of Behavioural and Cognitive Neurosciences (BCN), the research institute Brain & Cognition (UMCG) and the university of Groningen, inspired by "Brein in Beeld"; Franciska de Beer, who is also part of Marvelous Mind, and myself were approached by Young Academy Groningen to give a talk during this series of lectures. Most of the people who presented at this venue were members of the Young Academy Groningen (YAG). Among the presenters were young professors Marijke Leliveld (Associate Professor in marketing at the Faculty of Economics and Business; member of the YAG since 2019), Léonie de Jonge (Assistant Professor in political science at the Faculty of Arts; member of the YAG since 2021), Laura Cuijpers (Lecturer and researcher in psychology and movement sciences at the Faculty of Behavioral and Social Sciences), Jocelyn Olivier (Associate Professor of behavioral neuroscience at the Faculty of Science and Engineering; member of the YAG since 2018), Jorge Pérez (Associate Professor in software foundations at the Faculty of Science and Engineering;
member of the YAG since 2019), Anastasiia Krushynska (Assistant Professor in acoustics at the Faculty of Science and Engineering), Pratika Dayal (Associate Professor in astronomy and astrophysics at the Faculty of Science and Engineering; YAG Alumni), Billie de Haas (Assistant Professor in demography and geography at the Faculty of Spatial Sciences).

What was the lecture series of Noorderzon?
As you might be aware, Noorderzon is one of the main attractions every summer in Groningen. Besides arts and music, a part of the festival is devoted to scientific communication. They do this with a series of flash lectures that are held on a stage in the festival. The idea behind these flash lectures is to communicate a diverse array of interesting and surprising research topics efficiently and effectively by young scientists based in Groningen. It is intended for people who are interested in science and want to learn more about interesting topics. In 15 minutes, you are fully up to date on interesting research topics. How do hallucinations work? What is the psychology behind good-doing and are we earthlings not just a terrible anomaly in this cosmos?

What was the topic of your presentation?
I gave a talk on why some people experience trembling or shaking. Keeping in mind that we were presenting to a general lay audience, I focused on telling an insightful but especially captivating story. The main gist of my story was that we technically all have a tremor—we often just don’t notice it, and it doesn’t bother us. However, some people are aware of their tremor because their tremor does bother them, and in some cases it can be a significant burden in their lives, such as in essential tremor or Parkinson’s disease. I discussed how several factors can influence the emergence of tremors. I provided the public an overview of both the mechanisms of how tremors emerge and possible pathophysiological and most clinically frequent movement disorders. I also addressed the common misconception that everyone with Parkinson’s disease has a tremor, which isn’t the case. My key message to the public was that not everyone who suffers from tremor has the same underlying cause. Not all who have a tremor, have Parkinson’s disease, and not everyone who is trembling is necessarily nervous. So next time I hope that when they see someone who has a tremor, they do not immediately try to draw their own conclusions on what that person might have.

How was your experience?
I was nervous at first. I am comfortable talking about science to my peers, but it is more difficult to discuss your research with a general audience. I had to rethink how to effectively communicate my ideas to these scientific ideas. It was both exciting and nerve-wracking. Personally, this was an interesting experience as Dutch is not my native language and I intentionally chose to present it in Dutch. I wanted to challenge myself as I want
to work and live here in the Netherlands; additionally, I wanted to experience communicating science in Dutch. And boy did I have a fun time doing so!

**What would be some recommendations that you might have for prospective students that might want to participate in similar events?**

I would tell them to just go for it. For me, it was a quite nice learning experience. As a clinical scientist, personally I felt it was very rewarding to be able to answer some questions from the public. The people there were very engaged, and I really enjoyed the experience. What I would take from this experience is that I should do events like this as much as possible. In this type of public outreach activity, the learning is bidirectional. The public learns about an interesting scientific topic and the presenter learns how to communicate with a broader audience more effectively. And I feel that the latter is a very important responsibility for researchers. For me, the key to these presentations is to be able to think outside the box; keeping in mind that the presentation should be sound, attractive, and relevant to the audience. People want to hear something that makes sense to them; they ask themselves, is this relevant or not for me? As a presenter, I had to always keep this in mind.

Regarding the preparation for my presentation, I practiced in front of colleagues, my girlfriend Valerie, and Franciska de Beer. In this regard, it always helps having some input from others, both from peers in the field as well as outside of it.

**So, after your experience at Noorderzon what is your opinion regarding scientific communication?**

The Noorderzon short lectures series, like the Marvelous Mind movie series, are opportunities to inform the public engagingly about the research that is being performed at the RUG. These projects are opportunities to share with the public what we as scientists find fascinating in a format that allows them to understand what we work on and what we think needs to be improved in society to make our lives better, which I think is the goal behind doing research and treating diseases. It also allows us to inform tax paying citizens what is being done with the money invested in research.

**By Jaime Mondragon**

**Photos by Valerie Timmers**

In this type of public outreach activity, the learning is bidirectional.
The Inglehart-Welzel cultural map of the world [Figure 1] is a scatter plot, based on the World Values and European Values surveys, that tries to show the relationship between the cultural similarities and differences among societies in the world. This political science cultural-relationship map plots the traditional values (e.g., the importance of religion, parent-child ties, deference to authority, absolute standards, and traditional family values) versus secular-rational values (e.g., less emphasis on religion, traditional family values, and authority) in the y-axis and survival values (e.g., economic and physical security, with an ethnocentric outlook and low levels of trust and tolerance) versus self-expression values (e.g., subjective well-being, self-expression, and quality of life) in the x-axis. Although not perfect, this map allows us to visually appreciate and become aware of how similar, but at the same time different we are as a community. Every time I meet a person from a different culture at the RUG, I try to picture this map to adjust my tone and the topics of the conversation. In my personal experience, it is the responsibility of the host to adjust to the sensibilities of the new member of the community to build a constructive cultural bridge.

The one aspect I truly enjoy about BCN is how diverse and international it is. I must confess that I have been in places that are more culturally diverse or cities that embrace diversity more broadly. However, in this corner of the world, I greatly appreciate sharing stories with people from India, Colombia, China, Germany, Serbia, Italy, Turkey, and Brazil to name a few. Furthermore, it is not the cultural diversity that is associated with each BCN member’s nationality but their journey to get here. Each student, researcher, and faculty member in BCN has a unique story, and a history of failures and successes. Granted that some stories are more interesting than others, we all have one. In this book review, I would like to present three books that I have recently read that directly or indirectly discuss journeys in the quest for scientific knowledge.

The first book is The Physician by Noah Gordon. This book narrates the story of an orphan who becomes a barber and later a physician in the 11th century. This wonderfully narrated story describes the journey of a young man through Europe and the middle east to reach the city of Isfahan in Persia. There, this young man becomes the best student of the greatest physician.
to have ever lived, Ibn Sina (Avicenna). The book is divided into seven parts. The first deals with the teenage and young adult age of the main character, Rob, as the assistant of a barber; in this stage, the main character’s intellectual curiosity is nurtured. Part two describes the journey from England to Persia. The third and fourth parts narrate Rob’s time at the Maristan, the Persian medical school. The fifth and sixth parts develop the transformations of other characters from the book and are filled with more adventures. Finally, the seventh part brings the story to an end, making an interesting and valuable critique of western medicine of the time. This story is not just of resilience and wit, but a human story of love and scientific curiosity. This book became one of my favorites and got me hooked into reading the two other books of the Cole family trilogy (i.e., Shaman and Matters of Choice).

The second book that I would like to present here is Becoming Dr. Q: My Journey from Migrant Farm Worker to Brain Surgeon by Dr. Alfredo Quiñones-Hinojosa. This autobiography describes the journey of a neurosurgeon and researcher in developmental and stem cell biology. The story of Dr. Q is also a story of resilience, where Quiñones-Hinojosa describes the life of a farmworker and his journey from community college to UC Berkeley to Harvard Medical School and UCSF medical school. This book is filled with anecdotes and incredible stories that any migrant could relate to. This story was special to me as it reminded me of my upbringing in southern California and my undergraduate studies at Cal. It is a feel-good story of human drive and personal drive to excel.

The third book is What I Talk About When I Talk About Running by Haruki Murakami. Murakami is better known for his novels Norwegian Wood, Kafka on the Shore, and 1Q84. However, this book is about one of Murakami’s passions, long-distance running. This book is divided into nine chapters, that are written in chronological order. Each chapter reflects on different topics of life, writing, and running. He reflects on what it means for him to run, what running provides him, and why we endure this type of punishment in our bodies. Murakami makes the argument that running has helped his writing. After reading this book I gained a better understanding of why I enjoyed running long distances and why I continue to pursue a life in academia.

The one aspect I truly enjoy about BCN is how diverse and international it is.

Each chapter reflects on different topics of life, writing, and running.

I was able to relate to these three books as a medical researcher. I realized that this journey, in science, is about resilience, teamwork, and our capacity to cope with failure. All three books provided insight into the human spirit from a multicultural perspective.

By Jaime Mondragon

Reference Figure 1
https://en.wikipedia.org/wiki/Inglehart%E2%80%93Welzel_cultural_map_of_the_world
A university community built on empathy and dialogue:
An interview with Tassos Sarampalis

Tassos Sarampalis is a lecturer in Experimental Psychology, at the Faculty of Behavioural and Social Sciences of the RUG. He has been affiliated with the RUG since 2009 and a BCN board member since early 2022. A full-time lecturer at the Department of Experimental Psychology, Dr. Sarampalis shares his thoughts and vision on university education and the academic community. Below is the conversation we had about his background, teaching, and his academic values.
Your research career has taken you from the UK to the US, and for the past 13 years, the Netherlands. This is a peculiar route you took to get here. Please tell our readers about your academic background and how this multicultural experience contributed to your personal and professional growth.

I am fortunate in a sense. I have been able to shape the nature of my job at the RUG. In the domain of education, I have seen many changes in my time involved at the RUG. The most obvious and most recent difference is the implementation of the Rewards and Recognition phenomenon (https://recognitionrewards.nl/) that has been promoted on a national level. Within the RUG, I am very cautious of what this will bring, but the idea behind this initiative is to promote a variety of profiles within the typical hierarchy of assistant professors, associate professors, etcetera. Some faculties now have education-oriented tenure tracks. BCN is a research school, hence it focuses primarily on research. Compared to many US institutions, the Dutch system focuses on research. From determining who gets a professor position, to who gets promoted within this system. Furthermore, we have a focus on grant acquisition which is also part of the Dutch hierarchical academic system.

My perspective regarding academic hierarchies is that, once you are a faculty member (researcher or lecturer) your rights and responsibilities should be similar. For example, your ability to promote students should be the same, and your opportunity to be a member of boards and committees should be equal. While full professors are more likely to be in committees, young professors carry most of the teaching burden and do not participate enough in decision-making. This leads to a constant imbalance that is less frequent in the UK and American institutions. I think if we fix this, some of the difficulties for early academics in attaining promotion would be lessened. Furthermore, the balance between teaching and administrative duties can be better distributed among faculty members at different stages of their careers. All in all, your work title should depend on your output and the quality of your work; but as a faculty member, your rights should be the same.

How has your experience in BCN been? As a member of the faculty of BSS, what is your opinion on the of our research institute?

I joined the BCN board just before the summer break. When this position was available, I asked myself what I could contribute to BCN as a board member. The answer to this question is still a work in progress but my personal academic experience and perspective on university education and creating a sense of community could be my contribution. In the past couple of months, I have been involved in organizing the next Nothing but the Truth conference. For the past couple of years, I have been keen on promoting a more nuanced understanding of the academic’s interaction with the notion of truth at the RUG at different levels. Academia in general has poor roots in the philosophy of science and epistemology. Most of us don’t have a clear framework through which we conduct research. I am very interested in this idea of objectivity, with the academic’s relationship with objectivity. There is a tension between what we understand as truths and the medium in which they are discovered; to me, this interaction or tension is very interesting.

A faculty member should be well-rounded in four domains. As a researcher, running a well-organized lab is essential. As an educator, developing a teaching style and engaging students are most important. Public engagement is also very important since we work at a public institution and most research is funded through tax-payers’ money. Furthermore, engagement with other colleagues at your department and in your research-institute is also important; this will develop multidisciplinary collaborations, leading to a cross-pollination of ideas, and creating enthusiasm and a sense of community.

How long have you been a lecturer and why did you choose this career path in academia? What advice would you give master’s and Ph.D. students that might be interested in teaching or a combination of research and teaching?

I chose this career path because I need to interact with people. I need to know these people as human beings, as individuals rather than as a means to an end. As an educator, I am not very interested that the student in front of me is learning a set of facts, but rather personally assess my students based on their input; this gives the student a lot of freedom, but also requires them to understand and reflect on their academic strengths and weaknesses. As an educator, my job is to accentuate the strengths and work on the weaknesses of each individual. At a university, we are all involved with knowledge. With the production, development, understanding, and explanation of knowledge. I am more interested in understanding knowledge. While discovering knowledge is fascinating, for me, it is more engaging when it comes to understanding topics and helping people who
are discovering things to understand them. From my second year as a bachelor’s student, I have been involved with teaching, only during my five years as a postdoc at Los Angeles and UC Berkeley I was not involved with teaching, and I missed it.

I have been a lecturer (docent, in Dutch) in Groningen for 13 years now, which is a position that does not fall into the traditional and hierarchical structure of Dutch academia. It is an unusual position to belong to as a board member of BCN because as you might be aware, research is at the heart of academia at the RUG. Both administrative duties, such as being on committees, and teaching are sometimes seen as obstacles in academia, which is a contrast to my previous experiences in academia in the UK and the US. I have a contrasting perspective on teaching; I would like to think that my enthusiasm for teaching brings a balance. My primary task at the university is to teach, develop education, to talk about and promote education. Regarding the advice to young students and junior researchers, I hope my profile can help them see that a different type of academic profile can exist, can be recognized, and be considered valuable, as well as a viable possibility to stay in academia.

Could you please tell us about your podcast "Degrees of Freedom"?
The primary goal of the podcast is to connect people who have an interest in education. But first, let me start with a previous, but still ongoing project at the Psychology Department. Nine years ago, I co-founded Mindwise, which is the public engagement platform (i.e., a blog, website, and podcasts for science communication and outreach) of the Psychology Department at the RUG, with the vision to build a community based on our common values, our vision of what academia should be, and our personal stories. The aim was to create a platform for public debate, social media interaction, development of artwork in the form of posters that create a sense of connectedness, as well as inform. Another project I was involved with is the Mindwise Debates, available at Studium Generale Groningen https://sggroningen.nl/lezing-serie/mindwise-debate (with an upcoming debate on psychedelics). The discussion of ideas in the form of debate is at the core of academia. Debating ideas promotes critical thinking and we need to build the structures to allow for public discussion of ideas in an academic setting.

Two years ago, I stepped down as the editor-in-chief of Mindwise. I took this step to start an outreach project in the realm of education in the BSS Faculty. My current vision is to build a Teaching and Learning Commons (TLC) to build teaching excellence, student academic support, and competency development; like what is being done in many US and UK institutions. Degrees of Freedom is a podcast that is part of this overall aim and has the purpose to empower both teachers and students to develop an understanding of what their job and tasks are, inspire them to take different directions to attain their goals, and provide them with ideas to allow them to be more fulfilled in attaining those tasks. The podcast is always co-hosted by a student and teacher (currently, Amy O’Connell and myself); similarly, the guests are typically also both students and teachers, giving us the chance to bridge gaps and open up discussions from multiple perspectives. In these discussions, we try to discuss pedagogical matters, not technical matters, but more teaching philosophies. This podcast has been around for nine months with around 12 or 13 episodes. From the feedback I have received, this podcast has made people feel more connected, more inspired, and more welcomed in our learning and teaching community. Personally, this podcast has allowed me to meet very interesting people, while understanding my colleagues and students better; in consequence, making me grow tremendously.

Our first podcast was in line with the idea of what is the point of university education; trying to answer the questions “What are we doing here?” and “What is the point of University education?”. We need to discuss these profound and sensitive topics. This dialogue allows us, as a university community to dissipate the tension that not having this conversation creates. I wanted to have this explicit discussion, taking into consideration that our university community has great diversity in background, education, and expectations. I wanted to discuss the goals of the university as an institution, to further understand what a university education is. Are we creating engaged citizens or are we trying to fulfill people’s academic potential? These are open-ended questions, that I don’t have the answer for, but as a community, we ought to have a platform where these discussions can take place. Our next podcast will be about a lecture, where we will try to
discuss questions such as, what does it mean for a lecturer to stand in front of students? What does it mean for a student, or 30 or 300 students to be in that lecture? We will discuss our visions, our experiences, and our values. I think it is important to have these discussions because these types of discussions are what build a community.

Finally, your research interests are in auditory perception and cognition. When and how did you get interested in the field of acoustics and the auditory system? Funnily enough, my interest in psychoacoustics is all thanks to good teaching. My psychoacoustics teacher at the University of Essex, Dr. Deborah A. Fantini had a contagious passion for this field, and I was hooked. It was during those early days in Deb's bachelor course on psychoacoustics that I learned to love the auditory system, the problem that it is trying to solve, and the elegance with which it solves it. Deb later became my Ph.D. project co-supervisor. After 25 years we still talk, albeit less often than I’d like; and I still remain as curious about the auditory system as I did back then.

My take
From my conversation with Dr. Sarampalis, I realized that more people at the RUG want to create a sense of community. With Mindwise and Degrees of Freedom, two platforms to exchange ideas among members of the university community exist. Talking to him, I came out of the conversation excited about the future of BCN. I firmly believe that Dr. Sarampalis will bring cohesiveness to the BCN community. A needed trait for a research institute coming out of a two-year lockdown. I would like to finish with two final thoughts. “Aristotle often evaluated a thing with respect to its ‘telos’- its purpose, end, or goal. The telos of a knife is to cut... The telos of a physician is health or healing... What is the telos of a university?” (Chapter 13: Wiser Universities, p254; The coddling of the American Mind: How good intentions and bad ideas are setting up a generation for failure by Greg Lukianoff and Jonathan Haidt, Penguin Random House, 2018). In his 1967 essay The responsibility of intellectuals by Noam Chomsky (available at: https://chomsky.info/19670223/), Professor Chomsky delineates three responsibilities for intellectuals, 1) speak the truth and expose lies; 2) provide historical context; and 3) “lift the veil of ideology, the underlying framework of ideas that limits the boundaries of debate” (Neil Smith and Amahl Smith, p. 7, University College London Press, 2019). It is the responsibility of intellectuals to speak out, educate, and set the stage for dialogue. University faculty members are members of the intellectual community, hence are held to greater standards than the rest of the public. While Chomsky was referring to the duties of the intellectual community regarding the political climate of the 1960s, his commentary can also apply to a university community in the Netherlands in 2022.

BY JAIME MONDRAGON
PHOTOS BY SANDER MARTENS
Better together? – Creativity in a group project

So there they sit: three different people with three different approaches, thrown together to write yet another group assignment. First is Julia, who is slightly stressed and highly prepared with a clipboard and to-do list. Then we have the bossy one who thinks she knows best, named Nancy. And last there is Peter, who is not really doing anything, even though he is pretty creative. The mission: to write something as creative as possible about creativity. The ideas: a whole board full. The timeframe: only a few days left. Can it be done with these group members, who all have distinct personalities and styles of working? Or will it become a hot mess?

The slightly obsessive

The first teammate to be introduced is Julia. She likes it structured and hates to stand in front of a blank sheet, it stresses her out. That’s why, even before the first group meeting, she looked for established approaches, drafted project timelines and text versions without even hearing anyone’s opinion. She is what personality psychologists might classify as having a high Personal Need for Structure (PNS). What the rest of the group thought at their first meeting was clear: “If she doesn’t come down and just lets it happen, that’s it for the creative project”. And indeed, her exemplary to-do-list approach had not yet produced any brilliant ideas – but could her organised streak also contribute to the project? Or would she remain “the stressful one”?

Fortunately not! As the group came across an article by Rietzschel et al. (2007), who dealt exactly with this predicament between structured potential and expected creativity-brake, it made them realise that high PNS actually only becomes the feared “toxic” cocktail when combined with another personality ingredient: high Personal Fear of Invalidity (PFI). High PFI describes all “But what if?”-people, all doubters and waverers who wallow in inhibiting indecision because of worry about the consequences. The within-personality mixture of high PNS and PFI might actually wedge two forces into one another: preference for simplification and tendency towards anxious complexification. What the study found was that, at high levels of PFI, PNS was associated with less creativity, but at low PFI, PNS was actually positively related to creativity. The magic word here is: persistence! It is precisely this characteristic of high PNS people that can ultimately contribute to the generation of more ideas, and among them there might be good ones! High PNS people act like moles here: they don’t necessarily shine in the flexible creativity facet that lets them jump back and forth between categories while thinking, but they are good at drilling deeper into a category in a structured way (if their low PFI allows that).

So, what does this mean for the group’s project? The others could try to assure Julia that she can just work wildly and not worry about the consequences. They could emphasise that at the end everything will be reviewed and the first draft will not be put on the gold scale. Luckily, the others find flexible thinking a bit easier, so they could give Julia several categories of ideas and let her play “mole” in a selected one.

The narcissist

Among the category-creators there is also Nancy, overshadowing the rest with her ideas. She might be a burden or a blessing. Her dominant and egocentric nature shows a distinct profile of personality: she is a narcissist. People like Nancy are extreme self-aggrandizers and have an inflated view of themselves in terms of control, success and admiration (O’Boyle et al., 2012). She probably sees herself as more creative than her group members, which she is not (Goncalo et al., 2010). Nancy is hard to work with, because she is pretty unlikeable and not willing to compromise (Han et al., 2019; O’Boyle et al., 2012).

At first glance, it does not seem appealing to have Nancy in the group, but she has much to contribute. What often happens in group work is that people hold back in sharing their ideas, leading groups to underperform (Diehl & Stroebe, 1987, as cited in Goncalo et al., 2010). Nancy could break through that. Her grandiose ideas of herself help her to just get her ideas out there,
without being scared of interrupting. This leads to the expression of more ideas. And more ideas help the moles of our group to find their category-hole to dig in deeper. Goncalo et al. (2010) have found that group creativity is optimal when two out of four group members are narcissistic. The competition among them would take creative ideas to the next level. So they might actually consider adding another narcissist! Nancy, as charming and enthusiastic as she can be, is skilled at selling her ideas to others (Goncalo et al., 2010). Narcissists like Nancy are not only useful for the generation of ideas, but also for the selling of them.

The ‘unproductive’ one
And then there is Peter, who is open to experience and therefore could be high in creativity (Baer & Oldham, 2006). However, he showed up to the first meeting without a clue what they were supposed to do. He told the group that he is into creative assignments, but felt like this was too early to start. A week after the first meeting Peter still had not done anything, so the rest of the group made it clear to him that there wasn’t infinite time. They told him that the group would not get a sufficient grade for the assignment if he continued like this. Nevertheless, he still did not produce any creative ideas.

That is when the group came across an article by Friedman and Förster (2001) which discussed the effects of being either prevention- or promotion-focused on creativity. Previously, Nancy and Julia had told Peter that they would not pass the assignment if he would not start to work. This made him prevention-oriented, in other words risk averse, vigilant and afraid of failure. In order to stimulate his creativity, he needed a promotion-oriented style. This meant that instead of wanting to avoid a bad grade, he had to want a good grade, or even more. Nancy and Julia reminded him that their assignment could even be about much more than a pass, that the best assignment would be given the chance to be published, and that it was he who spontaneously expressed at our very first meeting, “I want us to be those lucky ones who can be heard by multiple people and communicate something relevant to many!”

Besides changing his processing style, this support helped him in another way. According to Baer and Oldham (2006), the feeling of time pressure alone is not enough to stimulate people that are just as open to new experiences as Peter to be creative – support is needed as well! With both time pressure and support, the chances of Peter being creative and therefore contributing to the group would most likely increase. When the rest of the group started communicating their expectations and giving support, specifically in a promotion-oriented way, Peter started to come up with one creative idea after the other.

So, it’s not only about group members’ personalities or working styles. Performing creatively depends on a lot of other internal and external factors. Everybody needs different things in order to perform creatively and reach their full potential. May it be the support for creativity or the shift towards a promotion-focus for Peter, a counter-playing narcissist for Nancy, or a predefined category to play mole in for Julia. Maybe it is precisely...
because of, and not in spite of, this colourful mix that the group can perform particularly creatively. Indeed, research has shown that having a group with different individual preferences and opinions can stimulate the motivation to engage in deliberate information searching and processing, which can indeed help creative performance (De Dreu et al., 2011). The most important thing is to recognize each other’s strengths and weaknesses and eventually to put everyone in their strength. So let’s just get started, because we indeed are better together!

**BY FELIX BURGERING, JUSTINE STRUBE, AND ANNE VLUTTER**

Originally published by Mindwise. The blog post was written as group assignment for the course Creativity and Innovation in Organizations (master track Organizational Psychology)

**ABOUT THE AUTHORS**

We are three enthusiastic students who are currently following the Work, Organisational and Personnel Psychology Master. We met as part of a group assignment for a course on “Creativity and innovation”, for which we were asked to write a blog that was as creative as possible, integrating some scientific findings from the course. The three of us are in the final stages of our studies, so we have written quite a few group assignments so far. This made us decide to write about the process of writing with a group of distinct personalities, as we felt that many students would be able to relate to this.

**Anne Vlutter**

I am Anne 22 years old and for this post it was my task to write about Nancy, the narcissist. I think her and my personalities are quite opposite of each other, which made it interesting for me to see how such a person would influence the group process and the creative output.

**Justine Strube**

I am Justine, 28 years old, and writing this post from Julia’s perspective actually made me deal a bit with some of my personality traits: I usually prefer structured approaches to thoughtlessly writing on blank paper, and I’ve often wondered how that affects my creative output. Fortunately, it didn’t seem to be the high PNS-PFI combo for me, so in our group project I definitely had fun during the different idea generation phases.

**Felix Burgering**

I am Felix, I am 23 years old and wrote about Peter for this post. I think everyone recognizes the one person in a group who keeps procrastinating and has this lazy attitude. I was interested in finding out how, based on the literature, he could be motivated.

**REFERENCE LIST**


My name is Hilde Althof, and I am a second year BCN master student (C-track). In this first semester of the second year I’m doing three last elective courses for the master, and my final course (Human Neuroanatomy) will be finished right before the Christmas break. After that, I’m going to move to Nijmegen to do my major thesis at the Donders Institute. I’ll be looking at whether 8-month-old babies find information-gain rewarding by itself without the need of external rewards, by using EEG signals and eye tracking. I am really looking forward to be working in the neurodevelopmental research field!

Besides the master I am also working in the UMCG as a student-assistant. Last year I started working for a Spanish PhD student and helped him by gathering information for his study about tinnitus. I had contact with all participants and planned the appointments. I also assisted during these appointments when the participant needed help with translation in English. Furthermore, I’m also working at the ENT department for updating information about tinnitus patients in the database in SPSS.

Besides studying and working I’m also still enjoying the student life! I’m doing group lessons at the ACLO, singing in popchoir Estrellas, hanging out with friends, and also leave some free time for myself to relax. After graduating I’m still not sure what I want to do. Perhaps a PhD, but right now I’m more leaning towards working at a research center or a company specialized in (developmental) neuroscience. However, nothing is settled and there are lots of interesting fields to discover, so I’ll still have to figure out what I want to do!

• BY HILDE ALTHOF
Online misunderstandings can also result from excessive clarity

More and more of our everyday conversations are taking place online, ranging from WhatsApp to Teams, and from e-mail to Twitter. We share our day with our extended family, we congratulate our colleague following the birth of her first child, we plan a get together with our friends, we share holiday pictures with our “followers”, we file a complaint to a customer service chatbot, and we discuss politics with strangers. But these online interactions, especially those about difficult topics, do not always fare well. Indeed, in the context of controversy, online interactions seem to be more prone to escalate into conflict and polarize opinions than discussions held face-to-face (e.g., Anderson et al., 2018). Consequently, a lot of research and theorizing has focused on why this is the case.

There are two prominent explanations for why online discussions escalate. First, it is suggested that people behave aggressively online because they feel anonymous, or at least distant from others (Suler, 2004). They think they can say anything they want without consequences, and become disinhibited as a result. A second commonly heard explanation for online conflict is that people tend to misinterpret each other’s messages because they are unclear or ambiguous due to a lack of non-verbal cues (Daft & Lengel, 1986). But do people really stop caring about others online and are online messages really that unclear?

My dissertation project (Roos, 2022) was aimed at understanding online escalation better by having a close look at what people actually do when they discuss online. We especially wanted to know how this compares to face-to-face discussions (because people are apparently better at harmoniously navigating disagreements when chatting in person). To this end, we asked small groups of unacquainted students to discuss controversial issues, such as the refugee crisis, via a text-based chat and face-to-face. We then analyzed their behavior during the interactions and followed-up after by asking them about their experiences.

We found that people in face-to-face conversations use several diplomatic skills to show that they are aiming for a harmonious and constructive discussion (Roos et al., 2020a, 2020b). First, people express their opinion tentatively or ambiguously by using disclaimers (e.g., “I do not know for sure”), hedges (e.g., “maybe,” “sort of”), and vocalizations that express doubt (e.g., a drawn out “hmm”) or tentativeness (e.g., “uhm”). This tentativeness communicates tact and concern for the feelings of others. Second, people in face-to-face interactions respond with head nods, “yes” or “hmm” to the person speaking. This shows their continued attention to and understanding of what is being said. Online, however, we found that people expressed themselves less ambiguously, more clearly, and less responsively than in the face-to-face discussions. That is, people behave less diplomatically online.
This does not seem to result from anti-social intentions. Rather, the relative lack of diplomacy behavior seems to be inherent to the limitations of the medium: expression in text is relatively clear, and a lack of synchronicity encourages cross-talking. Nevertheless, these behaviors have social consequences.

We found that participants felt ignored online and thought that their interaction partners were disinhibited (Roos et al., 2020a). They thought that their partners were more concerned with clearly expressing their own opinion, of which they were strongly convinced, than with listening. As a consequence, participants thought they disagreed more than they actually did, and felt less close to each other when interacting online.

What I think was most important is that we found no differences in actual disinhibition and actual disagreement between the online and face-to-face discussions (Roos et al., 2020a, 2020b). Participants did not consider themselves any more (or less) disinhibited online than when interacting face-to-face, nor did we find evidence for disinhibition in their conversation behaviors. (For example, we found no instances of aggressive language use.) Moreover, participants did not express more (or less) disagreement during the online discussions and did not show more disagreement in their private opinions after the discussions. This shows that people can perceive each other as disinhibited and experience disagreement, not because others are disinhibited nor because there is disagreement, but simply because the medium limits diplomacy (see also Roos et al., 2021).

This offers new insights into the commonly held assumptions about online escalation mentioned at the start of this article: 1) misunderstandings can arise online because people communicate too clearly, rather than too ambiguously, and 2) because the communication medium changes people's behavior they can appear disinhibited while, in fact, there is no evidence that they are.

I would like to end with a practical take home message. Next time you notice a disagreement or misunderstanding with someone in WhatsApp, try to be responsive to the other person (for example, by typing "yes, I see your point. but," and try to formulate your opinion as an opinion ("I think that might not be true") rather than as an established fact ("that is not true"). But, preferably, do not try to fix things online and continue discussing potential controversies face-to-face.

• BY CARLA ROOS
• RUBIN’S VASE ILLUSTRATION BY MILOU DE GROOT

Originally published by Mindwise.

ABOUT THE AUTHOR
Carla is a former PhD student at the Social Psychology department of the University of Groningen where she studied social regulation in online interaction together with Tom Postmes and Namkje Koudenburg. Carla defended her PhD thesis on the 22nd of September. She is now an assistant professor at the department of Communication and Cognition of Tilburg University.

REFERENCES
Career planning has never really been my thing. In fact, aside from a period in primary school where I was convinced that I wanted to become an actress, I’ve never really known what I wanted to be when I grew up. I chose my high school course profile based on which courses I thought were most interesting, and when it was time to pick a bachelor study I decided to postpone the decision a bit by studying Liberal Arts and Sciences at University College Maastricht. In this bachelor, which allows you to take courses in almost any field, I made the good call of picking the Introduction to Psychology course in my first semester. This opened
my eyes to the never before considered fields of psychology and neuroscience, which I then quickly rolled into with the rest of my course choices.

Fast-forward to my third year, where I had to figure out what to do after my graduation. I’d decided I loved neuroscience and doing research, so a neuroscience research master seemed like a logical next step. I preferred (and got accepted by) the BCN research master, so I returned to my roots in Groningen. There it was time for the next nudge towards a direction in my career path. At one of the Introduction to BCN lectures, Dr. Benno Haarman gave a presentation about the influence of inflammation and the gut microbiome on the course and symptoms of bipolar disorder. I’d taken both immunology and clinical psychology courses in my bachelor (yay University College), and I was immediately intrigued by the interconnection of these two research fields. At that moment I was still looking for a minor research project for the next semester, so I e-mailed Dr. Haarman and received a wonderful opportunity to do a project within the GUTS study. This study, led by Prof. Iris Sommer, investigates the effect of probiotic supplementation on symptoms and cognition in people with schizophrenia and bipolar disorder. Although the project was unfortunately cut short by the COVID pandemic, for 1.5 months I had an immensely enjoyable time. The work was very varied with patient visits, lab work, and data analysis, and I had very approachable supervisors and an enthusiastic research team that had lunch together almost every day. Luckily, after having redone my minor project in an EEG study on depression relapse (also very interesting, and less COVID-restricted), I was able to return to the GUTS study for my major research project.

This was again immensely fun and inspiring, but of course at this point in my masters the question “what will I do next?” came up. I already had the vague idea that I wanted to do a PhD, as I still really liked doing research and wanted to continue with that, but the times I’d looked around on AcademicTransfer I’d not really found any positions I really wanted to apply to. You probably guessed it already, but I again rolled into the next part of my career; this time in the form of the BCN PhD grants. The possible prospect of getting a PhD on a subject I entirely chose myself sounded very appealing, so I decided to give it a shot. Together with Iris Sommer, I quickly chose to focus on the relationship between stress, stress resilience, and the microbiome in schizophrenia, as it’s an extremely interesting and highly understudied topic, straight on the intersection of psychology and biology.

A stressful proposal-writing period and a presentation later, I was immensely happy to hear that I’d been awarded one of the two available positions! I’m now only in the starting phase of my PhD but I am already enjoying myself as much as in my masters project. I moved from the end of the office hallway to the front, and my former daily supervisors are now my colleagues, but aside from that it feels just like I never left.

I suppose the take-home message from all this is that you don’t necessarily need to stress about having a long-term career plan. If you make in-the-moment choices towards study fields or topics you find interesting, and people you enjoy working with, you’ll probably end up somewhere you want to be. I still don’t really know what I want to be when I grow up, but I trust that by the end of my PhD trajectory I’ll be able to roll into the next step of my ever-elusive career path.
On November 10th and 11th, the BCN PhD community gathered to focus on sharing their research without distractions from daily life. After corona-related restrictions, this was the first edition of the BCN Retreat on-site, taking place in the Hotel De Oringer Marke, in Odoorn.
Wander Lowie, Member of the BCN Education Committee gave an introduction to provide the students with an overview of the upcoming scientific programme. He reminded attendees that the main idea of this exercise is to be open, be inspired by the research in other fields and encourage collaboration. The BCN Retreat is a crucial activity of the BCN PhD Programme, where PhD students provide a scientific talk to “non-experts” from other fields. Some honorable mentions of presentations will be highlighted.

One of the first presenters on the first day was Jelle Brouwer (English Linguistics and English as a Second Language). With his incredibly strongly told presentation “Exploring late-life language learning as a healthy aging tool” he managed to catch the audience’s attention. Despite the fact that he didn’t do statistics yet - the results were only recently obtained - he was the first day winner of the “Best presentation award”. Presenting is not only about strong scientific content but also how the story is told.

The first day

One of the first presenters on the first day was Jelle Brouwer (English Linguistics and English as a Second Language). With his incredibly strongly told presentation “Exploring late-life language learning as a healthy aging tool” he managed to catch the audience’s attention. Despite the fact that he didn’t do statistics yet - the results were only recently obtained - he was the first day winner of the "Best presentation award". Presenting is not only about strong scientific content but also how the story is told.
Jenny Borkent (Biomedical Sciences of Cells and Systems) shared her data on gastrointestinal dysfunction in bipolar and schizophrenia spectrum disorders in the GUTS study. A lively discussion followed the presentation where attendees were mostly interested in the striking associations between very common gastrointestinal symptoms and affective hallmarks of psychiatric disease already at baseline data.

Nowadays, there is more focus on multidisciplinary approaches in treatment of psychiatric patients. An example of this multidisciplinary approach where several (mental health) organizations work together is the study 'Together for recovery' by Suzanne Kroon (Psychiatry, Rob Giel Research Center). She investigates to what extent the involvement of relatives contributes to the recovery of clients. One of her preliminary results was that clients appear to be more negative about involving relatives than professionals; largely because clients feel guilty of how much they are already asking from their relatives. Therefore, they feel burdened to ask for help.

After the first coffee break, the session was kicked off by Emile d'Angremont (Biomedical Sciences of Cells & Systems), who was extremely happy to present at the location where he has had so many birthday parties at the bowling center; He is originally from Odoorn. Emile started with the statement that Parkinson's disease traditionally is seen as a dopaminergic disease where dopaminergic deficiency causes the motor problem symptoms, but it should be seen as a multisystem neurodegeneration disease also involving degeneration of the cholinergic system. Short-latency afferent inhibition (SAI), which is assessed using transcranial magnetic stimulation (TMS) paired with peripheral electrical stimulation, might be a relatively cheap and non-invasive alternative for fast in vivo assessment of the cholinergic system in PD. Although he had hoped for a strong correlation, it turned out there wasn't. So he concluded that SAI is not a reliable marker
in Parkinson’s Disease. This well-presented talk was a great example of researching a new method that you hope would work, but turned out not to.

The scientific programme was accompanied with a social programme. In the afternoon, people could participate in a Mountain Bike Clinic or Heels on Wheels, a beautiful hike in the surroundings of Odoorn. The activities were followed by one hour of scientific speed dating. Every three minutes, people switched partners to talk about their research projects. Meanwhile, we had all grown hungry and thirsty and longed for dinner. After dinner, the evening was settled in the underground bowling center.

The second day

The second day, Hector Gallegos Gonzalez (Culture and Cognition) started with his presentation about gender identity and the embodied experience of instrumental music. Women often perform arts more than men, but why? Moreover, researchers in the field of aesthetics often include sex as a default variable without having a clear idea of what this classification could mean for said studies. Hector hypothesized gender identity to better account for differences in artistic experience than biological sex does as it is deeply related to people’s life experiences and sense of self. His results confirmed the hypothesis. We must question the inclusion of the gender binary as a default variable in the field of aesthetics, a gender identity approach can bring nuance and clarity to the experimental research of arts and gender. Thank you Hector for this inspiring lecture!

The winner of the second day’s best presentation was Franciska de Beer (Biomedical Sciences of Cells & Systems). She had an outstanding presentation about the effect of a psychiatrist on the functioning of their client with a first episode of psychosis (FEP). More specifically, the gender of the psychiatrist and the prescription behaviour. The take home message was that the gender
of the psychiatrist doesn’t relate to how well clients function in their daily life. However, the results showed that there is an effect of the prescription behaviour of the psychiatrist on daily functioning and symptom severity of people with FEP. The identification of potential psychiatrist effects could foster the improvement of treatment and ameliorate patient’s outcome.

Prajit Dhar (Center for Language and Cognition) shared data about his study on compounding in children and neural networks. Given an unseen word combination, how would a child and an AI tool process it? His data elicited a lot of exciting questions from the audience. We could all agree that language processing is a fascinating aspect of cognition.

At the end of the second day Gerben Ruesink (Biomedical Sciences of Cells & Systems) managed to wake everyone up with his ‘sex talk’, a topic that always creates good tension in the audience. His study introduces a novel approach to study the processing of sexual stimulation, by focusing on the way different sensory modalities interact in signaling sexual incentives. The results corroborate earlier sexual attentional blink studies, showing that during very early sensory processing, unimodal sexual stimuli grab more attention than neutral ones. Furthermore, sexual multisensory integration seems to require additional processing time or attentional resources before it can have an effect.

Lastly, Romy Buwalda-Smit (GELIFES) closed the day with her outstanding presentation about fetal microchimerism, a mysterious epigenetic phenomenon of pregnancy, where cells of fetal origin establish themselves as permanent or temporary colonies in maternal tissues and vice versa. Probably to provoke responses in the mother that benefits the fetus. Interestingly, we are partly the cells of our grandmother! It was a very fascinating and fun end of two days of presentations.

As named above, there were two day’s winners. But in the end, only one could be the main winner. After an exciting round of voting, Jelle was elected the first prize; 250 euros extra on his BCN budget. Congratulations Jelle! And thanks to everyone for these beautiful, inspiring, and gezellige two days. See you next year!
Testimonials from attendees

**Jelle Brouwer**  
(Linguistics and English as a Second Language)  
The BCN retreat was in my opinion a great success! I really enjoyed being able to talk about my research with other PhD candidates from fields completely different from my own. Of course, being able to hone my bowling skills was a great added bonus.

**Thomas Rust**  
(Biomedical Sciences of Cells and Systems)  
The BCN Retreat was the perfect environment to connect with fellow PhD students on a professional and personal level. It was a pleasure to hear about current research from all walks of neuroscience, and the programme facilitated active participation from everyone. Overall, it was stimulating, educational, and extremely fun, and I look forward to presenting my own work at the next BCN Retreat.

**Yuequ Zhang**  
(Molecular Pharmacology)  
I really enjoyed the BCN retreat in Odoorn! Professional presentations, nice organization, amazing food and hotel, the bowling skills of the attendees were really impressive and I look forward to the retreat next year! Thanks to all organizers and participants, I am proud to be a member of BCN!

**Nikki Dreijer**  
(Biomedical Sciences of Cells and Systems)  
It was very interesting to meet people from different fields and hear about the broad range of research that is being done within BCN. The mountainbiking over the heide and in between the sheep and cows was a great way to unwind after the interesting presentations. 10/10 would do it again!

**Hong Yan**  
(Molecular Pharmacology)  
It’s a great thing to be able to attend a BCN retreat in person since the COVID time! The activity was very organized: bus travel, clear and well-planned activities, good hotel and food, and bowling at night. Of course, it was definitely a great opportunity for me to learn about other people’s research and projects. I loved everything.

**Karen Castaño Gonzales**  
(Otorhinolaryngology)  
Attending the BCN retreat was a great opportunity for me to meet new people and get acquainted of their research. I was amazed by the diversity of projects from BCN students. This event broadened my perspective of the different ways PhD students work on their projects. It was also a nice experience to get to know a beautiful Dutch village! I could see the beauty of the landscape during the walking tour.
Marvelous Mind & WOW

Marvelous Mind Movies
We need your input! Interested in science? Check! Interested in movies? Also check? Then why not join the Marvelous Mind team?

In order to promote BCN’s research to a general audience, every two months we show a movie with a link to cognitive neuroscience, in collaboration with Forum and introduced by an expert on the topic. Help us brainstorm which expert researchers to invite, and which movies to pick! For more info, send a mail to Suze Westervoorde (s.e.westervoorde@student.rug.nl).

Wetenschap op woensdag (WOW)
In collaboration with Academie Minerva Groningen, Marvelous Mind is also developing a new initiative: Wetenschap op woensdag (WOW; "Science on Wednesdays"). Using social media, we plan to post fun facts related to cognitive neuroscience with the aim to reach a large general audience and inform them about the cool stuff BCN scientists are working on. Every post will present a fun fact, important finding, or cheeky proposition, matched with a cool illustration created by graphic artists and students from the art academy.

We hope you like this concept of combining art and science. For this to work though, your ‘marvelous mind’ input is required! To give some inspirational examples of already submitted fun facts:

• Deep brain stimulation can cause swimming difficulty.
• When depressed people receive electroshock therapy, their brain grows bigger.
• The experience of time is an illusion of consciousness.

Please use this link (www.tinyurl.com/wowfunfact) to submit one or more fun facts related to your own research/research field. Thank you in advance!

THE MARVELOUS MIND TEAM
Emma Gerrits and Wouter Huiting move to top institutes abroad on Rubicon grants

Emma Gerrits:
Spatial reconstruction of the neurovasculature in amyotrophic lateral sclerosis and frontotemporal dementia
University of Groningen -> Sweden -> Karolinska Institutet -> 24 months

Wouter Huiting:
Uncovering the secrets of functional protein aggregation
University of Groningen -> United States -> Stanford University -> 24 months  

2022 BBRF Young Investigator Grants for Inge Holtman and Marieke Begemann

The Brain & Behavior Research Foundation (BBRF) awards the Young Investigator Grant to promising investigators to launch their careers in neuroscience and psychiatry as independent research faculty, and gather pilot data to apply for larger funds.  

Iris Sommer receives Huibregtsen prize

Professor of psychiatry Iris Sommer received the Huibregtsen Prize on October 12th, partly for her research on unequal medical treatment of men and women.  
The Huibregtsen Prize was presented to Sommer in Leiden by Education Minister Robbert Dijkgraaf, during the Evening of Science & Society. She also received a sculpture and 25,000 euros that she can use for research.  
https://www.umcg.nl/s/iris-sommer-wint-huibregtsenprijs

Martien Kas elected president of European College of Neuropsychopharmacology

Martien Kas, professor of behavioural neuroscience at the Groningen Institute for Evolutionary Life Sciences (GELIFES), has recently been elected president of the European College of Neuropsychopharmacology (ECNP) for the term 2022-2025.  
https://www.rug.nl/research/gelifes/news/2022/20221018-kas-ecnp

Iris Sommer receives Huibregtsen prize  

Huibregtsenprijs Iris Sommer
Woman life freedom

Shush, be quiet! You are not allowed to laugh loudly outside. No, do not lick your ice cream in the street! You cannot wear what you want, only what we want! Colorful clothes and shoes are of course forbidden. To sing and dance is provocative, do it only in privacy. Hair and red lipstick are illegal. Your curvy body is stimulating for men, hide it! You are a woman, and women are sinful, remember this.

Such is life growing up in Iran. In my generation, opportunities, freedom of choice, and ambitions belong to boys; girls must marry and bear children. Even if they continue their University education the ultimate goal is to give service to men. A joyous life with a taste of freedom is an exclusive right for boys. If a woman sacrifices her happiness, wishes, and life for her family, it is seen as the absolute greatest value in her life. As a girl, you are only allowed to have aspirational dreams when you are born into a family who supports you against the patriarchy. This means, as a consequence of Iran being a society led by the most misogynist and brutal regimes in history, the authorities are entitled to arrest you for any challenges to their sexist laws.

Punishment for anything against the Islamic government is common, especially for women. I was myself arrested by the morality police at the University, on the street, and even in my car several times. When this happened, they slapped me in the face, beat me up, and insulted me and my family. I was also threatened to be expelled from my University at these times. All because of wearing a flowery coat, showing too much of my black hair, wearing makeup, or because of wearing short pants in the summer.

Although I left Iran years ago, I still get anxious when I see people wearing uniforms, even NS guards who say “Goedemorgen” with a smile, to check my ticket. The sirens of the ambulances and police also bring back feelings from my life in Iran.

Since the beginning of the rule of the theocracy in Iran, the women have been murdered, raped, attacked with acid, immolated and stoned. Male offenders
are less severely punished for similar crimes, following the Iranian constitution. Femicide is easily defensible and the number of daughters killed because of perceived dishonoring of the family has been legitimized by the current rulers. I have always asked myself: “What do Iranian women have to lose? We cannot decide for ourselves regarding our clothing, our body, our children, our intimate relations, what education we can have, which job we can choose, or where and with whom we can travel. Our blood is worth half of that of a man, and we have no identity without a male chaperone.” As I grew older, I lost hope of ever helping to change my country, and as a consequence, I left my beloved Iran. Like many Iranian women, I had to pursue my dreams in another country. The truth is that the only opportunities for women in Iran are given to puppets of the regime, who conceal the truth of the dictatorship and protect the government, so they can continue their brutal rule in Iran.

On September 16th, 2022 an innocent 22 year old girl was arrested by the morality police because of her improper hijab. She was subsequently hospitalized and died. A shocking report published by a brave young journalist, Niloofar Hamedi, about the murder of Mahsa Amini in custody, put an end to the hibernation of Iranian women. This was just one of the horrific crimes perpetrated by the Islamic regime. The lack of justice and basic human rights in Iran have unfortunately been normalized by the regime, and for a long time, it has seemed like the Iranian society has been passive. It seems to me that the brutal murder of Mahsa Amini has awakened Iranian society to say “Enough!”. Within a few days, protests spread all over the country, and the brave women on the front lines are protesting for justice and freedom even though they know their lives are on the line. Men have also joined the protests supporting these women.

It is also true that the women of Iran have practiced fighting against the patriarchy. For some women, this fight happens in their houses, against their partners, their grandfathers, fathers, and uncles. The dictatorship in Iran has empowered these men to abuse, torture, and erase women from public society. Any effort for freedom by Iranian women has been suppressed up until now. Iranian women are now fighting both domestically and from abroad against this tyrannical Islamic regime since we know that if nothing is done, the injustice and brutality will continue indefinitely. We will not go back to the forced subjugation by the mullahs but will fight to the last drop of blood for our freedom, and the possibility of real justice and equality. This is what we mean when we shout “WOMAN LIFE FREEDOM!”.

• BY MAHYA HOSSEINI BONDARABADI
• PHOTOS OF THE DEMONSTRATION IN BERLIN BY MAHYA HOSSEINI BONDARABADI AND GERWIN STROOTMAN
BCN Symposium 2022 and BCN Conference 2023
While this issue is about to be published, the BCN Symposium takes place. We hope that you did not miss this interesting symposium. If you did... next year we will not organize a symposium but a 2-day conference Nothing but the Truth (NBTT). Block your agenda for this edition of NBTT which will take place on July 6 and 7, 2023. News about this conference will reach you by email!

BCN Winter Meeting
The BCN Winter Meeting will take place on Thursday February 2, 2023. The course 'BCN Poster Presentation' is embedded in this event. All PhD students are invited to bring a poster. We hope to welcome also a lot of the BCN senior members.

Winner BCN Best presentation Award
During the successful BCN Retreat in Odoorn, Jelle Brouwer was elected as the best presenter during the first day. Francisca de Beer was the winner of the second day. Finally, Jelle was selected as the overall winner and took home the BCN Best Presentation Award. Congratulations Jelle!

BCN Moved
You will find the BCN office in De Brug on the 8th floor. Diana's office is in room 8.30, working days Tuesdays, Wednesdays and Thursdays. Evelyn's office in room 8.32, working days Monday till Thursday. Both are working all their working days at the office in De Brug. Michelle Pena can be contacted by e-mail: m pena@umcg.nl

PhD Day Groningen 2023
Come to the PhD Day Groningen 2023 edition, with the theme 'Sustainable paths: Planting seeds of innovation'. The PhD Day Groningen is an annual event in Groningen for PhD students to broaden their research and career prospects. This day includes a wide range of activities, presentations and workshops related to careers within and outside academia. Check out our website for a sneak peak of the programme and follow us on social media to get the latest updates.
The PhD Day will take place in Martiniplaza on Friday February 3rd, and you can earn 1 ECT for your participation. Buy your tickets now at: https://phd-day.nl/. Join this event for a day full of keynotes, workshops, networking opportunities, and an amazing after-party!

Agenda BCN Activities
• Every 1st and 3rd Thursday:
  - BCN Lunch Lectures series: 12:00 - 13:00 hrs.
• February 2, 2023:
  - BCN Winter Meeting.
• July 6 and 7, 2023:
  - BCN Conference Nothing but the Truth

● BY DIANA KOOPMANS
I'm Lan, and I am from China. Before I moved to Groningen, I had studied and worked at Shanghai for nine years. Now I am a PhD student at UMCG, investigating the association between childhood adversities and psychotic disorder. I like sports, food, plants and sunshine :). Recently, I am trying mindfulness exercise.
BCN WeCollaborate Discord Server!

If you haven’t yet, please sign up to our discord server all-things-statistics! Scan the QR code or join through the link: [https://discord.gg/xYMyW9C52J](https://discord.gg/xYMyW9C52J)

The BCN PhD student council wants your opinion!

We would like to receive feedback from anybody who is joining our events and lectures. Our goal is to create events that are to your liking and fun! Please help us by filling in the feedback form after joining one of our events/lectures! Here is the link: [https://forms.gle/Dsx8o5DDfTSxxcTF9](https://forms.gle/Dsx8o5DDfTSxxcTF9) and also there is a QR code. Thanks for your help!
BCN Social Drinks at Dot
October 12th 2022

We decided to kick off the new academic year with some socializing at the Dot. A nice group of PhD students came together to have a few drinks and food. As usual, we happily snacked some Bitterballen and loaded (vegetarian) nachos. We were also very happy to see that some new people decided to join! A warm welcome to anyone who was there for the first time! Thanks to everyone who joined, we felt like it was a great evening! Stay tuned for our Sinterklaas event!
“Stickiness” of thought as a potential feature for predicting vulnerability to depression

Major Depressive Disorder (MDD) is one of the most prevalent mental disorders, that affects more than 264 million people worldwide according to a recent report by World Health Organization. Depression affects the way one feels, thinks and acts. Its core symptoms include sadness and feelings of anhedonia, i.e. loss of interest in activities one once enjoyed, leading to decreased task performance and productivity.

In recent years, an increased emphasis on mental health and access to care via telehealth has led to an increase in the number of patients seeking treatment, however, cost-effectiveness models suggest that even in the unlikely event of optimal treatment being delivered in all cases, only 35 – 50% of the overall burden of depression and anxiety would be alleviated [1]. Thus, there is a dire need of finding a sensitive biomarker that spans the continuum from health to disorder so that even minor deviations can be tracked and relapse be detected for an effective early intervention.

Rumination has been found to be strongly and most consistently related to depressive symptoms. According to Response Styles Theory, rumination is characterized by an excessive focus on oneself as well as a repetitive and passive focus on one’s negative emotions. Rumination has important implications in the manifestation, understanding and maintenance of depressive episodes and has been shown to prolong and deepen episodes of depression by persevering in depressed mood. It has also been found to most consistently predict depression and onset of depression, making rumination the key biomarker of interest for understanding relapse.

Rumination can be evoked in a laboratory setting, for example, in a Sustained Attention to Response Task (SART), especially when it is preceded by a validated social stressor, such as the Trier Social Stress Task [2] or when participants are asked about their failures before starting with the task. These studies have found that depressed individuals report more instances of rumination (being off-task). Moreover, an interesting aspect of negative rumination that has received attention recently is the “stickiness” of thoughts: the difficulty in disengaging from the thoughts causes prolonged and repeated pondering on thoughts. This cognitive variable can be a reliable factor in studying non-clinical manifestation of rumination.

Van Vugt and Broers [3] measured “sticky” thoughts in a SART and found that it can be identified by including “thought probes” in the SART, by asking the participant what they are thinking about at that moment. They reported that “stickiness” had substantial effects on the performance of the participants in the task and indicated that an increase in self-reported “stickiness” instances may be related to tendencies of depression. Level of “stickiness” has also been shown to be associated with pupil size. A uni-dimensional measure like pupil size might be a good choice when one knows what parameters affect the data and what one is precisely looking for but when we don’t its helpful to have as much information as possible and multidimensional signals are a more plausible choice. Moreover, as pupil size is sensitive to arousal in general, EEG might be a good choice to study “stickiness” as it has been used to measure a variety of functions including attention, memory and emotion.

In collaboration with Marieke van Vugt, Partha Pratim Roy, and Hang Yang, I recently conducted a study to explore whether EEG signals can capture this subtle
state and allow more reliable differentiation between individuals with high and low vulnerability to depression. The study found that a Bidirectional Long Short Term Memory (BLSTM) model gave the maximum accuracy of 91.42% in delta power spectrum for "stickiness" data. This model used only the EEG data from trials that participants reported to be engaged in "sticky" thoughts. Statistical tests showed that raw, delta, and theta brain waves have channels that are statistically different between individuals with high and low vulnerability to depression. However, though these results seem encouraging we should keep in mind that this study worked with a limited sample size of forty participants. Further studies with larger sample sizes need to be done to corroborate these findings for generalization to a wider population.

BY PALLAVI KAUSHIK

REFERENCES:
As a young reader of science fiction novels, I couldn’t wait to grow up and see all of the cool robots that were no doubt about to be invented and be impressed by the fascinating ways that artificial intelligence would be used in everyday life. I assumed that these developments were merely a matter of understanding human intelligence and copying it, but as anyone who studies the brain will tell you, it turns out that human cognition is really complicated. In my research, I aim to uncover the mechanisms of thought, with a particular focus on how the structure of intelligence can inform and improve artificial systems that instruct, supplement, or collaborate with human users.

My current project seeks to bridge the gap between neuroscience and AI by using brain imaging data to explore the high level frameworks of cognition proposed by computer science based architectural models. By expanding on current theoretical accounts of human thought processes, like the Common Model of Cognition, I hope to incorporate insights from the human brain into platforms for general purpose artificial intelligence that more closely resembles our own.

I moved from the United States to join the Faculty of Science and Engineering earlier this year. Taking over from Abigail Toth I’m happy to act as copy editor and contribute to the BCN magazine!
Microglia, the Jack of all trades of the brain

INAUGURATION
Bart J.L. Eggen
TITLE
Microglia, the Jack of all trades of the brain
CHAIR
Molecular Neurobiology
FACULTY
Medical Sciences
DATE
October 7, 2022

The central nervous system, made up of our brain and spinal cord, is our most complex organ. Like our entire body, it is made up of individual building blocks, cells. The human brain is roughly made up of 2 types of building blocks: nerve cells and glial cells. Nerve cells form an extensive network within the brain and also make contact with other organs in the body and with our muscles. Nerve cells are essential for these functions of our brain, but they cannot function without glial cells, which are also an essential component of our brain.

The different types of glial cells are astrocytes, which provide nerve cells with nutrients; oligodendrocytes, which are necessary for proper communication by nerve cells, and microglia, which constantly scan our brain for possible disturbances and infections and keep our nervous system healthy.

Disrupted functions of glial cells can lead to disorders of the central nervous system. Examples include multiple sclerosis, a condition where our own immune system attacks oligodendrocytes, or Alzheimer’s disease, the most common form of dementia, where microglia function is disrupted. My research focuses on mapping which processes in glial cells are disrupted in brain disorders such as multiple sclerosis and Alzheimer’s disease. A fundamental understanding of these processes is necessary to understand the origin and course of such disorders and to identify new leads for therapeutic interventions. New therapeutic strategies are necessary because there is currently no cure for many disorders of our central nervous system.
Alzheimer’s Disease (AD) is the most common prevailing form of dementia, with no proven cure in sight yet. The numerous failed clinical trials demonstrate the lack of understanding of the disease, which has been attributed to inadequate representations of the disease in animal models, as well as lack of robust indications of the disease.

Network hyperexcitability, a prospective prodromal indicator of AD is suggested to be associated with both AD patients and animal models. However, recent evidence suggests a possibility that network hyperexcitability in animal models could be confounded by other unrelated factors, resulting in misleading animal models.

The thesis of Sean Tok Shui Lian investigates the role of AD-associated pathology within the context of network hyperexcitability, in two similar animal models of the disease. The findings highlight interestingly divergent outcomes in these two animal models, both in terms of pathological and neurophysiological outcomes. The implications of these findings suggest that the underlying basis of network hyperexcitability in animal models may not be the same as patients.

Thus, while clinical cases of AD clearly demonstrate network hyperexcitability, this prompts a re-evaluation of the validity of network hyperexcitability in animal models of the disease.

Sean Tok Shui Lian defended his thesis on August 22, 2022.
planning and treatment follow-up of brain tumor patients. However, imaging with conventional MRI has several limitations challenging clinical decision making. This thesis explores the use of multimodal imaging with advanced methods to improve the clinical management of brain tumor patients.

Part I discusses the treatment planning and prognostication of brain tumor patients. There is a special focus on the anatomical relationship of glioblastoma with the ventricles. Patients with ventricle-contacting glioblastoma have a poorer prognosis compared to patients with non-contacting tumors. This thesis finds that ventricle-contacting glioblastomas demonstrate higher peritumoral perfusion and proliferation rates as demonstrated by advanced imaging methods. These aggressive features possibly explain the survival difference between patients with ventricle contacting and non-contacting glioblastomas.

Part II emphasizes on the treatment follow-up of glioblastoma patients. Due to the inevitable recurrence of glioblastomas, patients undergo frequent MRI scanning throughout treatment. However, treatment effects such as pseudoprogression can mimic tumor progression on conventional MRI. The inability to accurately differentiate pseudoprogression from tumor progression hinders reliable decision-making regarding continuation or discontinuation of treatment. This thesis demonstrates that multimodal imaging with advanced MRI and PET methods improves the treatment evaluation of glioblastoma patients. The current practice of standard scheduled MRI scans during treatment is also questioned. Pseudoprogression causes a considerable amount of uncertainty on scheduled scans and treatment decisions are often postponed.

This thesis substantiates the value of multimodal imaging to aid in clinical decision making in brain tumor patients.

Bart van Dijken defended his thesis on August 24, 2022.

Life with others: function and mechanisms of social modulation of behaviour and physiology in Drosophila melanogaster

PHD STUDENT
T.P.M. Bailly

THESIS
Life with others: function and mechanisms of social modulation of behaviour and physiology in Drosophila melanogaster

PROMOTORS
Prof.dr. J.C. Billeter
Prof.dr. B. Wertheim
Prof.dr. R.S. Etienne

FACULTY
Science and Engineering

Tiphaine Bailly discovered social facilitation of oogenesis and egg-laying in Drosophila melanogaster and described the neuro-hormonal mechanisms underlying this modulation.

Group-living facilitates cooperation between individuals, but also creates competition for limited resources. Individuals should thus modulate their reproductive output in response to the presence of others. However, mechanisms that lead to such social context-dependent modulation of reproduction are poorly...
understood. In the fruit fly *Drosophila melanogaster*, females actively attract conspecifics to lay eggs on the same resources, generating groups in which individuals may cooperate or compete. The genetic tractability of this species gave Bailly an opportunity to dissect the mechanisms by which females adjust their behaviour and physiology to their social environment.

Bailly demonstrated that social environment affects ovarian activity of females in a density-dependent manner. She showed that these responses to the presence of others are mediated by vision through the motion detection pathway and are the result of the stimulation of the juvenile hormone pathway. While social modulation of reproduction is considered a sign of sociality and is mostly expressed in social hymenopterans, her findings thus demonstrate that such phenomenon can already be found in rather solitary species such as *D. melanogaster*, making the concept of solitary vs social species a bit artificial. Bailly moreover proposed a new approach to explore the variation in sociability among *D. melanogaster* through the quantification of multiple sociability traits. She found significant variation between the flies in the strength of responses to others, demonstrating the existence of a sociability spectrum in this species.

Tiphaine Bailly defended her thesis on August 29, 2022.

**Identification, Categorisation and Forecasting of Court Decisions**

PHD STUDENT
M. Medvedeva

THESIS
Identification, Categorisation and Forecasting of Court Decisions

PROMOTORS
Prof.dr. M.B. Wieling
Prof.mr.dr. M. Vols

FACULTY
Arts

In her thesis she discusses her work on forecasting, categorising and analyzing outcomes of the European Court of Human Rights (ECtHR) and case law across Dutch national courts. Her dissertation demonstrates the potential of such research, but also to highlight its limitations and identify challenges of working with legal data, and attempts to establish a more standard way of conducting research in automatic prediction of judicial decisions.

Medvedeva provides an analysis of the systems for predicting court decisions available today, and finds that the majority
of them are unable to forecasts future
decisions of the court while claiming to be
able to do so.
In response she provides an online
platform JURI Says that has been
developed during her PhD, and is
available at jurisays.com. The system
forecasts decisions of the ECtHR based on
information available many years before
the verdict is made, thus being able to
predict court decisions that have not been
made yet, which is a novelty in the field.
In her dissertation Medvedeva argues
against ‘robo-judges’ and replacing judges
with algorithms, and discusses how
predicting decisions and making decisions
are very different processes, and how
automated systems are very vulnerable to
abuse.

**Masha Medvedeva** defended her thesis on
September 8, 2022.

---

**Unravelling early endovascular skill acquisition: Using psychometric predictors and multimodal magnetic resonance imaging**

**PHD STUDENT**
K.I. Paul

**THESIS**
Unravelling early endovascular skill acquisition: Using psychometric predictors and multimodal magnetic resonance imaging

**PROMOTORS**
Prof.dr. N.A Taatgen
Prof.dr. A. Villringer

**COPROMOTORS**
Dr. F. Cnossen
Dr. P. Lanzer

**FACULTY**
Science and Engineering

The structure of the brain changes as a result of learning to perform a new medical procedure.

In this research project, we studied what happens in the brain when medical students acquire the skills needed to perform a procedure called endovascular intervention (EI). Endovascular interventions are used to treat vascular disease, the most well-known application area is the treatment of a narrowed coronary artery. What makes learning how to perform such a procedure quite difficult is that, as opposed to open surgery, an EI is conducted via a small skin incision under x-ray guidance. As a result, there is neither direct access to nor direct sight onto the treatment site. Although these procedures are widely used, it is not clear how to best train residents to perform EIs safely. Therefore, we investigated the development of the skills needed to conduct an EI on a behavioural and brain level and tested whether pre-existing abilities influence the learning process. We trained medical students to perform an EI on a medical simulator and conducted non-invasive magnetic resonance imaging (MRI) scans to assess their brain structure before and after training. Before training, participants completed cognitive and fine-motor ability tests. We found that participants who scored higher on a test that measured mental rotation ability improved more rapidly during endovascular training. Intriguingly, our MRI data showed that the brain of participants who trained this medical skill adapted to the new demands: the volume of grey matter in the intraparietal sulcus- a brain structure crucial for hand-eye coordination- had increased in comparison to a control.
group. Our results identified the brain regions involved and the crucial sub-skills that are necessary to perform EIs and thus may have important implications for training endovascular interventions.

Katja Paul did her doctoral research at the department of Artificial Intelligence of the Bernoulli Institute financed by the Ubbo Emmius Funds and the Max-Planck Institute for Human Cognitive and Brain Sciences. Katja defended her thesis on September 13, 2022.

Neural dynamics of social emotion processing in alexithymia

PHD STUDENT
Z. Wang

THESIS
Neural dynamics of social emotion processing in alexithymia

PROMOTORS
Prof.dr. A. Aleman
Prof.dr. Y.J. Luo

COPROMOTORS
Dr. K.S. Görlich
Dr. P. Xu

FACULTY
Medical Sciences

Alexithymia ("no words for feelings"), a transdiagnostic risk factor for various psychiatric disorders, is characterized by an impaired ability of emotion processing and regulation. Difficulties in emotion processing are at the core of alexithymia, which are mediated by altered neural correlates and dynamics. Given that social functioning is a major aspect of psychiatric disorders, we investigated the domain of social emotion processing and focused on the neural dynamics underlying social emotion processing in alexithymia.

We first replicated impaired emotion processing (indexed by higher P2 amplitudes in EEG recordings of brain activity) and additionally revealed intact emotional multisensory integration in alexithymia (accompanied by intact N1 and N2 EEG responses). Importantly, we demonstrated social-specific impairments of emotion processing in alexithymia (accompanied by higher N2 amplitudes and stronger alpha oscillations). Considering the important role of eyes within the face, we further showed perceptive and affective impairments for emotive eye-region processing in alexithymia, subserved by abnormalities of N1 and frontal alpha asymmetry. Furthermore, we found intact emotion-
cognition integration in alexithymia in a nonsocial context and atypical adaptation to volatility learning following fearful facial expressions (i.e., social context), suggesting that impairments of emotion-cognition interaction in alexithymia are possibly social-specific. Our findings revealed impairments at early as well as later stages of social emotion processing in alexithymia and argued that deficient social emotion processing is at the core of alexithymia. This thesis contributes to the scientific understanding of neuropsychopathology of alexithymia and may aid the development of treatment strategies of alexithymia-related mental disorders.

Zhihao Wang studied Applied Psychology at the South China Normal University in China. He did his doctoral research at the department of Biomedical Sciences of Cells and Systems and the institute of Brain and Cognition of the University Medical Center Groningen. He now works as assistant professor at a university in China. Zhihao defended his thesis on September 14, 2022.

Coordination and timing of speech gestures in Parkinson’s disease

PHD STUDENT
J. Jacobi

THESIS
Coordination and timing of speech gestures in Parkinson’s disease

PROMOTORS
Prof.dr. M.B. Wieling
Prof.dr. B.A.M. Maassen
Prof.dr. R. Jonkers

COPROMOTOR
Dr. M. Proctor

FACULTY
Arts

Many individuals with Parkinson’s disease (PD) experience articulatory difficulties, which often have a considerable impact on their quality of life. It is currently poorly understood which mechanisms underlie these articulatory difficulties. In order to learn more about these mechanisms, this dissertation examined the coordination and timing of speech gestures in PD speech. Both these aspects are intrinsic to articulation, but at current it is unknown how they relate to the articulatory difficulties observed in PD speech. The studies in this dissertation address this issue using state-of-the-art methods. In the first study of this thesis, the effect of levodopa on vowel articulation in PD was examined. The results from this study suggest that articulation of vowels is not influenced by levodopa. In the following two studies, spatial and temporal aspects of speech gestures have been examined. The results from these studies suggest that the timing of speech gestures, and also the coupling between speech gestures is impaired in PD. In the final study of this dissertation, the prevalence and nature of tongue tremor in individuals with PD were investigated. Using a computer algorithm, we found different types of tongue tremor in our data, which we believe may affect the timing of speech gestures. Together, the studies in this dissertation show that coordination and timing are indeed impaired in the speech of (at least some) individuals with PD. We believe that this impairment may be caused by the presence of malfunctioning regulatory mechanisms in PD speech.

Jidde Jacobi defended his thesis on September 26, 2022.

Identifying risk and protective factors for suicide

PHD STUDENT
J. Dickhoff

THESIS
Identifying risk and protective factors for suicide

PROMOTOR
Prof.dr. A. Aleman

COPROMOTORS
Dr. E.M. Opmeer
Prof.dr. M.J. van Tol

FACULTY
Medical Sciences

For all human beings, a core need in life is physical security. It is therefore staggering that, annually approximately 800,000 individuals end their life by suicide (WHO, 2021). Unfortunately, to date, there are still many open questions surrounding the factors contributing to suicidal thoughts, suicidal behavior and suicide. Therefore, the aim of the current thesis was to add knowledge about various risk factors as well as protective factors, that might link to suicide. The results of this thesis show an association between suicidality and the severity of clinical symptoms (e.g., depression severity) and psychological complaints (e.g., hopelessness). With regards to
cognitive risk factors, individuals with suicidality showed better social cognitive skills and lower performance on general cognitive (i.e. attention and verbal learning) tasks. Furthermore, we found a relation between self-harm behavior and weaker unconscious associations with words related to suicide/death. People with self-harm behavior also showed less self-compassion, and a lower level of mindfulness was related to a risk factor (entrapment) for suicidal thoughts. We also found individuals with suicidal thoughts to be less flexible in switching from one brain region to another across the brain, which could be an indicator of more rigidity. The results of this PhD thesis contribute to a better understanding of the complexity of suicide and can be used for future studies about treatment and prevention methods. Ultimately, this will lead to an improved quality of life of individuals at risk for suicide and of our society as a whole.

Justine Dickhoff studied Clinical Neuropsychology at the University of Groningen. She did her doctoral research at the department of Neurosciences and the institute of Brain and Cognition of the University Medical Center Groningen. Justine defended her thesis on September 29, 2022.

Measuring social withdrawal: Using semi-natural social environments to identify translational measures in mice

PHD STUDENT
K.G.O. Ike

THESIS
Measuring social withdrawal: Using semi-natural social environments to identify translational measures in mice

PROMOTOR
Prof.dr. M.J.H. Kas

COPROMOTORS
Dr. S.F. de Boer
Dr. B. Buwalda

FACULTY
Science and Engineering

Excessive social withdrawal is a symptom of multiple neuropsychiatric disorders, greatly impacting the quality of life. The heritability of neuropsychiatric disorders suggests that we can search for their cause in the genetics. Since humans and other animals show overlapping genes and social behavior, we can utilize model organisms to study the genetics behind social withdrawal. Conventional tests for social behavior, in which two interacting animals are observed in an artificial environment, have proven to be difficult to replicate and insufficient to develop a treatment for the patients. There is a need for a reliable and validated test for complex social behaviors. Thus, in his thesis Kevin Ike aims to develop a generalizable and ethologically valid method to reliably quantify social withdrawal in mice, laying a foundation for future translational research.

Ike: “Our methods focus on measuring social group-behavior in a semi-natural environment, in which the mice could interact freely, over a period of multiple days. We have shown that we can replicate findings from earlier research, which used conventional tests, in our semi-natural environments. Further, we were able to replicate the results from our own experiments in another laboratory, showing the robustness of our methods. We have demonstrated that our methods can be used to study human risk genes.
Kevin Ike defended his thesis on October 4, 2022.

Linear order in language: an error-driven learning account

PHD STUDENT
D.B. Hoppe

THESIS
Linear order in language: an error-driven learning account

PROMOTOR
Prof.dr. P. Hendriks

COPROMOTORS
Dr. J.C. van Rij-Tange
Dr. M. Ramscar

FACULTY
Arts

Learners of German often struggle with learning the grammatical gender of nouns and their correct articles, for example, that it should be "die Gabel" (the fork) and not "der Gabel". Why is this so hard? And why do gender systems even exist?

I taught participants differently structured artificial languages and found that it is especially difficult to learn a gender system, when gender is marked before the noun (e.g., in German: "die Gabel", the fork, vs. "der Löffel", the spoon) as compared to when gender is marked after the noun (e.g., in Albanian: "pirun-i", the fork, vs. "lug-a", the spoon). With computational simulations I could show that this effect arises because human learning is sensitive to the order of words.

However, while gendered articles are hard to learn, they can facilitate communication because they can make following nouns more predictable and therefore easier to process: for example, after the German article "der", "Löffel" is quite likely, "Gabel", however, is very unlikely to follow. This is a function that gendered suffixes, as in Albanian, or genderless articles, as in English, cannot fulfill. In a language production study, I observed that speakers produce more articles that can make following nouns predictable, such as German articles, than articles that cannot fulfill this function, such as the English article "the".

I conclude that the order in which gender is marked in languages affects language learning as well as communication. This makes German gender hard to learn but useful for communication.

Dorothée Hoppe defended her thesis on October 6, 2022.

Thinking about thinking: An Exploration of Basic Processes and Higher Order Functions and Metacognition in Adult ADHD

PHD STUDENT
C.M. Butzbach

THESIS
Thinking about thinking: An Exploration of Basic Processes and Higher Order Functions and Metacognition in Adult ADHD

PROMOTOR
Prof.dr. O.M. Tucha

COPROMOTORS
Dr. A.B.M. Fuermaier
Dr. L.I. Tucha

FACULTY
Behavioural and Social Sciences

Attention Deficit Hyperactivity Disorder (ADHD) in adults is associated with various cognitive deficits. First, we explored metacognition in adult ADHD. Metacognition refers to "thinking about thinking", the awareness and regulation of our cognitive processes. To illustrate, think of driving down the highway. If you notice you get tired and less concentrated (self-awareness), you could drive to the nearest
gas station and rest (self-regulation), so when you drive again you might be more concentrated. Patients with ADHD may show deficits in some aspects of metacognition, but other aspects may not be affected. This raises concerns about the widespread reliance on self-reports in clinical assessments and calls for a multidimensional assessment approach. Metacognition influences daily functioning (rated by patients and their relatives), which may have important implications for treatment strategies.

Second, we investigated the impact of basic processes on higher order functions. The rationale is: if the foundation is impaired, any functions building on it may be affected. For example, if someone in a conversation does not register and encode some information (basic process), they may be unable to remember and act on it later (higher order function). A central finding is that basic processes may be part of the foundation of cognitive impairment in adult ADHD. This was replicated with different tests in an independent sample, reinforcing the importance of basic processes. As stimulants may improve basic processes, clinicians could use deficits in basic processes as indication that stimulant treatment may be beneficial.

**Marah Butzbach** defended her thesis on October 6, 2022.

**Cardiac MRI in young adults with sedentary lifestyle-related risks**

**PHD STUDENT**
G.J.H. Snel

**THESIS**
Cardiac MRI in young adults with sedentary lifestyle-related risks

**PROMOTORS**
Prof.dr. R.H.J.A. Slart
Prof.dr. R.A.J.O. Dierckx

**COPROMOTORS**
Dr. N.H.J. Prakken
Dr. R.J.H. Borra

**FACULTY**
Medical Sciences

Western society is characterized by a sedentary lifestyle combined with an unhealthy diet resulting in growing populations with overweight, high blood pressure and type 2 diabetes. In older populations, it was demonstrated that these risk factors trigger cardiac adaptation. If cardiac adaptation already occurs at younger age, these changes could potentially overlap with findings on cardiac MRI that are suggestive of cardiomyopathy, complicating diagnosis and treatment.

In a prospectively recruited study cohort of 311 young adults (18–45 years old, 49% male), the impact of the aforementioned risk factors on cardiac MRI outcomes was investigated. It was shown that overweight, high blood pressure and type 2 diabetes cause alterations in wall mass, cardiac volumes and tissue characteristics. Therefore, reference values of cardiac outcomes have been reported for young risk populations to more reliably assess future MRI scans. Also, it was demonstrated that the body metric being used for indexation of body size has a significant impact. Furthermore, changes in ejection fraction were not found, whereas subtle wall motion abnormalities were present.
With literature, the applicability of the tissue characteristics T2 (edema) and T2*-mapping (iron) was assessed for the differentiation of cardiac diseases, risk factors and healthy individuals. Further, it was demonstrated that aortic dimensions can be measured accurately with native imaging, thereby reducing potential health risks in especially risk populations. Lastly, a short-axis cardiac MRI contour-tracing protocol was validated which can be used to accurately assess morphology and function, and also to manually adjust automated tracings in a standardized fashion.

Gert Jan Snel studied Technical Medicine at the University of Twente. He did his doctoral research at the department of Radiology at the University Medical Center Groningen. Gert Jan defended his thesis on October 10, 2022.

Mild traumatic brain injury at older age: patterns in clinical and neuroimaging data

PHD STUDENT
M. Bittencourt

THESIS
Mild traumatic brain injury at older age: patterns in clinical and neuroimaging data

PROMOTORS
Prof.dr.ir. N.M. Maurits
Prof.dr. J. van der Naalt

FACULTY
Medical Sciences

With the global population growing and getting older, the number of older adults sustaining a mild traumatic brain injury (mTBI) increases. In this population, which is at higher risk of developing persistent post-traumatic complaints, complex interactions between brain injury, age-related neurological changes and other pre-injury factors are likely involved in determining recovery. In this thesis, we employed neuroimaging techniques and machine learning methods to answer clinical questions such as: "Which (combination of) self-reported complaints indicates increased risk for incomplete recovery in older adults who suffered an mTBI?" and "How can effects of sustaining mTBI at older age on brain functioning be disentangled from those of ageing?". By analyzing clinical data, we identified post-injury neck pain, irritability and forgetfulness as potential prognostic markers for incomplete recovery after mTBI at older age. By analyzing neuroimaging data at rest and during a working memory task, we found altered brain activity in this population, in areas involved in the integration of multisensory inputs (e.g. left-middle temporal gyrus, cerebellum). Despite (cognitive) complaints, working memory performance of older patients with mTBI was unimpaired. However, we observed hypoconnectivity between their...
bilateral insula, while activity in these regions was not associated with task performance. Perhaps sustaining an mTBI affects regions that are indirectly involved in cognitive processes, such as sustained attention, self-motivation and integration of sensorial inputs for visuomotor control or visual-auditory perception. The observed changes in brain functioning could act as stressors on more vulnerable, older brains, and partly explain the development of persistent post-traumatic complaints.

Mayra Bittencourt studied Mechatronics Engineering at the Polytechnical School of the University of São Paulo, Brasil. During her master research in 2016 she achieved an Erasmus+ Scholarship for an internship of six months at the department of Neurology of the University Medical Center (UMCG). In 2017 she started her doctoral research at the department of Neurology of the UMCG. Since February 2022 Mayra Bittencourt works as a postdoctoral researcher at the Lab for Experimental Ophthalmology of the UMCG, in collaboration with the Spinoza Centre for Neuroimaging in Amsterdam. Mayra defended her thesis on October 12, 2022.

**Therapeutics development for pantothenate kinase-associated neurodegeneration (PKAN)**

**PHD STUDENT**
S.J. Hayflick

**THESIS**
Therapeutics development for pantothenate kinase-associated neurodegeneration (PKAN)

**PROMOTORS**
Prof.dr. O.C.M. Sibon
Prof.dr. D.J. Reijngoud

**FACULTY**
Medical Sciences

For more than two decades, research has been underway to understand the biology of and develop treatments for PKAN, an ultra-rare genetic disease affecting children and adults. People with PKAN suffer from painful muscle spasms, stiffness, trouble controlling their movements, and blindness. The cause of PKAN is a mis-spelled gene that normally enables the body to use vitamin B5 to build other essential chemicals. Without a properly spelled gene, people with PKAN are unable to make those chemicals to preserve brain and eye health. Our work presented in this thesis has been focused on improving understanding of PKAN and the chemical pathways affected in this progressive disorder. We use that understanding to inspire new ideas to combat this chemical problem and potentially develop a treatment. Our work was provided hope for a way to bypass the PKAN problem, and we are currently focused on testing this idea in people with the disease.

**Susan Hayflick** studied Medicine at The Pennsylvania State University College of Medicine, Hershey in the United States of America (USA) and at The Maine Medical Center in Portland, USA. Thereafter she worked as doctor and researcher at the Oregon Health & Science University, Portland, USA amongst others. Her doctoral research took place at the department of Biomedical Sciences of Cells and Systems of the University Medical Center. After this she will work as a doctor and researcher at Pediatrics and Neurology, Oregon Health & Science University. Susan defended her thesis on October 17, 2022.
Cognitive stage detection and interpretation: Discovering the underlying stages in various tasks using machine learning applied to EEG and MEG

PHD STUDENT
H. Berberyán

THESIS
Cognitive stage detection and interpretation: Discovering the underlying stages in various tasks using machine learning applied to EEG and MEG

PROMOTORS
Dr. J.P. Borst
Prof.dr. D.H. van Rijn

FACULTY
Science and Engineering

Every process of our life can be divided into steps or, in other words, stages that describe this process. This concerns simple daily activities such as preparing to go to work and more complex activities such as writing a scientific paper or this thesis. Thus, even in completely different areas of life defining the constituent stages play a crucial role for understanding the process. With this thesis, we aim to provide a better understanding of the stages encompassing cognitive processing. To obtain this goal, we have used a combined technique from artificial intelligence and neuroscience, a novel machine learning algorithm called Hidden semi-Markov Model multivariate pattern analysis (HsMM-MVPA). This big-data method takes all data of an experiment into account simultaneously, to ultimately track cognitive processes in much more detail. In this thesis, we applied HsMM-MVPA to two imaging techniques used to measure brain activity during the performance of cognitive tasks, electroencephalography (EEG) and magnetoencephalography (MEG). These techniques have very high temporal resolution allowing to record brain activity on a millisecond timescale. To obtain robust conclusions on the cognitive stages, we combined HsMM-MVPA with experimental manipulations and other traditional modelling techniques. Additionally, we wanted our stage definitions to be task-independent; for this reason, we used three different tasks of increasing complexity: simple visual discrimination, lexical decision and vocabulary learning tasks.

Hermine Berberyán defended her thesis on October 18, 2022.

EVELYN KUIPER-DRENTH, ON BASIS OF PRESS REPORTS OF THE UNIVERSITY OF GRONINGEN

PHOTO BY MARTIJN GAEBLER
Success is 1% inspiration, 98% perspiration, and 2% attention to details. – Phil Dunphy in Modern Family

Bart van Dijken

All of life is social.

Tiphaine Bailly

All models are wrong, but some are useful.

George E. P. Box

It’s not whether you get knocked down, it’s whether you get back up – Vince Lombardi

Gert Jan Snel

Curiosity is really made of what is already known by the imagination [A curiosidade é mesmo feita do que já se conhece com a imaginação]. - Chico Buarque de Hollanda, Turbulence [Estorvo], 1991.

Mayra Bittencourt

With time, people become more hardened in their views unless they work to actively keep their mind open to new ideas and information.

Susan Hayflick

The simple believes everything, but the prudent gives thought to his steps (Bible, Proverbs 14:15).

Hermine Berbery

The only constant in life is change.

Jing Wang
COOL LINKS IN NEUROSCIENCE

> Site
  https://neurotorium.org/
  An online platform filled with educational resources about neuroscience. Their content - images, powerpoint slides, videos etc. – is freely available for you to use.

> Digital magazine
  https://aeon.co/
  Since 2012, Aeon has established itself as a unique digital magazine, publishing some of the most profound and provocative thinking on the web. They ask the big questions and find the freshest, most original answers, provided by leading thinkers on science, philosophy, society and the arts. Aeon’s content is completely free to enjoy. Check it out!

> Column
  A fascinating column about a new fabric that can 'hear' sounds or broadcast them. Fabrics containing special fibers might become an easy, comfy – and maybe trendy – way to listen to our organs or to aid hearing.

> Twitter account to follow
  @slava_bobrov
  Not only the latest scientific developments and articles are shared on twitter, but also wonderful animations. Follow, for example, this account of @Slava_bobrov who shares intuitive animations about biology & nature. However, since Elon Musk took over Twitter, Mastodon seems to be THE new platform. Let's give it a try.

BY SOPHIE VAN ZONNEVELD
Do you enjoy reading the BCN magazine?

If so, why not join our enthusiastic editorial team and make it even better? Regardless of whether you’re a master student or PhD student, it’s a great way to expand your network, improve your English writing skills, and be actively involved in BCN.

Interested?
Send an e-mail to Sander Martens, a.d.j.martens@rug.nl!