Exclusive first look inside Infoversum!

IN THIS ISSUE
An interview with Prof. Jan-Willem Romeijn: Science through philosophical lenses 2
Introducing a new staff writer: Anouschka Ramsteijn 4
Afterthoughts: Interactive double PhD interview between Caroline Coppens and Esther Veldhuis-Opmeer 5

Infoversum:
A diamond in the rough 7

Interview with Professor Paul Luiten:
The art of retirement 11
Cool links 13
Introducing a new staff writer: Sanne Brederoo 13
Alumnus Column
The mind-blowing experience of language learning 14

2nd Translational Neurosciences Summer School ‘Ageing Brain’ 15
BCN Symposium 2013 – ‘Connecting to the Brain’ 16
Foreign adventures
USA: Beyond the comfort zone 18
News from the BCN PhD Council 20
Grand stuff 21
PhD and other news 22
PhD Column
BLUE DEVILS! - going from the RUG to Duke 23

Orations 24
Promotions 24
Cheeky theorems 28
Colophon 28
Science through philosophical lenses

Initially, Prof. Jan-Willem Romeijn started as a physics student, but while he was studying problems of quantum mechanics and the intertwining of time and space, other questions arose from his mind: What does it actually mean to know these things? How does a factor like time relate to our personal experience of time? Driven by this curiosity, he started to study philosophy, and in the end, he finished both studies cum laude. This year, Jan-Willem Romeijn became Professor of Philosophy of Science, and last July he held his inaugural lecture that was ambiguously titled “Filosofie voor de wetenschappen” – ambiguous because the Dutch word “voor” can be translated in two ways. Both “Philosophy at the service of science” and “Philosophy before science” would provide a correct translation of the lecture title. To clarify this ambiguity, we visited Prof. Romeijn to talk about the role of philosophy with respect to science, the underlying assumptions of research, and the meaning of chances.

Let us first clarify the difficult question of whether philosophy can actually be referred to as a scientific discipline or not. Prof. Romeijn explains that philosophy is at least different from other disciplines because it is not an empirical branch of science. Perhaps philosophy can best be seen as an autonomous field that is inherently intertwined with practically all fields of science, acting in parallel with science, but not at a similar level. However, as Prof. Romeijn advocates: “Philosophy should pursue a scientific approach to philosophical questions.”

Philosophy at the service of science

When taking a closer look, the contribution of philosophy to science is indeed a rather general one. Philosophers can take a step back, and provide abstract analyses of the logical constructs and concepts used in empirical research. They can supply scientists with knowledge about valid empirical methods, raise statistical awareness, and provide a broad perspective which places scientific results in a meaningful context. All of these aspects seem rather important contributions to science. Thus, should it not be better if scientists would pay more attention to logic in general? Prof. Romeijn: “It is indeed an incredible shame that the analysis of the data is often seen as the final stage of the research. Scientists put a lot of effort and time in theorizing, planning the design, and collecting the data, but they often overlook the wealth of possibilities in the analysis of those data.” He emphasizes the importance of keeping in mind that the scientific aim is to find systematic behaviour in the empirical data, and that hopefully, that systematic behaviour tells us something about how the world works. When following this line of thought, it is already easier to distinguish the good from the bad questions. Raising such awareness among scientists is a major goal of philosophy of science, according to Prof. Romeijn, but how can awareness of the possibilities of the data be increased? Should scientists be better educated regarding statistics or even philosophy? Prof. Romeijn says that it is particularly important that scientists come to understand the
rationale behind statistical analyses instead of learning more statistical tricks. This way, the purpose of the research can be matched with the correct analysis, and following the enhanced understanding, the possibilities and boundaries of the data also will become much clearer than before. In addition, questions can become much more subtle when the knowledge of statistics is increased.

Taking all of this together, philosophy puts scientific results in the right perspective, and can therefore probably be seen as the assistant of science. In this way philosophy acts at the service of science. However, philosophy can also be seen as acting at the root of science, or maybe even before science.

**Philosophy at the root of science**

Scientists collect samples of information and try to fill the gaps of knowledge by drawing conclusions based on these samples. However, the process of induction, which is the reasoning from a small subset to the whole population, relies on a wide set of pre-assumptions. In the 18th century, the philosopher David Hume thought that the problem of induction would be the most difficult problem to solve. Prof. Romeijn states that in the practice of science, the problem is in some sense solved: statistics helps us to relate sample and population. The modeling assumptions that precede research should be more of our concern, because these are crucial for the final conclusions. That is, to derive a meaningful result from statistical analyses the input has to be valid. Prof. Romeijn explains: “It is like the magic trick where a bunny is pulled out of a hat. The trick is only possible when the bunny is put into the hat before the magician performs his trick, otherwise it does not work.” In science, philosophers guard these premises by eliciting and evaluating them, which allows scientists to conduct research that has solid footing.

Although one could think of these assumptions as objective and self-contained, strikingly, Prof. Romeijn argues that we ourselves are at the base of these conventions and premises. We as people have determined these assumptions ourselves based on former experiences. Therefore, we are at the origin of the knowledge we thought we gathered about the world. While this circle might seem a bit mind-dazzling at first, it also emphasizes immediately the limitations of everything we think we know: Everything we know is conditional on the pre-theoretical assumptions we have set. This is not only extremely interesting, but also important for the role of science in society. One implication, for example, is that scientific experts in court are not always able to reveal the information they are asked for. That is, they can only draw conclusions given a set of premises (e.g., the probability of the facts given innocence), which are not always in accordance with the premises asked for (e.g., the probability of innocence given the facts). Another implication is that politicians and other policy makers cannot use the
argument that something is “proven scientifically” without further explanation, because something is only proved given certain conditions. However, the latter is often left out of the story. Therefore, it is important that when people are informed about the facts revealed by scientific research, they are also educated about the assumptions and conditions that are underlying these facts.

**Chances: ignorance or inevitable?**
The last time we talked to Prof. Romeijn, he had just started his VIDI project, which concerns single-case chance and statistics. Of course I am curious what became of the original plans for this project, two years later. “Things are going well”, says Prof. Romeijn, “My two PhD students are doing a good job, and I am planning to focus more on the metaphysics of chance, instead of the actual statistics of chances.” He explains that the plan was to focus on these metaphysics earlier, but “once people see something as your expertise, it is hard to get rid of.” But now, since the subject is properly demarcated, the time is ready to concentrate on this very philosophical topic of the metaphysics of chance.

So for example, what does it mean that we can reveal processes at a really low level, e.g., cells, but that, at the higher level, e.g., becoming ill, we can only predict something based on chance? Is this inability to reveal a cause-effect chain all the way up to the higher level caused by a lack of knowledge, lack of measurement techniques, by ignorance? Or is it simply not possible to make a better judgment than one based on chance as in quantum mechanics? If it were up to Prof. Romeijn, and what was already wished for by Descartes, then in the future, we will be able to precisely determine the relationships of cause and effect for practically everything. Although this seems rather unlikely when we look at the “chaos” that seems to be at the origin of our society, or our experiences and behaviour, a similar thing happened to the field of physics. At first, there also seemed to be only chaos, however, eventually we have successfully managed to reveal many underlying cause-effect rules in physical systems. However, for now, the question remains: Is chance just an intermediate solution or is it inevitable?

> Once people see something as your expertise, it is hard to get rid of. <
Afterthoughts: Interactive double PhD interview between Caroline Coppens and Esther Veldhuis-Opmeer

For many starting PhD students, it is hard to imagine what a PhD will be like. Caroline Coppens (who studied adolescent social stress in rats) and Esther Veldhuis-Opmeer (who studied depression) both recently finished their PhDs. One important thing they have to tell about doing a PhD is that it will never stop!

After some confusion about whether to chat in Dutch or English, the session begins.

Esther
I’m ready!

Caroline
So am I.

Are you still working in Groningen?

Esther
Yes I am still working in Groningen. I am doing a postdoc in the same research group as my PhD. What are you doing at the moment?

Caroline
Is your new research also a follow up of your PhD or is the topic different? My building, room and desk didn’t change, but my work did: I am currently appointed as a teacher at the institution where I did my PhD.

It’s a temporary position that gives me time to think about what to do next.

Caroline
Is your new research also a follow up of your PhD or is the topic different? My topic slightly changed. My PhD was about brain activation in major depressive disorder and the changes in brain activation over time (I did my PhD at the Neuroimaging Center). My postdoc is about the brain activation related to apathy in schizophrenia.

However, the last couple of months I was mostly busy with resubmitting manuscripts from my thesis.

What was your PhD topic? I think I heard a talk about it during the BCN retreat, but do not remember anymore...

Caroline
Completing a PhD project often seems like a never ending story!

Esther
Haha true!

Caroline
My topic was adult aggression and impulsivity, and how adolescent social stress affects this.

One of the former PhD students in our department told me once that you should not think that your PhD will be done when you submit it to the reading committee, but once you leave the academic building. However, it is apparently even longer...

Esther
Interesting! Yes, I think it is finished when all the articles are accepted. At least within medical sciences.

And you are a full-time teacher at the moment? And is that something you would like to continue or is it temporary?

> Caroline: I have never ever been so nervous! <
CONTINUATION OF THE INTERACTIVE DOUBLE PHD INTERVIEW BETWEEN CAROLINE COPPENS AND ESTHER VELDHUIS-OPMEER

**Caroline**
I am working four days a week, which is perfect. I really enjoy the time for myself. I will probably not continue teaching, it is only temporary. It is good to get some experience with it, but I prefer organising stuff. Whether that is research or organising education doesn’t really matter, I found out.

You are planning to stay in research I assume?

**Esther**
Yes, I hope so. I now have a contract for four years (three years to go), so I could still stay for a while. After my current contract I’ll have to make sure to have some research money again. But I also like teaching and clinical work, so perhaps I will combine it in the future.

Did you organise the financing of your current research yourself?

**Esther**
No, I am working on the VICI-grant of André Aleman. So to get my own financing will be a new challenge! But apparently you also liked your work environment because you would like to stay there?

Yes, I really enjoyed my work environment (and Groningen as well). In my field it is kind of the ‘rule’ to go abroad for a postdoc if you are planning to stay in research. Something I am not planning to do, which is one of the main reasons not to stay in research. Combined with the fact that you have to write grants which are at the moment difficult to obtain...

That’s probably not a requirement in your field, or is it? I mean, the international experience.

**Esther**
Well, it is actually necessary also in our field for your scientific career to go abroad. But I also quite like working in Groningen and my life here. Therefore, I also do not have the ambition to go abroad. I am now very lucky with my postdoc position, but I’ll have to see what will happen after four years when I do not have international experience. However, I have a broad interest, so I am not afraid that I will not find a job that interests me.

But something else, how was your defence? Were you very nervous? Did you like it?

**Caroline**
I have never ever been so nervous! It went really well though. I thought of the questions they could ask and wrote elevator pitches with the answers and it turned out that 80% of the questions were the questions that I expected.

How was yours?

**Esther**
Good preparation! Me too! And I was now thinking that I cannot really remember what they asked me. Perhaps I should have enjoyed it more at the moment.

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> Esther: So to get my own financing will be a new challenge! <

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**BY FREDERIEKE V LieG**
**PHOTO CAROLINE BY MAYKE BOSMAN**
**PHOTO ESTHER BY SANDER MARTENS**
Infoversum: A diamond in the rough

If you have been near the Ebbingekwartier behind the Neuroimaging Center lately, you will have noticed an active construction site. Since I live right around the corner and pass by there regularly, I had been wondering what was being built. The info board next to the construction site displays a futuristic dome-like building that is called the Infoversum. I decided to get in touch with the people in charge to unravel the mystery of this new building in UMCG’s backyard.

I contacted one of the project leaders, Annemarie Hofman, and asked for an interview. My curiosity about the project was easily matched by her enthusiasm and willingness to share information. On top of agreeing to an interview, she invited me to the construction site to give me a tour. Our editor-in-chief received a similar invitation to take pictures.

I arrived at the construction site on a picture perfect Dutch autumn morning: it was windy, cold and damp. My first impression of the building was that it looked like an awesome hybrid between a ship and a spaceship, dominated by a giant dome. It reminded me a bit of the Universum Science Center in Bremen (http://www.universum-bremen.de/en/).
The tour started with some background information about the production process and the materials used. Architect Jack van der Palen had a long-time wish to design an unconventional building, and had been searching for non-traditional building materials. He ended up with steel as the material of choice, because it is flexible and relatively easy to work with. At the same time, the instigator of Infoversum, Prof. Edwin Valentijn, had been dreaming of a theater and once they found each other, the project developed naturally.

The base structure engulfing the dome is made up of huge plates of steel, and you can still see the welding marks of where they have been joined. Currently, both the architect and production team hope for a wet, cold, and long winter to facilitate the rusting process since the outer parts will not actually be painted but will instead feature the thoroughly rusted steel facade.

The dominating structure of the building – the huge dome – is also made of steel. The individual parts are produced by the Groningen-based company Centraalstaal B.V. (http://www.centraalstaal.nl), less than two kilometers from the construction site. This company traditionally focused on shipbuilding but has recently branched out to contribute to complex architectural projects. Consequently, they bring a unique set of steel bending and forming skills to the table. The fact that the individual parts can be produced in the factory around the corner and then assembled on-site also greatly facilitates the production process, making it surprisingly efficient.

During the tour, we were able to see the bare inside of the dome. It is hard to believe that all the individual parts were first shaped by hand and then assembled outside the building. Ultimately, the resulting half dome, weighing 65,000 kg, was lifted onto the base structure of the building with an enormous crane. Apparently, there was quite some excitement about whether the dome would actually fit. It did fit, of course, which is nevertheless impressive given that all the individual parts had been hand-bent and produced by a handful of highly specialized people.

One thing that has been stressed again and again is that the project aims to be sustainable and local. If feasible, the companies and people involved in the production process are locals, thus emphasizing local craftsmanship and expertise. The final look and feel of the building is supposed to combine the raw and natural feeling of the steel structures on the outside with the high-tech entertainment system on the inside.

Which brings us to the next and possibly most interesting point: What will be inside this impressive dome of steel? The short but over-simplified answer...
is: a 3D full-dome movie theater. A 3D full-dome movie theater basically means that the entire surface area of the inside of the dome is one giant screen on which you can watch 3D movies. Its future audience will be seated in reclining chairs and the experience is supposed to be much more immersive than a regular 3D movie, because you can literally lean back and look at things. Of course, this is great for entertainment. But the added benefit might be even greater for educational purposes such as visualizing data and zooming through different solar systems, brains, DNA, and the like. The potential for educational purposes is actually the main reason that the University of Groningen is one of the co-founders of the Infoversum project. Other collaborators come from the private and public domain.

The dome will provide room for 265 seats and can also be used as a lecture hall. Furthermore, the inside of the dome and the seats are engineered in such a way that they can be removed within minutes so that the hall can also be used to accommodate up to 400 standing visitors and be used for receptions, presentations, or a dance floor. The latter option seems especially intriguing if the music can be synchronized with visualizations on the full-dome screen.

The Infoversum has more to offer than what is going on within the dome, though. The entrance area of the venue is publicly accessible and there will also be access to a terrace that is planned as an outdoor café with space to hang out and have a drink. A projector that will be installed in the outer wall will be able to project things onto the outside of the dome and it will be interesting to see how that will be used. Furthermore, there is a garden area surrounding the building and stairs will be constructed that lead straight down to the adjoining channel.

Overall, one should not forget that the Infoversum is a commercial project. It is not subsidized and needs to make a profit to exist in the long run. That means that throughout the production process, Infoversum project leaders have put a lot of effort into maximizing the possible ways in which the venue can be used and made attractive to people in the area. Apart from aiming to attract people that might have something to celebrate, or companies that want to use the venue for commercial events, the Infoversum’s stated goal is that of infotainment. Even though Hofman is not too fond of the term herself, it encapsulates the idea of attracting people by providing them with a novel entertaining experience, while at the same time informing them about various things in a unique way.

A possible scenario might be the showing of a fully animated 3D full-dome movie that is both entertaining and educational. After guests buy their tickets, they will enter the lobby in which they will have time to walk around and check out exhibitions that are related to the movie they are about to see. This is both to give their eyes some time to adjust to the darker environment and to combine interesting art and/or science exhibitions with the movie-going experience. After the movie ends, they will leave the dome through another door and enter a lounge area where they can have drinks, hang out, and access the terrace.
If everything goes according to plan, the Infoversum will open in the summer of 2014. The primary target audience consists of people from the area, but in the long run, the Infoversum will try to establish itself as a tourist attraction that is unique in the region, pulling in visitors from the rest of the Netherlands and Northern Germany.

Overall, the Infoversum seems like a great place to bring together science and entertainment. The Department of Astronomy is one of the driving forces from within the university, but the knowledge generated in the UMCG will be of great value as well. As such, the university will operate as a scientific communicator and the Infoversum will serve as a great way to make on-going research more accessible to the general public. This also connects with one of the university’s main themes: Big Data. The Infoversum will provide a unique way to visualize and communicate data. And since it will ultimately be a commercial venue like any other in the region, any interested party – be it either within the university, a private person, or a company – can rent the Infoversum facilities to promote and present their ideas in a unique way.

Since all 3D full-dome movies need to be specifically rendered to be compatible with the high-tech projectors and format used in the dome, one cannot simply show a regular 3D movie. Therefore, the Infoversum will not be competing with local cinemas but does provide a truly unique experience. On the other hand, this also means that the selection of available movies will be different. Unlike a regular cinema, though, the venue is multi-functional and can be used for all kinds of events that do not necessarily involve movies. It will be interesting to see which clients the Infoversum will eventually attract. And it might be even more interesting to see which ideas people in the area come up with for the Infoversum, things that may never have crossed the project leaders’ minds.

> The Infoversum seems like a great place to bring together science and entertainment. <

By Florian Sense

Photos by Sander Martens
INTERVIEW WITH PROFESSOR PAUL LUITEN

The art of retirement

Having worked in the Department of Molecular Neurobiology for years, Prof. Paul Luiten recently retired. Here, we are honored to have Prof. Paul Luiten to share about his life before and after retirement.

As far as I know, your main research interest relates to the ageing brain, with a special focus on Alzheimer’s disease. What brought you into this field?

My interest in brain ageing has a long history. Initially my coworkers and I were focused on mechanisms of neurodegeneration and ways to protect the brain against these challenges. In that sense we did many studies on neuronal cell death after stroke, and later found out that partly similar mechanisms played a role in brain damage in Alzheimer’s disease. In general, I could say that I was always interested in the biomedical aspects of brain function, with the starting point that brain dysfunction can only be appreciated when we know more about basic neuronal mechanisms.

Did you set some long-term goals to achieve when you started your scientific career? How were these goals later achieved?

As I said earlier, I was always intrigued by the brain and its functions in health and disease. However, I did not have long-term goals when I started as a PhD student. The longest-term goal was to get my PhD degree on time. After that I applied for a postdoc grant to obtain new experience abroad and did a postdoc in San Juan, Puerto Rico and later in Toyama, Japan. After returning to Groningen, I began applying for grants and gradually extended my own research lines which were increasingly focused on memory mechanisms. It was hard work, doing good research, writing papers, travelling, attending conferences and building up networks. Precisely the job of a neuroscientist! But let’s not forget teaching and the fact that I always enjoyed the transfer of knowledge to the new generation, so also setting up inspiring teaching programs (at least I hope they were inspiring!).

When you look back at your whole career, what are you most proud of or impressed by? If you got an opportunity to go back to the old days, are there any regrets you would like to make up for throughout your whole career?

Probably I should have spent more time with my family, but apart from that I certainly have no regrets to begin with. Do not forget that I began my career in a period when universities were growing with all the benefits that came with expanding budgets. In that respect I was very lucky, and I am fully aware of this.

There are several scientific findings I am proud of (although this is not precisely how I would describe myself). I can give a few examples. Together with Eddy van der Zee, I think we were the first to visualize permanent changes in protein kinases expression in the hippocampus of animals as a result of a learning experience. In a different project with Eszter Farkas (from Hungary) and Rob de Vos (from Enschede), we discovered robust microvascular breakdown in the brain of Alzheimer patients and the fact that hypertension is basic to an accelerated vascular breakdown. This view is now gaining serious attention in Alzheimer research. With Tibor Harkany (also from Hungary) and Jaap Korf, we could demonstrate that neuronal damage after amyloid exposure (the key phenomenon in Alzheimer) involves glutamate overstimulation. The importance of this finding is the fact that it is one of the leading principles of current drug development for Alzheimer’s disease.

The website of Globalisation Studies Groningen (GSG) says that you were active in it as a membership of the Board of Governors. Could you please briefly introduce the GSG? What was your working experience like there? Are you still involved in it now?

Globalisation Studies Groningen is an interfaculty organization in our university that coordinates and stimulates scientific research and education for students and projects from developing countries. The GSG has a highly motivated and active permanent staff. The Board of Governors acts as a kind of support team for the staff.
CONTINUATION OF THE INTERVIEW WITH PROFESSOR PAUL LUITEN

where we discuss the financial frameworks, strategies and goals, selection of new staff and other related topics. I was asked to become a member of this board because I had a very different background than most of the other board members. Apparently, they were looking for ‘new blood’. I think it helped that I had long term experience with the organization of BCN, since I was a BCN board member and chairman for ten years. I truly believe that doing things out of the ordinary is a stimulating extension of the university job as a neurobiology professor. Although I am now formally retired, I will do this board function a little longer (unless they want to get rid of me).

Have you withdrawn from the scientific community or teaching activities completely now, or are you still involved to some degree?

In fact I was a bit surprised that I received several invitations for part-time functions. Apart from doing some teaching activities, I was asked by our national science foundation, NWO, to join the programme committee of the newly launched Deltapanf Dementie. This Deltapan involves a considerable funding programme to stimulate innovative scientific research on dementia and in particular Alzheimer’s disease. The idea is that I join this programme for the next four or five years (if my health allows me). It is not a full time job but there is a serious amount of work to be done over the years in selecting the best research proposals that fit into the deltapan framework. Moreover, I was asked for a couple of other Alzheimer-related activities such as giving comments, selection of conference abstracts, etc.

I heard that you will receive an honorary doctorate from Semmelweis University on 15th November. Congratulations! Would you like to say something about it?

Thanks for your congratulations. In fact this came as a big surprise to me. I guess it has to do with the fact that I have done a lot of research with Hungarian colleagues, and was involved in educating many Hungarian students in my career. My Hungarian connection started with the appointment with Bela Bohus as our department head and professor in 1981. With Bela Bohus, one of his coworkers, Csaba Nyakas, came to Groningen as well on a part-time basis. With Csaba Nyakas, we started a long-term collaboration that continues up to this day. Over the years, a whole bunch of master and PhD students came to Groningen to do their training and shared their interests with us. I think an important motor of this intensive exchange was the impressive communicative skills of Bela Bohus (who most unfortunately died prematurely when he was 64, only months before his retirement).

How is your retirement life? What do you think are the most significant differences in your life before and after retirement?

The great thing about retirement is that I do not have to worry about funding, bureaucracy, and many of the less attractive components of the professor job. The 1970’s were in a sense carefree years, the way I experienced it. I am aware of the fact that top science is extremely competitive these days, and I do not expect that this will become less in the near future. One of my pieces of advice is to be prepared for other options than to be successful in science at any price. The road to success cannot be predicted. Maybe it is better not to think too far ahead. I remember my PhD period as a time where I could fully indulge in my research topic. Make use of the facilities that are offered to you but do not forget to look around and broaden your horizon. Discover yourself and find out which talents you have in stock. The future will come to you anyway.

Every researcher would dream about having a successful scientific career. Do you have any advice or words for other researchers (e.g. new PhD students)?

This is a very difficult question as I never really planned to become a successful scientist when I was 25 in 1973. The 1970’s were in a sense carefree years, the way I experienced it. I am aware of the fact that top science is extremely competitive these days, and I do not expect that this will become less in the near future. One of my pieces of advice is to be prepared for other options than to be successful in science at any price. The road to success cannot be predicted. Maybe it is better not to think too far ahead. I remember my PhD period as a time where I could fully indulge in my research topic. Make use of the facilities that are offered to you but do not forget to look around and broaden your horizon (e.g. by participating in activities other than your own project). Discover yourself and find out which talents you have in stock. The future will come to you anyway.
My studies in Cognitive Neuropsychology led me from Groningen to Amsterdam and back again. The journey was not merely one between the north and west of the country: I also made some trips to scientific disciplines outside my main focus. In Amsterdam I became very interested in neurolinguistics, which brought me back to Groningen, where I did a research internship in this field at the Faculty of Arts and Neuroimaging Center. After completing my master studies, I completed a bachelor in the Philosophy of a Scientific Discipline, where I got to know a lot about philosophy of mind, and learned to look at (neuro)science from a meta-perspective. Now I’m back to my roots, doing my PhD on visual perception and lateralization in the Department of Experimental Psychology.

I’m very glad to be a part of BCN, because here’s where it (we) all comes together. Rather than just reading about BCN research and events, I will contribute to this newsletter by writing about things that interest me, and –hopefully– you.

Cool links

Stumbled upon very cool or useful BCN/Science related things (e.g., youtube, articles, demos, websites) that you think are worth sharing to the BCN community? Let us know, and we’ll include a selection of it here!

- A BBC piece about a recent report from CELL about the molecular basis of jet lag
  http://www.bbc.co.uk/news/health-23880152

- This Nature paper created quite a stir, reporting beneficial effects of video gaming on healthy ageing.
  http://www.nature.com/news/gaming-improves-multitasking-skills-1.13674

- WEIRD Science: A helpful diagram of American Psychology and how our samples might be severely biased towards “Westerners”
  http://www.bestpsychologydegrees.org/american-psychology/

- Psychologically Flawed: A blogpost on the different expressions used to approximate insignificance
  http://mchankins.wordpress.com/2013/04/21/still-not-significant-2/

- Neurosynth: Large-scale, automated synthesis of fMRI data from published articles (updated often)
  http://neurosynth.org/

- The Reproducibility Project (for Cognitive Psychology) on the Open Science Framework
  https://www.openscienceframework.org/project/EZcUj/wiki/home

- “Science in transition” advocates that new checks and balances are desperately needed in science. Read the proposition on the website, and decide for yourself:
  www.scienceintransition.nl (proposition is also available in English)
The mind-blowing experience of language learning

As a person who grew up in a region in northern Italy where Italian and German coexist, I always considered bilingualism to be a very natural phenomenon. Being able to understand and speak two languages, and being able to watch movies or listen to the radio in either of the two – seemingly without any effort – was a given.

That view changed during my Communication Sciences and Disorders studies at the University of Padova (Italy), when I attended a talk from Michel Paradis, one of the world’s experts in bilingual aphasia. He explained that bilingual people who suffer from brain damage exhibit various types of recovery patterns, including selectively recovering the second, less dominant language, while “losing” the native, more dominant one. That day marked the realization that one of the central characteristics that makes us human, the ability to use language, and particularly the ability to use our native language, could be abruptly influenced by brain damage. That very day I decided on my research path. I wanted to specialize in understanding what happens to the language abilities of people who suffer from aphasia (from Greek ἀφασία, speechlessness), particularly in people who are bilinguals and suffer from aphasia.

After completing my first MA degree in Communication Sciences and Disorders at the University of Padova under the mentorship of Dr. Gianfranco Denes, I wanted to specialize even more on the linguistic and neural aspects of aphasia, and language processing in general. After evaluating different opportunities, I applied and was accepted to the EMCL program (European Master in Clinical Linguistics) at the University of Groningen. Those two years marked the time of big personal changes (including learning Dutch, my fourth language), and incredible scholarly insights. Under the mentorship of Dr. Roelien Bastiaanse, I graduated with a thesis focused on a cross-linguistic comparison of Italian and German aphasia. This master’s experience set the stage for thinking about future projects that could be developed into a PhD research programme, which I started in 2003.

The four years I spent between the Harmonie building and BCN in Groningen were of intense learning, research, and travels for data collection. Given that my dissertation project focused on understanding the linguistic consequences of aphasia in Italian speakers, I spent several months traveling to Italy, contacting specialized medical institutions, screening patients suffering from aphasia to determine whether they fit the required profile, and most of all, spending a lot of time with them. During the time I spent working with aphasic speakers, I could not stop thinking that some of the language patterns they produced vaguely reminded me of those early stages when we struggle to learn a second language. Often, sentences simply do not come out correctly, or if they do, they sound slow and painful to the listener’s ear. At the same time, I noticed that something incredible was happening to my native language, Italian. When speaking on the phone with my parents, they would sometimes make fun of me, mentioning that they could not understand what I really “meant”. When traveling in Italy on a train, co-travelers would compliment my ability to speak Italian, and they would ask me where I had studied it. Those anecdotes were only the first signs that suggested that something incredible was happening: speaking and using English and Dutch (my third and fourth languages) on a daily basis was beginning to impact my native language. In other words, my native language was changing due to allocating cognitive resources to the processing of English and Dutch.

The illuminating thought that we are all to a certain extent aphasic speakers when we are trying to acquire a second language, and also when we experience the first stages of language change in our native language due to the interference by competing languages, inspired me to write (and win) a grant to start my postdoctoral studies at the Center for Language Science at Penn State University (USA), one of the world-renowned centers for research on bilingualism. After three years of intense postdoctoral research under the enriching mentorship of Dr. Judith Kroll and Dr. Giulia Dussias, gearing my research on learning a variety of behavioural and neuroimaging techniques (among which ERPs, eye-tracking and fMRI) to investigate bilingual language processing, I was ready to start my new position as Visiting Assistant Professor in Linguistics at Penn State.

I feel I am on the verge of a new professional and life experience. I am sometimes anxious by the quantity and novelty of tasks linked to a Professor status, but I cherish the original enthusiasm that made me absolutely electrified by trying to understand the mechanisms and the link between the various realities of language; its first acquisition, its loss, and its constant changing as a consequence of acquiring a second or several other languages.

By Eleonora Rossi
Photo by Gerald Hewitson
2nd Translational Neurosciences Summer School ‘Ageing Brain’

Ghent, 26-31 August 2013

After the success of the first edition of the Neurosciences Summer School in Groningen in 2012, the Laboratory for Clinical and Experimental Neurophysiology, Biology and Psychology (LCEN3) at Ghent University hosted this year’s U4 – NEU4EU Summer School ‘Ageing Brain’.

Ghent welcomed a total of 15 master students and all 7 U4 PhD students to this year’s Summer School. Seven different nationalities were present (Belgium, The Netherlands, Sweden, Germany, Denmark, Spain, Canada) with different types of background (medical, biomedical, engineering, psychology, etc.).

In the morning, the students attended interactive classes on five different themes, taught by an international group of speakers all linked to the U4 – NEU4EU network: Ageing in clinical practice, Diagnostics in neuroscience and ageing, Neurobiology in neuroscience and ageing, Ageing from a neuropsychological perspective, and Therapeutics in neuroscience and ageing. In the afternoon, the students were given the opportunity to work on their assignment in different groups. The task consisted of the writing of a full project proposal and the preparation of a formal presentation.

On Wednesday 28 August a special U4 – NEU4EU PhD Symposium was organized in ‘Het Pand’. During this symposium, the U4 PhD students were given the opportunity to present their ongoing work.

In addition to work, the students had the chance to get to know the beautiful city of Ghent during the social activities organized by the PhD students from LCEN3, such as the ‘Ghent-City-Trip’ with a guided tour around the city, a visit to the local brewery and a boat ride on the city’s canals. It was the perfect end for a successful U4 Summer School!

■ BY EVELIEN CARRETTE AND MICHIEL HOOIVELD
■ PHOTOS BY MICHIEL HOOIVELD
BCN Symposium 2013 – ‘Connecting to the Brain’

On the 7th of November, the annual BCN Symposium took place. The topic of this year’s symposium was ‘Connecting to the Brain’.

There are several ways of ‘connecting to’, ‘communicating with’ or studying the brain. For example, Brain–computer interfacing is aimed at forming a direct communication between the brain and an external device. The 2013 edition of the BCN symposium focused on providing insight into a range of possibilities to study the brain and to interact with it.
The symposium was opened and chaired by Lambert Schomaker, professor of Artificial Intelligence. Next, Prof. Jens Schouenborg (Lund University, Sweden) gave an interesting presentation on biocompatible brain implants for long-term use. Maarten de Vos (Universität Oldenburg, Germany) elaborated on the development of a truly mobile EEG system suitable for field recording and described its use in real-life situations. The last speaker of the morning session, Olivier Macherey from the Laboratoire de Mécanique et d’Acoustique (CNRS, Marseille, France) gave a nice presentation on cochlear implants, the first and, to date, only suitable prosthesis capable of substituting a sensory organ.

During the afternoon, three parallel sessions were organized, with the topics ‘Multi-electrode arrays’, ‘Brain-computer interfacing with EEG’ and ‘Voice, speech and language’ with well-known speakers from Twente University and the University of Groningen.
FOREIGN ADVENTURES

USA: Beyond the comfort zone

Schiphol, February 2013. I was hardly aware of anything but my Scientific American. We have jumping genes, I read in the article. OK, fascinating. But not as fascinating as the cocktail party effect: my attention jumped to stewardesses whispering my name. “Where is Robin? Is he sitting here? Have you seen him?” When I thought nothing could go wrong (survived the visa interview and customs), Nemo the Boston Blizzard effectively cancelled my flight to the US.

I felt surprisingly numb. I get giggly whenever perfectly planned things go horribly wrong: Because of the storm, Iceland Air suggested to send me to Iceland first where I would stay in a hotel for free, and wait until the blizzard was over, before traveling from Iceland to Boston. Sure. So I stayed there for the night, and then another night, and then another one. Meanwhile, I swam in hot springs and thermal baths, out in the open with an air temperature of -2°C, mountain views, free breakfast, free lunch, and free dinner. When people get stuck in disasters, they flock. And what a flock it was: A Harvard neuroscientist, a brilliant Indian mathematician, a Scandinavian drug user in search of higher order consciousness and more. We grouped together and drank at night, each night the group increased in size, nothing else to do but chat and enjoy life. I even met a Brown alumnus that knew the professor I would be working for during the coming seven months of my BCN major project. It was so perfect.

Some days later, I ended up in Providence, Rhode Island. I was dropped off (by a woman I met in Iceland) at the beginning of the street I would be living on. Normally, I can manage walking 100 meters. But now there was a 1.5 meter-tall wall of snow in my way. Try that with two big suitcases! An hour later, I knocked on the door of 118 Daboll Street. No one home. I called the phone numbers of my to-be-roommates. No answer. Then I discovered that the front door wasn’t properly closed. I could force my way in. “Hello? Anyone home?” I went to the second and third floor. No one home. But I did hear some kind of Gangster rap music coming from the first floor. I pushed open the door of their living room. It smelled like weed, smoke everywhere, one giant television, two barking dogs, and a bunch of cool Latino guys with caps and golden chains. “Anyone of you Jack, my roommate?” I asked. “Who Jack?” they replied “What you doin’ in our house?!?”. Luckily for me, a drowsy Jack came walking down the stairs. “It’s OK guys, he’s the new roommate”. Jack fell asleep while waiting for me to arrive. He was always sleepy always sleepy.

A few months later, I relaxed in my room. Science went well. Awesome lab. And I was reading the Providence Journal. “Teenager stabbed to death in downtown Providence”. Wait a minute. I know this guy. He’s from the family that is living on the first floor! I soon discovered what
happened. One of the girls downstairs messed with a guy that had a girlfriend. This girlfriend sent a few of her homies to beat the shit out of the girl. So her brother showed the guns he owned on Facebook, with the message “These are the guns I’m going to kill you with. For what you did to my sister”. One day, her brother went on the bus downtown, and saw “Diamond”, one of the main perpetrators, sitting on a bench. He ran towards him and there soon was a clash of knives. Diamond ended up in hospital. The brother apparently stumbled into a café. “Help me… it was Diamond… he stabbed me” were his last words.

You think the family on the first floor learned a lesson? Well, the sister posted on Facebook “You guys are responsible, you’re next (showing guns etc.)”. Camp Diamond decided to do a drive by. Three shots were fired through the windows of 118 Daboll. I decided to move house.

My last months were spectacular. I ended up living in a well off area, a 5 minute walk from Brown. This is where all my lab mates lived too. After work, we would have jam sessions, play squash, tennis, and cook dinners for each other. The cooking sessions were amazing, as my lab mates came from all over the world: China, Korea, France, Morocco, Germany, Turkey, Serbia and so on. Only two of them were US citizens.

The lab was huge. We had about 5 postdocs, 10 PhD students and 10 undergrads all working on similar projects. We had meetings every week, often including Chinese food. The lab focuses on biologically inspired computer vision, ranging from object recognition, to automated systems for classifying behaviours of humans and animals, to robot navigation. Awesome tools include a virtual reality lab, a 50,000-dollars-worth cluster of GPUs and lots of huge Macs. Mathematically challenging, especially for us neuroscientists, but very worthwhile.

If you’ll go to the US for your major project, you’ll notice a change of atmosphere. Although people were easy-going and very funny at times (even the PI continuously made jokes, even when reviewing a paper), there just isn’t a ‘zesjes-mentaliteit’. People work about 70 hours per week. And when students are afraid of not getting an A on their test, they drop the class. The PI once told one of my lab mates “Listen, there is a big deadline coming up, lots of money involved, I need you to do all-nighters. In exchange, you can get next week off”. The lab mate agreed. However, starting on Monday in her week off, she was first in the lab, and last to leave.

In August, after sweating, crying and screaming to get my thesis finished, I took a road trip around about 8 States and Canada, together with my girlfriend and my 82-year old grandmother (she decided to come and visit!). The scenery in the US is...... Amazing. Go to Vermont. It’s nuts.

If you’re interested in visiting the lab, take a look here: http://serre-lab.clps.brown.edu/research/. If you’re interested in living at 118 Daboll Street or planning to stab someone and you want to get some tips, I can give you a number.

BY ROBIN MILLS
PHOTOS BY ROBIN MILLS

> I heard some kind of Gangster rap music coming from the first floor. <
The BCN PhD Council is looking forward to another busy and exciting academic year. We have already kicked off with a BBQ to welcome new PhD’s. Luckily it takes more than a few gray clouds to stop a Dutch-style garden party, and a lot of new BCN members got together for a meal and a nice evening.

We also have two new members to welcome aboard, meet Heleen Hoogeveen and Dennis van der Meer!

Heleen Hoogeveen

After I received my Master’s degree in Neuropsychology at the University of Groningen in 2012, I knew it was my passion to study the brain, and more specifically the neural underpinning of (healthy) ageing. I’m fascinated by the variety of ways in which individuals deal with this inevitable process. Besides my scientific interest in Cognitive Neuroscience, following a personal interest, I also gained broad knowledge in nutrition and physical well-being. Furthermore, my inquisitiveness has led to my engagement in several committees and volunteering activities, through which I’ve met many enthusiastic and inspiring people. Bringing these experiences together, I started my PhD project in June 2012 concerning the psychological and biological mechanisms through which properties of food affect changes in liking and wanting after repeated consumption of food in elderly, which I work on at the Neuroimaging Center of the UMCG. In particular, my project focuses on age-associated changes in taste perception and liking, using functional Magnetic Resonance Imaging. Besides this topic, I especially like the collaboration of science, food industry, and government in our research group. Recently I joined the BCN council, since I feel that PhD students themselves can contribute to safekeeping and improving the quality of the educational programme. Additionally, bringing together people with shared interests and being more involved in the scientific community will add value to the scientific and personal development of all of us. I’m looking forward to meeting you soon.

Dennis van der Meer

My road towards the BCN PhD programme started with a Bachelor in Biology right here in Groningen, in 2006. Although hesitant at the time, it turned out to be a great choice because I became fascinated with that wonderfully complex piece of machinery, the human brain. I chose for a minor in Psychology and my fascination grew when I learned more about the consequences of brain dysfunction. After a slight detour – getting a Master’s in “Science, Business and Policy” – I decided to enroll into the BCN C-track master. During my first project at the Neuroimaging Centre, I was offered a PhD position at the Department of Child- and Adolescent Psychiatry at the UMCG, which I immediately accepted. I now get to play around with a very large database containing hundreds of MRI scans of adolescents with ADHD which was gathered by other hard-working PhD students. My project revolves around analyzing the effects of gene-environment interactions on the ADHD brain, as well as determining the neural correlates of comorbid internalizing problems. I joined the BCN PhD Council mostly because I enjoy organizing fun activities with interesting people. I’m also a firm believer in multidisciplinarity, and that hanging around with smart people in other fields can bring about the best research in unexpected ways. I hope you can find this out for yourselves by joining us at some of the BCN activities!
Communicating our interests
So what does the BCN PhD Council do? First of all, we communicate and facilitate the interests of all BCN PhD students. We represent BCN PhD students at BCN Education Committee meetings and make sure our opinion is heard when important decisions are made. After all, topics such as course content, the registration of study credits, and funding for conference trips concern us as PhD students!

We also send out questionnaires to get a better idea of what issues BCN PhD students are facing. Typically, our surveys are about work related topics such as teaching, supervision, and courses. The outcomes of these questionnaires are also communicated to the BCN board and Education Committee. We then try to resolve any issues together.

For instance, we want to give new students a good start in Groningen. Therefore we now have a mentor system where new PhD students have the opportunity to be coupled with those who already know the city and the working environment. As you probably also have noticed, several Dutch scientists have been caught cheating with their research. Currently we are discussing how we can focus more on ethics within the BCN.

Socializing
Meeting peers and socializing within BCN is also an important part of PhD life. Therefore we organize several events where we can get together, such as the sports day, the first-year BBQ and BCN drinks. We have also hosted workshops on practical skills such as press communication, blogging, and grant writing.

Last year we launched a new event – the Lunch Meetings. The theme of the next BCN Lunch (November 26th) is Scientific Inventions.

Get in touch
We are continuously trying to get a feel for what is happening at BCN, so please contact us if you have comments or any issues that should be discussed. You can also mail us with suggestions for lunch topics or other ideas. Or you can join the council; new members are welcome.

To keep you all up to date about interesting events for BCN PhD students, we have a blog bcnphdcouncil.blogspot.nl, and a facebook group https://www.facebook.com/groups/ bcnphdcouncil/. You can also contact us at bcnphdcouncil@list.rug.nl.

Current BCN PhD council members
- Erin van Buel, Molecular Neurobiology (e.m.van.buel@umcg.nl)
- Heleen Hoogeveen, TI Food and Nutrition, Neuroimaging Center (h.r.hoogeveen@umcg.nl)
- Dennis van der Meer, Child & Adolescent Psychiatry (d.van.der.meer01@umcg.nl)
- Barbara Nordhjem, Lab of Experimental Ophthalmology, Neuroimaging Center (b.j.t.nordhjem@umcg.nl)
- Kashmiri Stec, Communication & Information Sciences (k.k.m.stec@rug.nl)
- Funda Yildirim, Lab of Experimental Ophthalmology, Neuroimaging Center (f.yildirim@umcg.nl)

BY BARBARA NORDHJEM
PHOTO HELEEN BY HENRI DE LANGE
> PHD AND OTHER NEWS

Hora Finita

All PhD students should have been informed by the Graduate School of their Faculty about Hora Finita. The registration of credits is now the responsibility of the PhD student and his/her promotor. At the moment of writing this (November 11, 2013), more information is not available. If there are important issues, I will inform everybody by e-mail.

BCN Retreat 2014: March 13 & 14

The BCN retreat will take place on March 13 & 14, 2014. 2nd and 4th years PhD students have been sent an invitation to give a presentation. 1st and 3rd year PhD students are welcome as audience. If you would like to participate, please send an email to janine.wieringa@umcg.nl

Agenda BCN Activities

February 6
BCN Poster Day
March 13 & 14, 2014
BCN Retreat

Check the website for detailed information.

 DIANA KOOPMANS
D.H.KOOPMANS@UMCG.NL

Credits for: Research related and academic activities

As of September 1st, 2013, credits can be earned according to this list:

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<tr>
<th>Activity</th>
<th>Credits</th>
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<tr>
<td>Workshops/Master classes /Summer school</td>
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<td>Seminars/Journal clubs</td>
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<td>Presenting data at international conferences (orally and poster)</td>
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<td>Supervised reviewing of manuscripts 2</td>
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<td>3 EC</td>
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<tr>
<td>Research stay abroad (minimum 2 weeks)</td>
<td>4 EC</td>
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<td>Depending on time invested (28 hrs per EC)</td>
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<tr>
<td>Stay in Dutch lab</td>
<td>4 EC</td>
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<td>Is granted only in very special occasions. Prior to the visit to the Dutch lab, the supervisor and PhD student must – with arguments – appeal for granting with the PhD education committee of the Research institute.</td>
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<td>Other academic activities</td>
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<td>GSMS PhD council</td>
<td>1 EC/yr</td>
<td>6 EC</td>
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<td>GSMS educational committee</td>
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<td>Research Institute’s PhD councils</td>
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<td>Teaching/Student supervision</td>
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Definitions:
1 Maximum EC for full time 4-year-PhD students, 3- and 2-year-students accordingly less
2 Teaching can be for medical as well as other students at university level
BLUE DEVILS! - going from the RUG to Duke

Go Blue devils! is loudly cheered for the Duke college basketball team. After a game I still have whooshing ears for a couple of days, but it’s worth it. Being part of a community such as Duke’s is an incredible experience; it feels like home now, and I am going to miss this place! Duke is an immense research university and has a huge campus (35 square km) which includes a beautiful garden and forests. It is located in a small town called Durham in North Carolina. Duke has around 8k graduate students, 7k undergrads, and a total endowment of around 6 billion USD. Here I have been percolating my cognitive neuroscience research skills for the last one and a half years.

After studying psychology for my undergraduate degree, the C-track of the BCN master was a good choice. The next step was conducting an fMRI experiment unraveling diagnostic processing in neurologists, under the supervision of Monicque Lorist and Luca Nanetti for my minor project. In the second year I got a chance to travel to the USA for a final project. This final project consisted of mastering the event-related-potential (ERP) technique to study cognition and motivation in the Woldorff Lab at Duke. I will be returning in November 2014 to bike-friendly Groningen to finish my PhD degree (if everything goes as planned).

My job here at Duke consists of numerous things: Besides setting up a few different experiments with the help of undergrad students, part of the job includes installing and testing two new EEG systems (15-year-old systems are finally retired), keeping the computers up-to-date and doing some basic bookkeeping for subject payment. Research-wise, one of the most important lessons I have learned is to be stubborn, say you are doing what your supervisor tells you to do, but then conduct the experiment or do the analysis the way you envisioned it yourself. Write up some interpretable results and impress your supervisor. Having the freedom and support to do so is awesome!

The grass is not all green here though. Quite literally: in the winter all the grass gets yellow. Thinking about it, there are actually many different aspects I miss from home. For example, biking to the Vismarkt to get some groceries and proper cheese from the farmer’s market. Drinking a beer and playing pool with friends in one of the many bars. Going to climbing center Bjoeks to have an intense workout. Don’t get me wrong, Durham is a lovely place – there are very friendly people, there is a farmer’s market, and it offers a wide variety of brewers from whom you can get a good beer. It is a place opposite from what you’d expect a stereotypical American town to be: a young fast evolving town, with more and more focus on sustainability. I feel well supported here, and have a lot of opportunities to practice talks, go to conferences and have lunch with visiting professors. At the same time, I am looking forward to working again in Groningen, utilizing the connections I am establishing at the moment.

BY BERRY VAN DEN BERG
Aspects of long-term use of antipsychotic drugs on an off-label base in individuals with intellectual disability

PROMOVENDUS
G.M. de Kuijper
PROEFSCHRIFT
Aspects of long-term use of antipsychotic drugs on an off-label base in individuals with intellectual disability
PROMOTORES
Prof.dr. R.B. Minderaa
Prof.dr. H.M. Evenhuis
CO-PROMOTOR
Dr. P.J. Hoekstra

Een derde deel van de bewoners van instellingen voor mensen met verstandelijke beperking gebruikt antipsychotica. Vaak zijn deze niet vanwege een psychotische ziekte voorgeschreven, maar om gedragsproblemen te bestrijden. Stoppen of verminderen van het gebruik van antipsychotica leidt juist tot afname van afwijkend gedrag. Ook daalt het gewicht. Bovendien neemt het risico op het Metaboool Syndroom af; dit is de combinatie van te veel buikvet, verhoogde bloedsuiker, afwijkende bloedvetten en hoge bloeddruk, waardoor de kans op hart- en vaatziekten toeneemt. Dit blijkt uit onderzoek van AVG'er (Arts voor Verstandelijk Gehandicapten) en UMCG-onderzoeker Gerda de Kuijper.

Antipsychotica zijn geneesmiddelen geïndiceerd voor het bestrijden van psychotische symptomen. Ongeveer 3% van de mensen met een verstandelijke beperking lijdt aan een chronische psychotische ziekte. Uit onderzoek in woonvoorzieningen voor mensen met een verstandelijke beperking, bleek dat antipsychotica aan 32% van de bewoners voorgeschreven werd. Bij 80% van deze antipsychoticagebruikers was het gebruik langer dan 10 jaar, bij 58% was dit voor probleemgedrag en bij 22% voor psychotische symptomen of een chronisch psychotische ziekte. Langdurig gebruik van antipsychotica kan neurologische, metabole en hormonale bijwerkingen tot gevolg hebben. In haar onderzoek ging De Kuijper na het gebruik van antipsychotica vanwege probleemgedrag afgebouwd kon worden in 14 of 28 weken.

Uit de studie van De Kuijper blijkt dat volledige afbouw bij 43% van de 98 deelnemers mogelijk was; bij follow-up na 12 weken gebruikte 36% nog steeds geen antipsychotica Zowel in de groep die volledig had afgebouwd als in de groep bij wie dat niet gelukt was werd bij het merendeel geen gedragsverslechtering gezien. De resultaten van afbouw in 14 en afbouw in 28 weken waren vergelijkbaar.

Bij gebruik van antipsychotica kunnen gezondheidsrisico’s voor overgewicht, metabole ontregeling, ontregeling van functies van primaire geslachtsorganen en bot calciumverlies toenemen. De resultaten van het onderzoek van De Kuijper lieten gunstige effecten zien op metabole symptomen: een vermindering van de
tailleomvang (dus minder buikvet) en daling van het lichaamsgewicht en van de bloeddruk.

Volgens De Kuijper hebben de resultaten van haar studie duidelijke consequenties voor de klinische praktijk. De Kuijper: ‘Behandelaars dienen zorgvuldig onderliggende oorzaken van gedragsproblemen bij mensen met een verstandelijke beperking te onderzoeken en kritisch te zijn op het direct instellen van een medicamenteuze behandeling’. Bij mensen met een verstandelijke beperking kunnen neurologische bijwerkingen van antipsychotica een rol spelen in het onderhouden van probleemgedrag. De Kuijper pleit daarom voor het stoppen of verminderen van antipsychotica bij gebruik buiten de geldige indicatie, zoals gebruik voor gedragsproblemen. ‘Uit mijn proefschrift blijkt dat volledige afbouw al is te realiseren in een periode van 3-4 maanden’. Verder is zij een groot voorstander van het bevorderen van scholing en coaching van zorgverleners en behandelaars in het omgaan met probleemgedrag.


Model and measurement studies on stages of prosthetic gait. Predictions on how not to walk symmetrically with a mechanical prosthetic limb

Promovendus
H.G. van Keeken
Proefschrift
Model and measurement studies on stages of prosthetic gait. Predictions on how not to walk symmetrically with a mechanical prosthetic limb
Promotores
Prof.dr. E. Otten
Prof.dr. K. Postema
Co-promotor
Dr. A.L. Hof

Biomechanische analyse laat zien hoe prothesedragers lopen
Groningse bewegingswetenschappers hebben in een driedelig onderzoek in kaart gebracht wat prothesedragers precies doen als ze lopen. Helco van Keeken gebruikte daarvoor biomechanische analyse, een combinatie van een analyse van wiskundige modellen en bewegingsdata. De uitkomsten geven inzicht in hoe patiënten de tekortkomingen van een prothesebeen beter kunnen compenseren. Lopen met een prothese verschilt erg van lopen met twee gezonde benen. Zo moet een prothesedrager ervoor waken dat hij niet door zijn knie zakt en dat de prothesovoet de grond niet raakt bij het naar voren zwaaien van het been. Ook is de prothese-enkel stijver dan een gezonde enkel. Al die aspecten hebben invloed op de loopbeweging.

Van Keeken ging na wat de biomechanische aspecten zijn van vier loopfasen: starten met lopen, gewicht plaatsen op het prothesebeen, het prothesebeen naar voren bewegen, en stoppen met lopen. Hij ontdekte dat het gebrek aan voortstuwing kracht in het prothesebeen gecompenseerd wordt door het gezonde been. Ook ontdekte hij waarom prothesedragers bij voorkeur beginnen te lopen met het prothesebeen en waarom ze bij stoppen dat juist liever doen met het gezonde been. Die inzichten kunnen helpen om de tevredenheid onder prothesedragers te verbeteren.

Verb and word order deficits in Swahili-English bilingual agrammatic speakers

PROMOVENDUS
T.O. Abuom

PROEFSCHRIFT
Verb and word order deficits in Swahili-English bilingual agrammatic speakers

PROMOTOR
Prof. dr. Y.R.M. Bastiaanse

Patronen agrammatisme bij sprekers Swahili beschreven
Het onderzoek van Tom Abuom richt zich op de patronen en ernst van problemen met werkwoordverbuiging en woordvolgorde bij tweetalige (Swahili-Engels) personen met agrammatisme.

Agrammatisme, ook bekend als agrammatische afasie, is een taalstoornis die veroorzaakt wordt door letsel in de hersengebieden die betrokken zijn bij de taalverwerking, met name in de frontale gebieden van de linkere hersenhelft. Het is bekend dat (eentalige) personen met agrammatisme moeite hebben met zinnen die door middel van werkwoordverbuiging naar de verleden tijd refereren en met zinnen met een afgeleide woordvolgorde. Zinnen als “yesterday, the man picked a flower” en “the girl is kissed by the boy” zijn bijvoorbeeld moeilijker dan zinnen als “Now the man is picking a flower” en “the boy is kissing the girl”.

Abuom heeft onderzocht hoe deze moeilijkheden zich manifesteren in agrammatische sprekers van een tot heden onbeschreven taal, Swahili. Deze sprekers zijn bovendien tweetalige sprekers van morfologisch verschillende talen. Swahili is een morfologisch rijke Bantu taal, terwijl Engels en morfologisch verarmde Indo-Europese taal is. De resultaten laten in beide talen significante effecten zien voor tijdsreferentie (referentie naar de verleden tijd is aangetast), woordvolgorde (productie en begrip van zinnen met afgeleide woordvolgorde zijn verstoord) en inbedding (productie en begrip van zinnen met ingebedde zinnen, zoals “the girl who is kissing the boy is tall” zijn aangetast). Het identieke patroon in beide talen, ongeacht de morfologische verschillen, laat vermoeden dat beide talen in gedeelde verwerkingsgebieden van tweetalige hersenen geregistreerd zijn. De resultaten laten verder zien dat eentalige en tweetalige Swahili-Engels agrammatische sprekers klinisch niet erg verschillen betreffende de problemen in taalproductie en begrip als gevolg van hersenletsel.


Programming effects of adversity on adolescent adaptive capacity

PROMOVENDUS
O.M. Laceulle

PROEFSCHRIFT
Programming effects of adversity on adolescent adaptive capacity

PROMOTORES
Prof. dr. J. Ormel
Prof. dr. M.A.G. van Aken

CO-PROMOTOR
dr. E. Nederhof

Het doel van dit proefschrift was om te onderzoeken hoe het meemaken van stressvolle gebeurtenissen voorspelling kan zijn voor veranderingen in adaptieve capaciteit tijdens de adolescentie. Adaptieve capaciteit zegt iets zeggen over iemands vermogen zich aan te passen aan een (veranderende) omgeving en kan op verschillende manieren onderzocht worden. In dit proefschrift hebben we gekozen voor temperament en lichamelijke stressreacties op een stressvolle laboratoriumtaak. De resultaten laten zien dat adolescenten die stressvolle gebeurtenissen hebben meegemaakt andere veranderingen laten zien in temperament en stressreactiviteit, dan adolescenten die geen of weinig stressvolle gebeurtenissen hebben meegemaakt.

Bijvoorbeeld, adolescenten die stress meemaken rapporteren meer frustratie op 16, dan op 11-jarige leeftijd, terwijl jongeren die geen stress meemaken juist minder snel gefrustreerd zijn naarmate ze ouder worden. Uit het onderzoek kwam ook naar voren dat adolescenten die deze non-normatieve veranderingen in
temperament laten zien, een grotere kans hebben om psychische aandoeningen te ontwikkelen. Samen genomen toont dit proefschrift aan dat adaptieve capaciteit (en in het bijzonder temperament) minder stabiel is dan vaak wordt gedacht en dat het belangrijk is om veranderingen in temperament en stressreactiviteit te onderzoeken in de context van stressvolle gebeurtenissen.


**The fire of life. Applications and implications**

**PROMOVENDUS**
S. Guidotti

**PROEFSCHRIFT**
The fire of life. Applications and implications

**PROMOTORES**
Prof.dr. G. van Dijk
Prof.dr. H.A.J. Meijer

Te vet en te zoet etende zwangere en zogende moeders maken hun kinderen gevoelig voor obesitas

Hoogactieve muizen blijken ongevoelig te zijn voor het ontwikkelen van obesitas wanneer ze op volwassen leeftijd worden blootgesteld aan een dieet met een zo hoog vet- en suikergehalte dat ‘normale’ muizen er obesitas van krijgen. Deze resistentie tegen dieet-geïnduceerde obesitas bij de hoogactieve muizen bleek zich echter niet te manifesteren wanneer hun moeders ook waren blootgesteld aan een hoog vet/suikerdieet toen zij zwanger van hen waren en hen zoogden. Dit blijkt uit het promotieonderzoek van Stefano Guidotti.

De ombuiging bij hyperactieve muizen van obesitasresistentie naar obesitategevoeligheid en de daarbij behorende stoornissen, veroorzaakt door het dieet van hun moeders rondom hun geboorte, is waarschijnlijk het gevolg van recombinatie van obesitas veroorzakende eigenschappen die de kans krijgen opnieuw tot expressie te komen door epigenetische veranderingen tijdens de foetale ontwikkeling. Soortgelijke mechanismen zouden een rol kunnen spelen in onze maatschappij, waar overgewicht, obesitas en daarmee gepaard gaande metabole stoornissen in toenemende mate voorkomen. Waarschijnlijk spelen beschikbaarheid van te veel lekker en ongezond eten en te weinig lichaamsbeweging hierbij een rol. Onderzoek naar de mechanismen die betrokken zijn bij regulatie van onze energiebalans is dan ook van groot belang, aangezien dit ook inzicht kan geven in het ontstaan van stoornissen hierin.

Voorts beschrijft Guidotti in zijn proefschrift de validatie van ‘de dubbelgelabeldwatermethode’ in muizen en mensen. Deze methode is uitermate geschikt om metabole snelheid te bepalen onder vrij-levende condities.


**EVELYN KUIPER-DRENTH, OP BASIS VAN PERSBERICHTEN VAN DE RIJKSUNIVERSITEIT GRONINGEN**
Als domheid een relatief begrip is, dan kunnen mensen met een verstandelijke beperking slimmer zijn dan mensen met een normale verstandelijke ontwikkeling”

Gerda de Kuijper

Voor lopen bestaat geen stappenplan”

Helco van Keeken

“The story is always better than your ability to write it. My belief about this is that if you ever get to the point that you think you’ve done a story justice, you’re in the wrong business” - Robin McKinley

Tom Abuom

“De vraag is niet langer of stressvolle gebeurtenissen een litteken kunnen achterlaten, maar of dit litteken zal vervagen met de tijd”

Odilia Laceulle

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health”

Stefano Guidotti