



HIGHLIGHTS OF THE YEAR

The year of 2021 became the most productive year in terms of publications in MIB's existence, evidenced by 60 published papers, many in high-ranking peer-reviewed journals. This was partly caused by Covid-19 and the consequent national lock-downs both in 2020 and in the first half of 2021, which gave us the possibility to focus on analyzing already collected data and writing up papers. These publications strike an excellent balance between theoretical and experimental papers: some papers lay out the theoretical fundament for the research into music and brain and contribute with new analytical tools and methods, which are then used and tested experimentally. This is true for Kringelbach, Vuust and colleagues who used mathematical modeling to describe the hierarchical organization of the brain and the brain connectivity resulting in insights and analyses tools which were then the basis for studying brain connectivity in relation to musical memory and are currently used in studies of jazz improvisation. Other theoretical work was devoted to describing how music is shared between people, such as Heggli's MEAMSO model which describes musical interaction as guided by mutual reduction of prediction errors; in effect rendering the interacting partners mutually predictable. These models inform our understanding of how competence, social context, and dyadic interactions rest on predictive brain processing in general and are at the core of MIB's future research plan as an extension of the predictive coding of music (PCM) model to communication of musical meaning between individuals. The ideas are currently being tested in studies where laypersons and musicians tap together, learn musical excerpts from each other and improvise together. Of special interest to music learning is Brattico, Vuust and colleagues' paper on the neural correlates of music listening in which it is proposed that music listening, even when conceptualized in an aesthetic and eudaimonic (a life well lived) framework, remains a learnable skill that changes the way brain structures respond to sounds and how they interact with each other.

At MIB, we take particular pride in the efforts to translate our basic understanding of brain processing of music into experiments with relevance for patients as well as for music learners. Over the years, we have expanded our interests into clinical populations such as patients with cochlear implants, suffering from hearing loss, with autism, with sleep problems, with noise sensitivity, with chronic pain, and lately with Parkinson's disease, and we are part of a large-scale rehabilitation effort for patients with chronic lung disease.

Hosting the Neuroscience and Music VI conference in Aarhus will remain the strongest memory from 2021. This event is by far the most important conference on music and neuroscience worldwide held only every third year with prominent speakers. The conference had been postponed from 2020 but finally took place in 2021. Pioneering this event for the first time as a hybrid conference took its toll, but everyone at MIB made a massive effort, and the conference turned out to be a huge success with 100 onsite participants and more than 400 online participants.

Leading up to the conference our Summer School debuted in an online version. The summer school will be a biennial event from now on and has been approved as a part of 'Summer University' at Aarhus University.

Just after the conference, Christine Ahrends defended her PhD thesis investigating the role of predictability and uncertainty in human brain dynamics, and she has continued her career as a postdoc at CFIN. Victor Pando defended his PhD thesis in September, on musical groove in Parkinson's patients and was employed as postdoc at MIB.

The beginning of our 2nd period as a CoE coincided with returning to the offices after another national lock-down due to Covid-19. Soon the offices were buzzing with activity with the arrival of nothing less than five new PhD students: Gemma Fernandez, Alberte Seeberg, Mathias Klarlund, Olivia Foster van der Elst and Rebecca Scarratt. We also welcomed a new postdoc, Tomas Matthews, who has been our long-term collaborator on the prominent studies on musical groove. In November, we were extremely happy and proud to be joined by our new professor, Peter Keller. Peter has been a good friend and collaborator for years, and he is a perfect fit for MIB. His main interest into musical interaction of which he is a world-leading expert coincides exactly with the goal of our second period focusing on the role of music in establishing, maintaining and fine-tuning meaningful human relationships and interactions.

MIB is thankful for generous external funding from William Demant Foundation, Sino-Danish Center, SEMPRES and BIAL Foundation. Finally, we wish to thank DNRF for their continued and invaluable support.