

A sense of rhythm—why do we have it and what does it mean to us?

November 26 2018, by Phillip-André Baarøy

Almost everything we do incorporates rhythm. At the University of Oslo 50 researchers from all over the world will provide us with some new answers about the meaning of rhythm for people - and possibly also develop the world's best dancing robot.

"If we can understand more about rhythm, we will understand more about how people function," says Professor Anne Danielsen.

Professor Danielsen and Associate Professor Alexander Jensenius are jointly responsible for running the RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion.

RITMO is a centre for excellence in research (CER) at which the Department of Musicology, the Department of Informatics (MatNat) and the Department of Psychology (SV) are engaged in cooperation. The Centre was officially opened on Thursday 15 November.

"We are excited and really looking forward to getting properly started," says Professor Jensenius.

Running and drinking coffee

Over the course of the next 10 years, the researchers at RITMO will conduct research on all general aspects of rhythm - not just in music, but in all areas of life.

"Many people probably don't think about it much, but rhythm is extremely important in almost everything we do. Rhythm is necessary for understanding events in time, for engaging in dialogue and for coordinating and synchronising ourselves with one another," says Professor Danielsen.

The Centre is aiming to identify the mechanisms which lie behind how people perceive and use rhythm.

"Just take walking for example. Or running. These involve two different types of rhythm. If you run in the company of others, you start to synchronise your steps with theirs. If you listen to music, then you may have an extra dimension to synchronise with," says Professor Jensenius.

"Or even drinking a cup of coffee," continues Professor Danielsen.

"The movement involved in lifting a cup, taking it up to your mouth, inclining your body, leaning back again and gently placing it back on the table. There is rhythm in that too. You know when the cup reaches your mouth and when it touches the table surface again, and you adjust your movements accordingly," she says.

Human robot dance

The researchers at the RITMO Centre will not just be using technology in order to understand rhythms. They will also use it to develop rhythms which will enable computers or robots to move rhythmically and to co-exist with people rhythmically.

"At present robots move in a very "meh meh" sort of way," says Professor Jensenius, as he demonstrates chopping movements with his arms.

"At the moment robots are not very good at adapting to whatever is taking place around them. If you think about the complexity involved in human movements - for example, simply lifting a cup of coffee - it is incredibly hard to make a robot do that. This is the sort of thing we want to investigate and understand," he says.

"We are absolutely motivated to make a dancing robot. Not a humanoid [robot](#), but one with movements which will incorporate human qualities. Maybe it will become a world champion robotic dancer," he smiles.

Soft and hard

Both professors point out the Centre's interdisciplinary attributes as being a decisive factor for acquiring a better understanding of [rhythm](#).

"Thanks to our background in the humanities we possess extremely good expertise on interpreting and drawing up interesting and relevant questions. In order to test and engage in experimental work, we also have people at the Centre who are highly skilled in respect of technology and experimental neuroscientific studies," says Professor Danielsen.

"We have people who are engaged in the softest of the soft to the hardest of the hard," he adds.

Small details

RITMO consists of around 50 researchers - not just from Norway, but also from countries such as China, Germany, England and Turkey.

"This is basic [research](#) which we are building up piece by piece, so it is fantastic to have the opportunity to gather so many [people](#) and work on this over a long period of time. The more we work on this, the more

complex we see that it is," says Professor Jensenius.

The researchers at RITMO also need to find new methods and develop new technology, because they are addressing questions which have never previously been investigated.

"We are working a lot with microtime and micromovement, which means that we are pushing ing our systems to the extreme. We have purchased the best equipment currently available in the world, but even so we are being challenged by trying to measure the small details that we are looking for. We are talking about milliseconds and millimetres," he says.

Provided by University of Oslo

Citation: A sense of rhythm—why do we have it and what does it mean to us? (2018, November 26) retrieved 24 April 2024 from <https://medicalxpress.com/news/2018-11-rhythmwhy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.