

## Press release

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### Basic information

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Department of: Clinical Medicine

Main supervisor: Professor Morten Kringelbach

Title of dissertation: Brain dynamics of predictability and improvisation: Evidence from jazz pianists and autistic listeners

Date for defence: 12/05/2020 at (time of day): kl. 10 Place: Online via Zoom platform

Press release (Danish)

Hjernedynamik for forventning og improvisation hos jazz pianister og autistiske lyttere

Et nyt ph.d.-projekt fra Aarhus Universitet undersøger hjernedynamikken i forbindelse med forventning og improvisation. Projektet er udført af Patricia Alves Da Mota, der forsvare hendes ph.d. afhandling den 12/05/2020.

Musik er unik i sin evne til at få os til at synkronisere. Uanset kulturel baggrund, personlig musikalsk ekspertise, præferencer, kontekst, emotion og biologiske faktorer, så deler vi de samme hjernemekanismer og hjernearkitektur til at give mening til og nyde musik; de samme mekanismer til at modtage, behandle, og forudsige. Spontan skabelse af musik er en bemærkelsesværdigt dynamisk proces og en meget værdsat form for kreativitet. Især inden for jazz er evnen til at improvisere et resultat af et harmonisk samspil mellem komplekse følelsesmæssige, kognitive og motoriske hjerneprocesser, der når det fungerer bedst skaber dyb følelsesmæssig og æstetisk tiltalende musik. Jazzmusikere skaber og vurderer spontant nye arrangementer af melodiske, rytmiske og harmoniske mønstre kombineret med fine motoriske bevægelser til at skabe nye musikalske sekvenser. Forbindelsen mellem musikalsk kreativitet og nydelse, både for musikere og publikum, er stærkt afhængigt af musikerens evne til at opretholde afbalancerede niveauer af forudsigelighed, energi (både psykisk og fysisk) og et stærkt følelsesmæssigt engagement. Præferencerne for balancen af musikalsk forudsigelighed kan ændre sig, fx hos autister, som udviser en tendens til at foretrække mere forudsigelige og gentagne mønstre. Dette ph.d.-projekt konstruerede en metodologisk ramme for kunne belyse de hjernemekanismer, der skaber det komplekse forhold mellem kreativitet, forudsigelighed og nydelse.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 12/05/2020 kl. 10.00. Forsvaret ledes online ved hjælp af Zoom-plattformen. Titlen på projektet er "Brain spatiotemporal dynamics of auditory patterns encoding and recognition". For at modtage Zoom-linket for at deltage i forsvaretonline og for yderligere oplysninger, kan du kontakte: ph.d. student Patricia Alves da Mota, email: [patricia.alvesdamota@clin.au.dk](mailto:patricia.alvesdamota@clin.au.dk)

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Press release (English)

Brain dynamics of predictability and improvisation: Evidence from jazz pianists and autistic listeners

New PhD project from Aarhus University investigates the brain dynamics of predictability and improvisation. The project was carried out by Patricia Alves Da Mota who is defending her dissertation on 12/05/2020.

There is something unique about music that makes us all synchronise as one large unit. Regardless of cultural background, musical expertise, listening interests, context, mood or biological factors, we all share brain mechanisms with highly convergent architectures to make sense of and enjoy music. Creating music is a remarkably dynamic process and a highly prized form of creativity. In jazz, the ability to improvise is the result of harmonious interplay between complex emotional, cognitive and motor processes, which can produce an emotionally and aesthetically pleasing output. Jazz improvisers spontaneously create and evaluate new arrangements of melodic, rhythmic and harmonic patterns, combined with fine motor movements, to produce novel musical sequences 'on the fly'. The link between musical creativity and pleasure, for both musician and audience, relies strongly on the ability to maintain balanced levels of predictability, energy load and emotional engagement, during music production. However, the preferred balance of predictability is changed in individuals with autism, who exhibit a stronger preference for familiarity and predictability. In this PhD project, a methodological framework is constructed to elucidate the brain mechanisms sustaining the complex relationship between creativity, predictability and pleasure.

The defence is public and takes place on 12/05/2020 at Kl. 10.00. The defence will be conducted online by using the Zoom platform. The title of the project is "Brain dynamics of predictability and improvisation: Evidence from jazz pianists and autistic listeners". For more information, please contact PhD student Patricia Alves da Mota, email: [patricia.alvesdamota@clin.au.dk](mailto:patricia.alvesdamota@clin.au.dk)

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