



LECTURE SERIES  
**MUSIK &  
MEDIZIN**

The Predictive Auditory System Through  
the Lens Of Magnetoencephalography

Nathan Weisz & Thomas Hartmann, Department of Psychology /  
Centre for Cognitive Neuroscience, University of Salzburg

November 30, 2023

**17:15 Salzburg (CET)**

Lecture: In Person & Online | Participation Free of Charge



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## MUSIK&MEDIZIN

# The Predictive Auditory System Through the Lens Of Magnetoencephalography

Nathan Weisz & Thomas Hartmann (Salzburg, AT)

Our brains are exquisitely specialized in extracting statistical regularities from incoming sensory inputs to predict future events. Especially in the visual system, it has been shown that this process involves an anticipatory engagement of sensory “templates“ of the predicted events. Such purely top-down-driven and anticipatory (predicted) feature-specific activation has been less established in the auditory system. In the first part of the talk, Nathan Weisz will introduce an experimental approach developed by our group to eavesdrop on these processes, including concrete applications in normal and hearing-disordered groups. In the second part of the talk, Thomas Hartmann visualizes what happens when musicians anticipate that an upcoming tone is not „in tune“. The results show what happens when a highly interalized rule (correct intonation of notes in a chord) is in conflict with a second rule, derived from the current stimulation sequence.

Nathan Weisz is Professor of Physiological Psychology at Department of Psychology & Centre for Cognitive Neuroscience, University of Salzburg | Thomas Hartmann is Senior Scientist at Department of Psychology & Centre for Cognitive Neuroscience, University of Salzburg

The Salzburg lecture series **MUSIK&MEDIZIN** presents scientific and artistic contributions from leading international experts in various disciplines to explore the interactions and mechanisms between the experience, processing and psycho-physiological impact of music on humans and to understand how music may promote health and wellbeing. The lecture is part of an interdisciplinary course where the referents discuss themes of their fields of research. – **Idea & Direction** Katarzyna Grebosz-Haring (Systematic Musicologist | Programme Area (Inter)Mediation, Focus Area Science & Art | University Mozarteum Salzburg / Paris Lodron University Salzburg) – **In Cooperation with** Günther Bernatzky (Biologist | Paris Lodron University Salzburg) and Leonhard Thun-Hohenstein (Child and Adolescent Psychiatrist | Paracelsus Medical Private University Salzburg)



### Time & Place

November 30, 2023

17:15 Salzburg (CET)

Atelier in KunstQuartier

Bergstraße 12a, 1<sup>st</sup> Floor,

5020 Salzburg

In Person & Online

### Registration Required for Attendance

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### Access Data

<https://www.microsoft.com/de-at/microsoft-teams/join-a-meeting>  
Meeting number ID: 320 081 556 049

Meeting passcode: sk8DNC



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