

Research * Clinical Practice: Explainable AI at the Borderlands of Living (Lise Marie Andersen & Alberte Seeberg)

Clinicians tending to unresponsive patients with serious brain injuries face critical end-of-life decisions. They must decide to continue or withdraw life-sustaining treatment based on the best available knowledge and resources. Looking into the future, can researchers aid this decision making process by designing supportive computational tools? And if yes, what considerations should they keep in mind?

Lise Marie Andersen (Interacting Minds Centre & Region Midtjylland) & [Alberte Seeberg](#) ([Center for Music in the Brain](#)) have stopped by this week to help us dig deeper into the research of the [Borderlands of Living](#) project. We get to talk about the intricacies of explainable AI in prognostic assessments for patients with Disorders of Consciousness and the role of accuracy, transparency, and uncertainty in designing a meaningful prognostic assessment tool to aid clinicians in their decision making.

To learn more about the Borderlands of Living project and the topics and resources mentioned, visit the [show notes for this episode](#) and listen to:

- [Research * Clinical Practice: Exploring the Borderlands of Living \(Mette Terp Høybye\)](#) for an overview over the research project
- Research * Clinical Practice: Understanding personhood and consciousness at the Borderlands of Living (Bess Boelsbjerg and Lise Marie Andersen)

Topics and Resources mentioned in this episode:

Seeberg, Skewes, Høybye, Grejs, & Andersen (forthcoming) Explainability in Clinical Decision Support Systems for Critical End-of-life Decision-making - Patients with Disorders of Consciousness after Cardiac Arrest.

[00:01:27] **Alberte Seeberg**

Visit Alberte's [University research profile](#) to learn more about her and her research.

[00:01:30] Center for Music in the Brain

“The Danish National Research Foundation’s Center for Music in the Brain (MIB) is an interdisciplinary research center at Aarhus University and the Royal Academy of Music, Aarhus/Aalborg, Denmark aiming to address the dual questions of how music is processed in the brain and how this can inform our understanding of fundamental principles behind brain functioning in general.”

Visit <https://musicinthebrain.au.dk/> to learn more.

[00:02:02] Lise Marie Andersen

To learn more about Lise Marie Andersen, see for instance <https://philpeople.org/profiles/lise-marie-andersen>

[00:02:40] Borderlands of Living overview episode

See <https://interactingminds.au.dk/podcast>

[00:03:30] Disorders of Consciousness (DoC)

An umbrella term describing a state where consciousness has been affected by damage to the brain. This may include comatose states, vegetative states, unresponsive wakefulness syndrome or a minimally conscious state.

[00:08:06] ‘Prognostication strategy algorithm’ (PSA)

For information (in Danish), see for instance <https://neuro.dk/wordpress/nnbv/hypoksisk-hjerneskaede/>

Or

[Nolan, J.P., Sandroni, C., Böttiger, B.W. et al. European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care. *Intensive Care Med* 47, 369–421 \(2021\). <https://doi.org/10.1007/s00134-021-06368-4>](https://doi.org/10.1007/s00134-021-06368-4)

[00:16:08] Example of recent machine learning tool developed to detect possible cardiac arrest emergency calls.

Blomberg SN, Folke F, Ersbøll AK, et al. Machine learning as a supportive tool to recognize cardiac arrest in emergency calls. *Resuscitation* 2019;138:322–9.
doi:10.1016/j.resuscitation.2019.01.015

[00:20:00] **Decision Making in the Danish Context**

Clarification: Although decisions lie within the hands of clinicians, family and patient wishes are of course taken into account.

Windows of Opportunity

[Kitzinger, J., & Kitzinger, C. \(2013\). The 'window of opportunity' for death after severe brain injury: family experiences. *Sociology of Health & Illness*, 35\(7\), 1095-1112.](#)

Learn more about Lise Marie Andersen and her research

- <https://philpeople.org/profiles/lise-marie-andersen>
- [Andersen, Lise Marie; Boelsbjerg, Hanne Bess & Høybye, Mette Terp \(2020\). Tracing Uncertain in New Prognostics of Consciousness. *Tidsskrift for Forskning i Sygdom og Samfund* nr 33, 87-108](#)

Learn more about Alberte Seeberg and her research

- [University research profile](#)

Learn more about the Borderlands of Living project

- [Borderlands of Living project](#) site
- [Twitter](#)