

## Show Notes:

# Surprise, Fear, Cognition, and Play (Marc Malmdorf Andersen)

Play Researcher [Marc Malmdorf Andersen](#) ([Interacting Minds Centre](#) & [Recreational Fear Lab](#)) has stopped by to talk about his cognitive theory of play, recreational fear, dark play, and why sweet spots of surprise could be at the core of making sense of why humans of all ages play.

We also get to talk about some of Marc's past and future research endeavours: Studying senses of agency in Ouija Board sessions, asking participants to detect beings in a virtual reality forest, and using a range of empirical methods to study people voluntarily seeking out frightening experiences in a haunted house.

[00:00:45] Tænkepause "Leg"

See <https://unipress.dk/udgivelser//leg/>

[00:00:50] A Cognitive Theory of Play

See Andersen, M. M., Kiverstein, J., Miller, M., & Roepstorff, A. (2021, February 18). Play in Predictive Minds: A Cognitive Theory of Play. <https://doi.org/10.31234/osf.io/u86qy>

[00:01:15] PhD on Supernatural Agents in Predictive Minds  
(only Available in Danish)

[00:02:00] "In the case of one empirical study we did..."

See [Predictive Minds in Ouija Board Sessions](#).

[00:02:50] VR Experiment exploring if it was possible to create false perceptions

See [Agency detection in predictive minds: a virtual reality study](#)

**[00:04:03] Predictive Processing Framework**

See “[A Cognitive Theory of Play](#)” (from p.16) for an overview of the framework and the argument Marc is laying out. To gain a better understanding of PP, visit <https://predictive-mind.net/papers>. Especially attend to the Contribution by [Wanja Wiese](#) and [Thomas K. Metzinger](#) entitled [Vanilla PP for Philosophers: A Primer on Predictive Processing](#)

**[00:11:08] Mood States like playfulness**

For a discussion of the concept of moods within the play literature, see [Play practices and play moods](#) by Helle Skovbjerg.

**[00:15:00] Sweet Spot of Surprise**

For a discussion of the GoldiLock Principle see “[A Cognitive Theory of Play](#)” (p.12) or [Kidd et al., 2012](#).

**Jack in the Box Experimental Study.**

See [Patterns of Fear Development during Infancy](#) by Sandra Scarr and Philip Salapatek (1970).

**Infants prefer to look at moderately complex pictures**

See [Kidd, C., Piantadosi, S. T., & Aslin, R. N. \(2012\). The Goldilocks effect: Human infants allocate attention to visual sequences that are neither too simple nor too complex. PloS one, 7\(5\), e36399.](#)

**[00:19:00] Designing for Playfulness**

For a discussion of how the Predictive Processing understanding of play could connect to education, see Schulz, T.S., Andersen, M.M., Roepstorff, A.H., (in production). Play, Reflection, and the Quest for Uncertainty. In Beghetto, R.A. & Jaeger, J.G., (Ed.), *Uncertainty: A catalyst for Creativity, Learning and Development*. Springer. (Available on request)

**[00:20:29] Johan Huizinga’s Magic Circle**

See Huizinga, Johan (1955). *Homo Ludens: a Study of the Play-Element in Culture*. Boston, MA: The Beacon Press.

For a quick overview, see [Wikipedia on this matter](#).

**Gregory Bateson**

See Bateson, P.P.G., Bateson, P. and Martin, P., 2013. *Play, playfulness, creativity and innovation*. Cambridge University Press.

[00:21:50] [Lifelong Kindergarten by Mitch Resnick](#)

For a discussion of the visual metaphor of Low Floor, High Ceilings, Wide Walls see [Mitch Resnick Blog on this matter](#).

[00:24:47] [The Recreational Fear Lab](#) (PI [Mathias Clasen](#))

[00:25:07] Study on Recreational Fear in a Haunted House attraction

See [Playing With Fear: A Field Study in Recreational Horror](#)

[00:29:20] Visceral Minds Group lead by Micah Allen

See the Embodied Computation Group at <https://www.the-ecg.org/>

## Learn more about Marc Malmdorf Andersen and his research

- Marc Malmdorf Andersen's [Research Page at Aarhus University](#)
- Blog Post: [Scaring children – done correctly – can be a route to important learning](#)
- The Recreational Fear Lab: <https://cc.au.dk/en/recreational-fear-lab/>