

Lucid Loop

A Virtual Reality Bioresponsive System using
Creative Artificial Intelligence for
Lucid Dreaming Practices

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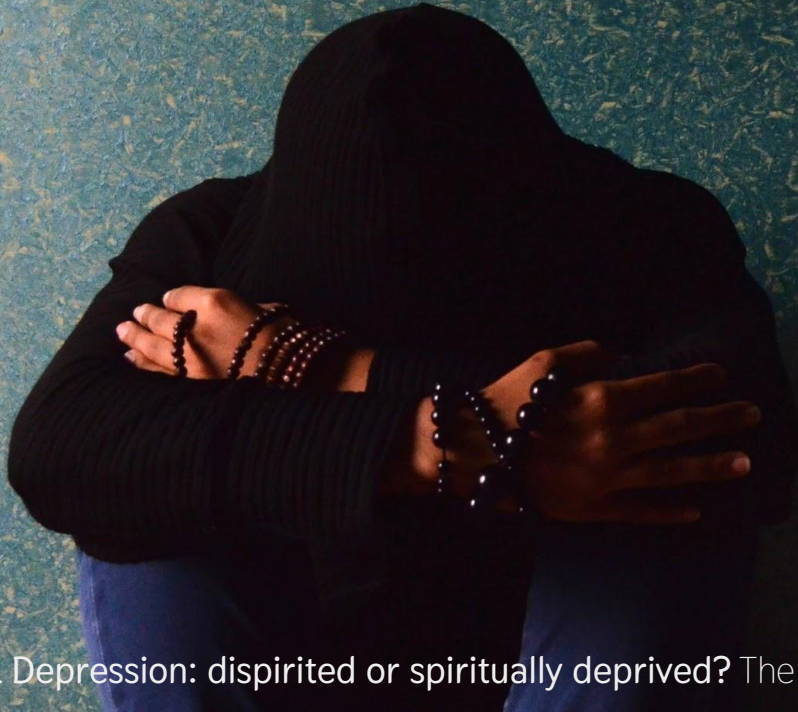


Spiritual Deprivation

disconnected

searching for meaning

lacking fulfilment



Transformative Experiences

positive emotions

increased connectedness

increased wellbeing

Gaggioli, A. (2016). **Transformative experience design**. Human Computer Confluence. Transforming Human Experience Through Symbiotic Technologies, 96-121.

Yaden, D. B., Haidt, J., Hood Jr, R. W., Vago, D. R., & Newberg, A. B. (2017). **The varieties of self-transcendent experience**. Review of General Psychology, 21(2), 143.

Lucid Dreaming



experience
anything

emotional &
epistemic
affordances

levels of
awareness

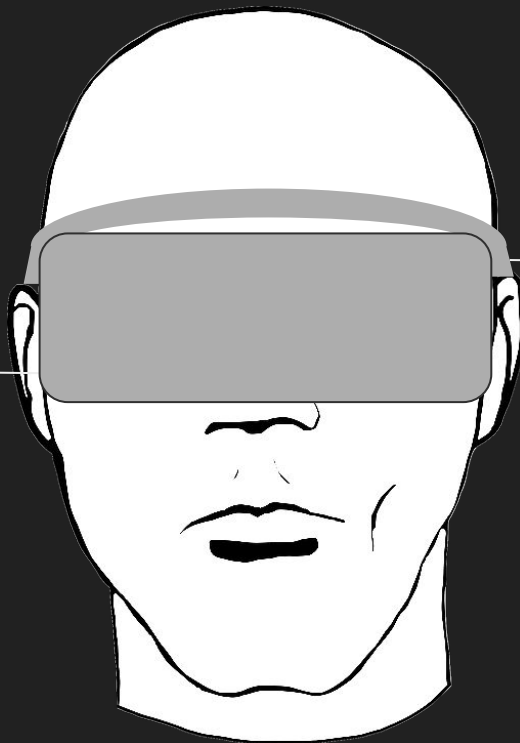
Virtual Reality



Lucid Loop

VR Headset

Untethered
Lightweight
Comfortable
6 DoF



Muse 2

EEG-brain waves
PPG-heart rate
PPG+Gyro-respiration

Biofeedback Mapping

Explorative

Playful

Empowering

Creative



Gamma	γ	30-50Hz	hyperactive
Beta	β	13-30Hz	alertness
Alpha	α	8-13Hz	relaxation

Theta	θ	4-8Hz	meditative
Delta	δ	0.5-4Hz	deep sleep

Kitson, A., Prpa, M., & Riecke, B. E. (2018). **Immersive Interactive Technologies for Positive Change: A Scoping Review and Design Considerations.** *Frontiers in Psychology*, 9, 1354.

Potter, R F. & Bolls, P. (2012). **Psychophysiological measurement and meaning: Cognitive and emotional processing of media.** Routledge

Visual Design

Nature

Abstract

Foggy → clear

Open environment

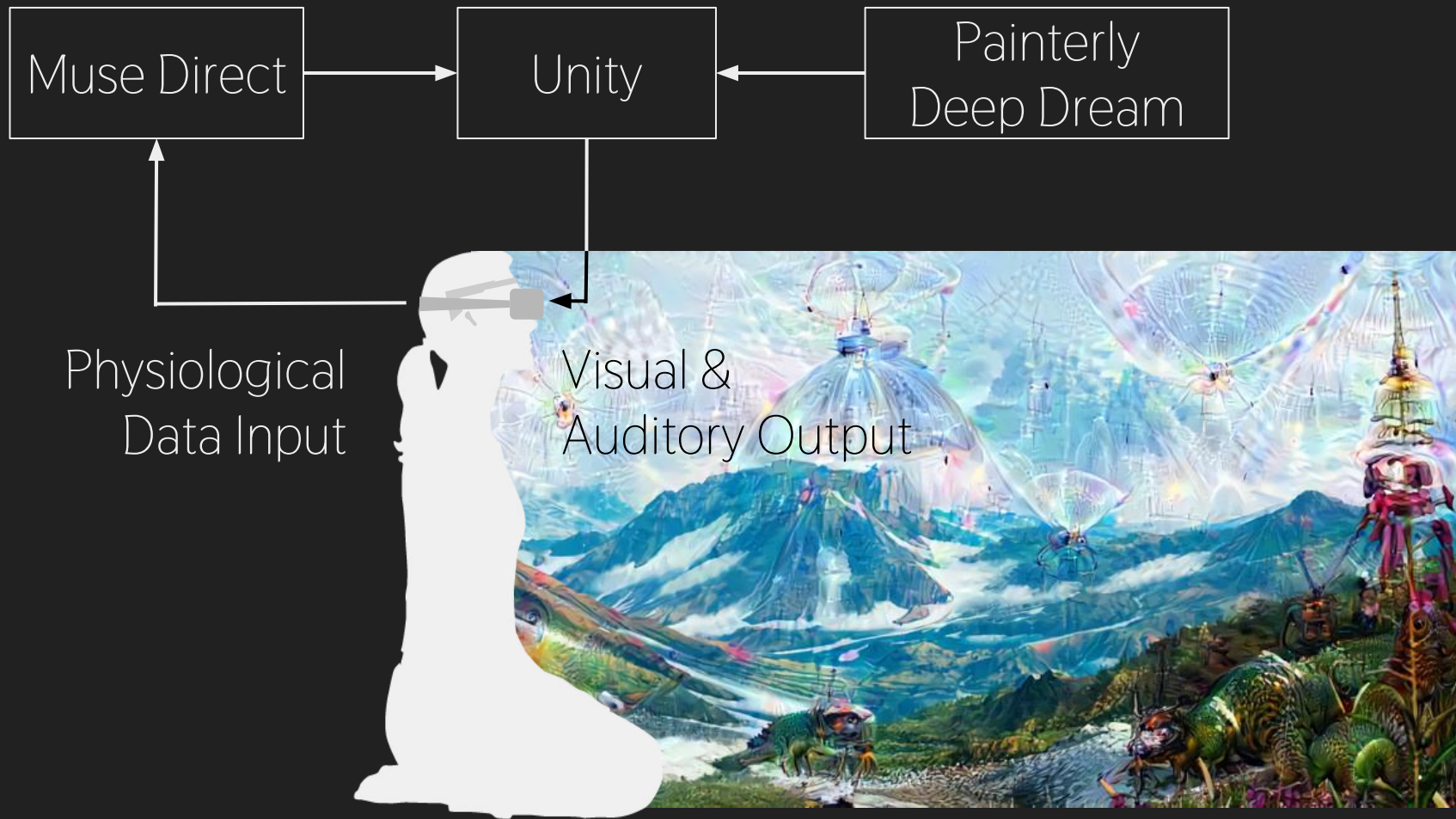


Kitson, A., Schiphorst, T., & Riecke, B. E. (2018, April). **Are You Dreaming?: A Phenomenological Study on Understanding Lucid Dreams as a Tool for Introspection in Virtual Reality.** In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (p. 343). ACM.



original image

Mordvintsev, A., Olah, C., & Tyka, M. (2015). Inceptionism: Going deeper into neural networks. DiPaola, S., & McCaig, G. (2016). Using Artificial Intelligence Techniques to Emulate the Creativity of a Portrait Painter. In EVA.



Future Directions

Test and validate components

System evaluation

Applications

Self-regulation of one's state

More frequent or sustained lucid dreams

Lucid Loop

demo & chat @ 16:30

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SCHOOL OF INTERACTIVE
ARTS + TECHNOLOGY

