

TRANSFORMATIVE PRESENCE

EXPLORING
NOVEL SPACES OF
THE SELF IN THE
PHYGITAL ERA



Andrea Gaggioli - *ExperienceLab* - Università Cattolica del Sacro Cuore

Transformative experiences

- generate profound and long-lasting shifts in core beliefs and attitudes
- not only change what we know and value, but also how we see the world

Gaggioli A. (2020) *Transformative Cognition*. In: Glăveanu V. (eds) The Palgrave Encyclopedia of the Possible. Palgrave Macmillan, Cham.



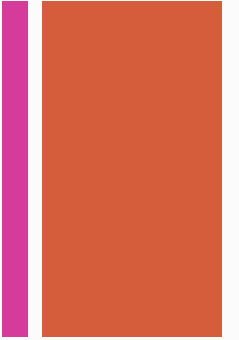
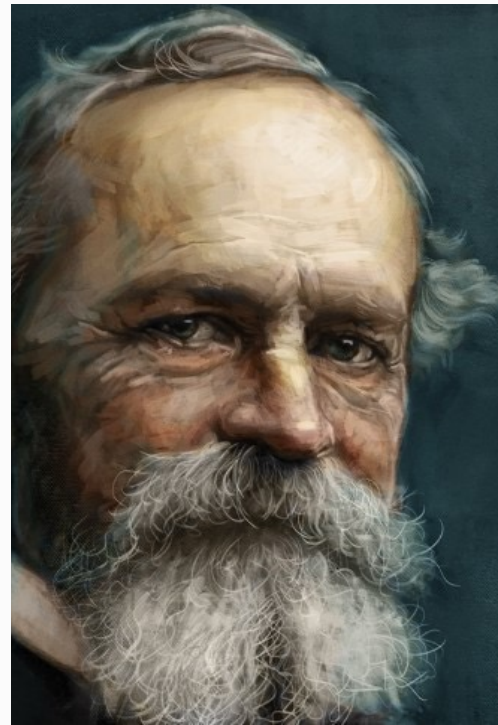
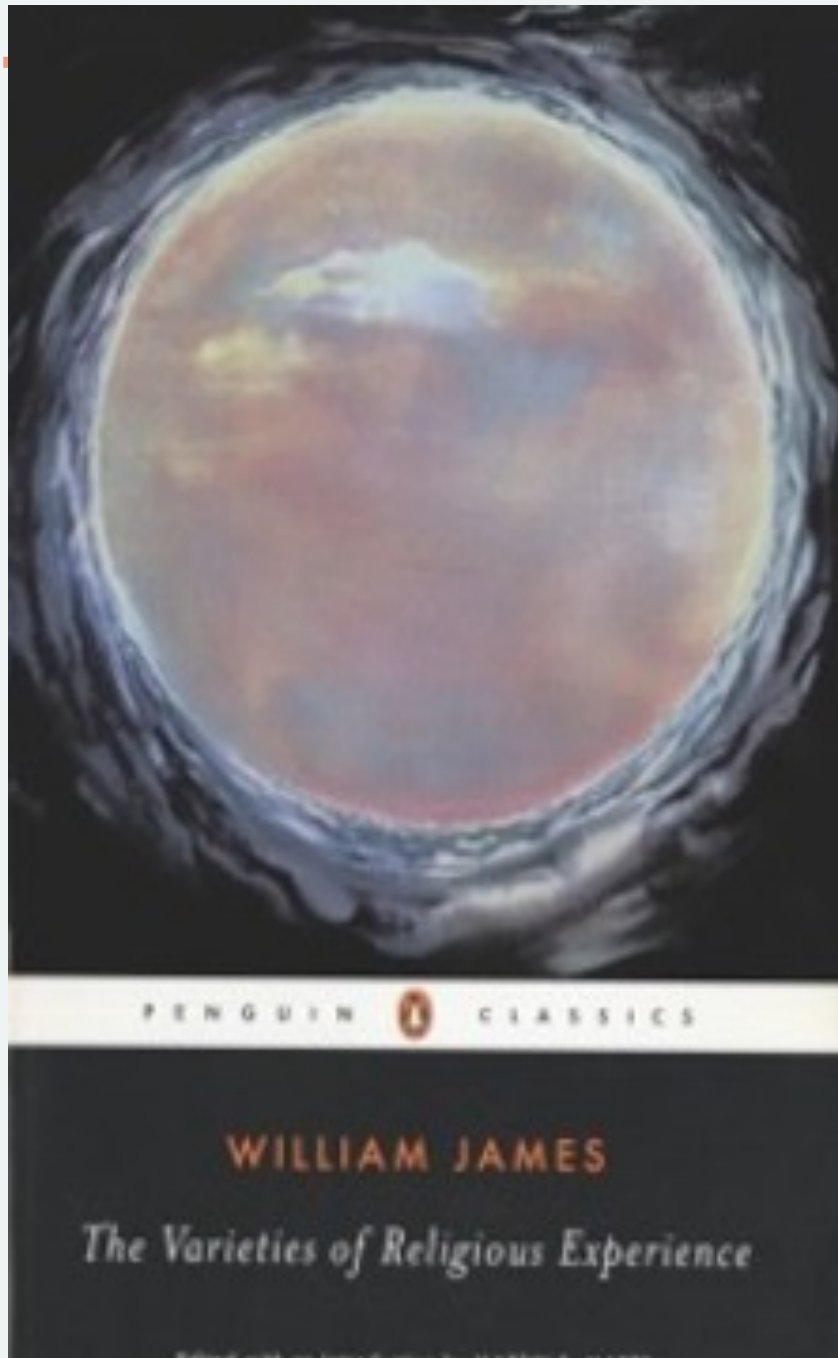




Ratatouille (2007), Brad Bird, Jan Pinkava



The transformative experience of hearing a sound for the first time



«Emotional occasions, especially violent ones, are extremely potent in precipitating mental rearrangements (...) and emotions that come in this explosive way seldom leave things as they found them»

W. James (1902)

QUANTUM CHANGE

WHEN EPIPHANIES
AND SUDDEN INSIGHTS
TRANSFORM
ORDINARY LIVES

WILLIAM R. MILLER
JANET C. de BACA



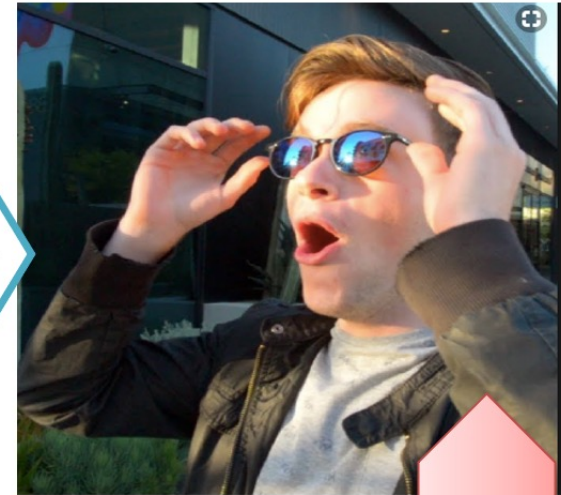
«Quantum change is (...) a vivid, surprising, benevolent, and enduring personal transformation (...) is a oneway door through which there is no going back»

W. Miller and J. De Baca (1994/2001)

EPISTEMICALLY-
TRANSFORMATIVE

The only way to
know what it is
like to have it is to
have it yourself

E.g.: trying a fruit
you've never
tasted before;
seeing a color for
the first time



TRANSFORMATIVE EXPERIENCE

PERSONALLY-
TRANSFORMATIVE

It changes your
point of view,
including your
core preferences

E.g.: Examples:
having a child;
taking a college
course



Towards a taxonomy of TEs



Defining Transformative Experiences: A Conceptual Analysis

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The concept of transformative experience (TE) has been widely explored by several disciplines from philosophy to neurobiology, and in different domains, from the spiritual to the educational one. This attitude has engendered heterogeneous models to explain this phenomenon. However, a consistent and clear understanding of this construct remains elusive. The aim of this work is to provide an initial comprehensive interdisciplinary, cross-domain, up-to-date, and integrated overview on the concept of TEs. Firstly, all the models and theories on TEs were reviewed to extract and analyze TEs' main components emerging from different disciplines. Then, this preliminary analysis was integrated with an in-depth examination of redundancies and particularities across domains and disciplines, to provide an integrated theoretical framework of TEs and a preliminary interdisciplinary operational definition of TEs. This examination, in turn, can help organize current research and theories, thus providing suggestions for operationalizing TEs as well as encouraging new interdisciplinary research endeavors.

OPEN ACCESS

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Varieties of transformative experiences

Flow

A mental state of focused absorption in an interesting and challenging task

Awe

A profound and overwhelming feeling of wonder or admiration for something vast and difficult to accommodate

Peak experiences

Experiences involving intense feelings of “merging with the universe”, wholeness, unity, and integration

Moral emotions

Positive emotions generated by the connection with something greater than ourselves (i.e., elevation, compassion, admiration, gratitude)

Mystical experiences

Experiences in which the sense of self can fall away entirely, creating a distinction-less sense of unity with one’s surroundings

Mindfulness

Experience characterized by “ego-less”, moment-to-moment, open, nonjudgmental awareness

AWE

*A feeling of wonder
experienced when
facing something
vaster, greater, beyond
current understanding*

Keltner & Haidt, 2003





The Overview Effect

In outer space you develop an instant global consciousness, a people orientation, an intense dissatisfaction with the state of the world, and a compulsion to do something about it. From out there on the moon, international politics look so petty. You want to grab a politician by the scruff of the neck and drag him a quarter of a million miles out and say, "Look at that, you son of a bitch!"

Edgar D. Mitchell, Lunar Module pilot for Apollo 14



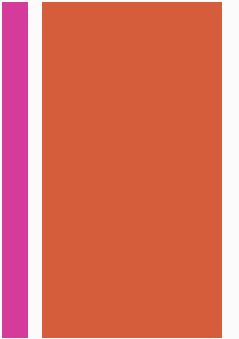
Awe boosts mental and physical wellbeing

Binds us to others (Piff et al., 2015)

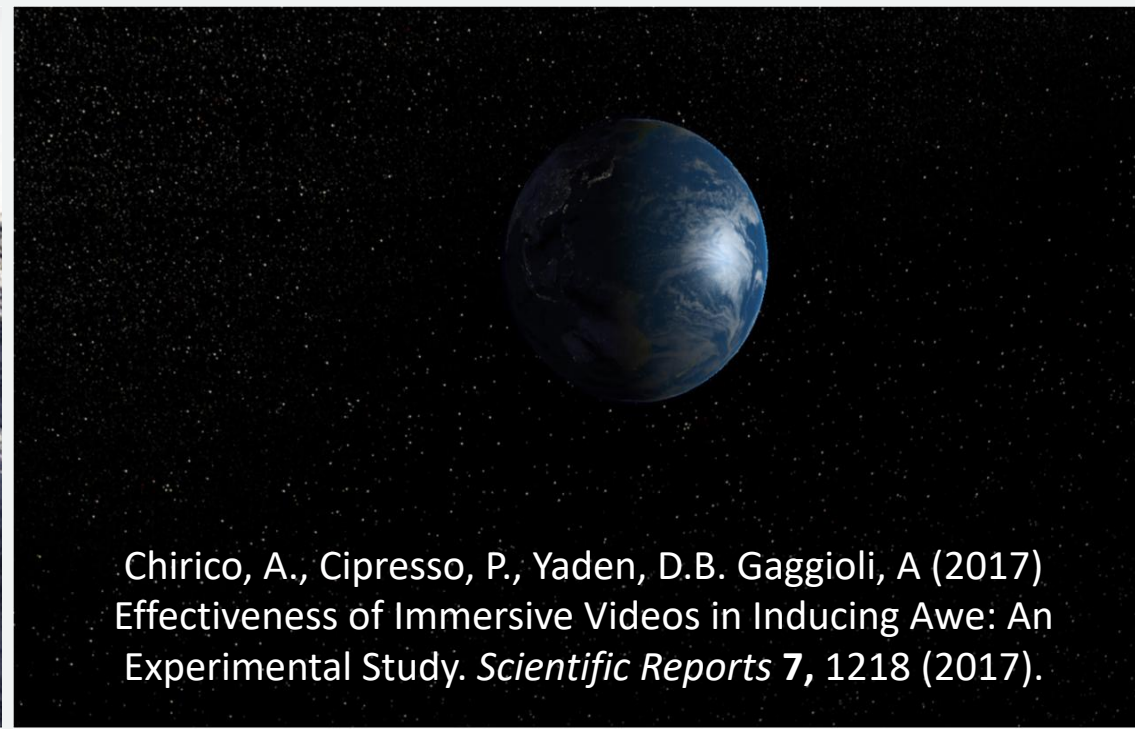
**Expands our perception of
time (Rudd et al., 2012)**

**Elicits spiritual beliefs (Van
Cappellen & Saroglou, 2013)**

**Enhances the immune
response (Stellar et al., 2015)**



VIRTUAL REALITY AS AWE-INDUCING MEDIUM



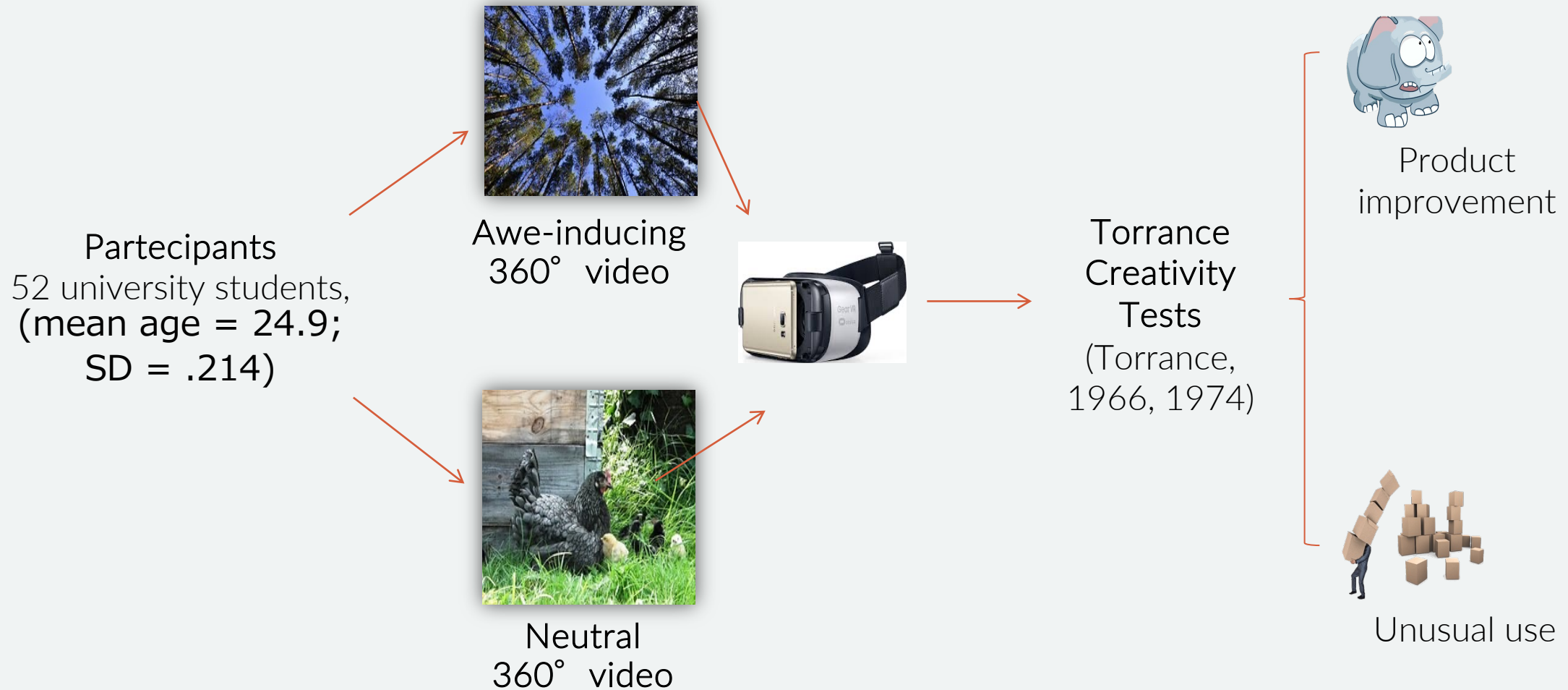
Chirico, A., Cipresso, P., Yaden, D.B. Gaggioli, A (2017)
Effectiveness of Immersive Videos in Inducing Awe: An
Experimental Study. *Scientific Reports* 7, 1218 (2017).



Awe is linked to creativity

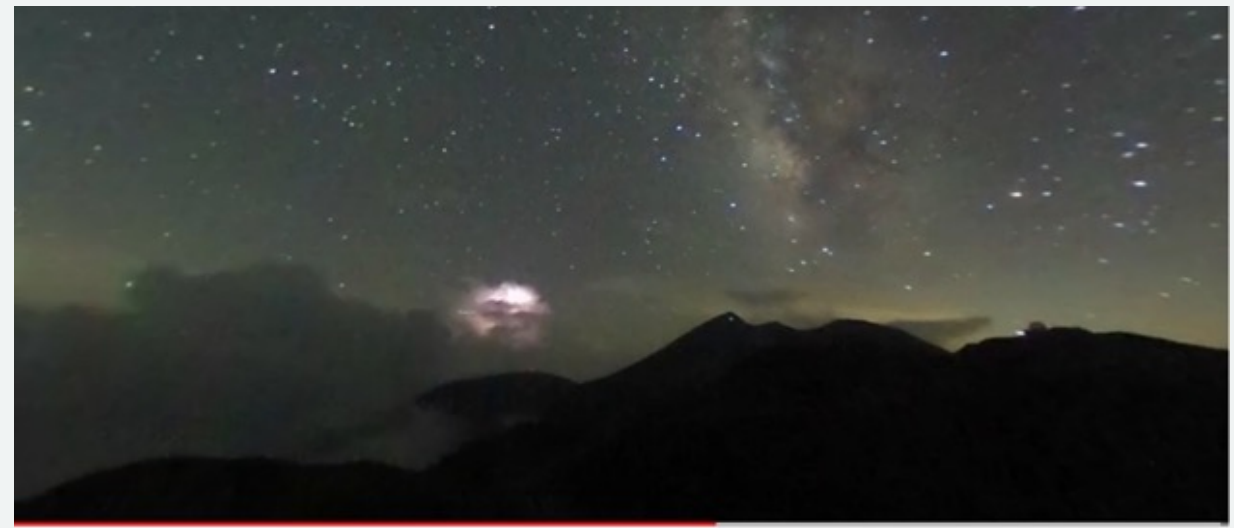
- openness to experience predicts both creative achievement and awe
- awe expands people's mental frames
- spaciousness enhances self-reported perceptions of creative potential
- uncommon/unexpected experiences enhance cognitive flexibility
- ambivalent emotional states (like awe) are conducive to creativity

Does awe boost creativity?





The Starry Night - Van Gogh -360° VR binocular - Spatial Sound Immersive



【RICOH THETA S】 Starry Night 360 4K Time Lapse

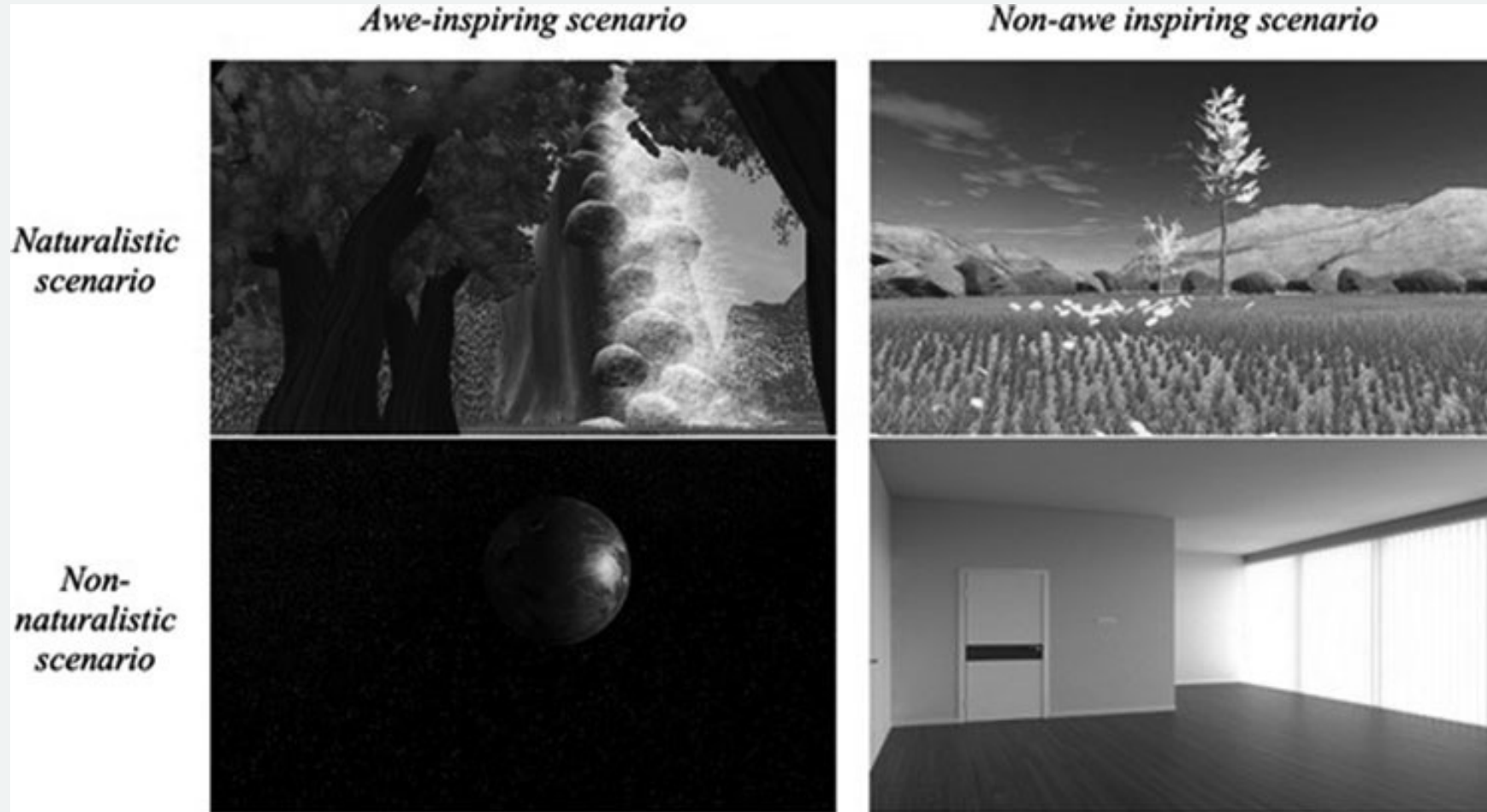
Chirico A, Clewis RR, Yaden DB, Gaggioli A (2021) Nature versus art as elicitors of the sublime: A virtual reality study. *PLoS ONE* 16(3): e0233628. <https://doi.org/10.1371/journal.pone.0233628>

Transformative emotional design for promoting ecological behaviors 1/2



Chirico, A., Scurati, G.W., Maffi, C., Huang, S., Graziosi, S., Ferrise, F., & Gaggioli, A. (2020). Designing virtual environments for attitudes and behavioral change in plastic consumption: a comparison between concrete and numerical information. *Virtual Reality*, 25, 107-121.

Transformative emotional design for promoting ecological behaviors 2/2



Chirico, A., Pizzolante, M., Borghesi, F., Bartolotta, S., Sarcinella, E. D., Cipresso, P., & Gaggioli, A. (2023). "Standing Up for Earth Rights": Awe-Inspiring Virtual Nature for Promoting Pro-Environmental Behaviors. *Cyberpsychology, behavior and social networking*, 26(4), 300–308. <https://doi.org/10.1089/cyber.2022.0260>



CAN
TRANSFORMATIVE
EXPERIENCES BE
DESIGNED?



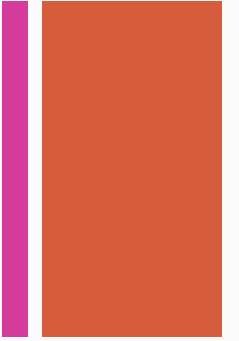
The potential of VR as transformative technology

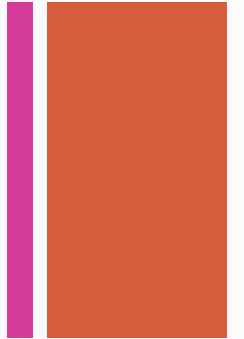
Creates a “sense of presence”

**Allows a first-person,
embodied perspective**

**Can simulate possible (and
impossible) worlds**

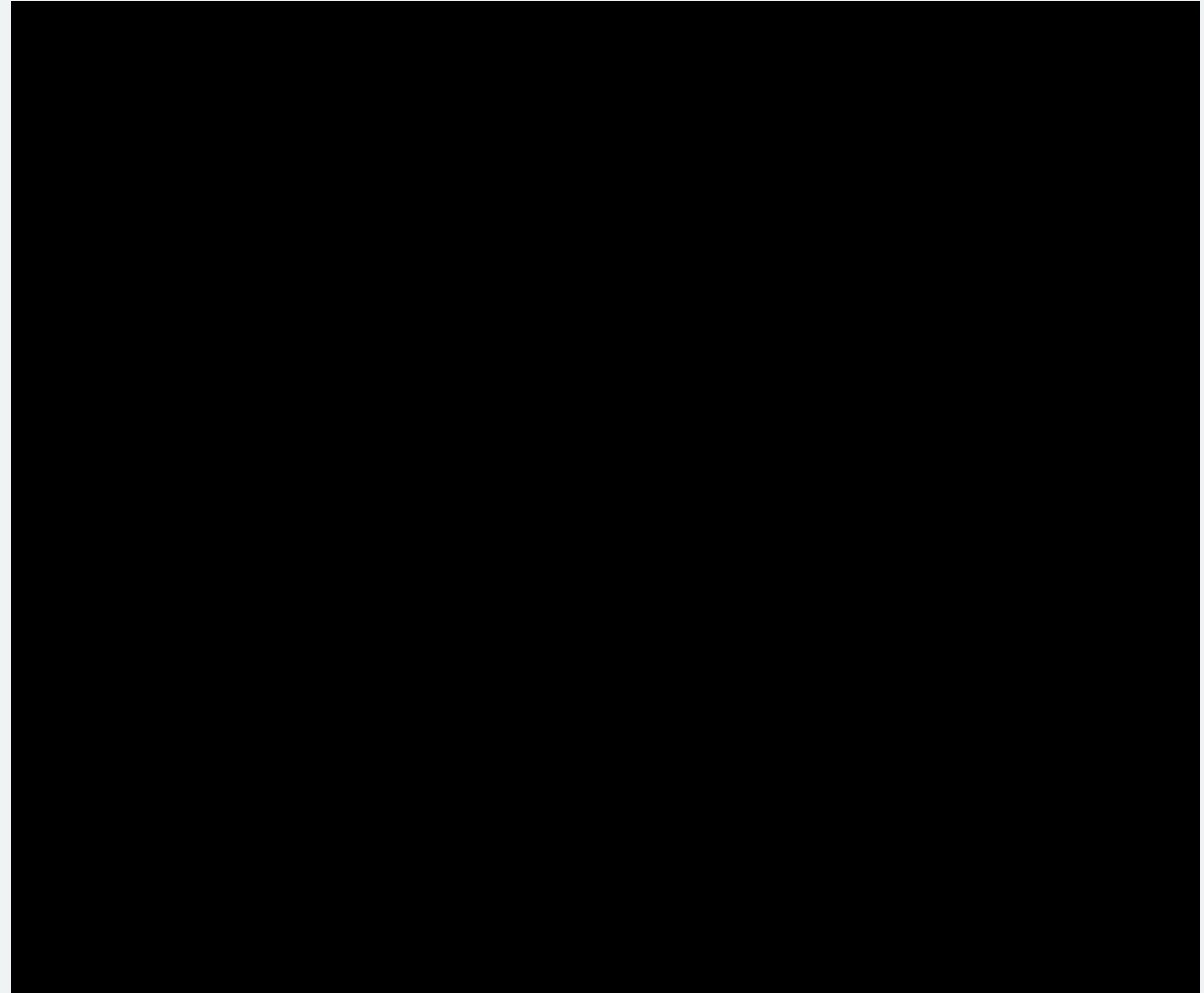
**Is already being used in
psychotherapy**





VR is effectively integrated in psychotherapy applications

“Tree” virtual reality experience by the New Reality Company



OUT-OF-BODY EXPERIENCES IN VR (Bourdin et al., 2017)

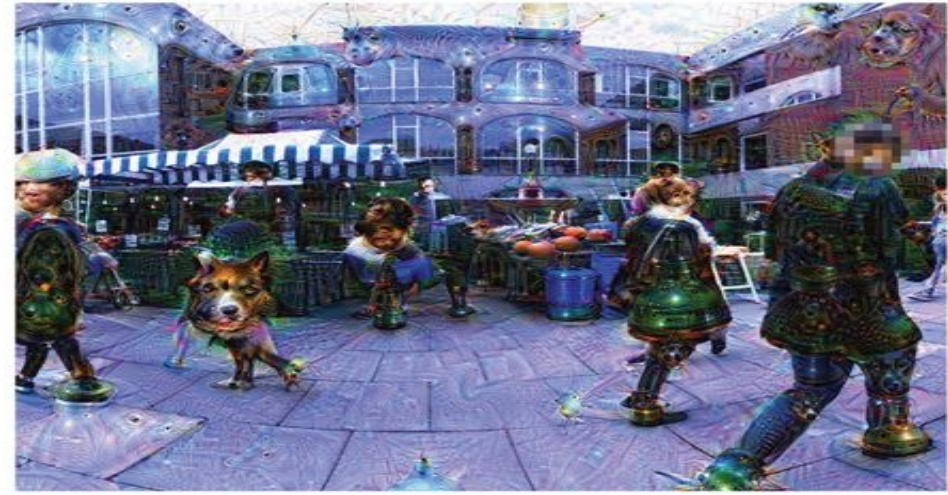


Bourdin P, Barberia I, Oliva R, Slater M (2017) A Virtual Out-of-Body Experience Reduces Fear of Death. PLOS ONE 12(1): e0169343. <https://doi.org/10.1371/journal.pone.0169343>
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0169343>

DEEP DREAM VR FOR STUDYING ALTERED STATES (Suzuki et al. 2017)



Original Image



Higher Layer (inception_4d/pool)



Lower Layer (conv2/3x3)



Middle Layer (inception_3b/output)

Deep-Dreamed Images

THE TRANSFORMATIVE
POTENTIAL OF
“PHYGITAL”
TECHNOLOGIES



PHYGITAL WORLDS AS
THE *APPLIFICATION* OF
REALITY

SPACE AND BODY
BECOME PROGRAMMABLE
INTERFACES



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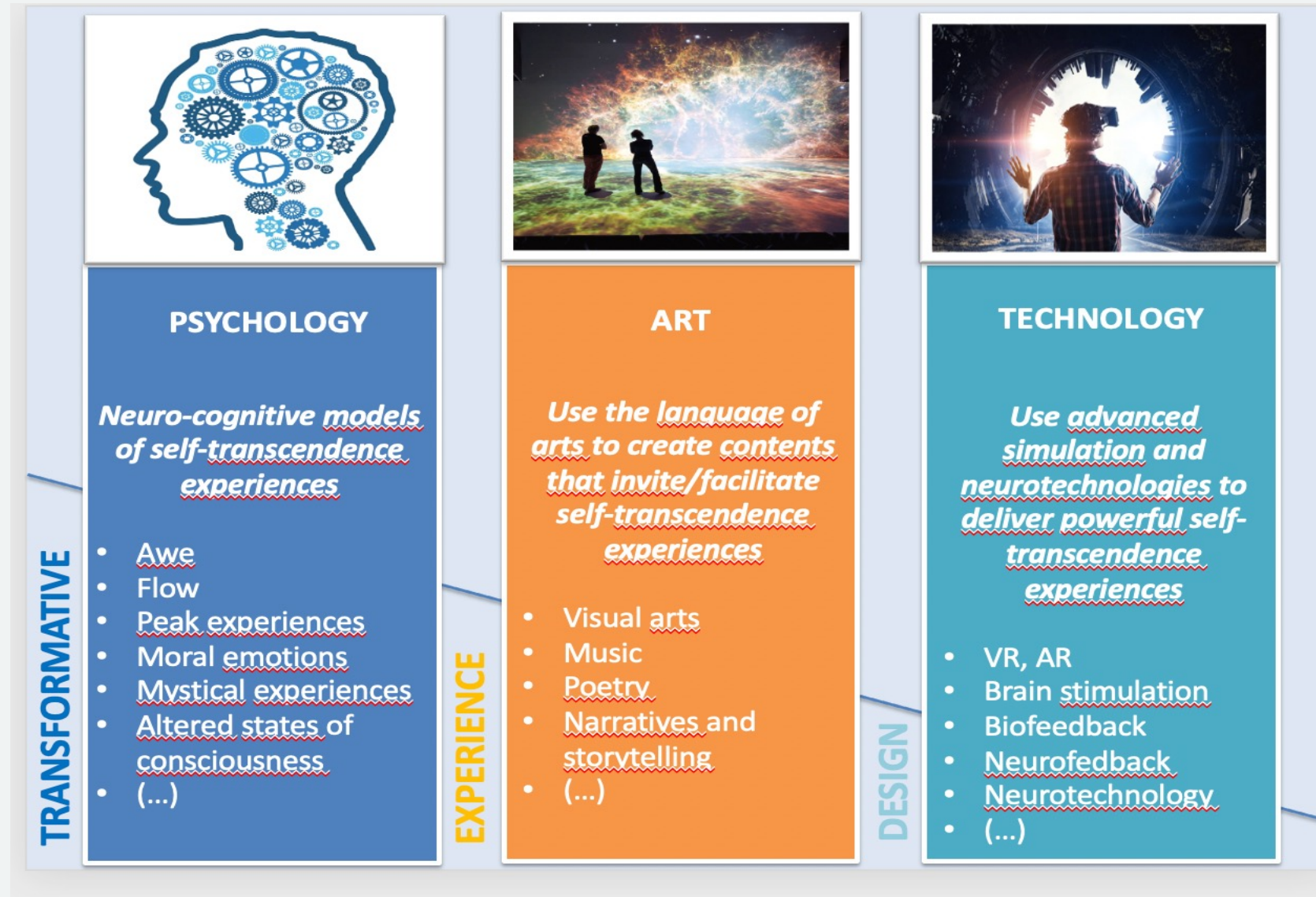
Gaggioli, A. (2017) Phygital Spaces: When Atoms Meet Bits. *Cyberpsychology, Behavior, and Social Networking*, 20(12), p. 774

THE TECHNOLOGIES OF THE SELF



ARE THE TECHNOLOGIES OF THE POSSIBLE

Transformative Experience Design



Gaggioli, A. 2016. *Transformative Experience Design*. In Human-Computer Confluence Transforming Human Experience Through Symbiotic Technologies, Gaggioli et al. (Eds.). De Gruyter, 97-121.

The Emotional labyrinth: Generative VR

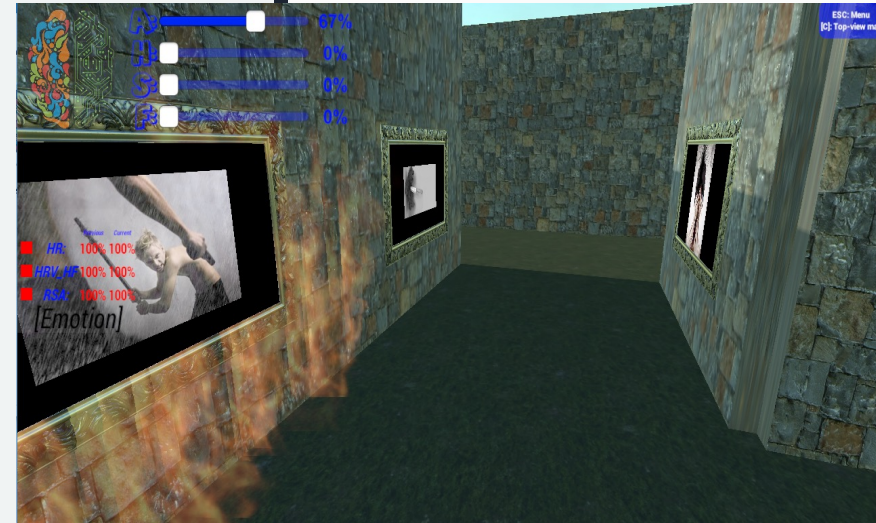


In the last three years, our team has achieved to design and develop the architectural software framework of the VR-based emotion-driven procedural content generator, and has successfully demonstrated a first proof-of-concept application of - the **Emotional Labyrinth**

The Emotional labyrinth: feedback objects



HAPPINESS



ANGER



SADNESS



FEAR



Moving into
the
transformation
economy



"The Experience Economy, updated edition",
Pine & Gilmore, 2011

Any sufficiently advanced technology
is indistinguishable from magic

Arthur C. Clarke



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