

Rethinking Immersion

Dr Adam Parkinson & Justin Randell

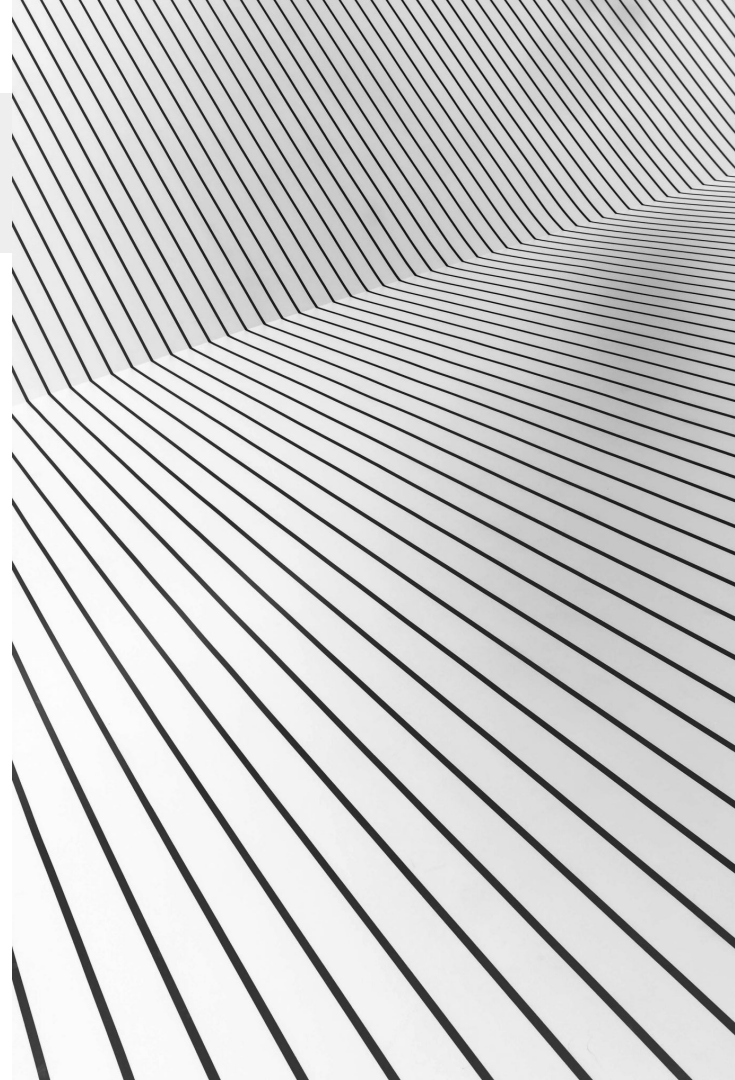
EST 1892 **LSBU**

Rethinking Immersion

This presentation proposes that people working in sound should explore how different disciplines define *immersion*, to see how this might bring new insights to immersive audio.

In so doing, we address the following questions:

- How is *immersion* conceived of in different areas of practice?
- What can *immersive audio* practitioners learn from these?



Lorenz Factor

These thoughts were prompted by the development of an “immersive” musical performance, *Lorenz Factor*.

The piece incorporates elements of audience **participation** and **interaction**.

We became curious as to how this facilitated audience immersion.

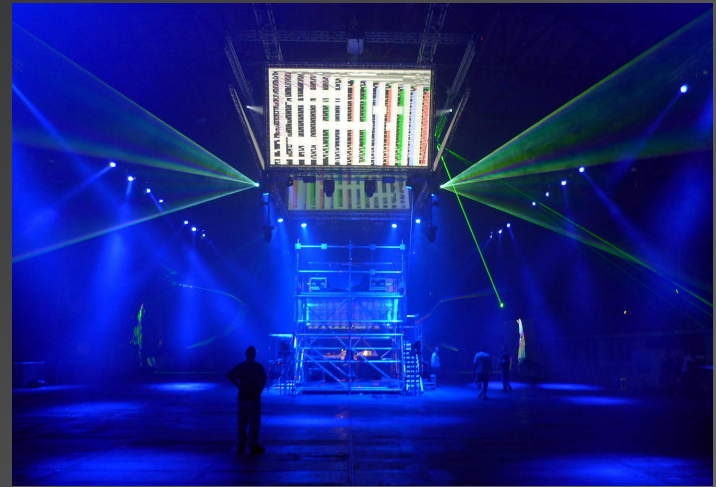


Multi-disciplinary “Immersion”

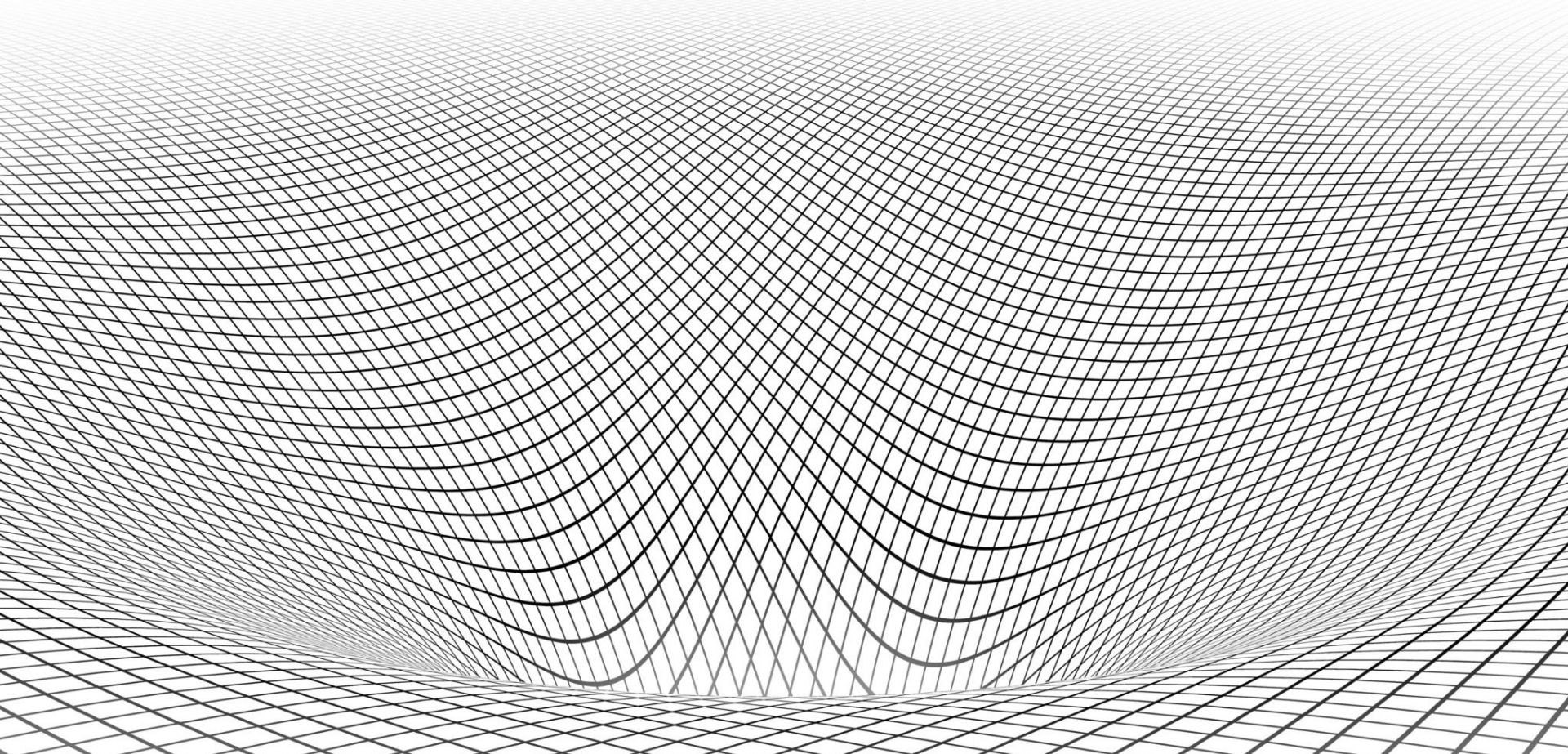
We have both worked on previous projects ranging from:

- Multichannel concerts
- Sound installations
- Binaural compositions
- Film mixing

Each of these combine different types of technology, and draw from different disciplines, environments, and audiences.



The Rise of Immersion

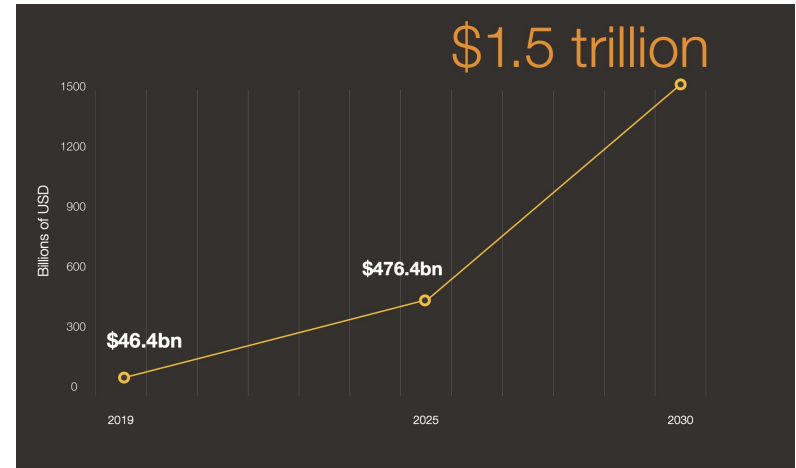
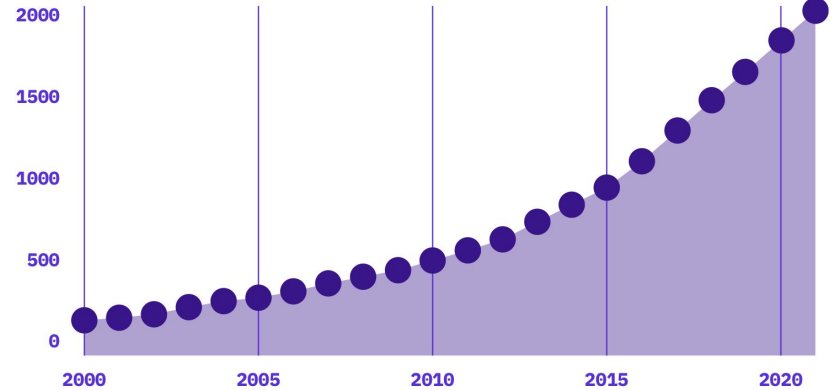


The Rise of the Immersion Economy

“Immersive industries” or the “immersive economy” is used to describe companies working with emerging technologies of Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR) and Extended Reality (XR).

- The number of business working in immersive tech in the UK has increased 83% in the past 5 years
- These are emerging markets and new areas for profit and funding. In 2021 they received £224 million in private investment and had a turnover of £1.4bn

Cumulative number of immersive companies in the UK



State Funding for the Immersive Economy in the Arts

There has been significant UK Government funding for the Immersive Economy, such as:

- The **Creative Industries Cluster Programme** distributed **£56m** through the **AHRC**.
- The **Audience of the Future Challenge** invested **£39.3m** from 2018 - 2022
- **CoSTAR** is a **£69m** UKRI immersive tech programme
- AHRC's **XRtist** call in June 2023 for a **£6m** fund for immersive tech.

Funding opportunity

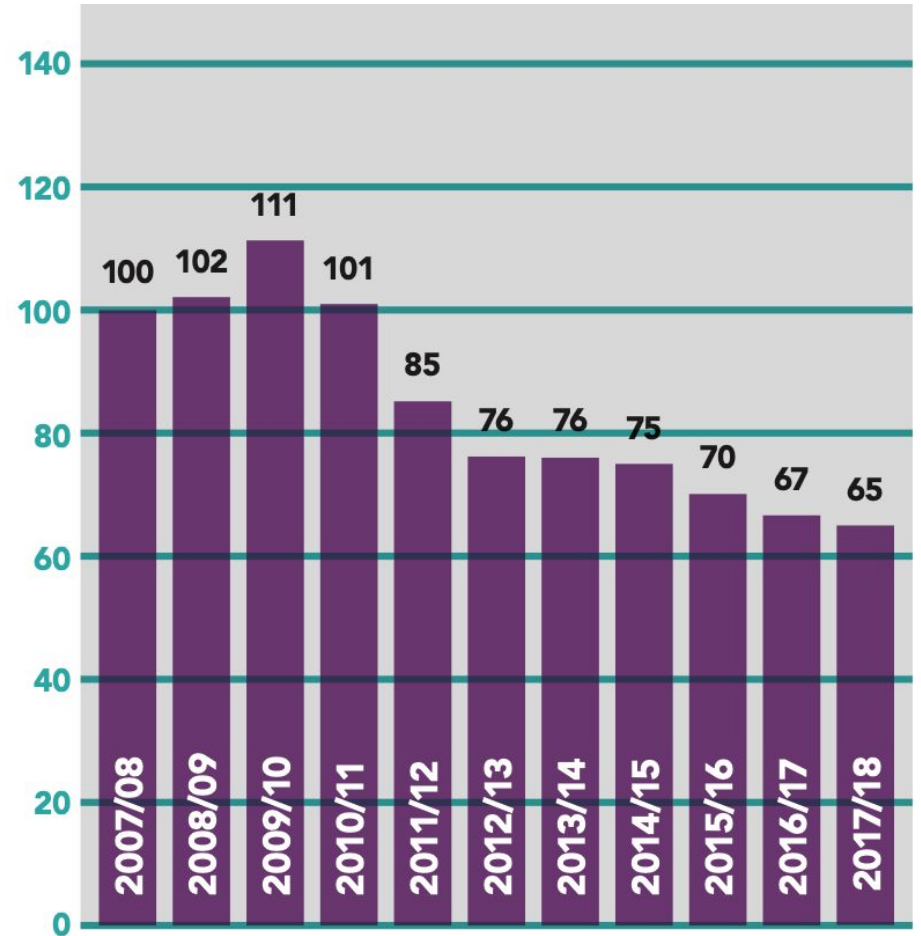
XRtists: supporting the implementation of immersive technologies

Opportunity status:	Open
Funders:	Arts and Humanities Research Council (AHRC)
Co-funders:	Arts Council England, Arts Council Northern Ireland, Arts Council Wales, Creative Scotland
Funding type:	Grant
Total fund:	£6,000,000
Award range:	£5,500,000 - £6,000,000
Publication date:	9 May 2023
Opening date:	9 May 2023 9:00am UK time
Closing date:	13 July 2023 4:00pm UK time

Whilst private & state funding for immersive industries has increased, arts funding in general has decreased over the past 15 years.

Treasury funding to Arts Council England per person 2007 - 2018.

Source: Campaign for the Arts



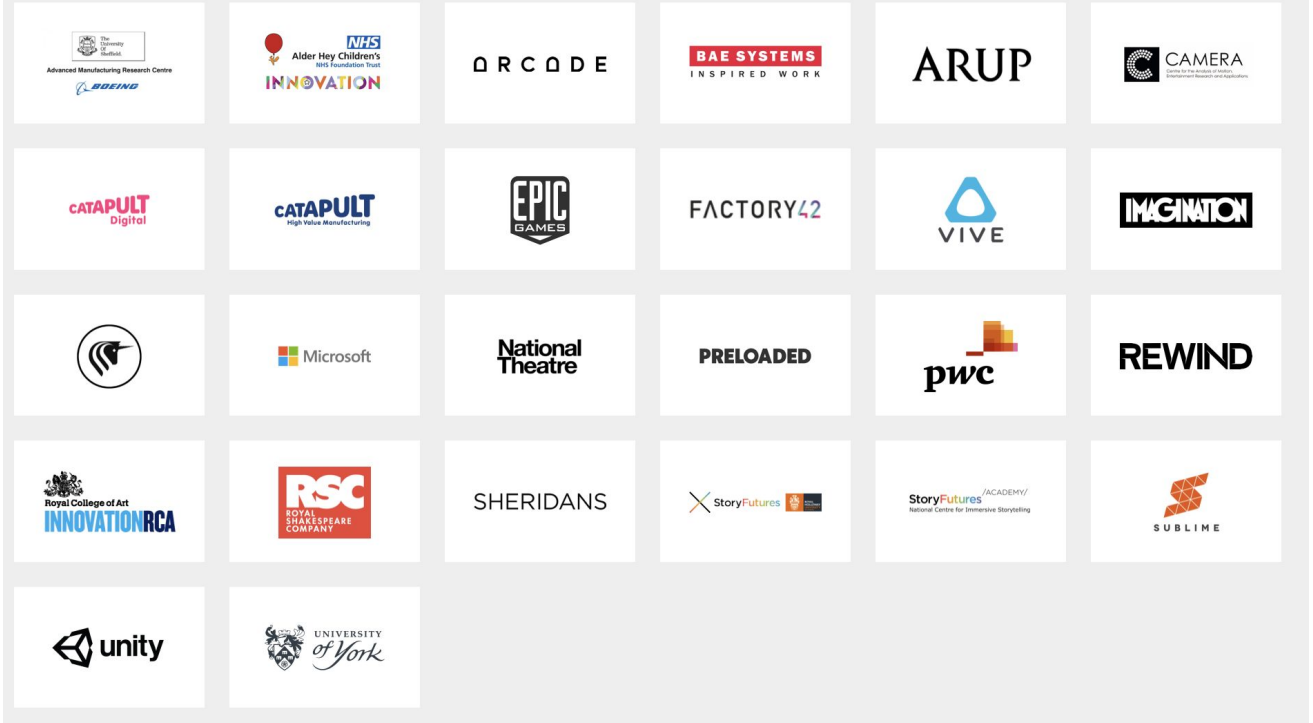
Immerse UK

Immerse UK is a not-for profit membership organisation founded to support the immersive tech sector in the UK.

The founding partners are interesting.

What else could unite the arms industry, academia, theatre and the games industry?

Founder partners



- *With arts funding in general in decline, the immersive industries are a rare place where funding can still be found*
- *The immersive industries often present a technology-driven concept of immersion.*
- *“Immersive experiences” risk becoming synonymous with these industries and technologies.*

Immersive Audio

Immersive Audio

Immersive Audio is generally used to describe any **spatial audio playback system**.

- Can use multiple speakers or be rendered over headphones **binaurally**, and it might be static or dynamic (head-tracking).
- Immersive audio formats stem from a range of disciplines: the technology is driven by a need to provide content that translates across platforms.
- Whilst these systems might quite literally immerse the audience in sound, immersive audio sometimes gets reduced to meaning *just* spatial sound, and this can limit our discussion of *what makes sound immersive*.

Immersive Audio Origins

Immersive audio experiences predate the current technological paradigm:

- The term “immersive” remains ambiguous, and changes according to the context of the experience.
- One definition compares immersion to submersion; a sensory experience in which the participant(s) transcend the physical world.
- “Unspoken” contract between the listener and the environment
 - What is the role of the artist / creator in this?
- The auditory domain extends visual cues, providing a wider perceptual experience

What can Immersive Audio learn from other domains?

Immersion in Other Domains

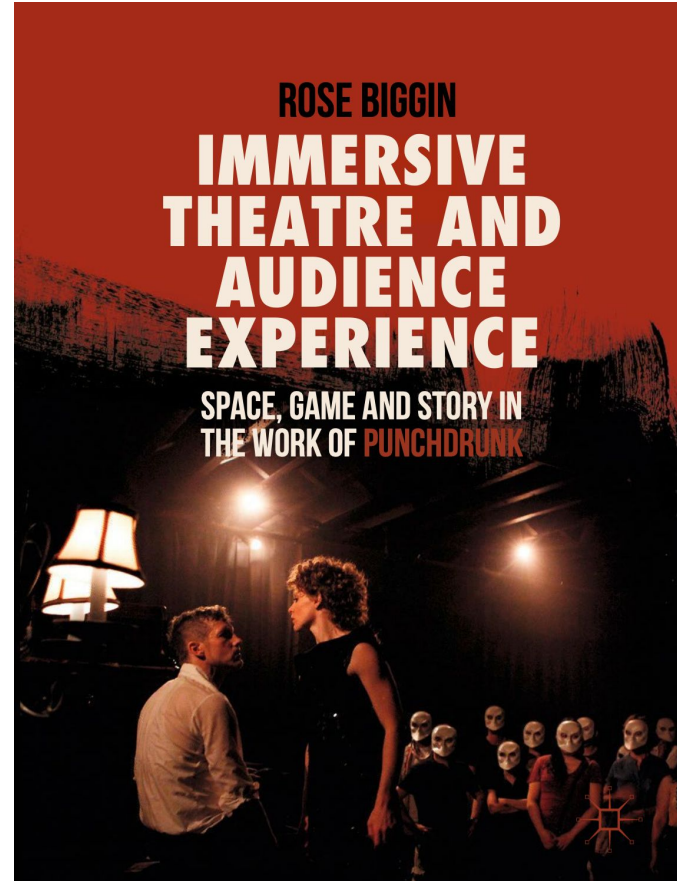
Immersive experiences are also found in gaming, theatre, heritage, VR and more. Within these disciplines immersion is defined differently and often without agreement.

- In gaming, immersion may involve feeling present in a game (Brown & Cairns)
- An Immersive Theatre performance might happen in an unusual space where the audience interacts with actors.
- An immersive heritage experience may use storytelling, interaction and digital technology to educate you about the past.
- In VR, an immersive experience might be one where you feel completely present in a virtual world

1. Separate **Form** from **Experience**

Researchers including Biggin (theatre) and Agrawal (sound) propose decoupling immersive **forms** from **experiences**.

- **immersive forms** in sound: ambisonic speakers, binaural mix
- **Immersive experiences**: feeling immersed when listening to music
- Immersion never guaranteed, just allowed for
- Some forms may be better than others at facilitating immersive experiences and this may vary across audiences.



2. Think (critically) about **Interaction & Participation**

- Interaction and participation can contribute to the immersiveness of an experience in theatre / heritage / games
- Some of the “interaction” in immersive theatre pieces has been criticised for being empty and merely rhetorical
- Participatory artworks can be problematic (see Claire Bishop *Artificial Hells: Participatory Art and the Politics of Spectatorship*)
- Christopher Small’s concept of “musicking” helps us expand the idea of musical participation.
- ***Can participation and interaction make sonic experiences more immersive?***

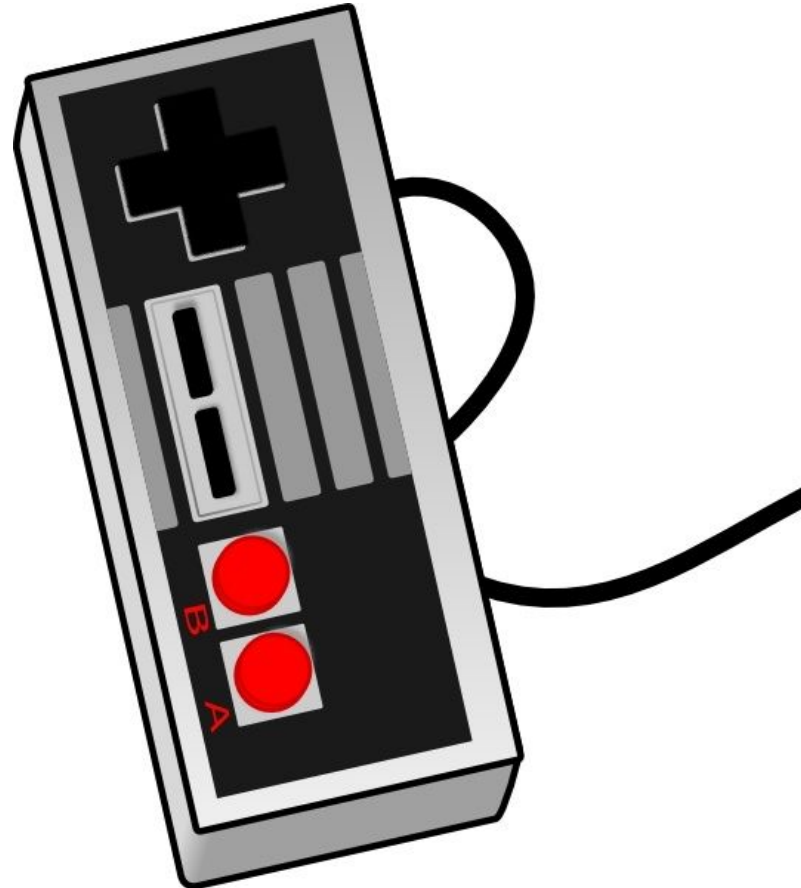
3. Immersion is **multifaceted**

Laura Ermi and Frans Mäyrä describe three different types of **immersive experiences** co-existing in gaming.

SCI model:

- **S**ensory-based immersion
- **C**hallenge-based immersion
- **I**magination-based immersion

There are different ways of being immersed in audio experience: what do we think they are?

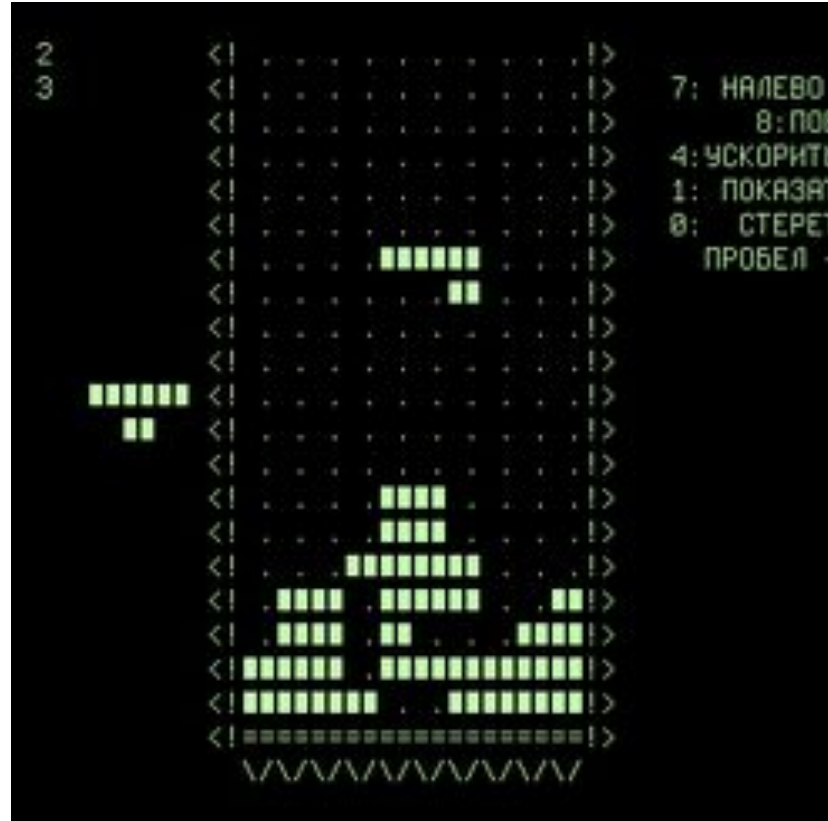


4. It's not all about (new) technology

Immersive forms should not be wholly defined by use of new technologies.

- Laura Ermi and Frans Mäyrä note that video games with basic (ie un-technologically advanced) graphics could still be immersive
- Theatre and heritage can both create immersive experiences through use of space / inventive storytelling / audience interaction with little or no new technology.

Immersive experiences don't have to be reliant on sophisticated playback technologies



5. Importance of narrative

- Relates to the imagination-based immersion identified by Ermi and Mäyrä but also identified in other studies in game studies
- Marie-Laure Ryan: “spatial immersion, the response to setting; temporal immersion, the response to plot; and emotional immersion, the response to character”
- Immersion as absorption → audience focus shifts from their surroundings towards the mediated experience (narrative)
- ***Can we map ideas of narrative immersion onto musical experiences?***

Conclusion

- New technologies such as VR, AR and XR have given rise to the immersive industries and new interests in immersive audio.
- Provides opportunities to (re)define the relationship between technology, disciplines and respective approaches to narrative (←each discipline has its own grammar and language).
- Immersive audio is sometimes reduced to technologies that can surround people with sound.
- This risks making creative work in this area inseparable from the technologies and alienated from the experience of the audience and curtails creativity.
- Studying how different disciplines such as gaming, heritage and theatre have approached immersion can provide insights for those working in sound.

References

- Agrewal, S., Simon, A.M.D., Bech, S., Bærentsen, K.B. and Forchammer, S., 2020. "Defining immersion: literature review and implications for research on audiovisual experiences". *Journal of the Audio Engineering Society*, 68(6),
- Altman, R. ed., 1992. *Sound theory, sound practice* (Vol. 2). Psychology Press.
- Biggin, R. (2017) *Immersive Theatre and Audience Experience: Space, Game and Story in the work of Punchdrunk*
- Bishop, C. (2012) *Artificial Hells: Participatory Art and the Politics of Spectatorship*
- Immerse UK (2022) *2022 Immersive Economy Report*
- Williams, J., Shepstone, S. and Murphy, D.T., 2022, August. Understanding immersion in the context of films with spatial audio. In AES 2022 International Audio for Virtual and Augmented Reality Conference (August 2022). Audio Engineering Society.
- Kidd, J. (2018) "Immersive" Heritage Encounters' *The Museum Review* 3(1)
- Mäyrä, F. and Ermi, L., (2011) "Fundamental components of the gameplay experience." *Digarec Series*, (6)
- Patterson, J and Lee, H (eds) (2022) *3D Audio*
- PricewaterhouseCoopers (2020) *Seeing is Believing*
- Rebelo, P., 2021. Sound and space: learning from artistic practice. In *3D Audio* (pp. 192-206). Routledge.
- Ryan, Marie-Laure. (2001) *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*.
- Théberge, P., Devine, K., and Everett, T. (eds) (2016) *Living Stereo: Histories and Cultures of Multichannel Sound*