Rethinking Immersion

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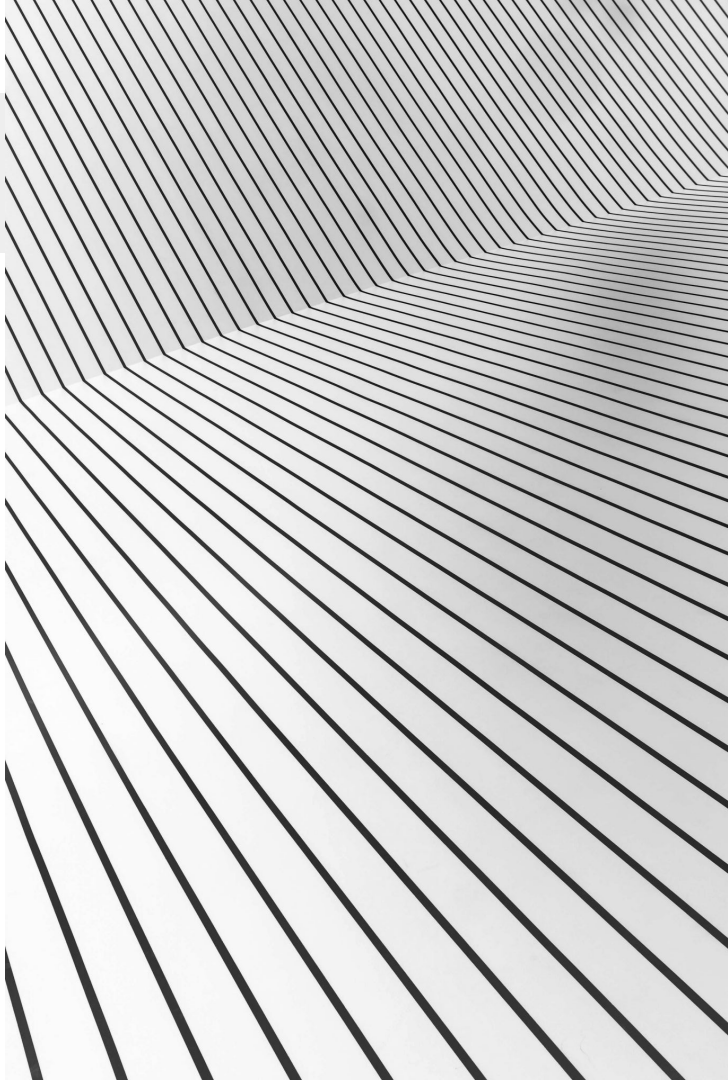
Rethinking Immersion

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 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**, and we were curious as to how this facilitates 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.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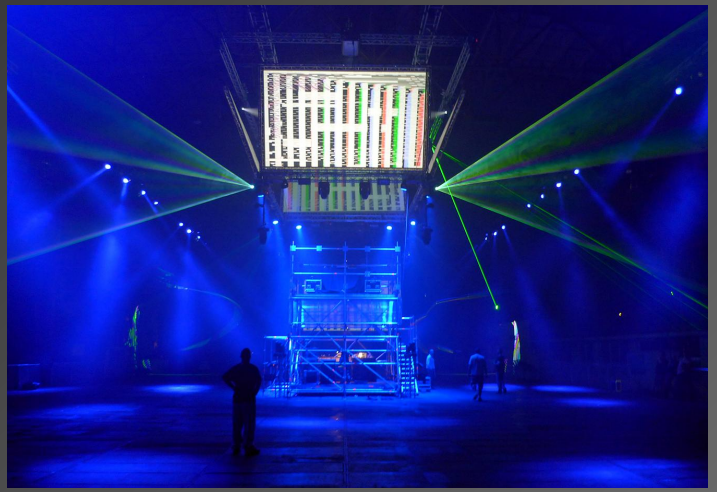
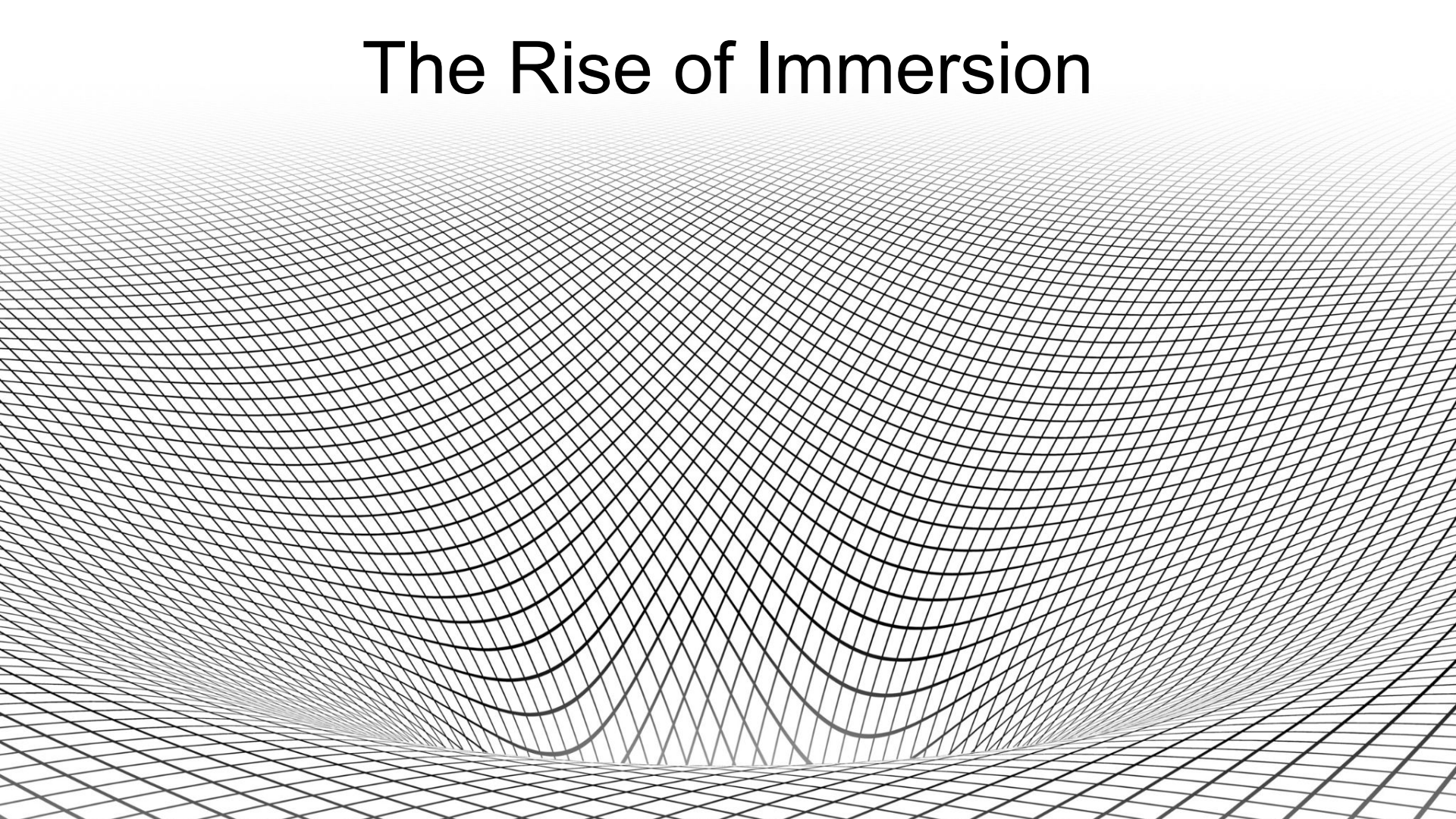
Studios


HumanForest



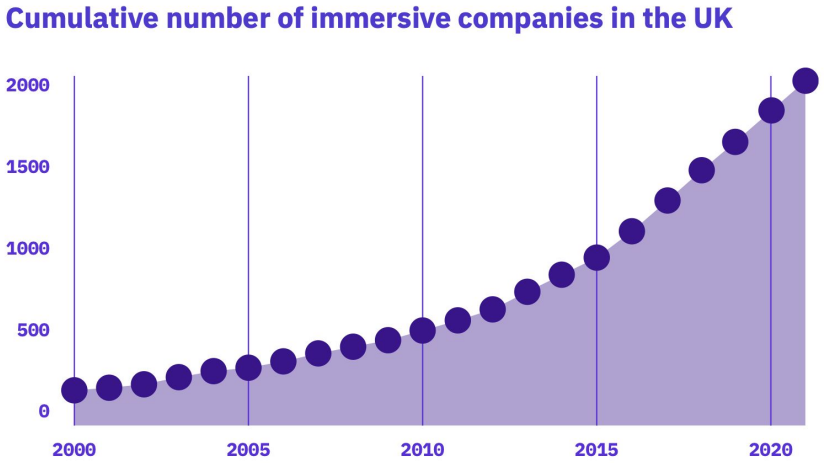
The Rise of Immersion

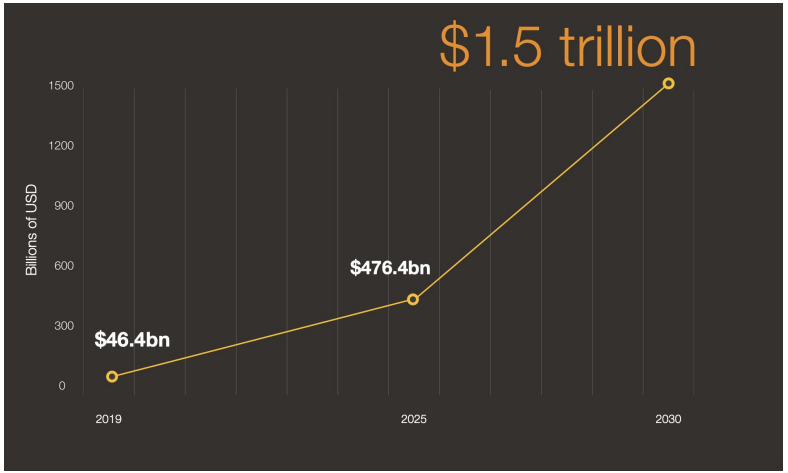


The Rise of the Immersion Economy

“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

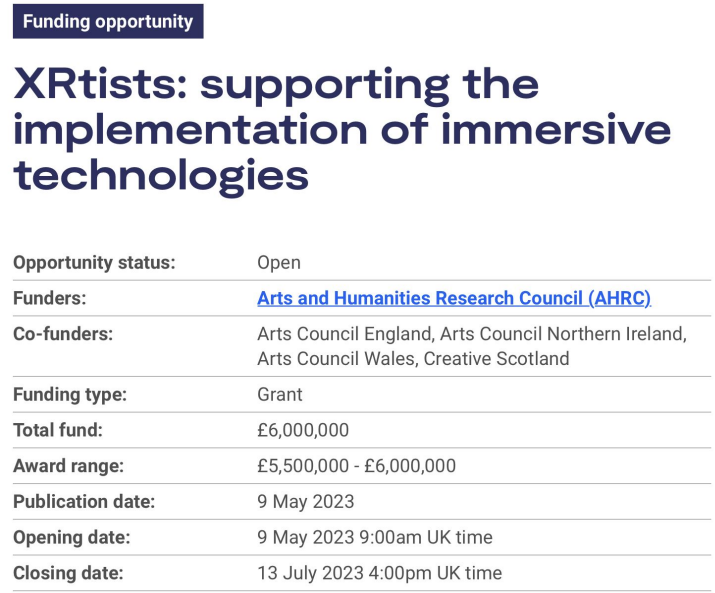




State Funding for the Immersive Economy in the Arts

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 has recently announced **XRtists,** 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

Immersive Origins

Immersive experiences predate the current technological paradigm (Rebelo).

- The term “immersive” remains ambiguous, and changes according to the context of the experience
- Being immersed is likened to being submerged; 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

- 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 spatialised audio playback system.

- This might 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:
  - Broadcast
    - NHK 22.2
    - Fraunhofer MPEG-H
  - Cinema
    - Auro-3D
    - Dolby Atmos
    - DTS:X
  - Music
    - Ambisonic
    - Sony 360 Reality Audio
    - 4D Sound
- 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.*

Learning from Immersion in Other Domains

Immersion in Other Domains

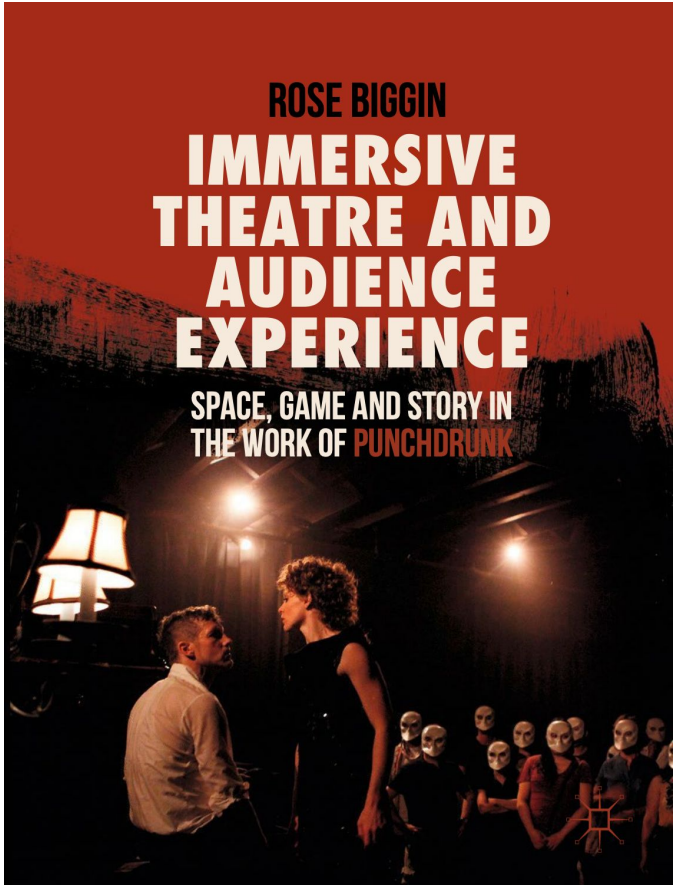
Immersive experiences are also found in gaming, theatre, heritage and VR. Within these disciplines immersion is defined differently and often without agreement.

- In gaming, immersion may involve feeling *present* in a game or in a flow state
- 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**

Theatre scholar Rose Biggin proposes decoupling immersive **forms** from **experiences.**

- **immersive forms** in sound: ambisonic speaker set up, 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

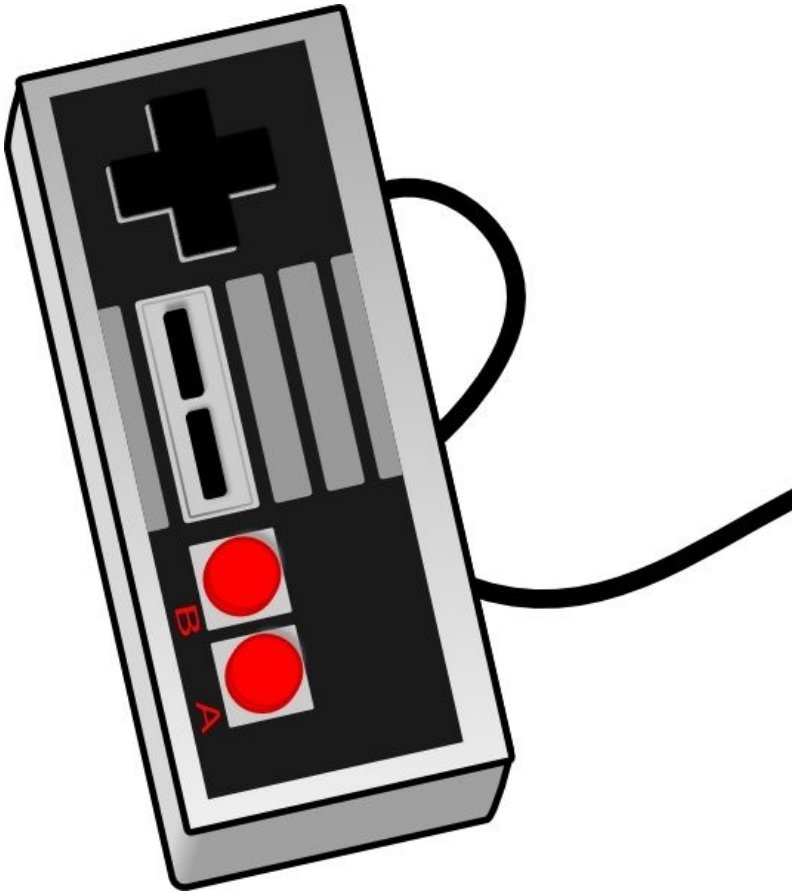
- Christopher Small’s concept of “musicking” helps us expand the idea of musical participation

3. Immersion is **multifaceted**

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

SCI model:

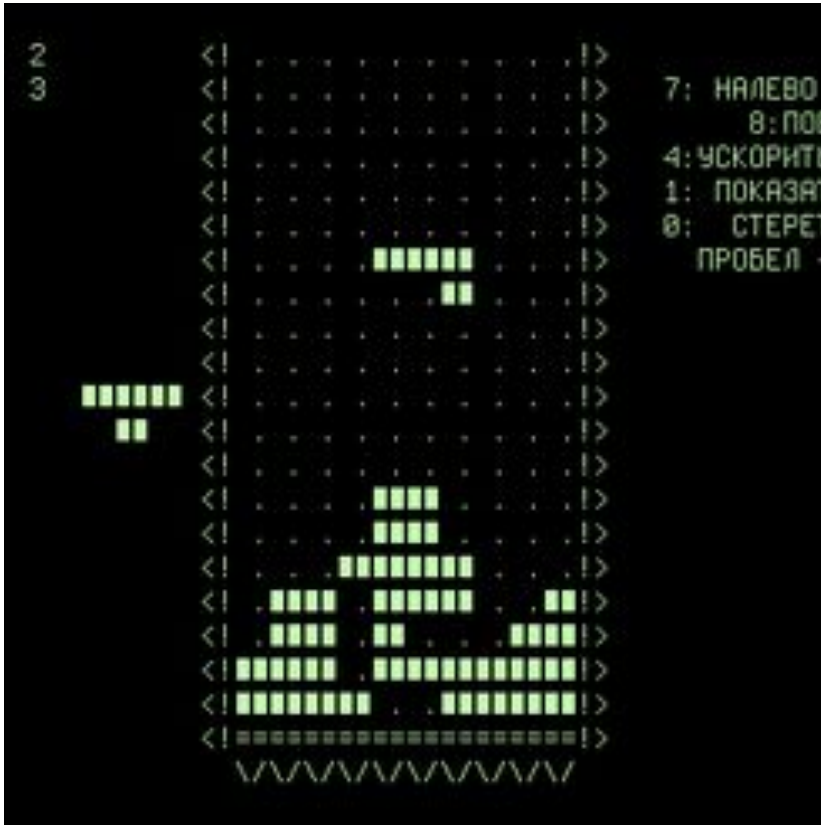
- **S**ensory-based immersion
- **C**hallenge-based immersion
- **I**magination-based immersion



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.



5. Importance of narrative

- Relates to the imagination-based immersion identified by Ermi and Mäyrä but also identified in other studies in game studies
- Literature studies (Ryan): “spatial immersion, the response to setting; temporal immersion, the response to plot; and emotional immersion, the response to character”

Conclusion

- New technologies such as VR, AR and XR have given rise to the immersive industries and new interests in immersive audio.
- Immersive audio is sometimes reduced to the technologies that can surround people with sound.
- Studying how different disciplines such as gaming, heritage and theatre have approached immersion can provide insights for those working in sound.

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