

School of Art, Design and Media, Nanyang Technological University, 2017/2018 Semester 2

DF2008 Issues in Film Practice: Immersive Imagery

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ASSIGNMENT: IMMERSIVE PAPER ASSIGNMENT

Task:

Write a 4-5 page essay, 1.5 line spacing, about one old and one new large format/immersive media space and what they present and presented. Compare our human fascination then and now with seeing things and places represented large and larger than life all around us.

(1148 words)

TAÜLL 1123: Immersive Experience in a World Heritage Site – Image, Sound & Interaction

In the new era of immersive experiences, one can argue that art tries very much to imitate life. Supported by the rapid development of new technologies however, this goal has been stretched to enhancing realities, rather than simply replicating it. Hence, we observe the birth of what is now known as an *augmented reality*.

Despite the term being commonly used interchangeably with *virtual reality*, the two cannot be more different. While virtual reality, as its name suggests, exists in a virtual realm, augmented reality incorporates virtual elements to our real-world environment¹, thus blurring the borders between digital and physical spaces.

In a successful merging of these two spaces, *immersive experiences* are being created. Head-mounted devices which separated and created a division between the two spaces is now making its way for a device-free environment, where imagination and reality have never been so intermingled².

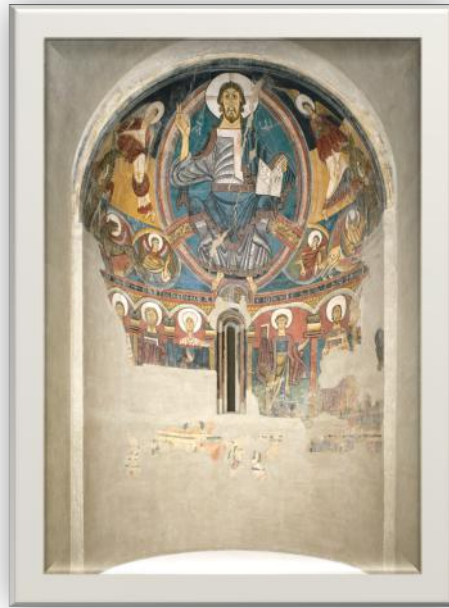
The Taüll 1123 is an immersive on-site experience that transports the visitors of the Romanesque church of Sant Climent de Taüll to the past (specifically to the year 1123)³. A significant element that was decided to be virtually preserved was its apse, which included the most outstanding Catalan Romanesque fresco – a representation of God surrounded by tetramorphs and angels: *The Christ in Majesty*⁴ (Figure 1).

¹ Intel. (n.d.). *Virtual Reality Vs. Augmented Reality Vs. Mixed Reality - Intel*. [online] Available at: <https://www.intel.com/content/www/us/en/tech-tips-and-tricks/virtual-reality-vs-augmented-reality.html> [Accessed 20 Mar. 2018].

² Ibid.

³ Mw2015.museumsandtheweb.com. (n.d.). *#Taull1123: Immersive experience in a World Heritage Site (or augmented reality without devices) | MW2015: Museums and the Web 2015*. [online] Available at: <https://mw2015.museumsandtheweb.com/paper/taull1123-immersive-experience-in-a-world-heritage-site-or-augmented-reality-without-devices/> [Accessed 20 Mar. 2018].

⁴ Ibid.



**Figure 1. Apse of Sant Climent de Taüll
Circa 1123. Painting.⁵**

A virtual preservation of this fresco was done through projection mapping (Figure 2). Projection mapping is a process that distorts images, warping and blending them to perfectly fit the (irregular) shapes on any desired surface⁶, which in most common cases happen to be historical buildings. While this solution of 'restoration' is marked with its own advantages, with one being that it enables the recovery of the church's authenticity to be combined harmoniously with the possibility of seeing the frescos in situ, concerns with it too, began to develop.

⁵ Museu Nacional d'Art de Catalunya (n.d.). *Apse of Sant Climent de Taüll*. [image] Available at: <http://www.museunacional.cat/en/colleccio/apse-sant-climent-de-taull/mestre-de-taull/015966-000> [Accessed 20 Mar. 2018].

⁶ Ibid.



Figure 2. Apse of Sant Climent de Taüll. 2014. Projection mapping.⁷

An issue that arises with the projected images of the frescos, in comparison to its original paintings is the fact that it is intangible. As a result, the image is not vulnerable to weathering as much as a painting would have been affected by this factor over time. After all, the image that strikes us when we think of the apse of Sant Climent de Taüll is one that had suffered considerable damage from leaking roofs, and not the glorified projections. Consequently, the authenticity of the experience becomes questionable.

However, a solution to this problem could have already been found in what is called the virtual-replica technique. While it currently serves as a mean to present its visitors with the visuals of the hypothetical reconstruction of what the church could have looked like in 1123 (Figure 3), this method could also easily be adopted in transporting them into the future.

⁷ Christie Digital (n.d.). *Christie powers the virtual mapping of original paintings in Sant Climent de Taüll*. [image] Available at: <https://www.christiedigital.com/emea/business/visual-solutions-case-studies/visual-solutions-application-stories/sant-climent-de-taull-english> [Accessed 20 Mar. 2018].



**Figure 3. Apse of Sant Climent de Taüll.
2014. Projection time-lapse.⁸**

Another concern is derived from arguably the most celebrated reason for augmented reality, which is the fact that it virtually requires no real-world space. This would allow for a more multi-functional use of the said space, rather than designating them for very specific purposes. For example, the projection time-lapse of the apse of Sant Climent de Taüll brings us through an almost thousand year time period with the same wall. While surely this seems like a desirable and economical method that allows for the harmonious merger of the past and the present, it also provides developers with an excuse to make more extreme physical changes to the surrounding as preservation efforts are done virtually.

The abovementioned concerns, are however, merely related to space-time dissociations, which would affect a visitor's overall experience. In approaching a fresco, it can be argued that the most important element that influences our experience is its visuals.

A three-million-point (one point every 3 millimeters) 3D laser scan was made of the entire area in the presbytery.⁹ Superimposing these high quality images of the frescos on what is left of the surfaces in the church would maintain the artistic authenticity of the work without digital distortions. This was made successful with the installation of six projectors: two at the church entrance above the reception,

⁸ Maduell, E. (2015). *The three different aspects: the restored frescos, the preserved paintings including those from MNAC projected, and #taull1123*. [image] Available at: <https://mw2015.museumsandtheweb.com/paper/taull1123-immersive-experience-in-a-world-heritage-site-or-augmented-reality-without-devices/> [Accessed 20 Mar. 2018].

⁹ Ibid.

another two on the side aisles, and the final two in the apse behind the flooring (Figure 4). Most importantly, the projectors, concealed behind metal supports, are not made visible to its visitors, allowing them to be in a state of suspension of disbelief.



**Figure 4. Distribution of projectors.
Sant Climent de Taüll.¹⁰**

However, visual quality does not only encompass pixel quantity. Accuracy of the colours of the projection on the ochre walls of the church was also tested, as it can be easily expected that it would differ from projections on a white screen. Through these methods, visual accuracy is guaranteed.

But what value is there in replication? How is it then an immersive experience that enhances our reality?

Thus it is important to study IMAX Theatres¹¹, which prides itself in its *immersive experiences*. Its website suggests that the experience is created by focusing on

¹⁰ Comenge, B. (2015). *Distribution of the six projectors..* [image] Available at: <https://mw2015.museumsandtheweb.com/paper/taull1123-immersive-experience-in-a-world-heritage-site-or-augmented-reality-without-devices/> [Accessed 20 Mar. 2018].

producing IMAX Sound, IMAX Picture, and lastly IMAX Theatre. What this means is that it does not fall short in any aspects related to audio-visual, with its *heart-pounding audio*, *awe-inspiring images* and theatres that are planned, designed, and exacting standards to ensure movie magic.

This idea is also supported by Qualcomm, which attributes a successful augmented reality experience to visual quality (both pixel quantity and quality), sound quality (high resolution audio and sound integrity) and intuitive interactions (through user interfaces and contextual interactions), as seen in Figure 5.

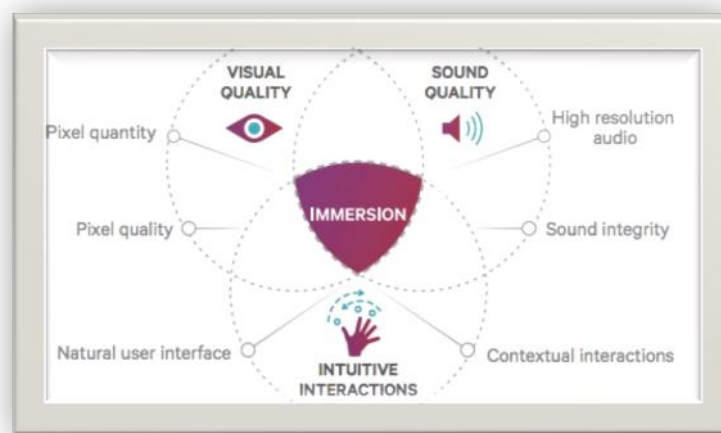


Figure 5. Qualcomm's Full Immersion Diagram.¹²

While we have looked into the projections of images and how it is placed in a certain continuum, it is also vital that sound is studied in understanding the creation of an immersive experience. Burzon*Comenge and Playmodes were involved in producing *Pantocrator*, the soundtrack used in the mapping of Sant Climent de Taüll. It was mentioned that their collaboration involved several recordings in different parts of the valley, capturing the sounds of streams, wind, bells, animals, human footsteps and the squeal of church door's hinges to reinforce the mapping's visual effects and elevate the immersiveness¹³. Thus, it

¹¹ Imax.com. (n.d.). *The IMAX Difference | IMAX*. [online] Available at: <https://www.imax.com/content/imax-difference> [Accessed 20 Mar. 2018].

¹² Qualcomm (2015). *Full immersion requires broader dimensions..* [image] Available at: <https://www.qualcomm.com/invention/cognitive-technologies/immersive-experiences> [Accessed 20 Mar. 2018].

¹³ Pantocrator.cat. (2014). *SOUND EFFECTS < Mapping Pantocrator Sant Climent de Taüll 1123*. [online] Available at: <http://pantocrator.cat/en/efectes-sonors-sant-climent-de-taull/> [Accessed 20 Mar. 2018].

can be said that sound too, plays a part in contributing to situating viewers in the context.

In conclusion, while the workflow in the creation of an immersive project of this scale would require the segregation of jobs, it is important to understand how each contributing element could work together in creating an immersive experience.

Illustration References

Figure 1. Museu Nacional d'Art de Catalunya (n.d.). *Apse of Sant Climent de Taüll*. [image] Available at: <http://www.museunacional.cat/en/colleccio/apse-sant-climent-de-taull/mestre-de-taull/015966-000> [Accessed 20 Mar. 2018].

Figure 2. Christie Digital (n.d.). *Christie powers the virtual mapping of original paintings in Sant Climent de Taüll*. [image] Available at: <https://www.christiedigital.com/emea/business/visual-solutions-case-studies/visual-solutions-application-stories/sant-climent-de-taull-english> [Accessed 20 Mar. 2018].

Figure 3. Maduell, E. (2015). *The three different aspects: the restored frescos, the preserved paintings including those from MNAC projected, and #taull1123*. [image] Available at: <https://mw2015.museumsandtheweb.com/paper/taull1123-immersive-experience-in-a-world-heritage-site-or-augmented-reality-without-devices/> [Accessed 20 Mar. 2018].

Figure 4. Comenge, B. (2015). *Distribution of the six projectors*. [image] Available at: <https://mw2015.museumsandtheweb.com/paper/taull1123-immersive-experience-in-a-world-heritage-site-or-augmented-reality-without-devices/> [Accessed 20 Mar. 2018].

Figure 5. Qualcomm (2015). *Full immersion requires broader dimensions*. [image] Available at: <https://www.qualcomm.com/invention/cognitive-technologies/immersive-experiences> [Accessed 20 Mar. 2018].

Video References

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Audio References

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