Moving On:
Between Physical and Augmented Realities

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Summary

Finding a balance between the physical space and the interactive technology is an obstacle. Keeping the attention of the exhibition visitor through the rapidly advancing age of technology is difficult, albeit not impossible. However, telling a story through different formats is probably the more difficult thing to achieve. Combining visual technologies with physical space is not unheard of. If done right, it can bring the story to life without losing the *aura* of the physical space. *Moving On* combines the physical experience with AR to achieve a unique narrative. It immerses the visitor in an eye-opening experience but one that can inspire hope.

Augmented Reality

In the late 1960s, the development of Augmented Reality (AR) systems started for various reasons. Professor Ivan Sutherland was one of the pioneers of the technology, having developed a head-mounted display system called *The Sword of Damocles*. The technology was too novel at that time to receive much attention.

It wasn't until 1992 that Louis Rosenberg developed one of the first functional AR models for the US Air Force. The system developed was dubbed Virtual Fixtures and it was intended for military personnel to virtually control and guide machinery for their training. While the system was not intended for commercial use, it laid some foundation for what came afterwards. AR systems have been used for many applications, but perhaps the most well-known AR applications came in the form of video games and mobile applications[1]. Throughout the past decade, the development of AR systems increased immensely to be used in many fields and formats.

Museums and exhibitions have moved towards incorporating AR systems in their designs to enhance the visitors' experience. The most known and used functionality of AR systems in museums is intended to provide complementary information. Through that experience, the visitor

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[1] Bridget Poetker. *A Brief History of Augmented Reality (+Future Trends & Impact)*. URL: https://www.g2.com/articles/history-of-augmented-reality accessed: 6 May 2023.

aims their smartphone at the piece of art exhibited and they are instantly provided with textual information, or sometimes a virtual guide or animated experience[2].

While the experience of physically visiting the exhibition is important for the visitor, interactivity has become a great tool to enhance the user experience. A mere few years ago, most exhibitions were held in a physical space only. However, with the development of AR, the use of digital technologies to increase interactivity has become an important focal point. However, with the development of AR technologies, interactivity has become a part of great importance. Through the interactive element, the visitor is to be immersed in the experience. Some exhibitions and museums have excelled in presenting a virtual experience to the visitor which they can access from home through images and videos. Yet, the challenge innates to these exhibitions which combine the physical and the virtual is to find the right balance between the two formats, particularly when the digital exhibition elements are accessible from home.

Moving On – Voices of Children in Migration combines physical and visual experiences through a unique blend that transforms still images into films that tell the story of the image in an immersive fashion. The concept is simple and effective. Instead of reading into the images, the viewer is immersed in stories through the visual and more interactive medium. By embedding these interactive technologies in physical spaces, the exhibition not only seeks to contribute to the possibility to move on from trauma and conflict, but also to create a sense of hope for a brighter future.

Virtual Reality (VR) vs. Augmented Reality (AR)

It is not uncommon to confuse Virtual Reality (VR) and Augmented Reality (AR), given that their functionalities are similar. VR has been in development long before AR as the development of VR was started in 1838 by Sir Charles Wheatstone. While the very early application of VR was the foundation of the stereoscope that laid the foundation for 3D development, it was vastly different from the applications of VR that we experience today[3].

Nowadays, VR technologies are widespread in many different fields from healthcare to military and space training to architecture and even entertainment. VR systems have also been used in museums and exhibitions. Suzan Kozel writes about her experience in the exhibition *I + the Other: Dignity for All, Reflections on Humanity* where she spent hours every day in a virtual

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[2] José Manuel Blanco. Augmented reality in museums: advantages and uses. URL: https://evergine.com/augmented-reality-museums/ accessed: 6 May 2023.

[3] Dom Barnard (2022). History of VR - Timeline of Events and Tech Development. URL: https://virtualspeech.com/blog/history-of-vr accessed: 6 May 2023.

space where her body was projected into another room to explore the idea of the "cyber-body" and the fleshly body[4].

The confusion between Augmented Reality and Virtual Reality is understandable. However, the difference is not as minute as one may think. Typically, AR uses digital elements that are layered atop the physical surroundings in real-time whereas VR creates an entirely virtual world where the user sees nothing of their physical reality and instead, they are immersed in a new world. Modern VR technologies often require goggles, whereas AR technologies usually rely on smartphone cameras or computers[5]. Implementing an exhibition in a VR environment would take away the aura of the physical experience, which is not the purpose of *Moving On*.

Storytelling through AR

Interactive storytelling is perhaps a novelty to many. There have been many implementations of interactive storytelling from computer games to board games and roleplaying games, but all of those serve an entertainment purpose through a fictional medium. Some of those interactive systems have an educational purpose underlying them, but there have hardly been any means of telling a story through an interactive medium until the implementation of AR systems. It wasn't until a few years ago that the move towards AR storytelling took a major step. The New York Times has been experimenting with technology to tell stories in the new medium since 2020[6]. Perhaps with the pandemic of COVID 19 and the worldwide lockdowns, it was time for the world to move towards a new strategy when it comes to virtual and augmented reality. Thus, in 2020, global spending on AR and VR technologies rose by 50%[7].

Yet, the general relief that took place after the world returned to a normalized state and the lockdowns were lifted inspired many things. The physical interactions as opposed to the virtual became far more desirable. Still, MacIntyre *et al.* claim that "…even a perfect VR exhibit could lack aura and thus not be as compelling as an experience in the physical location."[8]. The *aura* of

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[4] Susan Kozel (2007). Closer: Performance, Technologies, Phenomenology.

[5] Eye on Tech (2022). AR vs. VR: What's the Difference? URL: https://www.youtube.com/watch?v=esUhTF9fk-w accessed: 7 May 2023.

[6] The New York Times R&D (2022). Showcasing 31 Published Experiments in AR Storytelling. New York Times. URL: https://rd.nytimes.com/projects/augmented-reality-storytelling accessed: 7 May 2023.

[7] Sergei Vardomatski (2021). Augmented And Virtual Reality After Covid-19. Forbes. URL: https://www.forbes.com/sites/forbestechcouncil/2021/09/14/augmented-and-virtual-reality-after-covid-19/?sh=5c391412d97c accessed: 7 May 2023.

[8] Blair MacIntyre, Jay David Bolter and Maribeth Gandy (2004). Presence and Aura of Meaningful Places.

being in the physical space of an exhibition is as important as the storytelling no matter the means. To experience is not only to see but to feel with all your senses.

Combining the physical and the augmented reality experience presents a balanced mode of storytelling. The purpose of the unique format of *Moving On* is to create an experience where the visitor navigates between the physical experience and the AR experience at their will. The concept is not entirely new but an enhancement of the ordinary without abandoning the tradition of exhibitions in their physical format.