

Medium Non-Loci

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Introduction

This paper examines the feasibility of the medial virtual perception of artistic experience, without the onlooker's physical presence (non-loci) or contact with an artefact or an art gallery space and context. Is the human cognitive and neural system ready for such a turn in perception? If the millions of years of socio-physiological ties to the environment are broken, can the artistic and educational messages be reconfigured consciously?

Are modern cultural institutions ready for the 2020s' leap into non-physical presentations? How can we form and redesign artistic experience to further reinforce its social and educational impact? Converging on the topic from both practical and philosophical perspectives, we try to draw attention to the issues and provide essential outlines for the answers.

This article is about the challenges of presenting works of art and historical artefacts digitally, and about the artistic and educational possibilities of virtual digital space and how it can be intertwined with the contemporary standards of curating and education.

My point of view comes from three angles. First, I am a visual artist, mostly working with photography. I often exhibit images commenting on ways of seeing. Second, I am a PhD student in a field of human perception, where I focus on specific phenomena and authors such as John Dewey and his concept of Art as Experience. Third, I work as a freelancer, creating photo-realistic models for cultural heritage protection, museums, and artists.

The nature of the visual art

The perfect photogrammetric quality of digital reproduction gives some people the false sense that we see the artwork in VR just as it is physically and that our experience with it could be equal. But it is not. We don't know which features of the artefact were omitted and which were made more apparent in the visualization. It has no aura, we don't feel the space and the fine connections between the work of art and the world around it, we don't feel the material, and so on; there is so much that is described as an irreplaceable artistic quality in art history books that we are missing here.

The biggest gap, in my opinion, is the time and attention deficit caused by the medium of VR. We don't have the patience to observe artefacts in VR and feel it for hours, which is necessary for media such as painting – we don't even do it for more than couple of seconds. Visual art is mostly meant for long-term perception; many people cannot really get in touch with it even in physical art galleries unless they spend long minutes with each piece. And still, they best relate to pieces they have home (should they be that lucky to own quality artworks). We are just not accommodated to patience in the digital world. And I do not believe this is going to change anytime soon.

On the importance of Medium Loci, let me quote an article in the Smithsonian magazine: Is it enough for you to visit the newly built concrete replica of Caverne du Pont d'Arc instead of the actual Chauvet Cave, the prehistoric jewel in France? It looks the same; it might even convince some of the less advanced experts in art history. Yes, it's impressive, and it's a great educational tool. But it is not the place where history happened some 40 thousand years ago. And that's the same with Picasso – you can see printed reproductions of his works in every art history book. But you would never think of them as his actual artwork. This metaphor is harder to imagine for digital media or video. But is watching Nam Jun Paik on YouTube the same as watching his art on his old tv in a museum? The harder we try to make it work, the more layers of realism and sensual inputs we add, the bigger the lie is. You are not looking at paint-covered canvas but at the shining LED crystals of your monitor or VR glasses. So, digital models and representations are not produced by the artist himself or herself, and their goal is not to be a work of art nor a replacement for a historical artefact but a mimesis, a metaphor of the actual artefact.

So, as curators, when talking about physical or analogue art, or museum or educational exposition, we mustn't think of VR presentation as a replacement for the actual thing but instead as a medium to promote art, teach it, and make it approachable and visible. Digitized art data can be invaluable for online education, making it more efficient and allowing museums to reach their visitors at any time and at any place. It can be great for accompanying programs to exhibitions and events, providing even more information for viewers as well as other curators and art scientists.

One huge advantage of digital presentations is the possibility to provide additional layers of data. It can be audio or text commentary, or there could be video and other hyperlinks connected to it. This way, we can also make the connections between individual artefacts more apparent.

Currently, one of the most important applications of VR and digital modelling is the scientific accessibility to cultural heritage site data, especially considering the current global unrest. We can easily visualize a huge amount of information very conveniently, with precise measurements and 1:1 textures. The best example would be the city of Palmyra in Syria, that was, luckily (whc.unesco.org/en/list/23/documents/ – the political development in the region was foreseen by UNESCO and thus the site was captured digitally in time), very well documented before it met its demise in 2015. These data are also publicly available (sketchfab.com/search?q=palmyra&sort_by=-relevance&type=models) and make for great educational tools, especially during the COVID-19 pandemic when most schools turned to online teaching. This is one of the missions of museums worldwide nowadays, even in regional institutions such as in Usti and Labem (sketchfab.com/matousekfoto/collections/usti-nad-labem-museum-highlights).

Post-processing technology also allows us to imagine or rebuild some parts of statues or architecture that have been destroyed. In future this may prove invaluable for preserving and studying the lost cultures of the world. Further, VR-scanning technologies are now becoming available for a wider audience and users and can also be used to create awareness of local under-represented art – re-imaging it in a different “light” – and bolster the relationship between people and where they live (sketchfab.com/matousekfoto/collections/usti-nad-labem-region-heritage).

Of course, there is a very specific set of rules, which are now being established year by year, to make all this work correctly. One of them is the field of User Experience, UX, which has become ever so important.

The immersive state, the ability to create the world, and the overall process of simulation are problematic for the brain and sensory organs of the body for many reasons. One physical reason is that we are used to movement in non-VR environments so we lack image observation modulation. We are trained by evolution and visual habits to perceive and

correctly estimate objects that are physically one metre away to actually be at a distance of one metre. In VR, however, we are looking at an image that is projected into the eye or displayed on a goggle display just a few centimetres away. The eye, based on its accommodation (adjustment of the optical properties of the eye, e.g., during focusing), correctly estimates the distance of an object as a few centimetres, but the brain, based on perspective and other properties of the displayed image, sees the space as VR simulates it.

Many physical presentation aspects should not be paraphrased and copied in VR but instead should be rethought and integrated into the interface itself. There is no need for a gallery-like space to present artistic projects in the first place. The final goal is to look at art (or at any visual environment) without noticing its medium – or in this case, its virtual interface.

However, there are, of course, actual works of art that were created directly in or for the virtual space, using its specifics and limits intentionally. Similarly, as Net art only works in old web browsers. There are thousands of great conceptual and spatial projects in VR that are now starting to be accepted as works of art (by MOMA and others). Some are actually video games but mostly they are unique tailored experiences, both visual and physical, fully immersive and visually inspiring fictional worlds of creative concepts. Some of the successful artists include Rioji Ikeda (www.youtube.com/watch?v=S-vSFDZGfF4) and Laurie Anderson (www.youtube.com/watch?v=WBfYCy5xQuk). On the other hand, there also some patterns that should not be followed, such as spatial recreations of famous paintings in the virtual space, often with a lot of pathos and low artistic quality (www.youtube.com/watch?v=0hAURjJHS4c).

So yes, it is very possible to curate visual art exhibitions in VR, but we are talking about something completely different from what we see online 99% of the time. Viable approaches all look very different from virtualized white cubes with small low-res pictures in them. You don't need a white cube in VR to isolate from the outer world – you are already pretty solidly away from it. And I'm not only talking about viewing it with goggles; your monitor is more than enough.

VR presentation is also breaking the entire history of the relationship between architecture and art, its meanings, and the traditional curatorial approaches that depend on it. Is that good or bad? What have we learned from the theory of the white cube? (www.tate.org.uk/art/art-

terms/w/white-cube). There, in a space isolated from the outer world and contexts, artefacts connect with onlookers in a different way. This can be both good and bad depending on the ethics and meanings of the exhibitions.

We consider the degree of immersion, that is, the degree of immersion in the virtual world and its plausibility. In the case of the gaming world, common on screens for many years, most users, except at the extremes, are able to distinguish between real and virtual experiences (although they may spend many more hours in the virtual world than living outside of it). In contrast, full immersion occurs when using glasses and other technologies that completely filter our senses from the surrounding reality.

For the purposes of this paper, however, let us consider VR as an experience in an individual's world (e.g., in goggles) that we (in some cases) create ourselves. One becomes both author and spectator at the same time; the usual schemas of experience disappear. It is necessary to distinguish between the approach of the classical theory of the last 20 years, where VR was primarily a computer game environment, and the current situation, where the mainstream is primarily about generating experiences of a limited duration.

Now, VR is one step further from space, away from any context (other than the interface) and our physical perception, including our senses' calibrations that we have been practicing for millions of years in the physical world. There's a term in neuroscience – corollary discharge (CD), which is the brain function responsible for coordinating our senses, our body, and our consciousness. It makes us aware of ourselves and of our actions.

For higher animals, this system is absolutely essential. In cooperation with the organs of the body, it can tame sensory input and provide steady data about reality. Without CD capabilities, crickets would go deaf because they would be unable to filter out their own noisy chirping. However, with CD, they are able to filter it out and ignore it (Wurtz 2013). In psychiatry, the example of "we can't tickle ourselves" is often given to explain this – we know the movement of our fingers in advance. Another example is that we don't actually perceive the flow of our own speech. We also hear it quite differently (because of the resonance of the skull), which is why everyone is uncomfortable when hearing their voice reproduced by technology. The process of corollary discharge is probably also a powerful actor in ego reflection and self-awareness.

Thanks to CD, when we turn our head to the side and our viewing point changes, we know it was us who made that happen and not the earth moving around us. This is not necessarily the case in VR; there we have little assurance of anything. Another example could be focusing our eyes at the four-centimetre space through goggles and being offered a sharp view of a large space of several metres or more. It doesn't make a lot of sense for all of our previous experience with our eyes, right? That kind of disparity and isolation, both physical and from our own senses, might be some of Brian O' Doherty's darkest dreams.

By default, there is zero bonding of the artefacts displayed in VR to space or time. The only bond is their virtual appearance, which points to their being created in the 21st century. There's mostly zero sense of the user's body and limbs in the process. There's no feeling, no smell, and zero unexpected or random elements. As described by the famous neuroscientist Anil Seth (viewer-friendly explanation in TED presentation: www.youtube.com/watch?v=lyu7v7nWzfo), the only difference between conscious reality and hallucination is the amount of control over the perceived sensations our brain has.

From John Dewey's perspective, experience in immersive VR is the problem.

Experience never happens in isolation from the environment. If we don't take this fundamental connection into account, we are in danger of rigidity of thought, or the inability to reformulate our views in response to new facts and current circumstances. In nature, the inability to adapt to environmental conditions leads to the death of the organism. (Dewey 1929) (viewer-friendly explanation in TED presentation: www.youtube.com/watch?v=lyu7v7nWzfo)

Although Dewey does not characterize the temporal length and progression of experience (for they are varied), he emphasizes that each experience, after the culmination of its potential, ceases to exist – an individual impression of an object does not last forever and thus the medium's means of attracting the viewer's attention cannot be used forever. *Experience must have structure and be a de-automated experience* (Bílek 2013). The virtual environment is often a pre-automated, prefabricated experience.

Through its knowledge and past experience, the brain presents us with the best, least distorted version of reality. The more direct information is brain fed, the better (and less mentally demanding) vision we are getting. With less sensual data, the brain is forced to ever recreate the definitions and meanings of the objects and phenomena we see in VR – and basically

rethink their essential properties for the real world. And this is exactly what a good artist, designer, or curator can take advantage of when creating for VR.

As Paul Virilio points out (Virilio 1991), progress and speed were the paramount keywords in the 20th century. With the technological superiority of our time, people might also feel immense scepticism of older works of art. With the indescribable changes in the way we now live and the technology we now have in command, the role of art has changed rapidly. Perceptual habits that had evolved for thousands of years fall flat in face of the moving images and all the distribution and representational possibilities that are widely available today. And just as philosophy struggles to stay relevant and influential, art is still redefining its role (especially after several art-zero-point climaxes of the last century). Thus, rather than supporting straightforward progress, some of the most common topics nowadays are either warning of the power of new or future technologies or reinterpreting the past. There's so much progress (and turmoil) in societies and technologies around the world that art may be most potent way to comment on and re-describe it. This may eventually provide humankind with the progress (or a way) to a sustainable real future.

There is a lot to do and discover about VR and there is no doubt that the future of visual art and its presentation will be full of surprises. We could argue that the advances in technology are just way too fast, and our societies, educational systems, and philosophies just cannot keep up. This means we are failing to put technology in theoretical context, to interpret it and criticize it. It's a paradox that thanks to technology, we are able to develop technology faster than we are able to develop our own imagination and critical thinking about the world.

Sometimes it feels like the vast majority of contemporary artists and critics are examining the state of contemporary visual culture and society in general rather than coming up with new solutions – trailblazing new approaches and experimenting with art itself. We also believe people are finding themselves in a situation where thinking about the big questions of life is getting overlapped by technical progress, rapidly, year after year. The gap is becoming so immense that it might become impossible to fix. Simply put, philosophy does not have enough time or manpower to catch up with and evaluate the big new challenges facing humankind – i.e., AI, DNA editing, and uncontrolled virtual reality. And if philosophy cannot successfully interpret and respond to these issues, does art have a hope? Or perhaps art should

provide with values to outweigh the lure of new technical possibilities – or at least put them in perspective.

Increasingly, another big issue which has not yet been solved is technology bias. AI or the apparatus of any technical media, be it 2D or 3D, must be made unbiased by design or by the designers, just and fair towards race, genre, and social status both by accessibility and its content. This is much easier said than done.

To leave you with a résumé – only the artwork newly created directly for virtual spaces can be perceived as an actual artwork there. There's no replacing experiencing “classical” physical art and historical items directly for now. We must be very much aware of the distinction.

In history, some museums and remarkable artefacts were not easily accessible for some people due to their social status or level of education. This has, of course, changed significantly in recent years; on the other hand, modern visual technologies can offer a unique aspect of social justice as they can bring artefacts, rare or geographically distant, to the middle of your living room. They can even re-image and relive things long lost in history.

Virtual realities and augmented spaces are excellent tools for transferring information and data, for education and entertainment, for fictional worlds, for playing and training our brains, for telling stories and concepts. They can be curated — pre-arranged, enriched and “tooltipped” like, and perhaps even better than, a physical exhibition – but only as long as we follow their specific rules and UX settings. And we really need to start thinking differently about them.

Perhaps art gallery educators or museum curators could work with 3D and UX designers just as they are cooperating with exhibition architects and installation technical crew.

References

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Additional resources

sketchfab.com -> Syria

The Iconém Project: iconem.com

Laurie Anderson: The Chalkroom, 2018

Corollary Discharge for Action and Cognition – Divya Subramaniana; Anthony Alerse Marc A. Sommer <https://doi.org/10.1016/j.bpsc.2019.05.010>

pavelmatousek.cz

Video presentation inc. 3D visual illustrations available at youtu.be/7vpZSOs6WfU

About the author

Pavel Matoušek, a Czech visual artist and 3D photogrammetry researcher focused on perception and experience-based phenomena. He ♥ trans-disciplinary and international collaborations with other artists. His imagery has been used by major institutions such as UNESCO. [Pavel](#) is interested in humanity, vision, consciousness, and the realms in between. Due to the developments of 2020, the change has come even earlier than we had expected. We must act and grasp the current turns in visual commutation as best as we can.

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