New Heritage:
New media art between cultural heritage experience and artefact

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In the context of Media Art, the notion of cultural heritage experiences a renewed interest with regards to accessibility, legacy and preservation. Contemporary media artists reimagine cultural heritage, not only finding inspiration in classic art forms, but contributing to a deeper perceptual understanding of historic context. Media Art and new technology help to provide new accessibility to heritage through a variety of strategies, but also present novel artistic readings of cultural contexts.

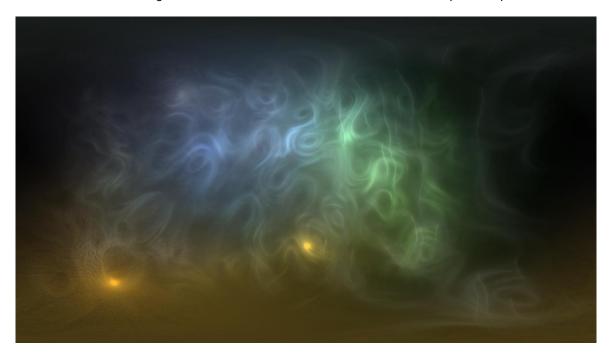*Cultural Heritage. New Media Art. Gamification. London Charter. Computer Graphics*.

Figure 1: *KIMA: Colour. Analema Group. National Gallery X. 2020*

1. INTRODUCTION

New Heritage (Kalay et al. 2007) - not to be confused with the New Heritage paradigm (Araoz 2011) - refers to the intersection of Cultural Heritage with New Media and the resulting creation of heritage experiences that engage not just existing but also new audiences, especially and including digital natives. New media and particularly their manifestation as multi-modal, interactive digital media provide opportunities for the presentation of cultural heritage that extend far beyond the display of physical and tangible artefacts, but can include the intangible (Silberman 2007) and also add new dimensions, such as immersive experiences that transport audiences to different points in time and space (Anderson & Sloan 2020). The digital creations of New Heritage are the foundation for the concept of Digital Heritage (UNESCO 2019).

During the Covid-19 pandemic, New Heritage is contributing more than ever to national, regional and local cultural heritage experiences, providing access and new, virtual forms of cultural engagement when traditional sites for heritage experiences such as museums, archives, libraries and national trust sites were closed due to health and safety considerations. The potential for interactive, participatory, multi-sensory digital heritage experiences to offer insight and knowledge through innovative means as well as new learning tools have been subject of a substantial body of research ((Gingrich et al. 2018; Gingrich et al. 2019; Gingrich et al. 2020).). This paper discusses trends across new heritage, while focusing on two case studies KIMA: Colour by the Analema Group and Baigala by Deborah Tchoudjinoff. Based on different positions by researchers (Oliver Gingrich, Eike Anderson / Bournemouth University), and artists (Deborah Tchoudjinoff and the Analema Group), this paper looks at a multitude of different approaches across the cultural sector where media can provide new experiences of classic heritage and new forms of accessibility. In particular, we present an overview of recent examples of successful use of computer graphics in cultural heritage, and discuss the creation of two artworks that recontextualise cultural experience through the prism of new media.

Deborah Tchoudjinoff's project Baigala II uses installation art and VR to communicate the cultural and natural heritage of Mongolia to a Western audience. The Analema Group's artwork KIMA: Colour reinterprets artworks in the classic collection at the National Gallery London as a 360 video and sound art piece. Through these case studies, we discuss key research questions:

How has new media changed the way we experience heritage? What are the underlying principles of audience experience? How can we critically reflect on these new developments? Apart from merely discussing new media art *on* cultural heritage, we also investigate the notion of new media art *as* heritage. How can such new forms of cultural heritage be preserved when technologies and its underlying platforms evolve so rapidly.

What are the challenges, creators (i.e. artists, curators, developers) and the public face when experiencing such new heritage? Does a critical analysis of context remain possible, if the goal consists in entertaining a mass audience? How does the concept of gamification come into play as a facilitator, and/ or a distractor and shield from historic authenticity? What are the criteria of success applied to new heritage experiences from the point of view of the audience, researchers and artists?

Figure 2: Baigala II by Deborah Tchoudjinoff

2. INTERACTIVE VIRTUAL ENVIRONMENTS AS NEW HERITAGE

New Heritage attracts new audiences, and there are many opportunities for heritage presentation and preservation that are inherent with recent digital technologies. Of special interest among these is the infrastructure for the creation of interactive virtual environments in which the technologies and techniques for the development of video games (Anderson et al. 2010) and VR not only allow the creation of immersive experiences, gamifying the heritage, but are particularly suited to the preservation and presentation of intangible cultural heritage (Anderson 2013).

Deborah Tchoudjinoff's Baigala II, exhibited at V&A Museum 2019 and the Slade School of Art represents a case study in new heritage as a vehicle for the preservation of intangible cultural heritage The Mongolian word Baigala "is best understood as a complex interactive field comprised of being (humans, animals), object (mountains, trees, rocks, grasses), and forces (weather) that are governed by beings akin to spirits (Humphrey & Sneath, 1999)

Baigala II consists of a physical yurt ('ger'), a circular dwelling, erected out of plywood and a VR installation that teleports audiences to Mongolian regions. Participants are invited to chose between two settings; a visually immersive panorama of Tsoohor lake or an indoor visit to a local family's yurt. While the indoor scene feels domestic, comforting, private and intimate, the outdoor setting conveys Mongolia's mesmerising wideness. Visually, the lake environment is designed to encapsulate psychedelic characteristics (bright and diverse colour hues), exploring novel spiritual aesthetics alluding to potential environmental and ecological narratives. The physical, architectural component of Baigala II, the yurt, is created using a wood and felt structure, referencing traditional Mongolian 'ger', which contrasts the intangible heritage such as traditional customs and dialogues of local residents experienced using the VR application.

Deborah Tchoudjinoff Baigala II exemplifies the potential of New Heritage to convey, present and preserve intangible heritage through a mix of new technology. Specifically, the domestic, private cultures and traditions, such as tea drinking in family settings, point to the power of new media to transcend rites, but also language, dialect and non-verbal traditions. In particular, the evoked feelings of domesticity, of belonging, the 'cosiness' of a family yurt, are clearly communicated in an immediate, and personable manner.

Immersive qualities of the media chosen (VR, installation) help to facilitate an almost intimate setting. New media is frequently used to communicate, but also conserve intangible heritage, whether this is in an ethnographic, sociological or artistic context.

Figure 3 & Figure 4: *Van Eyck's Arnolfini Portrait and KIMA: Colour Van Eyck. by The Analema Group. National Gallery X. 2020.*

Figure 5: *Deborah Tchoudjinoff. Baigala II. 2019*

Figure 6: KIMA: Colour: Monet Analema Group. National Gallery X.

3. INTERACTIVE VIRTUAL ENVIRONMENTS AS NEW HERITAGE3. KIMA: COLOUR: NEW HERITAGE EXPERIENCE OF COLOUR HARMONIES

In order to research colour harmony in national heritage artefacts within the National Gallery's collection. the Analema Group, an art collective focusing on the intersection between sound and vision, was commissioned to launch the world's first residency at National Gallery X.

The remit of National Gallery X consists in sparking discussions on the National Gallery's collection through the use of contemporary media, research, artistic practice, and technology. Created as a collaborative space between King's College London and The National Gallery, the new physical space was inaugurated by Tim Berners-Lee in 2019. Only a month later, the Analema Group residency was interrupted by Covid-19, resulting in a complete recontextualisation of the residency's research output.

KIMA: Colour discusses colour harmonies in some of the National Gallery's greatest artworks including Vincent Van Gogh's Wheatfield with Cypresses (1889), Jan Van Eyck's Arnolfini Portrait (1434), and Monet's Water Lillies Setting Sun (1908). Looking at colour as data, and correlating this data with sound, KIMA: Colour was originally designed as an immersive light installation. With Covid-19, National Gallery X and the art collective translated the original artwork into a virtual framework, thereby shifting the focus from a physical space into an abstracted, multi-sensory artwork.

KIMA: Colour was created as three 360 immersive artworks that can be experienced either on a smartphone, tablet or VR headset, involving 360 spatial sound and 360 images. The audience is immersed into a constantly evolving, viscose exploration of colour tones and colour palettes, sampled from the artworks at the National Gallery's collection.

The result of intense discussions with the National Gallery's research team including the Principal Scientist at the National Gallery, Joe Padfield and Head of Science, Marika Spring, as well as the National Gallery's curators, Thomas Dalla Costa on Titian's Bacchus and Ariadne (1520-1523), the National Gallery's Head of Conservation, Larry Keith on Diego Velazquez' Rockeby Venus (1647) and the National Gallery's Deputy Director Susan Foister on JMW Turner's The Fighting Temeraire (1839) and Jan Van Eyck's Arnolfini Portrait (1434). These discussions involved deep insights into colour pigmentation, as well as historic context of the paintings and their respective use of colour.

The research was led by research questions on the potential of multi-sensory, immersive media art to encourage interest in cultural heritage, and their use of colour at the National Gallery. A secondary research question was concerned with the specific context of the creation and display of the artwork and investigated if participatory media art such as KIMA: Colour can contribute to social connectedness by providing shared cultural experiences during Covid-19 and times of social distancing?

Figure 7: *National Gallery X*

The resulting artwork consisted of three immersive experiences that present colour palettes in the artwork of three great masters presented in the collection of the National Gallery. These new artworks were made accessible to the wider public through The National Gallery's networks and were flanked by two surveys and a making of film featuring the artists and curators of The National Gallery. During the UK's first national lockdown, audiences were able to experience colour palettes within the National Gallery's cultural heritage collection as experimental, atmospheric abstracted colour simulations from the comfort of their homes.

During the Covid-19 pandemic, the role of new heritage shifted from being a secondary source of information, providing additional entertainment value to historic sites, towards providing fundamental functionality of access to historic artefacts, while citizens were confined to their homes - a situation often accompanied by social isolation and sensory deprivation. New heritage and artworks such as KIMA: Colour can provide valuable resources of multi-sensory and participatory engagement, during a hiatus of physical interactions due to health and safety measures being in place.

4. NEW HERITAGE DURING COVID-19

The Covid-19 crisis has instigated physical segregation and nuclearisation of creative activities with the confinement of creative engagement to residential homes. Even after lockdown easing, there is a likelihood of a persistence of social distancing, and increased difficulty for the public to enjoy cultural activities. There is a clear societal need to support cultural engagements, not least to prevent social isolation, loneliness and sensory deprivation.

Recent research by Dr. Daisy Fancourt of UCL's Behavioural Science & Health (Fancourt & Steptoe 2020) points to an increase in perceived loneliness during the Covid-19 health crisis. Mental Health Guidance by the UK government (DDCMS 2018) suggests that a key method of maintaining mental health is to consider how to connect with others.

UCL's heritage in hospitals report (2008-2011) points to a significant increase in patient's wellbeing and happiness scores through the engagement with museum artefacts. HLF funded 'Inspiring Futures' (Warby et al. 2016) project delivered by Manchester Museum and Imperial War Museum in Salford pointed to a 75% increase in wellbeing after taking part in regular cultural activities.

Creative engagement reduces cognitive decline, and optimises cognition by increasing brain blood flow directly linked to neuronal wellbeing (Chapman 2016). But arts and culture not only benefit the elderly, and frail, but all spectra of society. As much as the research context of participatory arts in health and wellbeing is well understood, more research is needed to understand how multi-sensory art such as participatory sound art can help in conditions of sensory deprivation or social isolation such as experienced by large parts of society during the Covid-19 health crisis.

The KIMA: Colour project, commissioned by The National Gallery as part of the National Gallery X residency, aimed to make cultural experiences accessible to audiences at home during the first UK national lockdown during March – June 2020. The research team worked hand in hand with a team at National Gallery to understand several key research questions. We tested both impact and outreach, as well as the effectiveness of the piece to stimulate interest in the National Gallery's collection. A quantitative, observational survey was administered to a sample of King's College researchers (N=10) for beta-testing to ascertain the effectiveness of the piece to encourage interest in the original artworks and the effectiveness of the multi-sensory characteristics of the artwork:

Figure 8: KIMA Colour experienced on the phone

All users reported that they understood that they were able to navigate the environment in 360° degrees. The majority of beta-users (54.6%) confirmed that the 360° soundscape improved the visual experience of colour in the artwork Importantly, the vast majority 63.6% attested that the experience made them curious to revisit the original artwork after lockdown. The beta-test study was framed by a survey administered in collaboration with the team at The National Gallery. Visitors reported that it was 'so innovative to present this kind of art during lockdown and to bring art to people at home' *(anonymous).* As a case study, KIMA: Colour exemplifies the potential of new heritage not only to provide alternate forms of audience engagements, but to provide access and nourish a public need for access to cultural experiences.

5. CRITICAL ANALYSIS & CONCLUSION

The new media technologies that allow the creation of New Heritage artefacts provide many opportunities for creators and audiences but require that the creators understand the technology, how best to use it, as well as the audience, to ensure that these opportunities are not wasted.

Gamification, i.e. the playful use of user interaction/audience participation to facilitate an introduction of gameplay elements into an activity or artefact, is non-trivial, and due to poor understanding of gameplay or unsuitable design decisions, many gamification attempts fail (Morschheuser et al. 2017). As gamified systems create games with a purpose beyond entertainment, they are essentially "serious games" (Sawyer 2002). It must be noted, though, that adding a scoring system and leaderboard is not enough to gamify an activity or artefact if the end result is neither entertaining nor visually attractive. In his seminal paper "From visual simulation to virtual reality to games", Zyda (2005) highlights the importance of fun and entertainment aspects for "serious games", which would include gamified new heritage experiences.

Figure 9: Baigala II experienced via VR in a Yurt

These aspects are essential, as audiences quickly lose interest if games are not entertaining and appealing, which in turn can have the effect that historic authenticity has a lower priority than the gaming/gameplay aspects. User/consumer expectations, informed by the quality of current commercial video games for entertainment, are very high (Anderson et al. 2010), and to maintain their audience, new heritage products need to match this in terms of gameplay as well as quality of the visual outputs, which can be achieved by selecting the same type of system infrastructure and processes as the one employed in the creation of entertainment products, the complexity of which is often underestimated (Blow 2004). The gamification of New Heritage thus requires the figurative walking of a tightrope, striking a balance between gameplay elements and visual appeal of the heritage artefact to attract the audience with the objective of facilitating and maintaining historic authenticity. Negotiating these conflicting objectives and finding this balance tends to be unique for each project and requires careful design, gameplay testing (Champion 2015) and some form of user evaluation to establish if the aims of the project are met by the New Heritage artefact.

New Heritage unfortunately not only provides now opportunities, but also creates its own set of problems and difficulties. The rapid advances of digital technologies and the inherent changes created by this progress have the unintended consequence that New Heritage artefacts that are

"born digital", i.e. that only ever existed in a digital form, are from the point of their creation in danger of extinction and in need of digital preservation (Gladney 2006; UNESCO 2009) in order to avoid becoming a victim of the eventual obsolescence of the technology used to create them. This would result in a loss of access to these New Media artefacts which would ban them to the obscurity of the digital dark ages (Kuny 1997). An example for this is the "Touch and Wellbeing" exhibition created as part of the Heritage in Hospitals project (www.ucl.ac.uk/culture/projects/heritage-hospitals) that is no longer accessible due to the continuation of the Flash technology that it was built on.

Figure 10: KIMA Colour: Van Gogh

As physical access to cultural institutions across the globe became limited during the Covid-19 health crisis, new media art provided new forms of cultural engagement possibilities for global audiences, to art collections, heritage sites, and new media art. This new heritage is driven by the need of cultural institutions to diversify access and continue to provide cultural offerings for global audiences, and by a public interest in continued cultural offerings. Whether access to historic sites (e.g. Aachen Cathedral www.aachenerdom.de), or all new artworks as in the case of Analema Group's KIMA: Colour, new media, the use of computer graphics, digital art, and technology-facilitated design strategies enable new forms of cultural audience participations on a global scale. In a global cultural landscape still largely characterized by digital poverty, the need for access considerations by art and heritage institutions remains of utmost importance.

Figure 11: Baigala II visual representation

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