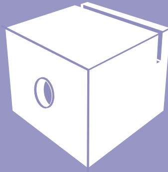
Published by:



EARLY VISUAL MEDIA LAB

CICANT

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Acknowledgements

All images in this paper are courtesy of the Smithsonian Library and Archives, and the Library of Congress.

‘BY THE AID OF OUR GLASS YOU SEE’: IMMERSIVITY, ILLUSION, AND IDENTITY IN THE STEREOSCOPIC PHOTOGRAPH MAGAZINE

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INTERNATIONAL JOURNAL ON STEREO & IMMERSIVE MEDIA, Vol. 7 No. 1
pp. 44-61
DOI: 10.24140/ijsim.v7.n1.03
ijsim.ulusofona.pt
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Abstract

Critical scholarly inquiry into immersive media often situates its inception within the last four decades. However, immersive media existed well before this point in time, and many of the concerns raised about contemporary forms of immersivity ring true in historical examples. Applying media theory to historical immersive media not only adds a new dimension to understand the media with, but can also help better situate aspects of contemporary immersive media in a longer timeframe. To explore the possibilities of this, my paper will use ZU-UK's 'The Post Immersive Manifesto' and concepts of media witnessing as a framework for analysing *The Stereoscopic Photograph*, a magazine produced by stereograph publishers Underwood & Underwood between 1901 and 1904. Critiques of the ability of immersive media to genuinely offer intimacy, accuracy, or an equitable relationship between subject, creator, and audience will form the basis of my argument.
I argue that *The Stereoscopic Photograph* was another avenue of communication for Underwood & Underwood that was designed to ensure continued commercial success with the white middle class. Despite being marketed as visual conduits that gave a viewer agency to experience a reality separate from theirs, an analysis of articles from *The Stereoscopic Photograph* suggest that the promised truth and intimacy found in stereographs was as illusory as the simulation of binocular vision they were based on. Instead, these stereographs were designed to make the audience feel learned and superior to other cultures, while encouraging the viewer to see and feel a specific way.

Keywords Stereograph, *The Stereoscopic Photograph* magazine, Underwood & Underwood, media theory, witnessing

In May of 2020, the experimental theatre group ZU-UK published 'The Post Immersive Manifesto' in the *Journal of Performance Arts and Digital Media*. This blistering critique of how our psyche, relationships, and art function under late-stage capitalism was targeting a specific type of art: immersive media. The term 'immersive' has been overused, they argue, and often in ways that promise the audience things it cannot actually deliver: lived experiences, self-improvement, and a level of creative autonomy inside the media form. Instead, it delivers the illusion of choice, treating the audience as consumers of a product and implicitly asking them to exist in a framework that reflects current social marginalisations (Ramos et al., 2020).

To break free of this way of seeing, ZU-UK offer a post immersive framework to create new works in. Among the recommendations is the following reframing of how to interrogate immersive media:

'We should not care about WHAT is immersive, as much as we must care about HOW is immersive, WHO is immersive BY and who is it FOR?' (Ramos et al., 2020, p.1)

While this manifesto is meant to refer to very contemporary problems in the use of immersive media, the problems raised ring true across historical examples of immersivity. The manifesto grounds the origin of these media troubles in the 1980s but it can be pushed far further back, well into the 19th century.

Stereography has oftentimes been referred to as 'Victorian virtual reality'. This has largely been a shorthand to contextualise the media form to a modern audience. But what if we delved further into the comparison, and applied contemporary scholarly critiques of immersive media to the creation and distribution of 19th- and early 20th-century stereography? In this paper, I will argue that carrying out this work will help build a more nuanced, complex understanding of stereographs; what social forces shaped them, how they shaped audiences, and the social ramifications of their modes of dissemination.

As a case study to this end, I will be analysing the extant editions of *The Stereoscopic Photograph*. This was a magazine produced by the stereographic publishers Underwood & Underwood. Though only in publication from 1901–1904, this series offers a valuable glimpse into how the company wanted their products to be perceived by the public. As one of the most successful stereograph publishers of the late 19th century, they were known for their wide ranging and often aggressive sales techniques.

By examining these magazines, we can see three types of illusion being used by Underwood & Underwood to sell their product and impact the identity of the viewer. The optical illusion of stereoscopy to simulate visual depth in a 2D image, the illusion of intimacy between image and audience, and the illusion of the truth-telling image. As explained in ZU-UK's manifesto, these forms of illusion collude to impact the identity of the viewer; by portraying stereographs as an emotionally and psychologically complete experience of witnessing, Underwood & Underwood are encouraging their target audience – the white middle class – to approach stereographs as a simple, morally edifying mode of seeing. In reality, such rhetoric smooths over the convoluted, often violent conditions in which these images and texts were extracted from countries

that often had a history of colonial interference. This guides the viewer into being the right type of colonial onlooker: emphasising cultural difference with the subject, asserting the viewer's right to cultural knowledge that is not necessarily theirs, and the continued consumption of purchased products to keep the company commercially viable.

Media Witnessing and Exploratory Modes of Seeing

While 'The Post-Immersive Manifesto' established a new facet to scholarly conversations on immersivity, it was not a point of origin. Since the acceleration of immersive media over the past 25 years, there have been a number of works in the media studies field that consider the social impact of media that creates a sense of being there.

Seeing Things: Television in the Age of Uncertainty, by John Ellis, is the first work to create a definition for witnessing as a mode of perception. Witnessing, for Ellis, is marked by the viewer having a sense of unmediated access to, and complicity with, the media presented, where the viewer cannot say they were not aware of an event happening, even if powerless to change it (2000). He argues that the rise of mass cultures in the 20th century, especially from Europe and the US, changed the way people documented and interacted with the world around them. With the resulting increase in mass media of places and people geographically and psychologically distant to the viewer, the witnessing mode of seeing was born. The supposed lack of aesthetic discrimination in photographic media is described by Ellis as creating a 'death-mask imprint of the moment', where any manipulation of the scene by its creators goes unnoticed (2000, p. 10).

Building on Ellis' work, John Durham Peters' essay 'Witnessing' conceptualises media witnessing as a complex mode of vision, with oft-obscured issues on the veracity and trustworthiness of perception. Peters also views the viewer as having a level of complicity as witness, but in a more active form than the powerlessness Ellis attributes to audiences. While this witnessing mode still creates the sense of complicity and immediacy Ellis refers to, Peters sees this as a potential source of power rather than a burden. Witnessing media is described as having 'an extraordinary moral and cultural force' and can impact thinking about media events in general (2009, p. 29).

Paul Frosh, on the other hand, views witnessing texts as media that invite the audience to participate in an imagined world, under the pretence that they are a true recording of the real world that is beneficial to engage in (2009). While Frosh does believe that such witnessing texts can be valid accounts in certain circumstances, he does concede a core disjunct between their claims and what they can achieve. Despite claiming a humanitarian purpose and purporting to emotionally connect with the audience, witnessing texts are usually mass-produced media from within an organisation, created broadly enough to be aimed at no one in particular. In writing on how real intimacy in media requires an interpersonal connection, Frosh sums up the impact of this illusory intimacy: 'Media witnessing thus helps to maintain that unexciting but essential sphere of indifferent relations to strangers in which potential feelings of hostility are neutralised without requiring

that individuals become personally acquainted or committed' (2009, p. 66).

Relational issues between viewer and subject are also the central concern of Kate Nash's work, which examines the moral risks inherent in virtual reality simulations of humanitarian crises. In particular, Nash is concerned about immersive technology's habit of creating 'improper distance' – the experience where an audience feels psychologically closer to an event or person than they actually are. As Nash argues, this is potentially dangerous not only because the viewer may assume a level of knowledge about a situation they do not have, but may cause them to pay less attention to the subject, focusing instead on the aesthetics of the scene, or even simply the feeling of being 'transported' (2017, p. 19).

While this paper mainly focuses on theory drawn from media studies, it is important to note that there is work within 19th- and early 20th-century studies that also speaks on truth, intimacy, and optical illusion as modes of seeing. Brenton Malin's work (2007, 2014) on the way American stereograph publishers, such as Underwood & Underwood or Keystone View Company, influenced the American white middle classes' perception of their emotions and identity is particularly relevant. In positioning stereoscopy as technologically cutting edge, Malin argues that Underwood & Underwood were attempting to frame the stereograph's ability to emotionally stimulate and transport a viewer as positive (2014, p. 88). Far from merely being an emotional experience, the scientific nature of stereoscopic viewing allowed a viewer to tangibly experience a scene outside of their normal experience in a manner that could enhance social standing. In Malin's view, the ideological and commercial aspects of how stereography was positioned at the turn of the 20th century were parts of the same whole; there was a direct link between consumable images and marking oneself as self-improved.

Iwan Morus' article on optical illusions as a source of knowledge production in the 19th century establishes a tradition of audiences interacting with visual media that played on one's sense of perception. David Brewster, inventor of the kaleidoscope and lenticular stereoscope, was fascinated with illusions, and published 'Letters of Natural Magic' in 1832, which detailed the types of illusion one may encounter (2012, p. 38). For Brewster, teaching illusion to the public was a serious form of inquiry. Given the ability of optical trickery to deceive audiences, it was important to establish vision as a sense that could impart information, but that the information may not be based in reality.

Kate Flint's *Victorians and the Visual Imagination* delves into the many facets of Victorian society's preoccupation with the visible world. In terms of photographic media, there are two ideas of Flint's that are especially relevant to this paper. Primarily, there was a long-standing demand from the mid-19th century for photographic technologies that promised to expose previously hidden experiences to the viewer. These could include optical experiences, such as microscopes, telescopes, and zoetropes, but also covered psychological expansion, such as with spirit photography, travel photography, and ethnographic 'type' photography (2000, p. 5). Secondly, Victorian audiences were well versed in interacting with media that aimed to create a feeling of spatial transportation, from working through the 'visual excess' of exhibitions, walking

the length of a panorama, or watching a scene change in a diorama or magic lantern show (2000, p. 4). By the time stereographs had their second wave of popularity, creating embodied experiences that promised to broaden the audience's understanding was also an accepted mode of visual communication.

Underwood & Underwood and *The Stereoscopic Photograph*

As the media critic Jean Comolli noted in 'Machines of the Visible', the success of any visual media relies on its social configuration as much as its technological novelty (1980, p. 121). When the Kansas brothers Bert and Elmer Underwood founded their stereographic distribution house in 1882 it was not to bring forth any technological innovation to the medium. What they did have was experience with door-to-door sales, and saw an opportunity to reinvigorate the sales of existing stereoviews taken by Eastern state stereo-photographers (such as Charles Bierstadt, J. F. Jarvis, and Littleton View Co) in the United States' West (Darrah 1977, p. 46). Their sales tactics, which involved hiring up to 3,000 university students during the summer months to sell their products door to door, were successful due to their coordinated, aggressive marketing techniques. By the late 1880s, Underwood & Underwood began production of their own stereographic views, and grew to become one of the largest publishers in the world, with numerous offices across the United States of America, Canada, and the United Kingdom (Darrah, 1977, p. 47). As this business model expanded, the Underwood & Underwood stereographic image went from the sole product to being at the heart of a complex knowledge network: it was the eyes of their travel guides, the detail in their maps system, and a potential segue between the viewer and further edifying literary texts.

Their manual of instruction, which was provided to canvassers, belies a tightly controlled marketing procedure for sales, guiding the salesman from how firmly they should knock at a door through to encouraging future sales when delivering already purchased products. In instructing the salesmen on the types of remarks to make to a prospective buyer as they viewed images through the stereoscope, Underwood & Underwood encourage them to be sold not only on the impact of binocular vision, but also with the supposed emotional and psychological immersion in the stereoscopic image. In a scene of the Vatican Library, the viewer is urged to 'feel' the distance and size of the space, a street scene in Japan is 'just as real as though one stood at a window over there and looked out at that street". A depiction of a 'plantation scene' in Georgia is an 'illusion so complete that we fancy we can reach out and touch the cotton' (1900, p. 13). As with Frosh's definition of contemporary witnessing texts, Underwood & Underwood's stereographs are marketed as invitations to participate in a true version of reality.

By the time *The Stereoscopic Photograph* entered production in 1901, Underwood & Underwood had well and truly hit their stride. Having introduced their popular packaged sets six years earlier, the company was purportedly producing 25,000 stereographs a day (Darrah, 1977, p. 47). They had manufacturing facilities in Washington DC, New Hampshire, and New Jersey, and four offices in London, New York City, Kansas, and Toronto. Their popular Travel System had been on sale for some years, with a recent purchase of all travel sets to date

made by the United States government for a military academy ('Snap Shots', 1901, p. 69). The educational market has also been tapped, with Underwood stereographs used in universities and schools across the US and UK.

The Stereoscopic Photograph was an attempt, then, to establish another avenue of knowledge production and communication with the public in an already well-developed system. From the outset, it promised to cover a wide range of topics in its articles including travel accounts, archaeological investigations, explanations on the nature and production of stereoscopic images, and details of the benefits of stereoscopic looking. Characterising their articles of being of 'the highest literary and artistic merit', the magazine was produced with a domestic or schoolroom context in mind. This target audience was not yet expert with stereographic viewing, but hopefully curious about or enthusiastic to learn more. The benefit of an ideal audience of this type is that they were not only interested in the media, but also likely to be open to the magazine's suggestion of viewing stereograph use as a beneficial, aspirational activity.

Before focusing on the illusory methods and ramifications used in the magazine, it is important to understand how Underwood & Underwood distinguished their stereographs from historical examples. As stereography had existed as a mainstream photographic medium since the 1860s, and had gone through a period of being unfashionable, it was commercially and ideologically important for Underwood & Underwood to set their product apart from this work. Keeping in mind ZU-UK's assertion that immersive media often promises to offer a meaningfully intimate experience, and Malin's observation that Underwood & Underwood were marketing their product as a method of self-improvement, we can see that *The Stereoscopic Photograph* was used to position their stereographs as uniquely truthful, emotional, and technologically progressive unlike those from previous years.

Underwood & Underwood's positioning of their stereographs as superior is best seen in 'The Sleeping Princess – a Historical Allegory' (Underwood, 1901). A rather odd fairytale written by Bert Underwood himself, it features a character known as 'Princess Stereograph', destined to be the leader of illustration land and distinctive among her kin for having two eyes instead of one. Noted for her beauty and truthfulness, she falls under the power of 'wicked mercenaries' –- stereo publishers of decades past who used the medium for spectacle. Having been misused in this way, the princess falls into a deep, Sleeping Beauty-like sleep, until woken by 'Prince Progress' (presumably Underwood & Underwood personified). From then, Princess Stereograph returned to leading illustration land with the prince as her 'most ardent lover and strongest ally'.

The theme of Underwood & Underwood providing extra care and effort in the process of stereography is also present in the article 'A Manifest Growth of Interest'. Underwood & Underwood are positioned as creating uniquely comprehensive travel stereographs through their sending of stereo-photographers across the globe 'regardless of expense', and having access to specific scenes and locations due to their 'exceptional credentials' (1901, p. 30).

The high production quality and veracity of Underwood stereographs is impressed upon the reader in their description of

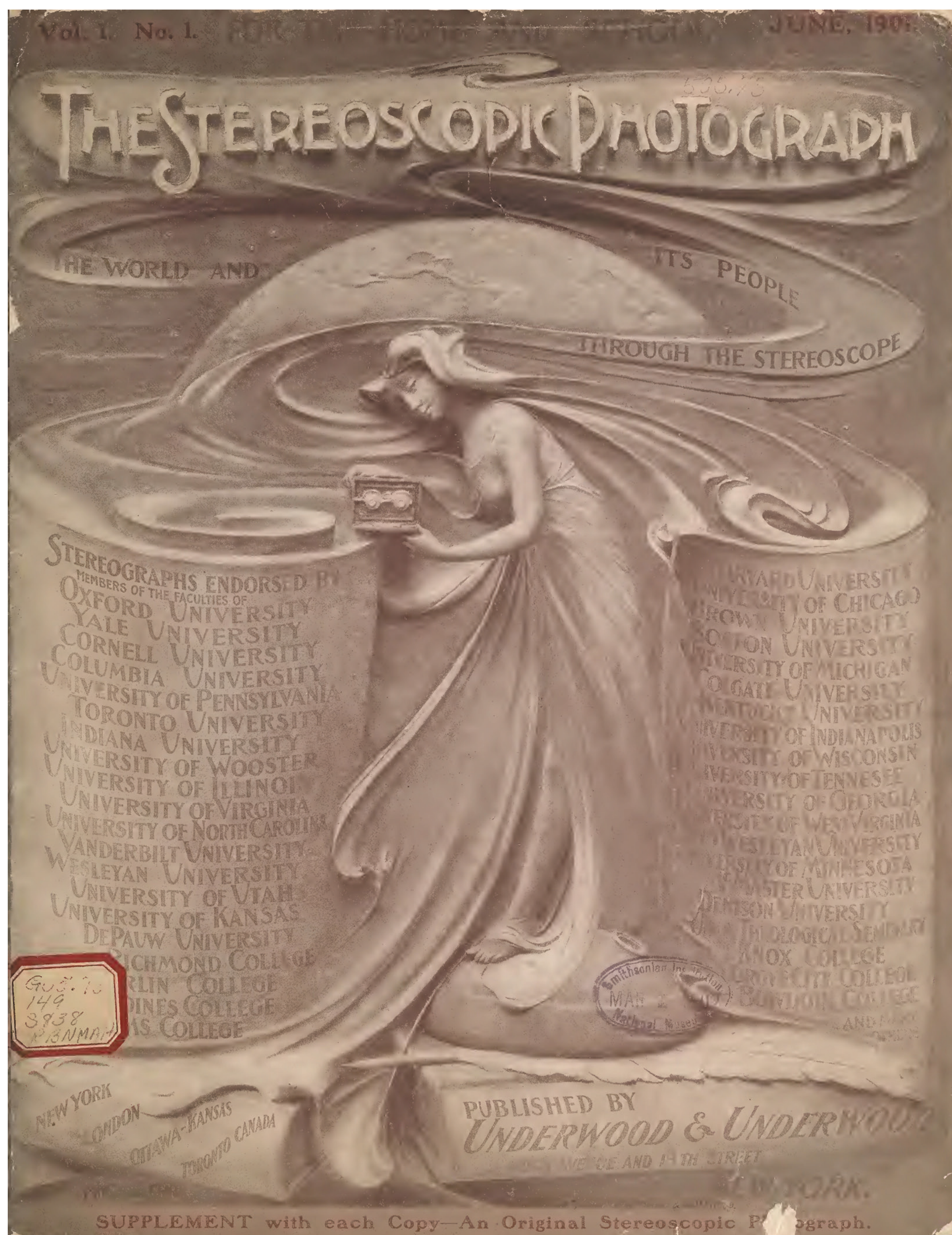

Fig. 1 The front cover of the first edition of The Stereoscopic Photograph. Courtesy Smithsonian Libraries and Archives.

the stereograph making process. Driving home the technologically complex process of production, their stereographs are required to pass through 'a bewildering multitude of hands' to be created, all of them expert. The photographer must possess 'keen artistic taste', while the employee responsible for plate development is 'a man of the highest technical ability as a photographic chemist' ('Stereograph Making', 1901, p. 24). Even the nameless warehouse workers, who do not receive specific accolades, are depicted diligently performing each step of the printing process. This narrative allows Underwood & Underwood to position their stereographs as being of a unique quality from their inception. Rather than a cheap copy at the hands of a shady operator, Underwood & Underwood stereographs are made *en masse* by a mass of proficient workers. By removing the subjectivity and limitations of a singular creator, Underwood stereographs are seen as technologically and emotionally superior, implied to have unleashed the full truth-telling, immersive potential of the medium. As noted by Malin, this in turn encouraged the viewer of the stereographs to feel technologically enlightened.

This technical aspect of the Underwood stereograph was not used just for establishing their uniqueness, but for evidencing their power to mimic binocular vision. As per Morus' article, there was an established tradition of using optical illusion to explain vision as a form of knowledge production. *The Stereoscopic Photograph* contains several articles that highlight the optical nature of stereographs, while linking this to scientific authority.

In trying to convince the audience of the communicative prowess of the stereograph, there is direct comparison to the telephone. Just as the telephone receives sound waves, converts them to electricity, and back to sound waves, the stereograph is argued as capturing a scene of reality, imprinting it into the retina of the viewer, which then converts back into the scene photographed in the mind of the viewer, rather than the photographic referent on the card (Osborne, 1902). Aside from asserting the veracity of optical transmission, it is possible this comparison to the telephone also echoed Underwood & Underwood's hopes for projected social use. Although it had first been patented in the US in 1876, the landline telephone was just beginning to experience widespread adoption during the turn of the century in 1900 there were 600,000 telephones registered on the Bell telephone system, a number which skyrocketed to 2.2 million by 1905 (Anderson, 2005, p. 29).

The supposed power of the optical illusion fed into the first of the psychological illusions employed by Underwood & Underwood to sell their product: the illusion of the stereograph as a truth-telling document. This tended to manifest as the insistence that the stereograph functioned as a window into another reality. As a foundational part of Underwood's marketing, references to the stereograph as a conduit to other places are rife through their literature. Their travel system guidebooks refer to visiting the location 'through the stereoscope', and the first article in the first edition of *The Stereoscopic Photograph* is a reprint of a piece published by Oliver Wendell Holmes, inventor of the most used stereoscope in the late 19th century, which proclaimed stereography's ability to cleave the form of reality from its matter.

'Pictures and Stereographs', by Mabel S. Emery, is an example of this illusion of truth. In this, the fundamental difference

Fig. 2 Images of the stereograph production line, from The Stereoscopic Photograph. Courtesy Smithsonian Libraries and Archive.

between a picture (be that a photograph or artwork) and a stereograph is their veracity. While pictures provide an approximation of reality, stereographs are seen as proving an exact visual impression. Emery describes this experience as being ‘for all practical purposes, in the presence of the real thing’ (1901, p. 57). Emery further pushes the idea of the stereograph as a conduit to another reality, describing viewing as a process that ‘by some inexplicable magic of the mind, in accordance with the optic nerve, you saw the whole thing’ (1901, p. 58).

Not content with marketing the stereograph purely on this claim of total immersion, *The Stereoscopic Photograph* also has articles that link the purported truth of the image to its prowess as an educational instrument. In a piece on the use of the stereograph in night school for working children, the author describes talking about a class topic while the pupils view related scenes in a stereoscope, without describing any of the scene – such is the strength of the pedagogical truth that they possess that further interpretation is not necessary (Cornish, 1901, p. 110). In another article, a group of school boys are depicted as enhanced from a rambunctious rabble into studious, self-improving students through the Underwood stereographic tour of the Holy Land (Vanderpoel, 1902, p. 157).

A fully immersive experience will have an emotional aspect, which is accounted for by Underwood & Underwood’s representation of their stereographs as an intimate experience. By intimacy, I am referring as much to the sense of psychological closeness with a person or place, as to the sense of physical closeness.

Albert Osborne’s ‘Extraordinary Results from Stereoscopic Photographs’ is another article on the nature of the stereograph, this time focusing on the psychological impacts of looking stereoscopically. In particular, he argues that the optical immersivity of the stereograph is so complete that it captures the same mental experiences of viewing a scene in person (1902, p. 168). This is explained by suggesting that correct stereoscopic viewing is a type of feeling; at one point the ideal viewer is described as feeling their way into ‘the very depth of the picture’. This sense of depth, along with the stereoscopes tendency to shut a viewer away from their surroundings, purportedly allows the viewer to experience the same emotional connection to a scene as someone who was physically there. Osborne goes on to attest that the experience of travelling is as much about the emotional connection and response to a scene as seeing it, thus the experience of seeing a scene stereoscopically is capable of generating a valid emotional response; ‘To prove there is not real Rome before one in the stereoscope does not prove there is no real soul stake within [the viewer], no genuine experience of being in Italy’ (1902, p. 170). This assertion that their stereographs can offer genuine emotional transportation to another place has ties to the critique in ‘The Post Immersive Manifesto’ of the rhetoric of escape. Despite promising emotional intimacy and truth, it is a form of participation that encourages the viewer to distance themselves from their own social and material environment.

The idea of stereographs generating emotional intimacy can be seen in practice in another piece by Mabel S. Emery. In this, her husband purchases a set of stereoviews of Switzerland, their honeymoon location, to celebrate their 25th wedding anniversary. Initially sceptical, the author begins to

recall the honeymoon once she views a specific scene very similar to a spot they visited at the Engadin. This reminiscing is so strong she is moved to tears, feeling as if she is on her honeymoon once more. She is not only touched by the emotional intimacy of the scene; it is also presented as generating a strengthened sense of intimacy between herself and her husband (1902, p. 9).

Ramifications of the Illusory Framework

For all of Underwood & Underwood's insistence in *The Stereoscopic Photograph* of the factual and emotional truth of their stereographs, we must consider the intended impact on the reader. 'The Post-Immersive Manifesto' denounces so-called immersive media for presenting imitated lived experience as objective truth, as Underwood & Underwood did with their stereographs, and asserts such claims force the viewer to assume they have a level of freedom in the media that they do not have. Underwood & Underwood not only used their aggressive salesmanship and quarterly magazine to extol the virtues of stereoscopic vision, but to place the company's ideological framework of aspirational self-improvement on the viewer. In doing so, they were attempting to create an audience that perceived themselves as discerning and enlightened, while continuing to consume their product and implicitly trusting any claims the company made. It was a framework that said: this is the truth, we are a mere conduit, by the aid of our glass *you see*.

The issues with this framework and the ramifications of placing stereography as a neutral, objective reality are best seen in the travel articles written by Underwood & Underwood's stereo-photographers. Accounts from stereo-photographers are rare and provide a stark glimpse into the practices and prejudices that shaped their work. 'On to Sparta', an article by Charles Baker, stereo-photographer for sections of the *Greece Through the Stereoscope* travel set, details his assignment to Sparta. He paints a rather negative picture of modern Sparta; it is a land of farms and houses that 'give the impression of squalor and laziness', and is allegedly populated by sickly-looking women and men who work all day before getting drunk at night (1901, p. 54). Aside from asserting their poverty and cultural difference, Baker also reveals that he feels entitled to capture this difference without consent. He acknowledges that Greek women do not wish to be photographed and makes light of his decision to ignore this: 'The old ones say it is a sin to be photographed, the young ones say "Why should you have my face?" so you stereograph her as she protests' (1901, p. 55).

This demonstrates the power imbalance at the heart of many stereographs; what is photographed is a selective process by the photographer and reflects their beliefs about the subject, not necessarily any truth the subject may wish to convey. In asking the questions of immersive media posited by ZU-UK at the beginning of this paper – who is it *by* and who is it *for* – we can use this article to read the resulting stereographs from this expedition as trying to assure the assumed white, middle-class audience of their cultural superiority as much as trying to broaden their horizons.

Such discussions around power imbalances in the relationship between photographed and photographer take an even darker turn in the article 'Shadow and Sunshine in China' by

James Ricalton, a travel photographer and war correspondent who photographed and wrote the guidebook *China Through the Stereoscope*. The article begins with the discussion of a stereograph Ricalton took of an unnamed Chinese man lying down in what he refers to as 'the dying place', a patch of land near a riverbank where the destitute allegedly go to pass away (1901, p. 65). Ricalton describes the scene in some detail, noting that other people in the city will not stop to help these people here as they are seen as being beyond charity. Ricalton professes sympathy in this article, yet chooses to document their distress regardless of consent. Describing the man in the photograph as a 'pitiable specimen', he notes that he must be more feeble than others in the dying place who 'having a trifle more vitality left, crawled away on hands and knees' as he tried to photograph them (1901, p. 65).

Using the framework created by Underwood & Underwood, this would be viewed by early 20th-entury Western audiences as the grim reality of the social standards of an implied inferior culture. But when we consider the social conditions leading up to this stereograph, we see a North American white man looking for a perfect 'pitiable specimen' who would remain still, setting up his field camera and tripod, checking composition and exposure, before photographing someone who likely

Fig. 3 Stereograph featuring Spartan woman and a child. Underwood & Underwood (1907) 'Looking over modern homes in ancient Sparta, west of famous Taygetos mountains, Greece'. Retrieved from the Library of Congress, https://lccn.loc.gov/2003688304.

did not wish to be photographed for the spectacle. Though presented with a humanitarian bent, such a stereograph is intended to be commercially profitable for its shock factor while still allowing the viewer to feel detached and morally superior to the culture the man is from. This mirrors another of the central concerns of the 'Post Immersive Manifesto', that conventional immersive media is unable to allow for complex social interaction, or thoughtful reflection from the viewer, due to its commercial nature (2020, p. 2).

Underwood & Underwood present their stereographs as windows through which the viewer can expand their intellectual and psychological horizons in a controlled, objective way. But when we consider what the stereo-photographer chooses to capture, we must consider the bias his viewpoint carries. To echo Frosh, Underwood & Underwood may have set up these images to be directed at 'no one in particular', and taken by no one in particular, but this is not how the images functioned. They were taken by white, mostly North American men and directed at white, middle-class families and school groups. The supposed universality of the scene produced would flatter the intended viewer as learned, by insinuating their probable opinions on culturally distinct subjects are inherent and objective. The stereograph presents

Fig. 4 Published version of the stereograph referenced in Ricalton's article on China. Underwood & Underwood (1900) 'Dying in the "Dying Field" where discouraged poor are allowed to come to die, Canton'. Retrieved from the Library of Congress, https://lccn.loc.gov/2006685950.

culturally dominant thoughts on non-Western cultures as truth, creating positive emotion in the viewer for having the right instinct about a place or person, and compelling them to consume more stereographs.

The illusory aspects in Underwood & Underwood's framework of stereoscopic seeing were not just incidental; they were an integral, driving force. When we consider these instances in regard to modern-day media scholarship, whether it be the improper distance raised by Nash, the complexity of media witnessing discussed by Peters, or the perpetuation of social marginalisation criticised by ZU-UK, it is important to remember that *The Stereoscopic Photograph* deliberately uses these deceptions for the benefit of the company.

The Stereoscopic Photograph, and Underwood & Underwood's approach to stereographs overall, are both incredibly complex, multilayered projects. This paper does not seek to create an exhaustive record of every form of stereoscopic literature that has these illusory themes, or fully establish the historical context that this magazine operated within. Rather, it aims to show how well these historical examples of immersive media respond to analysis using contemporary media theory. Tracing the current scholarly issues with immersive media back into the 19th century can also potentially assist the wider field of media studies. By widening the timeframe for immersive media to occur before the 20th century, we are better able to understand how and why it has developed the way it has.

In this article, I have shown that historical stereography and the literature produced around it is an incredibly rich seam of material to apply contemporary media scholarship to. Through critiques of immersivity and witnessing as a mode of seeing, the claims *The Stereoscopic Photograph* makes towards stereography as being a fully immersive, truthful form of media unravel. Instead, we see that stereography was a convoluted, complicated media, which used forms of optical and psychological illusion to smooth over these problems to create a more commercially acceptable product. Furthermore, the stereographs and literature created by Underwood & Underwood were specifically made in and for early 20th century culturally dominant paradigms in the West, especially in regard to capitalism and colonialism.

The possibilities for further study in this area are wide-ranging. A comparative analysis between Underwood & Underwood's framework for stereoscopic seeing and the frameworks of other publishing houses, such as Keystone View Company, could help establish what parts of the framework were unique to each business and why. Examining the role of witnessing and its social impacts in other forms of stereography not mentioned in this paper, such as humorous and medical views, could also be a rewarding pursuit. Whatever area of study is chosen, the issues raised in 'The Post Immersive Manifesto' can likely be seen in these historical antecedents. In turn, this can help us better understand the way in which immersive media functions today.

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