EXAMINING THE ETHICAL IMPLICATIONS OF VIRTUAL REALITY IN
JOURNALISM

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ANALYSIS

The following is a professional analysis on the ethics of virtual reality in journalism.

These insights were derived from a variety interviews with a number of journalists,

academics and media ethicists tackling the newfound ethical challenges in VR

journalism. The transcripts for these interviews have been included in Appendix A of this

project.

Unraveling the ethical challenges of virtual reality in journalism

As the technical capabilities of immersive media continue to expand and mimic

our own reality, journalists continue to grapple with the newfound ethical challenges the

technology presents. Immersive media includes many facets of virtual reality such as

360-degree video, 3-D scanning and computer-generated imagery. Virtual reality is

enabling journalists to bring audiences closer to the story by putting the user in control,

expanding their perspectives, and presenting story experiences that are explorable in

nature. This technology has quickly evolved from giving viewers a peripheral view from

a stagnant position, to allowing them to freely move and to interact within a virtual

environment.

Scholarly research points to two specific values for the use of VR in journalism.

These include immersion, meaning the sensation of being enveloped in a virtual world

(Owen et al., 2015) and presence or embodiment, meaning viewers temporarily identify a

dual unity between themselves and the virtual world (Maschio, 2017). Ethics, as Madary

and Metzinger (2016) explain, plays a vital role in deciphering the length to which content creators push the boundaries of these two values at the expense of their audience's well being.

So how can journalists set standards to meet the capabilities of a technology that's constantly evolving and is still nascent to the field of journalism? And, to reference back to one of the original research questions posed, does VR in journalism call for a new or additional set of ethical standards?

First, it's important to highlight that the long-established ethical guidelines of seeking the truth, minimizing harm, and being transparent won't be re-written to meet the needs of immersive media. Instead, they need to be adapted to specifically address the unique process of story conception, production, and distribution of immersive media in journalism, as outlined by Cruz and Fernandes (2011). Second, as journalists continue to introduce emerging technology to the public, such as VR, more transparency is needed to show how source material is gathered (Domínguez-Martín, E. 2015). And finally, it's vital to acknowledge that the ethical findings and strategies presented in this article could very well be primitive in the years, and even months to come. However, it's important to consistently update and adapt the ethics of journalism to fit the needs of this evolving digital age (Diaz-Campo and Segado-Boj, 2015). Immersive media specifically is advancing at such a rapid pace that the insights presented here aren't final, but rather an examination of where the medium stands at this point in time.

Currently, immersive media is consumed through a VR headset, on a mobile device, or on a desktop. However, in the near future it could become commonplace to

consume immersive media without the constraints of these devices, and new consumption habits will present their own ethical challenges.

After interviews with a variety of journalists, academics, and media ethicists, three overarching ethical challenges in immersive media rose to the top. These topics include:

1. The role of a journalist in a VR setting.

2. Maintaining accuracy in the representation and recreation of real-world environments.

3. Presenting sensitive or graphic images to audiences.

All three of these topics will be addressed with input from the thought leaders interviewed. But first it's imperative to define the capabilities found in each subdomain of immersive media.

Understanding the technology

Immersive media has many facets that can be leveraged in storytelling, but just like any other technology, the more you know about a technology, the more effectively journalists can address the ethical implications of the technology.

360-degree video- Monoscopic: 360-degree video was journalism's entrance into immersive media and virtual reality. It expanded viewer's perspectives by presenting a spherical view of a scene, rather than being constrained by a fixed frame. Monoscopic 360-degree video specifically refers to footage that's captured with a single 360-degree camera or camera rig. While the spherical images provide a sense of immersion, image clarity decreases at the edge of the sphere. The majority of 360-degree video is shot in

this format due to the low costs of leading 360 cameras like the Samsung Gear 360. The prices for these cameras range from $90 to $230.

Example: The Associated Press' "Rohingya Exodus"

360-degree video - Stereoscopic: Stereoscopic 360-degree video is captured in the same way as monoscopic 360-degree video. However, instead of a single camera, a pair of 360-degree video cameras are placed side by side to add depth between the foreground and background for a heightened sense of clarity and immersion.

Example: Next VR's coverage of the NBA Finals

Augmented Reality: This is when 3-D models are projected onto physical surfaces using depth sensors built into the cameras of mobile devices.

Example: Quartz's coverage of NASA's Cassini Satellite

Volumetric - 3-D scan: Real people, places and objects are scanned with depth sensors to create elements that, when combined, form a walkable 3-D environment.

Example: Emblematic Group's "Out of Exile"

Volumetric - CGI (Computer-generated Imagery): 3-D models and environments are recreated based upon photo and video references through gaming software.

Many times, volumetric scans and CGI models are combined to create a more cohesive presentation.

Example: The Associated Press' "Alzheimer's Disease: Exploring the Brain"

The Evolving Role of the Reporter

Immersive media is enabling journalists to break the fixed frame found in traditional mediums such as photo and video. The technology allows audiences to control

their field of view in a spherical frame, as seen with 360-degree video, or even move through a virtual 3-D environment, made possible through volumetric capture.

As journalists present their viewers a broader frame to explore, they are also relinquishing some editorial control in the process (Watson, 2017). This trade-off has presented new challenges that have led newsrooms to re-conceptualize how journalists can add context and build narratives in an immersive setting. This challenge is most prevalent in 360-degree video, where real-world images are captured and displayed in a spherical format.

One challenge journalists working with 360-degree video are dealing with is whether a reporter should appear in a scene. A poll conducted I in the spring of 2017 with 37 immersive journalists shows there's no current agreement on the presence of a reporter in a 360-degree video setting. However, thought leaders have found effective methods of both including and excluding a reporter in a 360-degree video scene.

How often does a reporter appear in a story?
37 responses

Legend:
- Never
- Almost never
- Sometimes
- Most of the time
- Always

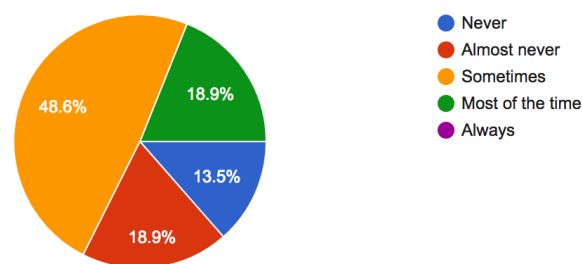Pie chart values: 48.6%, 18.9%, 13.5%, 18.9%

Figure 1: Poll: How often does a reporter appear in a 360-degree video story? These are the results from a poll I conducted in the spring of 2017 with 37 other immersive journalists.

"I actually want to see the relationship between the person that we are interviewing and the reporter, I want to see how they look at each other," said Bryn

Mooser co-founder of RYOT, an immersive media company based in Los Angeles. RYOT routinely conducts interviews with the journalist and the subject on camera.

Others like Jenna Pirog, a virtual reality editor for The New York Times Magazine, have decided to take a 'fly on the wall' approach to VR journalism and often decide to leave a reporter out of a 360-degree video scene. Despite the absence of a reporter, Pirog said that the journalist still plays a vital role in providing context in a 360-degree video story.

"Certain journalists watch VR and they're like, 'Oh my god, I'm going to become obsolete.' I don't believe that for a second," Pirog said. "We are still trying to figure out how to tell a story in VR, and in that regard, voice-over is written by a journalist and video is constructed into a story. Where the camera gets placed is still a journalist's choice; how the piece is put together is still an editor or journalist's choice. Obviously, this is still a huge role."

Providing context can be achieved in a variety of ways and the results of the same VR poll identified three best practices journalists are using to provide context in a 360-degree video setting:

- **Reporter voice-over.** Example: "Arctic 360" by The Guardian

- **Text-on-screen.** Example: "Genocide's Legacy: Preserving Auschwitz" by The New York Times

- **An overlay of graphics.** Example: "Trapped in Myanmar: Life inside a Rohingya camp" by the Associated Press

What these findings show is that a journalist's role in an immersive setting is no different than any other medium. However, the unique challenges of guiding an

audience's view throughout a spherical scene have pushed journalists to find new strategies to add context to a story where they're relinquishing some editorial control.

Maintaining Accuracy in the Representation and Recreation of Real-World Environments

The ability to volumetrically scan, recreate, and enhance real-world scenes using computer graphics has presented journalists with an entirely new challenge of maintaining the tenets of truth telling and accuracy.

Take for example, "Beyond These Restless Skies," a story created by the VR journalism studio Empathetic Media in New York City. This story examines the lack of government aid for residents living in section eight housing in Harlem. The story utilizes volumetric scanning technology that allows participants to physically move through one resident's apartment and experience for themselves what it's like to live in an often neglected section of New York City.

But how can audiences know for certain that what they're experiencing is an authentic representation of the real world? Dan Archer, founder of Empathetic Media, believes that being transparent by informing the public of the processes used to build 3-D environments is the key to upholding journalistic standards when using this technology.

"We've found that taking a ton of photo references both before and after we scan an environment is an effective way to maintain fidelity," said Archer.

"I originally worked in comic journalism where I was getting the same reprimands in saying, 'well if you're drawing this how can it correlate to reality?' But I think as long as there's transparency in the methodology then you can be covered."

Empathetic Media isn't alone in their efforts to share the editorial process of creating immersive media with the audience. Other thought leaders, such as Al Tompkins, a senior faculty member at the Poynter Institute, have expressed this same sentiment.

"Disclosures are not a sanitizer for all problems, but they certainly are an attempt to let the user in on what you're doing and what you're not doing," said Tompkins. "Part of what we have to do is to make sure that we don't lose context in order to gain aesthetics."

Journalism scholars have also called for a greater level of transparency. In their book "The New Ethics of Journalism: Principles for the 21st Century," Rosenstiel and McBride (2014) argue that the values of transparency and community have risen to prominence in the 21st century due to the rapid development of technology, while truth remains to be a unifying value. Cruz and Fernandes (2011) agree with this sentiment and believe all new technology, should be utilized in a way where the core values of truth telling, loyalty to public and the discipline of verification, should be working in unity with capabilities of the technology.

Presenting Sensitive or Graphics Images to Audiences

The evolution of immersive media from a stagnant position to a dynamic, free-flowing virtual environment has given audiences a greater sense of freedom in VR. However, as these experiences become more realistic, more research is needed to understand the psychological effects on the brain to prevent potential harm to viewers.

This summer the Associated Press conducted a VR study at the New York City Media Lab in partnership with Multimer, a biosensor company from MIT. The study

aimed to uncover how stories told across various VR viewing devices affect an individual's state-of-mind.

By collecting data through EEG sensors and heart rate monitors, the Multimer staff was able to determine various levels of attention and relaxation that gave an unprecedented look at how VR is affecting its user's minds. After testing four different story subjects across three different viewing devices the AP's study found that stories covering conflict, such as war zone reporting, drove the highest levels of stimulation and power/intensity. Stimulation was associated with an individual being more attentive than they are relaxed, while power/intensity is associated with the lasting impact of the experience. The conflict story tested, AP's "House to House: The battle for Mosul," also drove the most participant comments related to strife and fear.

The AP isn't alone, however, in examining the effects of VR on the brain. In his thorough research of VR ethics at the University of Mainz in Germany, philosophy professor Michael Madary delved into a concept he calls 'the plasticity of the human mind.' This concept address the sensation of our mind's being deceived into believing images we see, especially in a VR setting, are part of our own lived experience

"For human beings visual perception is very tightly joined with action and VR mimics our perception of the real world in a way you can't achieve with any other medium," said Madary.

"We take it for granted that when we perform an action, we instinctively know we're in control. This can create an illusion of reality that VR gives us the agency to do."

This concept alludes to the 'being-there heuristic,' outlined by Sundar and Limperos (2013) who state that the authenticity and intensity of VR established through movement allows audiences to craft their own personal connection to the medium.

These insights can help journalists balance the opportunity of producing stories in this new medium with the danger of causing post-traumatic stress to their audiences.

For example, consider the VR experience "Witness Auschwitz," created by the Italian VR production company 101%. Although this experience isn't directly marketed as journalism, the virtual environment was created based on photo and video evidence from the concentration camp, along with testimonies from those that suffered through the horrors of Nazi Germany. In this experience participants perform a variety of tasks such as digging mass graves for fellow prisoners, while in another scene the cries from a crematorium are covered by the sound of a motorcycle engine.

One way to scrutinize the ethics of this kind of story can be through the lens of the uses and gratifications theory, which seeks to uncover the fulfillment of an individual choosing to interact with a specific medium (Sundar and Limperos, 2013). De la Peña, (et al., 2010) established that one of the objectives of VR is to establish presence in locations audiences would never have access to, however Madary's (2016) principle of non-maleficence states that risk of harm should be no greater than that encountered in real life.

If this story were to be told through a journalistic lens, content creators could consider these two questions to weigh the opportunity of producing this story with the risk of harming audiences:

- Do these kinds of experiences educate viewers in a way other mediums can't?

    If the answer to this question is no, then consider the following:

- Was the creation of this experience made just for showcasing immersive technology?

    If the answer to this question is yes, then this story probably isn't necessary for VR in the first place.

This boils down to the idea that not ever story works in an immersive media setting. Ray Soto, director of emerging technology at USA Today, said that by using VR as a gimmick, journalists could put their audience at risk, or end up creating underwhelming stories.

"Before we shoot anything, we go through a pre-production storyboarding process where we want to make sure the story enhances the visuals and the visuals do the same back to the story," said Soto.

"If one of those two elements is missing, then we might decide this might be better as a print article or this might be better as a photo gallery."

Strategies to Plan for the Future

Although journalists have identified key areas of ethical challenges, immersive media as a whole is still in a stage of infancy, and the standards surrounding VR will continue to change as the technology evolves. One solution newsrooms can adopt to stay the forefront of these conversations is to have an open ethical framework, outlined in Ward and Wasserman (2010). This encourages journalists to reach out and include the voices of those outside the realm of journalism in an effort to efficiently build standards

as the technology progresses. In the case of VR this would include those working in game design, 3-D motion design, and VR filmmaking.

These fields have been experimenting with the technology years before journalists began adopting VR, and can provide valuable insights into how the technology will change in the future. This kind of collaboration alludes to a similar ethical framework presented by Mittlestadt, Stahl, and Fairweather (2015), called discourse ethics. Discourse ethics encourages a forward-thinking methodology to developing new ethical guidelines, instead of trying to find similarities with emerging technologies of the past. Aside from inviting those working at the forefront of VR, Plaisance (2016) calls for a shift away from the Western ideologies and Western values of the press. Plaisance (2016) argues that morality is established through human experience and since VR aims to transport audience to locations that are hard to access, understand the ethics of non-Western societies will be vital to respecting the autonomy of story subjects. By continually sharing the ethical challenges faced in face in the field and during post-production, news organizations can collectively solidify an ethical approach to VR in journalism.

As new ethical challenges arise, and others are more clearly defined, here are three strategies to help journalists confidently navigate the field of immersive media.

1. Set an objective for the immersive story you're about to tell. By establishing an objective before a story is produced, journalists can avoid falling into the trap of creating a VR story simply for the sake of using the technology. For example, in the AP's VR report "The Age of Dynamic Storytelling," AP photo editor Maya Alleruzo shared that the objective of her 360-degree video story "House to House: The battle for Mosul," was

to show the difficulties and dangers of warfare in a dense urban environment. In order to achieve this goal she recognized that 360-degree video was the ideal medium to establish presence and showcase these dangers. Once an objective for a story has been set, ethical challenges that may arise in the production or post-production phase of a story can be confidently addressed.

2. Journalist should present their editorial options and should never assume accuracy. To instill trust with the public, journalists can benefit from explaining how immersive stories are produced and address their limitations. For example, consider the collaboration between The Washington Post and Empathetic Media who used augmented reality to recreate the fatal altercation between Freddie Grey and the Baltimore Police Department. In addition to the AR story, Empathetic Media released a supplementary story to explain that the AR story was based on user-generated content from the crime scene, eyewitness testimony and court documents. This principle is most applicable to immersive stories that leverage 3-D scanning and / or computer graphics. Journalists can also benefit from clearly labeling when images are altered or enhanced through CGI and how these adaptations uphold the tenets of accuracy and truth telling. Currently, it's difficult to download and alter pieces of VR journalism that have been shared online. 360-degree video is the only form of VR that's shared using universal files such as .mp4s. These kinds of files can easily be downloaded from websites altered. Room-scale VR stories that allow participants to move around a scene are often contained within singular applications that prevents user from downloading the assets of a story. However, as web developers begin to build a streamlined and uniform method of sharing VR content across multiple devices, such as Google's WebVR project, immersive storytelling

will be easily susceptible to variations that could spread false information. Alterations to real-world events captured in virtual reality could easily be used to gain political influence, impact the sanctity of a fair and impartial judicial system and could enhance the dangers facing societies.

3. Heightened realism raises the chances of inducing post-traumatic stress and harm. In the near future, it may become commonplace that our own realities and those of a virtual world form the same symbiotic relationship that we currently have with our mobile devices. However, in VR the risks of inducing harm on an individual are at a heightened level as participants now have the agency to personalize their own experience through a full range of movement and touch. Just because journalists have the ability to produce an immersive experience doesn't mean we should risk potentially harming the public in the process. In the end, journalists can benefit from asking themselves if placing a subject in an immersive setting is necessary for them to gain an original perspective on a topic.