

Faculty of Education and Natural Sciences

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Master's Thesis

Engaged and Empowered —

A qualitative research of the consumers' experience of 360-degree news

Engasjert og Myndiggjort —

En kvalitativ undersøkelse av hvordan konsumentene opplever 360° nyheter

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TABLE OF CONTENTS

Acknowledgements.....	3
List of figures and tables.....	8
English abstract.....	9
Norsk sammendrag.....	10
1. Introduction.....	11
1.1 Research focus and research question.....	12
1.2 Research design.....	13
1.3 Definition of key terms.....	14
1.4 Development of this master's thesis.....	16
2. Background.....	17
2.1 Old (traditional) media.....	17
2.2 New media.....	18
2.3 The news consumer.....	20
2.3.1 Changes in the way consumers access news.....	20
2.3.1.1 The Internet as a source of news.....	21
2.3.1.2 Getting news from social media.....	22
2.3.1.3 Using the smartphone to access news.....	23
2.4 Virtual reality (immersive) journalism.....	24
2.5 Summary.....	27
3. Theory.....	28
3.1 Audience research.....	28
3.1.1 Reception analysis.....	29
3.1.2 Experience.....	32
3.2 Medium theory.....	33
3.2.1 Marshall McLuhan's <i>The Medium is the Message</i>	34
3.3 Journalism and the public.....	36
3.3.1 Engagement and relevance.....	36
3.3.2 Transparency.....	38
3.4 Virtual reality in news.....	40
3.4.1 Spherical (360-degree) video as virtual reality.....	43
3.5 Telepresence (presence).....	44

3.6 Presence and Immersion: Is there a difference?.....	47
4. Methodology.....	49
4.1 Research strategy and design.....	49
4.2 Choice of 360 works and selection of participants.....	50
4.3 Collecting the data.....	51
4.3.1 In-depth interviews.....	51
4.3.1.1 Request for interviews.....	52
4.3.1.2 Interview guide and format.....	53
4.3.2 Documentary evidence.....	54
4.4 Working with and analyzing the data.....	55
4.5 Ethical issues.....	56
4.5.1 Anonymity.....	56
4.5.2 Recording of the data.....	57
4.6 Limitations.....	57
4.7 Reliability and validity.....	59
5. Analysis and Findings.....	60
5.1 “The Displaced” by the <i>New York Times</i>	60
5.1.1 The consumers.....	61
5.1.2 The consumer perspective of 360 news.....	62
5.1.2.1 Additional impact of spherical video on the viewing experience.....	67
5.1.2.2 Using a virtual reality headset to view 360 news.....	69
5.1.2.3 Appropriateness of using 360 video in news.....	69
5.1.3 Document analysis.....	70
5.1.4 Summary.....	73
5.2 “Oslo Lufthavn – Pir Nord” by <i>Teknisk Ukeblad</i>	74
5.2.1 The consumers.....	75
5.2.2 The consumer perspective of 360 news.....	76
5.2.2.1 Additional impact of spherical video on the viewing experience.....	80
5.2.2.2 Using a virtual reality headset to view 360 news.....	80
5.2.2.3 Appropriateness of using 360 video in news.....	81
5.2.3 Document analysis.....	82
5.2.4 Summary.....	83

5.3 “Visit Syria in 360 degrees – The Old City of Homs” by the Norwegian Red Cross.....	84
5.3.1 The consumers.....	85
5.3.2 The consumer perspective of 360 news.....	86
5.3.2.1 Additional impact of spherical video on the viewing experience.....	90
5.3.2.2 Using a virtual reality headset to view 360 news.....	91
5.3.2.3 Appropriateness of using 360 video in news.....	91
5.3.3 Document analysis.....	92
5.3.4 Summary.....	93
6. Discussion of findings.....	95
6.1 Present in the work.....	96
6.2 Increased understanding.....	100
6.3 Engagement.....	102
6.4 Autonomy.....	105
6.5 Transparency.....	107
6.6 Secondary research questions.....	109
6.6.1 Does it make a difference if one uses a virtual reality headset when viewing 360 news?.....	109
6.6.2 Should spherical (360-degree) video be used in news?.....	110
6.7 Summary.....	112
7. Summary and conclusion.....	114
7.1 In what way do consumers experience spherical (360-degree) news?.....	115
7.2 Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news?.....	118
7.3 Should spherical (360-degree) video be used in news?.....	119
7.4 The way forward.....	121
References.....	122
Appendix.....	130
Attachment 1: Example of a request to participate sent to a potential research volunteer.....	130
Attachment 2: Request to participate with instructions on how to watch the 360-degree work.....	131
Attachment 3: Requests for interviews sent to two producers of 360 news.....	132

Attachment 4: Interview guide for viewers of 360 news content.....	134
Attachment 5: Interview guide for producers of 360 news content.....	135
Attachment 6: “The Displaced”.....	136
Attachment 7: “Oslo Lufthavn – Pir Nord”.....	138
Attachment 8: “Visit Syria in 360-degrees – The Old City of Homs”.....	139

LIST OF FIGURES AND TABLES

Figure 1: Main characteristics of five audience research traditions.....	29
Table 5.1.1.a: Profile of the three participants who viewed “The Displaced,” a 360 work produced by the <i>New York Times</i>	61
Table 5.1.3.a: Analysis of user comments: “The Displaced” as of 7 June 2017.....	70
Table 5.2.1.a: Profile of the three participants who viewed “Oslo Lufthavn – Pir Nord,” a 360 work produced by <i>Teknisk Ukeblad</i>	75
Table 5.2.3.a: Analysis of user comments: “Oslo Lufthavn - Pir Nord” as of 7 June 2017 (my translation).....	82
Table 5.3.1.a: Profile of the three participants who agreed to watch “Visit Syria in 360 degrees – The Old City of Homs,” a 360 work produced by the Norwegian Red Cross.....	85
Table 5.3.3.a: Analysis of user comments: “Visit Syria in 360 degrees – The Old City of Homs” as of 7 June 2017 (my translation).....	92

ENGLISH ABSTRACT

News producers are looking to new media technologies like 360-degree video to capture the imagination of the consumers and re-engage them in news. The last two years have seen a growing number of media outlets use spherical (360-degree) video in their work. A leader in the field is the *New York Times*, which released its first 360 production, “The Displaced,” in November 2015. As with all 360 works, “The Displaced” can be viewed on a mobile – with or without a virtual reality headset. It also can be viewed on other mobile devices like a computer or an iPad.

Spherical (360-degree) video often is described as the “gateway to virtual reality.” The technology allows viewers to navigate the scene by moving their mobile around or, if they are using a virtual reality headset, by swinging their head from side to side. Those viewing the work on a computer, however, must click and grab onto the screen to navigate. The advocates of 360 video point to the technology’s inherent ability to allow viewers to experience the news firsthand by placing them on site. But is this really the case and if so, is this reason enough to use 360 technology in news?

The news producers think so but there is little research available that addresses the consumers’ thoughts on the matter. This master’s thesis is an attempt to redress the issue. The overall aim of this research is to present the consumers’ perspective of 360 news. A basic qualitative study, which is exploratory in nature, was conducted to obtain the information needed to understand and conceptualize the consumers’ experience and their thoughts about the media’s use of 360 technology. The study bases its empirical findings on in-depth interviews and the analysis of viewers’ comments posted on the Internet. Nine participants took part in this study. Each were asked to watch a 360 report and to discuss the experience.

The results of the research indicate that watching the news in 360 engaged and empowered the viewer. The participants in this study indicated that they did not just observe the action. They took part in it. They felt as if they were there and that they had control over their viewing experience. Their ability to obtain the information firsthand, they say, gave them a deeper understanding of the issue – one that they would not have received from traditional media. The use of 360 technology also made the work more engaging and transparent.

NORSK SAMMENDRAG

Nyhetsprodusenter er hele tiden på leting etter ny teknologi for å fange publikums interesse og fantasi. Flere mediebedrifter har funnet at 360-grader (sfærisk) video engasjerer publikum og representerer noe helt nytt innen mediadistribusjon. De siste to årene har blitt sett et økende antall 360-grader videoer distribuert via mobiltefonteknologi. *New York Times* var blant de første som tok i bruk 360-video i reportasjene sine. De produserte “The Displaced” i november 2015. Som alle 360-grader produksjoner, kan “The Displaced” vises på mobil – med eller uten brukt av VR-briller. Den også kan bli sett på ved bruk av datamaskin.

Sfærisk (360-grader) video beskrives ofte som “inngangsporten til virtuell virkelighet.” Teknologien gjør det mulig for publikum å navigere på “innsiden” av reportasjene ved å bevege mobilen opp og ned eller til siden. De som bruker VR-briller navigerer ved å bevege hodet. De som ser på reportasjen på en datamaskin må imidlertid bruke PC mus eller tastatur til å navigere på innsiden av reportasjen. Tilhengere av 360-video peker på teknologiens iboende evne til å la publikum oppleve førstehåndsnyheter og reportasjer ved å plassere dem på innsiden av reportasjen. Men er dette virkelig tilfelle, og er det i så fall grunn nok til å bruke 360-teknologi i nyheter?

Nyhetsprodusenter er sikre, men det er gjort lite forskning på området og lite har blitt gjort med tanke på hvordan publikum opplever bruken av 360-video. Denne masteroppgaven er et forsøk på å belyse dette. Mitt overordnede mål med denne oppgaven er å presentere publikumperspektiv på 360-video. Jeg tok i bruk kvalitativ metode gjennom utforskende, individuelle dybdeintervjuer. Jeg har også analysert kommentarer om 360-video som har blitt lagt ut på kommentarfeltet på Internett. Ni informanter er med i denne studien. De ble bedt om å se på en 4-11 minutters 360-videoreportasje og deretter forklare hva de opplevde. Mitt hovedmål er å forstå og konseptualisere publikums opplevelse av 360-video.

Resultatene av forskningen min viser at informantene blir engasjert og myndiggjort ved å se nyheter i 360 grader. De ni informantene indikerte at de ikke bare observerte reportasjene, men de deltok i dem. De ble en del av handlingen, samtidig som de kunne kontrollere opplevelsen sin. Informantene får førstehåndsinformasjon som gir dem en dypere forståelse av problemet – noe som de ikke ville ha fått gjennom tradisjonelle medier som TV og avis. Bruken av 360-teknologi gjorde også reportasjen mer engasjerende og gjennomiktig, ifølge informantene.

1. INTRODUCTION

Advances in technology have always had a bearing on the way journalists do their job, on the nature of news and on the media's relationship with the public (Pavlik, 2000, p. 229). This was true in the days of Julius Caesar and it is true today. A case in point is the media's use of spherical (360-degree) video – a technology that is widely viewed as the “gateway to virtual reality” and whose use has begun to transform the nature of storytelling (Watson, 2017, p. 17). Spherical or omnidirectional video allows viewers to navigate the screen by moving their mobile around or – as in the case of those using a virtual reality headset – by turning their head. Those viewing the work on a computer, however, must click and grab onto the screen to pan, tilt or zoom in.

Proponents of omnidirectional video contend that the use of this technology would provide “unprecedented access to the sights and sounds, and possibly the feelings and emotions that accompany the news” (de la Peña et al., 2010, p. 292). As John V. Pavlik observed in his article about the implications of new media on journalism:

Imagine the consequences if Abraham Zapruder had held an omnidirectional video camera instead of a directional Bell & Howell 8 mm film camera when he documented the assassination of President John F. Kennedy. How might the course of both journalism and history have been changed (certainly, Oliver Stone would not have had to make his controversial film, JFK, since a 360 degree view camera would have allowed us to instantly look around the downtown Dallas scene and determine whether there was a second gunman perched on the grassy knoll). (Pavlik, 1999, p. 56)

The *New York Times* is the leader in the production of spherical (360-degree) news videos. A year after the *Times* released its first spherical work, “The Displaced,” it launched *The Daily 360* – short videos that can be viewed on a mobile phone – with or without a headset. They also can be viewed on a tablet or on a computer. Not wanting to be left behind, others in the mainstream press began experimenting with 360 news. Towards the end of 2015, 12 news organizations had produced approximately 60 projects that used either 360-degree video or animated three-dimensional models in computer-generated scenes to “tell stories that could be experienced in virtual reality” (Doyle, Gelman, & Gill, 2016, p. 19).

The launch of 360 services on social media platforms like Facebook, YouTube and Twitter has continued to generate interest in 360 content. A quick scan of YouTube finds a number of spherical works produced by media outlets like Gannett, CNN, ABC, the BBC and the *Guardian* newspaper in the UK. Nonny de la Peña, the first to recognize the potential of

pairing virtual reality technology with journalism, is not surprised. According to the journalist and documentary filmmaker, virtual reality allows the media to put audiences “on scene in the middle of a story” (de la Peña, 2015). In a 2015 TEDWomen forum, de la Peña, who began exploring the potential of journalistic virtual reality in 2010, explained that:

My whole life as a journalist, I've really been compelled to try to make stories that can make a difference and maybe inspire people to care. I've worked in print. I've worked in documentary. I've worked in broadcast. But it really wasn't until I got involved with virtual reality that I started seeing these really intense, authentic reactions from people that really blew my mind. (de la Peña, 2015)

1.1 Research focus and research question

Immersive journalism is in its infancy and the audience for 360 news is small. Media organizations, however, are optimistic about its future. As noted in the Digital News Project 2017 report, *VR for News: A New Reality?*, some news organizations – the *New York Times*, Gannett and the BBC among them – have moved from early experimentation to launching virtual reality applications. This, according to the report’s author Zillah Watson, is a clear indication that virtual reality news is beginning to be integrated into mainstream journalism (Watson, 2017, p. 6).

According to a 2015 report for the Tow Center for Digital Journalism, the production of virtual reality content is a natural evolution of news – one that must be taken if the industry is to keep up with audience expectations. This assessment should come as no surprise to anyone. As the authors of *Virtual Reality Journalism (2015)* note, it is only to be expected that the “generations that have grown up with rich media on interactive platforms” will seek “immersive, visceral experiences” (Aronson-Rath, Milward, Owen, & Pitt, 2015, p. 15). Even if this is true, is that reason enough for the media to embrace immersive technologies and make it a staple tool in its journalistic arsenal? Furthermore, do viewers, especially those watching the 360 work on a computer or laptop, really feel as if they are present in the work?

The news producers think so but there is little research available that presents the consumers’ perspective on this issue. In fact, one is hard pressed to find media research that addresses the consumers’ response to 360 news. This researcher was able to locate six studies that examine the use of immersive technology in news. They are Nolan (2003), de la Peña et al. (2010), Aronson-Rath et al. (2015), Doyle et al. (2016), Gannett (2015) and Watson (2017). Not one of them explores the consumers’ experience of 360 works.

However, Gannett (2015) and Watson (2017) do highlight the need for additional research into this area. As Watson (2017) makes clear, no one – not even those involved with immersive news – has a complete picture of consumer habits, expectations or unmet needs (p. 36). Audience appetite for virtual reality content, for example, remains a big unknown. Watson writes:

A couple of VR producers I spoke to joked that, at the moment, most news 360 is still being produced for VR news journalists and the news industry itself. But is VR news being watched by news junkies and early adopters, or is it managing to reach news audiences? We simply don't know. (Watson, 2017, p. 36)

This researcher seeks to redress the imbalance. Thus, her decision to pose the following research question: In what way do consumers experience spherical (360-degree) news? Furthermore, the viscerality of the medium and the fact that viewers are encouraged to view the work through a virtual reality headset give rise to two follow-up or secondary questions. They are:

- Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news?
- Should spherical (360-degree) video be used in news?

By exploring the consumers' experience with 360 news, the hope is that this research study will provide a fresh perspective on the issue and that the information contained within the pages of this report will help newsmakers produce 360 works that best serve the public.

1.2 Research design

The overall aim of this research is to better understand the consumers' experience with 360 news. However, as there is very little information available on this topic, this researcher felt that a basic qualitative research would be best suited to obtain the data needed to answer the research questions posed. In-depth interviews will be the main method of data collection. An analysis of the comments posted about the 360 works to be examined will provide secondary data. User comments will be sourced from the websites of the respective publications that issued the work or on social media platforms like Twitter, Facebook and/or YouTube. A detailed explanation of how the empirical data was collected and collated is presented in Chapter 4, the Methodology section. This researcher's intent is to ensure that the depth and the descriptiveness of the material provided will make up for what this report may be lacking in breadth.

There are nine participants in this research study. Each has been asked to watch one of three spherical works. They are “The Displaced” by the *New York Times*, “Oslo Lufthavn – Pir Nord” by *Teknisk Ukeblad* and “Visit Syria in 360 degrees – The Old City of Homs” by the Norwegian Red Cross. The first two works – “The Displaced” and “Oslo Lufthavn – Pir Nord” – were produced by news organizations. The *New York Times* is a newspaper based in the United States with a large domestic and international following. *Teknisk Ukeblad* (TU) is based in Oslo, Norway. Although mainly net-based, TU issues and distributes a monthly magazine.

The third work, “Visit Syria in 360 degrees – The Old City of Homs,” was produced by the Norwegian Red Cross, which is not a news organization per say. It does, however have staff working in conflict-filled zones and a communications department that issues press releases that are often used or cited in news stories. It is this division of the Norwegian Red Cross that produced the “Visit Syria in 360 degrees – The Old City of Homs” video.

1.3 Definition of key terms

The terms that this researcher believes will be helpful are presented below. The definitions provided are only meant to guide the reader. Chapters 2 and 3 provide a more detailed explanation of the concepts put forth.

Experience

There are different ways of learning about the world around us. Experience, which is equated to lived activity, is one of them. The writer Norman Fischer links the definition of experience to a person’s interaction with the world (Fischer, 2015, p. 309). The Oxford Dictionary, on the other hand, affixes the definition of the term to the knowledge or skill attained from observing or participating in an activity (Tulloch, 1997, p. 519). As the focus of the interviews is to examine participants’ experience of watching spherical 360-degree news – i.e. the thoughts, feelings and perceptions generated from this interaction – it is this general meaning of the term that has been used in this work.

Traditional news

The term “traditional news” often is used to refer to legacy platforms or the established outlets of news such as newspapers, magazines, radio and television. Mainstream journalism and legacy media are other terms used in lieu of the term “traditional news.”

Spherical (360-degree) news

Spherical news uses 360 video that allows viewers to look around in every direction. Also referred to as immersive news or journalistic virtual reality, news in 360 degrees is a relatively new form of digital storytelling. User interaction with the work is limited but its proponents claim that 360 video, the foundation for all non-computer generated virtual reality content, is a “required building block to a truly immersive virtual reality experience” (Cave, 2016, paragraph 14).

Virtual reality

Virtual reality is typically portrayed as a medium and its definition is often linked closely to the hardware and software associated with it – i.e. computer, headset, headphones and motion-seeking gloves. The researcher Philip Brey, for example, defines virtual reality as a “three-dimensional interactive computer-generated environment that incorporates a first-person perspective” (Brey, 1999 as cited in Brey, 2008, p. 362). Other scholars, however, argue that virtual reality is much more than “just a collection of machines” (Steuer, 2010, p. 33). Jonathan Steuer, who suggests that virtual reality be defined in terms of human experience, is among them.

Presence

Simply stated, presence is the sense of being in the environment. The term refers to an individual’s subjective or psychological response to a virtual work. It also is used to describe the mediated experience of a physical environment (International Society for Presence Research, 2000, paragraph 2; Steuer, 2010, p. 36).

Immersion

In journalism, immersion refers to the desire to bring audiences as close to the action as possible by injecting them into the story. This is in line with the spirit of the definition proffered in Brey (2008), which defines immersion as “the sensation of being present in an environment, rather than just observing from the outside” (p. 362). In the field of virtual reality, however, the term “immersion” is often used when referring to the technological component of the virtual experience. This includes, but is not limited to, descriptions of the extent to which the computer displays, software, graphics and headsets can deliver an inclusive and vivid illusion of being in the virtual world.

1.4 Development of this master's thesis

The introduction provided in Chapter 1 sets the stage for this research. The focus of this study, the research question posed and the way in which empirical data will be obtained are briefly presented in this section. The key terms used throughout this dissertation also are defined. Chapter 2 contextualizes the research question posed. The concepts of old and new media will be examined and an overview of the conditions leading to the mainstream media's use of 360 technology in the delivery of news will be provided. The theoretical background of this project is put forth in Chapter 3. To be presented are key concepts, such as audience research, engagement and virtual reality in news, that this researcher believes are most relevant to the research question posed.

The methodology used to gather – and analyze – the empirical data will be presented in Chapter 4. Furthermore, an explanation of the choices made and the decisions taken during the research process will be proffered. Chapter 5 puts forth a detailed description of the data obtained from the interviews conducted and the documents examined. The information will be presented in three mini-reports. Each report first will present contextual or background information. This will be followed by a description of the empirical data obtained. A summary of the data compiled and the analysis conducted will be provided at the end of each mini-report. The findings of this research will be discussed in Chapter 6. A summation follows in Chapter 7.

2. BACKGROUND

The concepts needed to provide context to this work and to the research questions posed will be presented in this chapter. First, the terms “old” and “new media” will be examined. Then, an overview of today’s news consumer, as well as a brief examination of the changes in the way in which people access news, will be provided. Lastly, the concept of “immersive journalism,” one of the ways in which the mainstream media is responding to the changes in the media environment, will be defined.

2.1 Old (traditional) media

The term “old media” is associated with mass communication and the mass media. In the area of journalism, the term “mass media” is used when referring to the traditional or established outlets of news such as newspapers, magazines, radio and television. Mainstream journalism or legacy media are other terms used in lieu of mass media, which as the terminology suggests, are communication technologies designed to “reach out to the *many*” (McQuail, 2005, p. 55, emphasis in original). A news broadcast is an example of a mass medium. The material is transmitted to a large and anonymous audience at the same time. The content is fairly homogenous and the flow of information is generally one directional – i.e. from the communicators of news to a widespread audience. Author Don Tapscott addresses this unidirectional relationship in his book *grown up digital: how the net generation is changing your world*. He writes:

When my generation, the (baby) boomers, watched TV as teenagers, we just watched, about 22.4 hours a week; we didn’t talk back. When we read newspapers or listened to top 40 hits on the radio, we were mostly passive consumers. It was the great, distant powers-that be in the news and entertainment industry (who) decided what news was fit to print, what songs were worth hearing, and what movies would be in the movie theaters – not us. (Tapscott, 2009, pp. 41-42)

McQuail, however, contends that there are grounds to believe that the mass media has changed from “its early twentieth-century days of one-way, one-directional and undifferentiated flow to an undifferentiated mass” (McQuail, 2005, p. 136). He notes that changes in the media landscape have uprooted the traditional relationship between the producers and the consumers of news, prompting the industry to reevaluate its approach to the audience. It also has had to rethink its definition of the term “mass.” As media scholars Marita Sturken and Lisa Cartwright state:

Whereas previously mass media were produced and distributed under the auspices of corporations and the delivery of these messages to the masses was regarded as a major source of corporate and/or state power in any society with a strong mass media system, since the 1980s consumers have increasingly been recognized by media producers as occupying smaller, niche audiences that must be addressed according to their specific tastes, interests, and language groups. (Sturken & Cartwright, 2009, p. 226)

Therefore, while it is true that the producers of news are making a concerted effort to reach out and increase consumer engagement – i.e. radio call-ins, texting, encouraging the viewer or reader to post comments online – one would be hard pressed to describe the relationship between the media and the public it serves as equal. Consumers still have limited input on the final product. It is the news producers, on the basis of perceived experience and expertise, who decide which topics or issues to cover. As media researchers Wiebke Loosen and Jan-Hinrik Schmidt note, “other journalists (colleagues and superiors) and the coverage of opinion leading media are the most influential references when it comes to deciding what counts as news” (Loosen & Schmidt, 2012, p. 869). A number of media scholars, Mark Deuze among them, have criticized this “in-group orientation,” noting that such an attitude furthers the belief that the press is operating in a bubble. As Deuze puts it:

Journalism has somehow succeeded in taking its traditional public service role perception extremely seriously, while at the same time, and largely because of this, it has established a position for itself in contemporary society that seems almost completely out of touch with the lived reality of its constituencies. (Deuze, 2008, p. 857 as quoted in Loosen & Schmidt, 2012, p. 869)

Consumer dissatisfaction with the mainstream media is taking its toll. While the older generation prefer to source their news from traditional news outlets such as television, newspapers and radio, the young do not (Gottfried, Mitchell, Barthel, & Shearer, 2016, p. 4; Lee-Wright, 2008, pp. 251-252). Media analysts Stephen Harrington and Brian McNair write that there is a sense among young adults that the news provided by the mainstream press is passé and of no particular use in their daily lives (Harrington & McNair, 2012, p. 49). Journalist Jon Katz hammers this message home in *Rock, Rap and Movies Bring you the News*, noting that the lyrics of musicians like Bruce Springsteen and Axl Rose and rapper Ice Cube were more likely to touch upon the issues affecting ordinary Americans than the stories found on the front pages of newspapers or in evening newscasts (Katz, 1992).

2.2 New media

The expression “new media” is a catchall term used when referring to electrical and digital media such as the Internet, the Web, cellular phones and wireless communication devices. Spherical (360-degree) works, which is being examined in this dissertation, also falls into the

category of new media, a term that has been in use since the 1960s but which scholars still find difficult to pin down. Lev Manovich, who defines new media as “the cultural objects which use digital computer technology for distribution and circulation,” freely admits that this definition is far from ideal (as quoted in Ott & Mack, 2013, p. 7).

The first problem with Manovich’s definition is that it requires constant revision, especially as computing technology becomes a more common mode of distribution (Ott & Mack, 2013, pp. 7-8). The second relates to the diverse nature of the category. Digital television, film and photography as well as e-books are considered to be new media as are the Internet, websites, online computer games and smartphones. As highlighted in both McQuail (2005) and Ott and Mack (2013), the broad nature of the new media category makes it difficult to identify a set of fixed characteristics shared by these varying formats of communication. Furthermore, the category’s ever-expanding nature also raises the question of whether new media will eventually come to include all media and thus become a meaningless category (Ott & Mack, 2013, p. 8). Other media scholars raise the same point. The scholar Rudolf Stöber, for instance, has noted that old media was, at one time, new and that every new medium will, at some point, become old (Stöber, 2004, p. 484).

For McQuail, however, new media is “new” because it enhances or improves on old media technology. In McQuail (2005), he proffers a list – generated from the consumer’s perspective – of seven features common to all new media. Interactivity – i.e. how well the medium responds to the user’s input – heads the list. This is followed by social presence (as experienced by the user), media richness, autonomy, playfulness, privacy and personalization (McQuail, 2005, p. 143). Ott and Mack (2013) provide a slightly different list. In their view, the defining characteristics of new media are: digitality; variability (ability to alter information and flexibility of user navigation); interactivity; connectivity and virtuality (Ott & Mack, 2013, pp. 325-327). Common to both lists is the notion of an active audience – i.e. consumers who would like to have greater control over their media experiences. As Tapscott explains:

The print media and the TV network are hierarchical organizations that reflect the values of their owners. New media, on the other hand, give control to all users. The distinction between bottom-up and top-down organizational structure is at the heart of the new generation. (Tapscott, 2009, p. 21)

2.3 The news consumer

In the old order of news, people had to “adapt their behavior to fit the rhythms of the news media” (Kovach & Rosenstiel, 2014, p. 216). In the United States, for example, news was distributed at set times in the day – i.e. in the morning over breakfast, early evening just before the evening meal and late at night (Cummings & Gottshall, 2014, p. 615). This meant that one would have to be home to watch the evening newscast or make sure to read the morning paper if one wanted to be “current with the news others had seen” (Kovach & Rosenstiel, 2014, p. 216). No longer.

The launch of the 24-hour news service CNN (Cable News Network) in 1980 made it possible for people to access the latest news any time, night or day. It also redefined the way in which people consumed news. As media researchers Kevin Cummings and Cynthia Gottshall wrote, the immediacy and intimacy of CNN’s coverage “amplified the audience’s desire to have instantaneous access” (Cummings & Gottshall, 2014, p. 615). Furthermore, the 24-hour news cycle meant that the public no longer had to wait for the evening news or for the latest edition of the day’s paper to get their news.

The advent of the computer, the Internet and other digital technologies made it even quicker – and easier – to access news. The new global media environment created following the introduction of satellite communication and the harnessing of the computer meant that, at the touch of a button, individuals could access news anywhere and at any time (Cummings & Gottshall, 2014, p. 615). For instance, consumers could browse through the online editions of international publications like the *Guardian* or the *Independent* to learn more about the issues concerning residents of the UK or log onto *Aftenposten*’s website to stay abreast of events taking place in Norway. In the words of media scholar John V. Pavlik, in an age of ubiquitous information, “news junkies have never had it so good” (Pavlik, 1999, p. 54).

2.3.1 Changes in the way consumers access news

Although news consumers have not abandoned traditional media, research indicates that an increasing number of consumers are turning to other media platforms for news. The Internet is one. Social media is another. The Pew Research Center’s 2016 assessment of the state of the US news industry found that 38 percent of all Americans prefer to get their news digitally, either through websites, news applications or social networking sites (Mitchell et al., 2016, p. 45). The same is seen internationally where studies are finding patterns of news use in which people are either combining news from digital and non-digital platforms or are

neglecting traditional news media as a whole (Swart, Peters, & Broersma, 2017, p. 10).

Young adults, in particular, expressed the least interest in sourcing their news from newspapers and other traditional outlets of news (Gottfried et al., 2016, p. 19). This is due in part to their growing disenchantment with the mainstream media and in part to the fact that the young are not willing to wait. As media magnate Rupert Murdoch stated in a speech he delivered to members of the American Society of Newspaper Editors in 2005:

What is happening is, in short, a revolution in the way young people are accessing news. They don't want to rely on the morning paper for their up-to-date information. They don't want to rely on a God-like figure from above to tell them what's important. And to carry the religion analogy a bit further, they certainly don't want news presented as gospel.

Instead, they want their news on demand, when it works for them. They want control over their media, instead of being controlled by it. They want to question, to probe, to offer a different angle. (Murdoch, 2005, paragraphs 16 and 17)

2.3.1.1 The Internet as a source of news

According to media researcher Jim Hall, people read the newspapers or watch television to get an overview of the day's events. However, when they want to find out more about the things that interest them, they go online. Hall attributes this to a number of reasons. First, the Internet allows consumers "to find information that is unavailable elsewhere" (Hall, 2001, p. 26). Second, the Internet is convenient, especially as in many cases, people, either at home or at work, already have access to the world wide web. Third, the Internet allows people "to search for news on a specific subject and filter out the full view" (Hall, 2001, p. 26).

The Internet's growing importance as a disseminator of news is reflected in the findings of the *2016 Modern News Consumer* report issued by the Pew Research Center. The report, which examines the traits that define the modern news consumer, found that 81 percent of Americans regularly get news from at least one Internet or digital source (Gottfried et al., 2016, p. 3). This, however, does not mean that Americans are fully reliant on the world wide web for news. Television, at 57 percent, still is the most widely used news platform, with radio and print coming in third and fourth respectively (Gottfried et al., 2016, p. 4). Digital currently lies in second place at 38 percent (ibid). However, as the statistics indicate, younger adults are far more interested in obtaining their news from digital platforms than from television so it may not be long before the gap between the two is closed.

The mainstream media has admitted that it had been slow to adapt to the digital revolution

and has acknowledged its failure to recognize the Internet's potential to reach "new audiences in new ways with new forms of content" (Kovach & Rosenstiel, 2014, pp. 5-6). As journalist Melissa Bell writes in her critique of the news industry: "For too long, we used outmoded approaches built for the technologies of print and television in a wholly new medium, the Internet" (Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2017, p. 29). The media is determined not to make this same mistake with immersive technologies like 360-degree video. In the words of Paul Cheung with the Associated Press:

This is an opportunity for the news industry to stay current and ahead of the curve. I feel like the news industry is having a role in shaping the outcome of [VR and 360], which is vital because that means in the early stages we are thinking not only about how to tell the story but what will the business model look like. (Watson, 2017, p. 10)

2.3.1.2 Getting news from social media

Social media platforms have become more than just a place where one can connect with others. It also has become a place where one can access – and share – current events. The Reuters' *Digital Report 2017*, which looks at how news is being consumed in 36 countries, has found that social media has become a part of people's everyday media mix. In the US, for example, more than half of those surveyed (51 percent) get their news from social media (Newman et al., 2017, p. 10). However, as the writers of the report make clear, social media users in the US also watch television (67 percent) and visit mainstream websites or news applications (66 percent) (ibid). Furthermore, the authors note, it is the young, those aged 18-24, rather than their elder counterparts, who are more likely to use social media and digital media as their main news source (ibid).

Interestingly enough, much of the stories found on the newsfeeds of those who rely on social media for their news are generated by traditional news outlets (Newman et al., 2017, p. 10). This lends support to Kovach and Rosenstiel (2014)'s claim that people are not abandoning news. In fact, if Vineet Kaul is to be believed, "there has never been so much of an appetite for information" (Kaul, 2012, p. 70). What is clear, however, is that the public is turning away from the "traditional forms of media in favor of new ones that are more convenient" (Kovach & Rosenstiel, 2014, p. 5). Social media platforms are capitalizing on this by introducing new products and features. Within the past year, YouTube, Facebook and Twitter have expanded their services to include 360-degree video and legacy platforms, the *New York Times*, Gannett, the BBC, CNN and *Time* magazine among them, are taking

advantage of this service to post a variety of 360 works that can be viewed on one's mobile phone, computer or through a virtual reality headset.

2.3.1.3 Using the smartphone to access news

Today's consumers use their mobile phones – iPhone or Android – for just about everything, whether it be to ring or text a friend, listen to music, surf the Net or watch a movie. Society's reliance on mobile technology is highlighted in the Reuters *Digital News Project 2016* report, which notes that the smartphone has become “the primary access point to digital and the remote control to life itself” (Newman, 2016, p. 9). Syrian refugees, for instance, used their smartphones to document their flight from their homeland, stay in touch with family and plan their move across Europe (ibid). Now, with mobile websites and applications, or “apps” as they are commonly known, the mobile has become the medium that many use to keep up with the events of the day.

Data contained in the *Digital Report 2017*, which is issued by the Reuters Institute for the Study of Journalism, show that, in developed markets, people tend to use their mobiles, specifically the smartphone, to access news online. In the US, for example, 55 percent of those surveyed reach for their smartphones when they want to find out what is happening around them (Newman et al., 2017, p. 16). In the UK, it is 49 percent and in Norway, it is 62 percent (ibid, p. 16; p. 82). A similar trend is seen in developing markets. As the researcher David Cameron notes, mobile phones, once a technology for the privileged few, has gone mainstream so much so that they are “increasingly being seen as a means of bridging the ‘digital divide’ in developing nations” (Cameron, 2011, p. 69). With mobiles, those living in rural areas are afforded the same access to news and information as their counterparts in the city.

In more developed areas, the mobile has become a taken-for-granted part of everyday life. Just about everyone has one. It is the last thing one puts aside in the evening and the first thing one picks up in the morning. Martin White, a consultant in intranet and information management strategy and implementation, writes that: “If our laptop or email stopped working for a couple of hours we might feel frustrated but would still be able to cope. Not having access to our mobile phones even for a few minutes and we feel that we have lost contact with the civilized world” (White, 2010, p. 243).

The ability to view video over one's mobile or smartphone is a large part of its appeal and with the online video revolution beginning to hit its stride, media organizations have begun to focus more on video. Aided in part by "faster and more reliable connectivity" and in part by "an explosion of new content," video has accounted for nearly half of all mobile data traffic in 2015 (Newman, 2016, p. 15). Moreover, it is anticipated that by 2021, video will account for about 70 percent of all mobile data traffic (ibid). Media organizations are preparing accordingly. The smartphone, with its ability to stream high-definition video, has become the preferred medium to use when watching videos and media organizations like the *New York Times* are taking advantage of smartphone technology to provide 360-degree news content. As Jenna Pirog of the *Times* points out:

The timing is ripe for widespread engagement. The technology is in the most consumer-friendly place that it's been – in the past 40 years that virtual reality has been around – because of the smartphone in your pocket. Every single person in this room probably has a little movie screen that they carry around with them at all times. (Holdner, August 24, 2016)

2.4 Virtual reality (immersive) journalism

Immersive storytelling. Immersive journalism. Journalistic virtual reality. The terms may differ but they allude to the same thing. All refer to works that use spherical video and other immersive technology to tell a story. As Gurman Bhatia states in his article for the Poynter Institute: "virtual reality in news can be a lot of things – video or cinematic experiences, 3D modeling, interactive graphics and something VR works with best – gaming environments and simulated computer-generated imagery" (Bhatia, 2015, paragraph 4). What binds all these works together is the use of digital technology that allows people to experience – and sometimes interact with – the scene in 360 (de la Peña, 2015).

Immersion – the desire to inject the audience into the story and bring them as close to the action as possible – has always been the goal of journalism (de la Peña et al., 2010, p. 291; Koski, 2015, paragraph 5). New Journalism icons like Hunter S. Thompson, Tom Wolfe, Joan Didion and George Plimpton practiced "their own form of low-tech immersive journalism by inserting themselves into their stories in imaginative ways" (Koski, 2015, paragraph 5). Plimpton, for example, joined the Detroit Lions American football team in 1963 to give readers an inside view of life as a professional football player (de la Peña et al., 2010, p. 291; Severo, 2003, paragraph 6). Today's reporters are no different.

Journalists Christiane Amanpour (CNN), Wes Allison (*St. Petersburg Times*) and Adrian van Klaveren (BBC) are among those who embedded themselves with the military to bring

“live” coverage from the front lines in Kuwait, Iraq, Afghanistan and Syria. However, where Amanpour and her colleagues bring the news to the people, immersive storytelling purportedly brings people to the news. According to a 2016 report issued by the Knight Foundation, virtual reality technologies like 360-degree video would allow journalists to produce stories that will “create a deeper connection between subject and viewer” and give “people the sense that they are being brought to places where they otherwise would not be able to go” (Doyle et al., 2016, p. 5). “The Displaced” by the *New York Times*, for instance, takes advantage of 360 technology to bring the viewer to a Ukraine village destroyed by war, a swamp in the South Sudan and a Syrian refugee camp in southern Lebanon.

The “Godmother of Virtual Reality”

Journalist and documentary filmmaker Nonny de la Peña began exploring the potential of immersive journalism in 2010. After having watched a virtual work created at a research laboratory in Spain, de la Peña was so “blown away by the immersiveness of the experience” that she began to wonder: “Why should anyone just sit in the audience when they can be in the middle of the story?” (Online News Association, 2013, paragraph 14). For de la Peña, it was obvious to that “three-dimensional technology should be considered for journalism” (ibid). Following her return to the US, de la Peña began to lay the foundation for what would come to be referred to as immersive or virtual reality storytelling.

Her debut film, “Hunger in Los Angeles,” was well received by the viewing public and captured the attention of her peers. It was not long before many in the mainstream media, Gannett Company and the *New York Times* among them, elected to follow in her footsteps. Gannett released its first immersive work in September 2014, the *New York Times* in November 2015. The *Times*’ decision to embrace immersive storytelling was seen to be a “watershed moment for virtual reality storytelling” (Kaye, 2015, paragraph 15). However, unlike the works produced by de la Peña or the *Des Moines Register*, the *New York Times* opted to use spherical (360-degree) video to tell the story of 11-year-old Oleg Teryokhin of the Ukraine, nine-year-old Chuol of South Sudan and 12-year-old Hana Abdullah of Syria, three children forced to leave their homeland because of war.

It also released the news documentary via the *New York Times*’ virtual reality app, which allowed consumers to choose how they wanted to experience the work. Viewers could watch it on their mobile phone with or without a virtual reality headset. They also could watch the work on an iPad or a computer. According to Jake Silverstein, the main driver behind the

New York Times' adoption of 360-degree technology, this move ensured that "The Displaced" would receive "the broadest distribution while alienating as few potential viewers as possible" (Walker, 2015, paragraph 8). Furthermore, Silverstein explained: "Although virtual reality is best experienced through headgear, the app also accommodates those who don't have it; a smartphone alone serves as a moveable viewer into the story" (ibid).

Lowering the barrier to entry

Advances in technology have brought down the costs of producing spherical content, making it viable for media organizations to experiment with 360-degree storytelling. When de la Peña began producing immersive content five years ago, it took time, effort and money to produce 360-degree films Watson (2017, p. 16). Today, with camera equipment like Samsung's Gear 360 and 360 Fly, it costs no more to produce a 360-degree virtual reality work than it does to produce a standard video. This has resulted in the development of journalistic virtual reality along two tracks. On one end are the news providers who are focused on creating short 360-degree films that can be viewed on web browsers and, if desired, on platforms like Google Cardboard (Baumgartner, 2016, p. 7). Among them are media outlets like the German tabloid, *Bild*, the *Guardian* newspaper in the UK, EuroNews and *Teknisk Ukeblad*, all of whom produce 360 works that can be viewed on a mobile, on their individual websites or on social media platforms like Facebook and YouTube. As Suzanne Kolb of Discovery Digital Networks notes:

Making content available via Facebook and YouTube – using a mouse cursor or the navigation buttons, rather than a VR headset, to look around in different directions – also exposes it to a 'critical mass' of viewers. It provides a nice entry point for people. Not everybody is going to be running around trying to find a (VR) headset. (Baumgartner, 2016, p. 7)

On the other end are journalists like de la Peña, who are focused on developing higher quality, higher-end virtual content for headsets. These productions are generally more expensive to produce, require more technical skill and knowledge and a willingness to spend more on equipment (Baumgartner, 2016, p. 7). The end product, however, is news content that is gripping and thought-provoking. Organizations like the *New York Times* and Fox Sports, which produce both short 360-degree news videos as well as longer more immersive works, fall into both camps.

However, as fractured as today's media landscape is, one cannot help but wonder whether there is an appetite for 360-degree news and whether this new format will re-engage the consumers in news. Thus, the decision to pose the following research question: In what way do consumers experience spherical (360-degree) news? By speaking directly with the consumers, this researcher hopes to obtain the information needed to conceptualize their perspective of 360 works. Also to be examined is whether it makes a difference if a virtual reality headset is used to view the 360 work and whether it is appropriate to use 360 technology in the delivery of news.

2.5 Summary

Gone are the set patterns of consuming news. The digitalization of news has resulted in a public that expects to get their news when they want it and where they want it (Tapscott, 2009, p. 44). Moreover, as noted in the discussion above, increased discontent with legacy media has led consumers to bypass traditional channels of news. Many are going online, electing to get their news from social media platforms like Facebook and Twitter or from online websites and/or news applications. Traditional media, however, is fighting back. They are turning to new media technology like 360-degree video to produce content that they hope will re-engage the consumers in news. The question now is whether consumers are aware of or have an appetite for news in 360 degrees. These are among the questions that this work seeks to answer. The theories that will be needed to answer the research questions posed in section 1.1 are presented in Chapter 3.

3. THEORY

This chapter puts forth the theoretical framework of this dissertation. To be presented are the concepts that this researcher believes are the most relevant to the primary and secondary research questions posed in section 1.1. The theories examined below will be applied when discussing the findings of the qualitative research conducted. First to be presented is a short overview over the use of audience research in journalistic studies. This will be followed by a discussion about reception analysis, a research tradition in which consumers and their thoughts and experiences play a central role. Medium theory also will be defined as will concepts such as engagement, transparency and virtual reality in news.

3.1 Audience research

The media audience has been the study and focus of discussions since the beginning of the 20th century (Ruddock, 2001, p. 6). The reasons for the studies conducted, the approaches taken and the conclusions drawn may have differed, but the goal has always been the same: to better understand what people do with media in their daily lives. This is not to say that early media researchers ignored the possibility of responsible audience activity. They did not. What they failed to do, however, was to give audiences sufficient credit for their selection, interpretation and use of media content (Baran, Davis, & Striby, 2014, p. 199).

As noted in McQuail (2005), research into the media-consumer relationship can be divided into two categories: media-centered and audience centered (p. 402). Media-centered research is focused on garnering information that the industry can use to increase the appeal or take up of its product. Audience-centered research, on the other hand, tends to be scholarly works that represent the voice of the consumers or speak on their behalf. In *Media Audiences: Television, Meaning and Emotion*, Kristyn Gorton depicts this relationship as an ongoing tug-of-war. She writes:

The history of audience research is characterized by a division between powerful media and powerful viewers: that is, between understanding the media as capable of influencing and therefore affecting viewers and understanding viewers as capable of influencing and therefore affecting the media. (Gorton, 2009, p. 12)

A large part of the research generated belongs to the media “control” end of the spectrum but this is slowly changing. McQuail explains that “accounts of audience research have increasingly tended to emphasize the ‘rediscovery’ of people, and the notion of an active and obstinate audience in the face of attempted manipulation” (McQuail, 2005, p. 402). In

journalism studies, for example, a new perspective of the audience is gradually emerging – one that considers the consumer to be an active player in the production and dissemination of information (Loosen & Schmidt, 2012, p. 871). Past research tended to view consumers as either passive recipients of information or shaped by the media.

Klaus Bruhn Jensen and Karl Erik Rosengren's examination of the studies conducted in audience research found that the works fall into one of five categories. They are: effects research; uses and gratifications research; literary criticism; cultural studies and reception analysis. Figure 1 outlines the similarities and differences between the different research traditions as delineated by Jensen and Rosengren. Of particular interest to this researcher is the centrality of the audience to the work and the importance placed on hearing directly from the consumers. As indicated in Figure 1, the audience is paramount in three of the five approaches: effects research, uses and gratifications research and reception analysis. Of the three, however, only those involved with reception analysis, the audience research arm of cultural studies, make it a point to seek out the consumers, to speak with them about their experiences and to listen to what they have to say.

MAIN CHARACTERISTICS OF FIVE AUDIENCE RESEARCH TRADITIONS

	<i>Effects Research</i>	<i>Uses and Gratifications</i>	<i>Research Tradition Literary Criticism</i>	<i>Cultural Studies</i>	<i>Reception Analysis</i>
Type of Theory	Semi-formalized	Semi-formalized	Verbal	Verbal	Verbal
Focus of Theory:					
Message	Less central	Less central	Central	Central	Central
Audience	Central	Central	Peripheral	Less central	Central
Social System	Less central	Central	Less central	Less central	Less central
Type of Methodology	Social science	Social science	Humanist	Humanist	Mainly Humanist
Approaches					
Experimental	Often	Seldom	Seldom	Almost never	Almost never
Survey	Often	As a rule	Seldom	Seldom	Seldom
In-depth Interview	Sometimes	Sometimes	Seldom	Often	As a rule
Message Analysis	Seldom	Seldom	As a rule	As a rule	As a rule
Techniques of Analysis					
Statistical	As a rule	As a rule	Seldom	Seldom	Seldom
Interpretive	Seldom	Sometimes	As a rule	As a rule	As a rule
Modes of Presentation					
Numerical, Tabular	As a rule	As a rule	Almost never	Seldom	Sometimes
Verbal, Analytical	As a rule	As a rule	Sometimes	Often	As a rule
Verbal, Narrative	Sometimes	Sometimes	As a rule	As a rule	As a rule

Figure 1: This table outlines the theoretical and methodological characteristics of the five main traditions in audience research as delineated by Klaus Bruhn Jensen and Karl Erik Rosengren (Jensen & Rosengren, 2005, p. 65).

3.1.1 Reception analysis

The reception theory in media studies is a counter to the traditional, social scientific approaches to the audience. The early models of audience research, for example, sees the

audience as “mindless vessels ready to receive media messages” (Ott & Mack, 2013, p. 247). The reception model, on the other hand, views mass communication from the position of “many different receivers who do not perceive or understand the message ‘as sent’ or ‘as expressed’” (McQuail, 2005, p. 72). In doing so, it acknowledges the power of the audience to actively give meaning to messages. As noted in McQuail (2005), media messages are always open. They have multiple meanings and are interpreted according to the context and the culture of the receivers (McQuail, 2005, p. 73).

What reception scholars seek to understand are the personal meanings that individuals make of media messages. This is done in one of two ways. The first is by interviewing the members of the audience. The second is by observing the audience in the environments where people read, watch or listen to news. This research study places weight on the former, especially in light of media researcher Nick Couldry’s belief that “large-scale patterns can be found in empirical evidence of people’s reflections on their encounters with the media process” (Couldry, 2001, p. 171 as cited in Wilson, 2009, p. 47).

Stuart Hall is one of the forerunners of reception analysis, which is strongly linked to the reception model. Hall’s encoding and decoding theory emphasizes the stages of transformation through which any media message passes on the way from its origins to its reception and interpretation (McQuail, 2005, p. 73). Hall’s premise is that the message produced by the producers of news (encoding) may be interpreted (decoded) differently by different individuals. This is because outside factors such as one’s cultural background, age, race, class and gender may affect how one experiences and interprets media. Therefore, while media owners may have the economic power to craft media texts with particular messages, ultimately, it is the members of the audience who determine what a text signifies to them and how it actually functions in their own lives (Ott & Mack, 2013, p. 247). They can decode or read the message as intended or they can add their own perspectives – i.e. read between the lines or even reverse the intended direction of the message.

Hall’s encoding/decoding model was seen to provide a valuable, if slightly restricted, guide to analyzing audiences. Television scholar John Fiske’s theory of polysemy, which refers to the “relative openness of media text to multiple interpretations,” re-works Hall’s encoding/decoding model (Ott & Mack, 2013, p. 251). For Fiske, a strong proponent of audience power, the ambiguity of polysemic texts enables audiences to interpret (decode) the text in different ways and therefore ensures that the receivers of information are not

dominated by the messages they receive. As Ott and Mack note, the value of polysemy to reception analysis is two-fold. First, it “recognizes two levels of potential meaning in any given text” and second, it allows scholars “to understand the “place” in the text where audiences engage their personal experiences and attitudes” (Ott & Mack, 2013, p. 252).

The polysemy theory, however, is not without its critics. Celeste Condit, for example, criticizes Fiske for failing to consider the “disproportionate amount of internal work required to generate personal meaning against the dominant meanings in the text” (Ott & Mack, 2013, p. 253). Therefore, she suggests that polyvalence, not polysemy, is by far the more applicable concept. Polyvalence ensues when audiences share the same understanding of the actual content of media texts but disagree on the merit or the value of the information and therefore produce different interpretations of the texts (Ott & Mack, 2013, p. 253).

Although not directly addressing media use, literary critic Stanley Fish’s work on textual interpretation also is applicable to media studies. Unlike Hall and Fiske, who recognize some degree of authorial power in texts, Fish places the creation of meaning squarely on the shoulders of the consumers (Ott & Mack, 2013, p. 255). Fish’s argument is that media texts are meaningless until the consumers or members of the audience begin to read or interpret them. It is the strategies people use to interpret text that, according to Fish, direct them to understand the words and images in a certain way (Ott & Mack, 2013, p. 255). It is at this point that the text takes on meaning.

Fish’s notion of interpretive communities is regarded to be particularly applicable to reception analysis. Interpretive communities are groups who, because they share similar social positions and experiences, interpret texts similarly. According to Ott and Mack, the interpretive communities paradigm collapses the distinction between the news producers and the audience because the focus no longer is on who or what creates meaning but on how the communities one belongs to influences the way in which one constructs and interprets media texts (Ott & Mack, 2013, p. 256). As Fish points out:

Readers and audiences who belong to the same communities as the author/producer will pick up on these projections as directions for understanding the text; those outside his/her communities will not. Meaning is not inherent in producers, texts, or audiences, but only in the interpretive communities that constitute each. (ibid)

3.1.2 Experience

In basic terms, an experience is the end result of a person's engagement with the world. According to Norman Fischer, these interactions take place in time; they are essentially subjective; and they can be confirmed by others (Fischer, 2015, p. 309). Take Bruce Springsteen's "The River Tour 2016" for example. This researcher experienced the concert held at Frogner Park in Oslo on 28 July 2016. She was there. She watched the three-hour-long performance as did about 37,000 others – all of whom can corroborate the experience (Lauritzen, 2016, paragraph 1).

However, when used in connection with travel, tourism and adventure, the term "experience" generally refers to "one-off encounters of intense stimulation" (Lash, 2006, pp. 335-336). Think whizzing over the cliffs, waterfalls and trees when taking a zipline tour of west Maui in Hawaii. On the other hand, when speaking about having experience in the field, one often is referring to a more empirical experience. An experienced journalist, for instance, obtains his or her knowledge after having had repeated encounters with "a series of cases of a relatively similar type" (Lash, 2006, p. 336). As Lash makes clear, these types of experiences typically have more "to do with learning; with tradition; with practical knowledge" (ibid).

Experiences can be external or they can be internal. One's feelings, perceptions, thoughts, intentions and desires fall into the latter category (Fischer, 2015, p. 309). However, unlike a concert or a zipline tour, the internal workings of one's consciousness are more difficult to verify. This research, for example, looks to explore and conceptualize consumers' experiences of 360 news – i.e. their thoughts, feelings and perceptions of the work. The researcher Daniel M. Wenger, however, questions whether such a task is even possible. In his work, *The Illusion of Conscious Will*, Wenger suggests that we may not have had the experiences that we say we had. According to Wenger, "what we think of as experience is a nostalgic story about something now gone, that we did not notice while it was happening" (Fischer, 2015, p. 314). If this is true, then, as Wenger notes, there is reason to wonder if "the world as we actually live in it and the world as we describe it to ourselves are two different things" (ibid).

For researchers Hairong Li, Terry Daugherty and Frank Biocca, however, an experience is much more than a "passive reception of external sensations or a subjective mental interpretation of an event" (Li, Daugherty, & Biocca, 2001, p. 14). According to the three, an

experience is the product of “an ongoing transaction that gains in quality, intensity, meaning, and value” – a transaction that integrates the psychological with the emotional (Mathur, 1971, as cited in Li et al., 2001, p. 14). The three, whose works include the examination of consumers’ perceptions of the virtual experience in e-commerce, say that experiences can be divided into three categories: direct, indirect and virtual. A zipline tour, for instance, is an example of a direct experience, which, according to the three scholars, occurs when there is “unmediated interaction between the consumer and the product” (Li et al., 2001, p. 15). The encounter, they say, is physical and it is multi-sensory (ibid).

Virtual and indirect experiences, on the other hand, are generated from media and therefore are regarded as mediated experiences (Li et al., 2001, p. 15). The virtual experience, however, resembles direct experience in that it is interactive (ibid). For example, learning about the ongoing conflict in Syria from a newspaper article is an indirect experience. On the other hand, watching a 360-degree news documentary on the same issue is a virtual experience. As news producers have noted, the 360 medium, which is three-dimensional, puts the viewer at the heart of the action and allows audiences to experience the news firsthand (Gannett, 2015, p. 10; Holdner, August 24, 2016).

3.2 Medium theory

Medium theory is a research tradition that focuses on media’s effects on its users and on society. It is the basis for the field of study known as media ecology, which examines the symbiotic relationship between people and the media technologies that they use (Lum, 2014, p. 137). Historically, research in media studies tended to focus more on the message and on its form. The medium, or the way in which the message was delivered, was not deemed to be important. Medium theorists, on the other hand, claim that “the technology of communication *always* makes a world of difference” and therefore, it is as important to study the medium of communication as it is to study the content of media (Ott & Mack, 2013, p. 314).

This media-centered focus has led to accusations of medium theorists being deterministic, of establishing a “too strong link between communication technologies and the character of human thought and the structure of society” (Ott & Mack, 2013, p. 331). Ott and Mack disagree. They contend that medium theory does not claim that there is a direct causal relationship between communications technologies and social changes. “It simply insists that

the underlying technologies of our social environment are as consequential as its messages” (Ott & Mack, 2013, p. 331).

Medium theory has three central premises. The first is that each communication medium has a “relatively unique and fixed set of characteristics” (Ott & Mack, 2013, p. 314). The second is that these characteristics produce a particular type of environment and the third is that the “communication environment has consequences for human consciousness and social organization” (ibid). With this in mind, medium theorists focus on identifying the characteristics of a medium that sets it apart – psychologically and socially – from other media. Among the key players in medium theory are Harold A. Innis, founder of the Toronto School of thinking and the author of works such as *Empire and Communications*; Marshall McLuhan, Innis’ protégé who helped facilitate the genesis of the media ecology movement; and Walter Ong, a student of McLuhan who many believe is most responsible for bringing medium theory into the mainstream of academic study (Lum, 2014, p. 138; Ott & Mack, 2013, pp. 314-321). McLuhan’s *The Medium is the Message* is examined below.

3.2.1 Marshall McLuhan’s *The Medium is the Message*

The Medium is the Message addresses the effect of the medium on the individual and on society. According to McLuhan, a medium is an extension of our bodies or our senses from which a change emerges (1964/1994, p. 7). His argument is that technologies like the telescope, television and film enable us to see things in ways that our naked eyes cannot while the radio, audio recording technology and portable devices like the iPod allow consumers to experience sounds – natural or engineered – that our ears alone cannot provide (Lum, 2014, p. 142). McLuhan’s decision to link the technical with the senses or the physiological world underscores “the ‘essential’ correlation of the human and the technical” (Hansen, 2006, p. 299). This integration is part of the reason why McLuhan and other media theorists argue that “there is no such thing as a message without a medium or a message that is not affected in its potential meanings by the form of its medium” (Sturken & Cartwright, 2009, p. 229).

Therefore, the choice of medium, whether it be one’s voice, a letter, the newspaper, the television or the Internet, will affect the way in which the receiver perceives the information provided. This is because, even though the same words are communicated in each of these mediums, the pitch and tone of one’s voice or the way in which the information is presented in a letter or laid out in the newspaper will change the nature of the contents. The same

rational applies to the way in which information is delivered on television and its presentation and availability on the Internet. As S. Brent Plate writes in the “Introduction: The Mediation of Meaning or Re-mediating McLuhan”:

Meaning is enveloped, arriving like a letter in the post, stamped, addressed, and carried from one location to another sealed by sender, opened by receiver. Just as the letter will not be delivered without proper postage and adequate address, meaning never appears apart from its existence as a particular embodied form. Meaning does not exist apart from its mediation. (Plate, 2012, p. 156)

In as much as the medium “shapes and controls the scale and form of human association and action,” then it stands to reason that communication media can never be neutral or value free (McLuhan, 1964/1994, p. 9). According to Casey Man Kong Lum, the intrinsic characteristics or biases of every communication technology will define “the manner in which each communication medium is to be used to encode, store, disseminate, retrieve, and decode information, and they will correspondingly help determine the nature and outcome of human communication that the technology is used to facilitate” (Lum, 2014, p. 139). This is contrary to the instrumental concept of technology put forth by Aristotle, which claims that technology is neither good nor bad but a means to an end. General David Sarnoff is among those who subscribe to this philosophy. Technology, according to Sarnoff, has always been a convenient scapegoat for those looking to find fault with modern society. He insists, however, that “the products of modern science are not in themselves good or bad; it is the way they are used that determines their value” (McLuhan, 1964/1994, p. 11).

Arguments like these, McLuhan contends, ignore “the nature of the medium, of any and all media” (McLuhan, 1964/1994, p. 11). It is the equivalent of saying that television, mobile phones, firearms or nuclear weapons are in themselves neither good nor bad. It is the way they are used that determines their value. According to McLuhan, this conventional response to all media is the “numb stance of the technological idiot” (McLuhan, 1964/1994, p. 18). The request being made is clear. McLuhan is asking each of us to take a step back, to not be so blinded by the “content” of the medium that we fail to examine the unintended or unanticipated consequences of the device. As McLuhan notes, just as the snakes in Medusa’s head hypnotized the unwary, “it is only too typical that the ‘content’ of any medium blinds us to the character of the medium” (McLuhan, 1964/1994, p. 9).

This inability to distinguish between message and content rests in part on our willingness to be distracted by the medium’s content, which, according to McLuhan, is nothing more than

another medium. Speech, for example, is the content of writing and the written word is the content of print. The message of speech or print, however, is not what has been said or what has been written. The message, according to McLuhan, is the way in which media – i.e. the speech, letter or newspaper – affects people and alters their relationship with themselves or with others. In short, “the effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance” (McLuhan, 1964/1994, p. 18).

The airplane and the Internet, for example, are not just modes of transportation (people and cargo in the case of the former and information for the latter). Their value is that they allow us to bridge the boundaries of space, distance and time. Thus, the message – i.e. the effect of these technologies on ourselves and on society – is that they “have accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of work and leisure” (McLuhan, 1964/1994, p. 8). This “change of scale or pace or pattern” that technologies like the airplane or the Internet “introduces into human affairs” is what McLuhan is referring to when he says that the medium is the message (*ibid.*).

3.3 Journalism and the public

The public has high expectations of the media. Journalists are expected to keep people informed, expose corruption, give voice to the voiceless, draw attention to injustice, organize public opinion and explain complex issues (Anderson, Shirky, & Bell, 2014, p. 4; Kovach & Rosenstiel, 2014, pp. 27-28). Fulfilling this mandate is no easy task. The public want stories that are useful and entertaining, stories that engage them and that address the topics and issues that they believe are relevant to themselves and to those around them. They also want to be able to trust that the information provided is credible. As media researchers Bill Kovach and Tom Rosenstiel highlight in their discussions about *The Elements of Journalism*: “The task of those engaged in journalism – whether they are professionals who make a living at it or community members who find themselves trying to explain what it was like to survive a disaster – is to find a way to make the significant parts of each story interesting for the reader” (Kovach & Rosenstiel, 2014, p. 214). Although the pair were referring to the print media, their advice is equally applicable to all journalists.

3.3.1 Engagement and relevance

In the past, news producers would push content through, expecting that the public would pay attention (Ksiazek, Peer, & Lessard, 2016, p. 503). Media scholar Mark Deuze refers to this

as “the ‘we write you read’ dogma of modern journalism” (2003, p. 220 as quoted in Loosen & Schmidt, 2012, p. 879). While this may have worked in the past, today’s news producers operate in a highly competitive market, one in which the consumers of news have greater control over when, where and how they access media. The suggestion being made is that if legacy (traditional) news outlets are to connect – or reconnect – with the audience, then they must do more to pull people in. In other words, it needs to offer something “not only more useful, informative, compelling, and gratifying than their competition, but also more *engaging*” (Ksiazek et al., 2016, p. 503, emphasis in the original).

But what does this mean? As Jake Batsell learned when interviewing journalists for his book, *Engaged Journalism: Connecting with Digitally Empowered News Audiences*, the term “engagement” has no fixed definition. For some, engagement entails listening to the public, not just talking to them. For others, it is the sense that “people are doing something meaningful with our content after reading it, or seeing it, or hearing it” (Batsell, 2015, p. 35). Not even the academic community is able to agree on a definitive definition of this phenomenon, which encompasses a variety of user attention and involvement with media. However, as Ksiazek et al. point out, the common thread to all engagement research is the apparent link between engagement and “the involvement, real or perceived, of the user in either producing, consuming, or disseminating information” (Ksiazek et al., 2016, p. 504).

For instance, Ksiazek et al.’s study of online news videos links engagement with interactivity – i.e. user attention and involvement with media content and other media users (Ksiazek et al., 2016, p. 503). They note that the consumer’s reaction to media ranges from simply viewing the work to responding to comments posted on a video discussion thread. Rachel D. Mersey, Edward C. Malthouse and Bobby J. Calder’s study of readers’ experiences with news content, however, closely associates engagement with the consumer’s collective experiences of a media brand (Mersey, Malthouse, & Calder, 2012, p. 698). Joëlle Swart and her colleagues, on the other hand, link engagement with people’s ability to use the news to connect with those around them (Swart et al., 2017, p. 4).

As exemplified by the definitions presented above, engagement, which encompasses both psychological and behavioral experiences, can be a property of the user, the medium or both (Ksiazek et al., 2016, p. 504). Kovach and Rosenstiel contend that journalists can engage with the public by producing works that make the “significant interesting and relevant” (Kovach & Rosenstiel, 2014, p. 213). This does not mean dumbing down information. Nor

does it mean emphasizing light-hearted and sensational news. Kovach and Rosenstiel's proposal calls on journalists to use their skills and the tools at their disposal to tell a good story – to illuminate the subject in a way that people will want to read, listen or watch it. In other words, “for those trying to offer a full record of the day, it involves finding the right mix of the serious and the less serious that reflects what real life is like” (Kovach & Rosenstiel, 2014, p. 214).

Batsell, like Kovach and Rosenstiel, believes that engagement is part of journalism's commitment to the public it serves. In *Engaged Journalism: Connecting with Digitally Empowered News Audiences*, Batsell details five guiding features of engaged journalism, which if followed should increase the relevancy of news. They include interacting with audiences at every step, providing specialized and localized content and empowering audiences to satisfy their own curiosity (Batsell, 2015, p. 39). Key to all this is involvement, which Ksiazek and his colleagues note, is often expressed as interactivity, a “fundamental component of the broader phenomenon of engagement” (Ksiazek et al., 2016, p. 504).

Batsell argues that, at a time when consumers have infinite options for getting news, it behooves journalists to engage in an ongoing conversation with their audience. This dynamic interaction, Batsell insists, “will make their journalism more inclusive and relevant than ever” (Batsell, 2015, p. 15). Failure to do so, he says, will lead news consumers to look to other media outlets to fulfill their needs. Therefore, “if news providers hope to stay relevant, useful, and, perhaps most important, financially viable in an ever-connected world, they must embrace an interactive mind-set and constantly find new ways to effectively engage their audiences” (Batsell, 2015, p. 15).

3.3.2 Transparency

Trust, according to Kovach and Rosenstiel, is the essential product of journalism (Kovach & Rosenstiel, 2014, p. 83). The public must be confident that the media values its commitment to the consumers and that it will place their needs ahead of those expressed by advertisers and shareholders. Unfortunately, as research from organizations like Gallup and Edelman show, this is not the case. In the US, consumer confidence in the media, which has been on the decline since 2004, hit an all-time low in 2016. The 2016 Gallup poll found that more than half (68 percent) of all Americans do not believe what they see, read or hear (Swift, 2016, paragraph 1). The international picture is just as bleak, with data from the 2017

Edelman Trust Barometer report showing that trust in the media hit all-time lows in 17 countries, the UK, Ireland, Australia and Canada among them (Edelman, 2017, slide 12).

According to Kovach and Rosenstiel, journalists have only themselves to blame for this growing mistrust of the media. In their discussions about the need to place the citizens first, Kovach and Rosenstiel state that:

Journalists like to think of themselves as the people's surrogate, covering society's waterfront in the public interest. Increasingly, however, the public doesn't believe them. People see sensationalism and exploitation, and they sense that journalists are in it for a buck, or personal fame, or perhaps worse, a kind of perverse joy in unhappiness. (Kovach & Rosenstiel, 2014, p. 96)

The pair insist that, if journalists want to reestablish credibility with the public, they must reaffirm its allegiance to the citizenry and be more transparent in their work. For Kovach and Rosenstiel, transparency entails being honest about what the journalist knows and what he or she does not know (Kovach & Rosenstiel, 2014, p. 114). In the context of sourcing, for example, the spirit of transparency would require journalists to disclose pertinent information to avoid deception, to reduce the use of anonymous sources and to explain the reason for granting a person anonymity if an anonymous source is used. Transparency, Kovach and Rosenstiel contend, allows "the audience to judge the information, the process it was secured, and the motives and biases of the persons providing it" (Kovach & Rosenstiel, 2014, pp. 114-115).

Although transparency plays a central role in projects to reform journalism, research conducted by Edson Tandoc Jr. and Ryan Thomas indicate that journalists do not rank transparency high on their list of journalistic values (Tandoc Jr. & Thomas, 2017, p. 35). Further complicating the issue is a study by Jane Singer, which found that suspicion of transparency is more prevalent within traditional journalism, which views "self-presentation as an infringement on journalistic autonomy" (Singer, 2007, p. 87, as cited in Allen, 2008, p. 326). Moreover, the media's attempts at transparency have not always been successful and its members are often bemused at the comments received by those who do not agree with their decisions. As Byron Calame, a former public editor of the *New York Times*, stated in an interview with *The American Journalism Review*:

The exchange is not always open-minded and raises the question of whether transparency is ever going to have that great an effect if so many people have their minds made up on the left and right. That gives me pause about transparency, because

I've always believed that if you explain how you do your job, being careful to protect your sources, you will increase your credibility. (Smolkin, 2006, paragraph 29)

Therefore, while the changing media environment may be forcing a shift toward transparency, media scholars have noted that more information does not necessarily equate to increased transparency. In fact, exploratory research conducted by Michael Karlsson suggests that while journalists are going through the motions, they are not necessarily complying with the spirit of full disclosure. Karlsson's evaluation of transparency rituals in the US, UK and Sweden found that while journalists were amenable to using time stamps, posting links, sharing original documents and correcting reporting errors, they were reluctant to "demystify the newsgathering process or disclose the personal preferences of the reporter" (as cited in Tandoc Jr. & Thomas, 2017, p. 36). Muddying the waters further are media studies that show that there appears to be little correlation between transparency and increased public trust. A study conducted by Onora O'Neill, for example, calls attention to the fact that "citizens do not usually require people they trust to be transparent" (Allen, 2008, p. 325). O'Neill's work also makes clear that transparency and truth are not synonymous. As she points out, "people who seek to deceive can employ transparency" (ibid).

3.4 Virtual reality in news

Virtual reality is no longer the purview of the gaming community. The technology is being used in other areas including the military, art, business, education, sports and healthcare. Now, it is making its presence felt in news. Virtual reality technology emerged in the 1980s as part and parcel of a technological system that consisted of a head-mounted display (HMD) and a datasuit or a dataglove that was attached to a computer. These technologies simulated three-dimensional (3D) environments that were displayed in surround stereoscopic vision on the head-mounted display (Brey, 2008, p. 362). The user donned the dataglove or the datasuit to enter into, navigate around and interact with the simulated environment. It was this original technology, Brey wrote, "that has helped define what is often meant by "virtual reality": an immersive, interactive three-dimensional computer-generated environment in which interaction takes place over multiple sensory channels and includes tactile and positioning feedback" (Brey, 2008, p. 362).

Brey's description is similar to the technical definition of virtual reality provided by researchers Philippe Fuchs and Pascal Guitton. In their introduction to *Virtual Reality: Concepts and Technologies*, the two write:

Virtual reality is a scientific and technical domain that uses computer science and behavioral interfaces to simulate in a virtual world the behavior of 3D entities, which interact in real time with each other and with one or more users in pseudo-natural immersion via sensorimotor channels. (Fuchs, Moreau, & Guitton, 2011, p. 8)

As the definition above indicates, Fuchs and Guitton believe that there are four essential elements to virtual reality. They are: a virtual world; immersion or the sense of being a full part of the virtual world; sensory feedback and interactivity. However, as Brey (2008) points out, all four elements can – to a greater or lesser degree – be realized with a computer. This has resulted in the rise of both broad and narrow definitions of virtual reality.

The purists argue for the application of a narrow definition, one that would only regard “fully immersive and fully interactive virtual environments as VR” (Brey, 2008, p. 362). Fuchs and Guitton fall into this camp. As does Jason Lanier, who pioneered the first commercially available virtual reality headset and who is credited with coining and popularizing the phrase “virtual reality.” As Lanier stated in a 1989 interview with two representatives of *Whole Earth Review* magazine:

Virtual Reality is not a computer. We are speaking of a technology that uses computer clothing to synthesize shared reality. It recreates our relationship with the physical world in a new plane, no more, no less. It doesn't affect the subjective world; it doesn't have anything to do directly with what's going on inside your brain. It only has to do with what your sense organs perceive. ...

Before you enter the Virtual Reality, you'll see a pile of clothing that you have to put on in order to perceive a different world than the physical world. The clothing consists mostly of a pair of glasses and a pair of gloves. Exactly what clothing there will be, it's too early to say. There are a lot of different variations that are possible and it's really too early to predict which will be the most popular ones. A minimal kind of virtual reality outfit would have a pair of glasses and a glove. (Heilbrun & Stacks, 1989, p. 110)

As the narrative above shows, Lanier links the virtual experience with the technological hardware associated with virtual reality systems, making it clear that there cannot be one without the other. This narrow interpretation of virtual reality would exclude the use of non-intuitive computer graphics as well as physical models that cannot be modified in real time. It also would exclude non-interactive animation – works that may be immersive but are not very interactive or intuitive and do not require the use of special clothing.

The pragmatists, who advocate for a broader definition of virtual reality, counter that there are many virtual environments that could still be categorized as virtual reality even though they do not meet all of the specifications put forth by Lanier or researchers like Fuchs and Guitton. Spherical (360-degree) video, which will be discussed in this work, is one of them.

Computer games like *Doom* and *Half-Life*, which are played on a desktop with a keyboard and mouse, is another. Neither of these products are fully immersive nor do they have the kind of sensory feedback and interactivity found in fully immersive virtual reality systems. They do, however, provide “virtual worlds that are immersive to an extent and that are interactive and involve visual and auditory feedback” (Brey, 2008, p. 362).

Therefore, while pragmatists like Brey and Jonathan Steuer acknowledge that the purists’ conception of virtual reality should be the ultimate destination, they also recognize that most of what is currently marketed as virtual reality is not necessarily intuitive nor is it, as defined by the purists, interactive or immersive. It is for this reason that Brey argues for the implementation of a definition that encompasses the immersive and nonimmersive (screen-based) forms of virtual reality. His proposal? That virtual reality be defined as a “three-dimensional interactive computer-generated environment that incorporates a first-person perspective” (Brey, 1999 as cited in Brey, 2008, p. 362).

Steuer, on the other hand, suggests that the concept be characterized in terms of human experience, not technological hardware. His proposal is that virtual reality be defined as “a real or simulated environment in which a perceiver experiences telepresence” (Steuer, 2010, p. 37). Linking virtual reality to the concept of telepresence – i.e. the extent to which one feels present in a mediated environment – would shift the focus from the technology to the individual and his or her relationship with the mediated environment. This, according to Steuer, has a number of advantages. First, it would provide a conceptual framework against which new technology could be examined in relation to other media technologies (Steuer, 2010, p. 40). Second, it would shift the focus from the technological hardware to the perceptions of an individual and thereby shift the unit of analysis from the technology to the individual (ibid). Moreover, as Steuer’s definition is not technology focused, it would allow for “variation across technologies along a number of dimensions” (ibid).

Russell (1997), Yoon, Laffey, and Oh (2008) and Yoon, Choi, and Oh (2015) chose to apply a broad definition of virtual reality in their studies. In *Nonexpert Conceptions of Virtual Reality*, researcher Anne Russell defines virtual reality as “the multisensory environment that is created and experienced in the mind of a participant through the use of technology” (Russell, 1997, paragraph 9). Yoon et al. (2008) and Yoon et al. (2015), on the other hand, opted to define virtual reality as “any system that allows users to interact with virtual objects in a computer-generated 3D environment” (Yoon et al., 2015, p. 1; Yoon et al., 2008, pp.

288-289). When conducting their research, Yoon and his colleagues chose to evaluate a web-based virtual reality system that runs on standard PCs. The computers used had no special input or display but allowed for the monitored viewing of three-dimensional objects (Yoon et al., 2015, p. 2; Yoon et al., 2008, p. 289).

3.4.1 Spherical (360-degree) video as virtual reality

The *New York Times* has taken the lead in the use of spherical (360-degree) video in news. A year after the *Times* released its first spherical work in November 2015, it launched *The Daily 360*, a series of short films intended to be viewed on one's mobile. The *New York Times*' initiative renewed the industry's interest in immersive storytelling and the use of 360-degree video in news (Newman, 2016, p. 19). It was not long before other media organizations, the likes of CNN, the BBC, *Teknisk Ukeblad* and the Norwegian Red Cross, followed suit.

Spherical 360-degree is essentially a three-dimensional video. However, because 360 works make one feel as if one is inside the frame and not standing on the outside looking in, the media has taken to referring to 360 video as virtual reality (Ulla, 2015, paragraph 1; Teknisk Ukeblad interview, 2016; Watson, 2017, p. 9). As journalists Zillah Watson and Peter Boyd Maclean note, 360 works, when viewed through a virtual reality headset, has come to be "widely accepted as one form of virtual reality experience" (Watson & Maclean, 2017, paragraph 1). This, however, is frowned upon by many in the virtual reality community who point out that there are distinct differences between the two mediums. The first is that 360 video does not allow the viewer to move from his or her position. The viewer can look around in every direction but the "viewpoint from the original image" remains unchanged (Cave, 2016, paragraph 5).

To create a seamless spherical image and the illusion that one is able to move around the work, film footage is taken simultaneously from different 360-degree cameras or from an omnidirectional camera – i.e. a camera that captures everything that happens around the camera's lens. The footage is "stitched together" in special video software (Cave, 2016, paragraph 5; Teknisk Ukeblad interview, 2016). The video is then uploaded to a news application like NYTVR or a website like YouTube 360, which has a built-in player that displays the video in its spherical form (Doyle et al., 2016, p. 19; Klubsuwan & Mungsing, 2009, p. 164). The production can be viewed on a smartphone or another mobile device as a "magic window" or in a browser (Watson, 2017, p. 9). When viewed through a headset, the

360 work becomes even more seamless, more immersive and, as Watson notes, becomes a virtual reality experience.

Wendy Powell, a reader in virtual reality at the University of Portsmouth and a senior member of the Institute of Electrical and Electronics Engineers, is unconvinced. She contends that, even with the headset, the 360 work is neither fully immersive nor is it interactive. Viewers cannot freely move around within the environment. They cannot open doors, pick up objects or move in and look behind those standing beside them. In fact, Powell states, “apart from looking around, and perhaps changing from one camera view to another, there really isn’t much in the way of interaction with 360 photos or video” (Cave, 2016, paragraph 7).

Jim Malcolm, the president of Ricoh Imaging Americas and an expert in 360-degree imaging, does not dispute Powell’s claims. He freely admits that additional technologies are required to transport a person from “simply watching a 360-degree video to truly experiencing a virtual world” (Cave, 2016, paragraph 14). Never-the-less, he insists that 360-degree spherical video – often referred to as the gateway to virtual reality – is an integral part of the virtual experience. As Malcolm notes in an interview with *IDG Connect*:

It is true that video game production and some entertainment content will be created entirely by the computer, but for real-world VR experiences such as virtual vacations, virtual tourism, virtual flight, virtual education, virtual training and even the ability to virtually go “back in time” all of these rely 100% on recorded content to capture everything in the environment. A 360-degree video, whether viewed in a VR headset or manipulated on a 2-dimensional screen, is in and of itself one of the major building blocks of our VR future. (Cave, 2016, paragraph 9)

3.5 Telepresence (presence)

In 1980, Marvin Minsky coined the term “telepresence” to describe the feelings experienced by those interacting through a teleoperator system (Coelho, Tichon, Hine, Wallis, & Riva, 2006, p. 26). These operators saw “through the eyes of the remote machine” and used their own limbs to manipulate the limbs of the machine (Sanchez-Vives & Slater, 2005, p. 332). As a result of this fusion of man and machine, operators reported being in two separate environments simultaneously: the physical world and the environment generated by the technology (Coelho et al., 2006, p. 27). Telepresence was used to refer to the point in which the mediated experience dominated over the real-world experience. This concept has also been applied to virtual reality. However, when discussing virtual environments, telepresence,

or presence as it has come to be known, refers to “experiencing the computer generate environment rather than the actual physical locale” (Witmer & Singer, 1998, p. 225).

Martijn J. Schuemie and his colleagues’ extensive review of the concept of presence indicates that there is no consensus on the exact nature of this phenomenon. Moreover, the definition proffered by the International Society for Presence Research acknowledges both the psychological character of presence as well as the duality of its nature. The definition, which is based on the Presence-L Listserv, an electronic forum established by the Information Systems Division of the International Communication Association, defines presence as:

... a psychological state or subjective perception in which even though part or all of an individual’s current experience is generated by and/or filtered through human-made technology, part or all of the individual’s perception fails to accurately acknowledge the role of the technology in the experience. Except in the most extreme cases, the individual can indicate correctly that s/he is using the technology, but at ‘some level’ and to ‘some degree’, her/his perceptions overlook that knowledge and objects, events, entities, and environments are perceived as if the technology was not involved in the experience. (International Society for Presence Research, 2000, paragraph 1)

What is made clear in the definition above is that presence is not a naturally occurring phenomenon. It is a subjective experience that is – and is not – mediated by technology. In other words, users of the technology are fully aware that the experience is not real but, at a certain stage in the proceedings, they forget the technology and experience an “illusion” of non-mediation (International Society for Presence Research, 2000, paragraph 5).

Researchers Bob G. Witmer and Michael J. Singer address the complexity of defining presence by breaking the concept down into two subjective levels. The first is involvement, which they contend is a matter of focus (Schuemie, van der Straaten, Krijn, & van der Mast, 2001, p. 185). The second is immersion, or the sense of being included in or enveloped by the work. In their report, *Measuring Presence in Virtual Environments: A Presence Questionnaire*, Witmer and Singer observe that, by focusing one’s energy and attention on the work, one becomes more involved and, as a result, will experience a higher sense of presence. This definition is similar to the concept of selective attention, which refers to “the ability to focus on one meaningfully coherent set of stimuli (in the VE) to the exclusion of unrelated stimuli (in the physical location)” (Witmer & Singer, 1998, p. 227).

The quest to understand the nature of presence continues but as Schuemie et al.’s literature review indicates, part of the difficulty in providing a straightforward definition rests in the

multi-dimensionality of the phenomenon. In a paper presented at the 3rd International Workshop on Presence, held in the Netherlands in 2000, Roy Kalawsky highlights the many interrelated facets that make up the concept. According to Kalawsky, presence is “a multi-dimensional parameter that is arguably an umbrella term for many inter-related perceptual and psychological factors” (Kalawsky, 2000, p. 5). Research conducted by Matthew Lombard and Theresa Ditton, for example, have identified six different ways in which presence has been presented in various literature. They include presence as realism, presence as transportation and presence as immersion. The first refers to the extent in which the medium can produce images that seem perceptual or socially realistic (Schuemie et al., 2001, p. 184). The second refers to the sensations of “you are there” and “it is there” and the third refers to the extent to which one’s senses are engaged by the mediated environment (ibid).

Variables that contribute to the sense of presence

What factors contribute to a sense of presence in a work? Vividness is one. Interactivity is another and the characteristics of the individual experiencing the virtual environment is a third. Vividness is often associated with the technology’s ability to produce a sensorially rich mediated environment. Schuemie et al. (2001), however, has extended the definition of the term to incorporate variables that relate to content. This includes the use of sound, stereoscopy and moving images (Schuemie et al., 2001, p. 194).

Interactivity is the extent to which a user can influence the form or content of the mediated environment. Similar to vividness, interactivity is stimulus driven and is determined by the technological structure of the medium (Steuer, 2010, p. 46). User characteristics, on the other hand, refer to the difference in which individuals experience the same work. As posited in *Practices of Looking: An Introduction to Visual Culture*, the material qualities of a medium will affect the way in which individuals experience the medium (Sturken & Cartwright, 2009, p. 230). Therefore, just as no two individuals will see the same event in the same way, no two individuals will experience media in the same way.

The technological qualities of a medium can influence whether a mediated work will induce a sense of presence. The quality of the sensorial input, visual depth, system response time, control and field of vision can enhance, or detract from, the virtual experience. According to Dustin Chertoff, the sense of presence is strong when the consumer forgets about the technology and responds as he or she would normally respond to a given situation. In other words, presence occurs when an individual is not able “to distinguish between sensory input

from a hardware-mediated environment and sensory input from reality, and thus responds to the hardware-mediated input as though it came from the real world” (Chertoff, 2008, p. 405).

Furthermore, psychological factors such as the ability of a person to concentrate on the mediated experience as well as his or her past experience with virtual reality and susceptibility to motion sickness may affect the degree to which one becomes involved in a virtual work (Coelho et al., 2006, p. 32). Presence, according to the Presence-L Listserv, is a property of the individual, not of the technology. Therefore, the sense of presence will “vary across people and time” (International Society for Presence Research, 2000, paragraph 4). This increases the likelihood that, even with the identical technology in use, no two people will experience identical levels of presence (Coelho et al., 2006, p. 33). Virtual reality researchers Jim Blascovich and Jeremy Bailenson would agree. The pair hold to the belief that reality is what the mind decides is real. In their view, “ours is not a passive relationship, where reality is and we simply experience it; reality is, in fact, a product of our minds — an ever-changing program consisting of a constant stream of perceptions” (Blascovich & Bailenson, 2011, p. 14).

3.6 Presence and Immersion: Is there a difference?

Although the terms immersion and presence are closely linked, they have very different meanings. Presence is generally used when referring to the psychological aspect of – i.e. the human response to – the virtual experience. Immersion, on the other hand, involves being or feeling surrounded by something. As Janet H. Murray states in her frequently cited book, *Hamlet on the Holodeck*:

Immersion is a metaphorical term derived from the physical experience of being submerged in water. We seek the same feeling from a psychologically immersive experience that we do from a plunge in the ocean or swimming pool: the sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our whole perceptual apparatus. (Murray, 1997, pp. 98, emphasis in the original)

Furthermore, even though the term “immersion” often is associated with the technological component of the virtual experience, it has been used to describe both “the technology surrounding the user” as well as “the user’s response to being surrounded by the technology” (Nilsson, Nordahl, & Serafin, 2016, p. 112). Studies conducted by researchers like Mel Slater, Beau Lotto, Maria Marta Arnold and Maria V. Sanchez-Vives fall into the first category. They link the concept of immersion to the system’s ability to deliver an inclusive,

extensive and vivid illusion of reality to the senses. This is done by using computer software that tricks users into believing that they have been “physically incorporated into the virtual world on all sensory levels” (Sturken & Cartwright, 2009, p. 177). Slater et al. argue that these technological features, or characteristics of the system, can be objectively measured, independent of the human experience engendered (Slater, Lotto, Arnold, & Sánchez - Vives, 2009, p. 195). Therefore, by Slater et al.’s definition, one system would be more immersive than another if, for example, that system had a higher display resolution or more extensive tracking than the other.

Witmer and Singer, on the other hand, contend that when it comes to virtual environments, immersion may be viewed as a “psychological state” characterized by the perception that one is “enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experiences” (Witmer & Singer, 1998, p. 227). The two men claim that immersion, like presence, is the individual’s perception of or emotional response to the mediated work. From this point of view, the subjective experience of immersion may be influenced by three factors. They are: the extent to which the person is isolated from the physical environment, the sense of self-inclusion in the mediated experience and the person’s ability to interact naturally with the environment (Nilsson et al., 2016, p. 112; Witmer & Singer, 1998, p. 227).

As indicated by the definitions provided by Nilsson et al. (2016), Slater et al. (2009) and Witmer and Singer (1998), there is a distinct difference between the terms immersion and presence. Moreover, while it can be argued that the more immersed one is in a virtual experience, the greater the sense of presence, it has been shown that the presence of one concept is not wholly dependent on the other. One can, for example, be immersed in an environment but not be present. Such is the case for some upper secondary students who are in class because their school’s attendance policy requires them to be there. If asked, many would probably admit that, while they may be physically present in the classroom, they are mentally absent from the lesson. The same holds true of virtual experiences that, while not very immersive, have captured the interest and the imagination of its users, so much so that they feel as if they are there.

4. METHODOLOGY

This chapter will present the details of the methodological approach used in this research. The choice of research strategy as well as the way in which the raw data was collected, collated and analyzed will be explained. Also to be discussed are the limitations of the work as well as the measures taken to ensure the validity and reliability of the study.

4.1 Research strategy and design

David Silverman says it best: let the research question determine which research strategy to use (Silverman, 2014, p. 9). When it comes to methodology, Silverman notes, there is no right or wrong choice. His argument is that the focus should not be on what kind of method – qualitative or quantitative – is best. The focus, he says, should be on: What is the researcher trying to find out (ibid)? This, Silverman maintains, is what ultimately should guide one's decision of which research method to use.

In this particular study, the researcher seeks to gain an understanding of a particular phenomenon – the consumers' response to spherical (360-degree) news. What, for example, do the participants say about their encounter with 360 news? Are there any similarities or patterns in the observations made and if so, what? Also of interest are the differences between 360 and traditional news, the appropriateness of using 360 technology in news and the thoughts of those who viewed the work through a virtual reality headset.

As very little research has been done in either immersive journalism or the use of 360 video in news, this researcher decided it would be best to conduct a basic qualitative study that is exploratory and inductive in nature. As Sharan B. Merriam and Elizabeth J. Tisdell explain, the overall purpose of a basic qualitative study is “to *understand* how people make sense of their lives and their experiences” (Merriam & Tisdell, 2016, p. 24, emphasis in original). They note that basic qualitative studies are found throughout the disciplines and are often used when researchers seek to determine how people interpret their experiences, how they construct their worlds and the meaning they attribute to their experiences (ibid).

In this dissertation study, the researcher wanted to obtain insight into people's thoughts about and reactions to 360 news. What, for example, was it like to watch it? What did the participants like about receiving news in this format? What did they dislike about it? Furthermore, as the work to be conducted is exploratory in nature, this researcher decided

that basic research – i.e. a basic qualitative study – was best suited to attain the information needed to better understand people’s perceptions of news in 360 degrees. As elucidated in Michael Quinn Patton’s discussion of the different types of qualitative research available, the purpose of basic research is to acquire knowledge for the sake of knowledge (Patton, 1990, p. 152). Therefore, it is the basic researcher’s responsibility to ensure that he or she is able to understand and explain the information attained – information that Patton says should be used “to contribute to fundamental knowledge and theory” (ibid, p. 150).

4.2 Choice of 360 works and selection of participants

This researcher wondered whether different people would react differently to a 360 work. Therefore, the decision was made to vary the selection of works to be viewed. The first, “The Displaced,” released by the *New York Times*, is a news documentary. The second, “Oslo Lufthavn – Pir Nord,” issued by *Teknisk Ukeblad*, is a news report and the third, “Visit Syria in 360 degrees – The Old City of Homs,” produced by the Norwegian Red Cross, is an informational update. The *New York Times* is considered to be the leader in 360-degree news. *Teknisk Ukeblad* and the Norwegian Red Cross, on the other hand, are among the first to produce and release 360 news content in Norway.

Finding participants willing to take part in this project was not easy. Two of the works – “The Displaced” and “Visit Syria in 360 degrees – The Old City of Homs” – are in English and target a domestic and an international audience. The other, which is in Norwegian, targets a domestic audience. It was important to this researcher that the sampling unit reflected this mix and that those selected to view a particular work fit the organization’s audience profile. For instance, attempts were made to ensure that those asked to watch “The Displaced” by the *New York Times* were between the ages of 18 and 65, were from different cultural backgrounds and lived in the United States or abroad. Similar criteria were applied to those asked to view the work produced by the Norwegian Red Cross. Viable candidates for *Teknisk Ukeblad*’s “Oslo Lufthavn – Pir Nord,” on the other hand, had to understand Norwegian and preferably be between the ages of 18 and 50.

Dropping by various stores and areas around Lillehammer, the town in which this researcher lives, and randomly asking people if they would participate in this research project did not work. One person who agreed, backed out at the last minute. He did, however, provide a name of another who he felt may be interested in taking part. This person also declined but was able to put this researcher in touch with another. Because of the time involved in finding

the first research participant and the deadlines set for completing this study, this researcher decided to reach out to friends and colleagues living in Norway and abroad. A list of suggested participants was compiled and an initial request to ascertain each person's willingness to engage in this project was sent (Attachment 1). Several declined. Three agreed to participate. A follow-up message was sent to those who agreed, letting them know which work they would be watching. Instructions on how to view the work was also provided (Attachment 2).

It would have been ideal if the respondents could have watched all three works and commented on them. However, as one of the works – “Oslo Lufthavn – Pir Nord” – was done in Norwegian, it would have required that the Norwegian participants be willing to watch and comment on all three films. No one was willing to do so. Therefore, this researcher decided that each of the spherical reports would be watched by three different people.

To ensure that the end product was “information rich,” the initial four who agreed to take part in this research were asked to refer me to others who would be interested in participating (snowball sampling) (Merriam & Tisdell, 2016, p. 98). The result was a group made up of a mix of male and females between the ages of 19 and 57. The participants live in different parts of the world and come from all walks of life. Their viewpoints provide the consumers' perspective. A profile of the participants is available in Chapter 5.

4.3 Collecting the data

Information obtained from in-depth interviews is the primary source of data. Evidence collected from written documents provides secondary data. Publications such as Merriam and Tisdell (2016), Patton (1990) and Silverman (2014) note that interviews and document study are among the methods qualitative researchers use to obtain empirical data. In addition, there is a tradition of using interviews in journalistic research and reception studies.

4.3.1 In-depth interviews

The focus of this investigation is the consumers' experience with and reaction to 360 news. Therefore, it was important that this researcher hear directly from the nine participants, who represent the news consumers, as well as from the producers of the 360 works examined. This goal, she felt, would best be accomplished by conducting in-depth interviews. As Patton explains in *Qualitative Researcher & Evaluation Methods*, interviews are used when

the researcher wants to “capture and understand the perspective of those they are speaking with” (Patton, 2015, p. 8). Reception analysis scholars, for instance, tend to conduct in-depth interviews to obtain the empirical data they need to better understand how people interpret media content.

In this particular study, the researcher wanted to find out why the *New York Times*, *Teknisk Ukeblad* and the Norwegian Red Cross chose to incorporate 360 technology in their work. She also wanted to obtain information about the viewer’s response to the organization’s use of spherical video. What, for example, were the participants’ perceptions of their encounter with 360 news? Did it differ from getting the news from traditional platforms like the newspaper or television? If so, in what way and if not, then how were they similar? Also of interest was each participant’s thoughts about the organization’s use of spherical video in news.

The answers to these questions would have been difficult to ascertain from direct observations. As Patton clarifies: “we cannot observe everything. We cannot observe feelings, thoughts, and intentions. We cannot observe behaviors that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organized the world and the meanings they attach to what goes on in the world” (Patton, 1990, p. 278). The only way to obtain information about these things, he says, is to ask questions. Thus, this researcher’s decision to conduct interviews, a process that Patton insists would “allow us to enter into the other person’s perspective” (ibid).

4.3.1.1 Request for interviews

The *New York Times*’ work with 360 video is fairly well documented. This is not the case with *Teknisk Ukeblad* or the Norwegian Red Cross. Therefore, to obtain the background information needed, interview requests were sent to all three parties (Attachment 3). Representatives from *Teknisk Ukeblad* and the Norwegian Red Cross agreed to discuss their experiences with 360 content. The *New York Times*, on the other hand, did not respond to four requests for an interview. Interview requests were e-mailed to representatives of the *New York Times*, *Teknisk Ukeblad* and the Norwegian Red Cross. Interview requests also were sent, via e-mail or as a text message, to the nine who agreed to take part in this research study (see section 4.2).

4.3.1.2 Interview guide and format

In order to establish a framework around the interviews, an interview guide consisting of 12 general questions was prepared in advance. The guide served as a reminder of the relevant topics to cover but was structured so that this researcher could follow-up, examine a subject in greater depth or pursue a particular line of inquiry. Attachment 4 contains the questions posed to the nine asked to watch 360 news (news consumers). Attachment 5 contains the questions posed to the producers of the spherical works examined.

Semi-structured interviews were conducted. This researcher felt that a semi-structured interview format would provide the flexibility needed to respond to the situation at hand – i.e. to guide the interview without curtailing the views of those being questioned. As Patton (2015) explains, the fundamental principle of qualitative interviewing is “to capture how those being interviewed view their world, to learn *their* terminology and judgments, and to capture the complexities of *their* individual perceptions and experiences” (p. 442, emphasis in the original). The semi-structured interview format, this researcher felt, was the best way to attain this goal. It enabled her to be open to the information given while offering the structure needed to ensure that comparisons could be made of the data obtained.

Open-ended, exploratory questions were posed and each of the participants were encouraged to take the time they needed to express themselves. Most of the interviews were done in English. Norwegian speakers, however, were given the option to answer in their mother tongue. Three accepted the offer. Their interviews were conducted in Norwegian. Furthermore, aware that additional questions could arise after the raw data had been examined, this researcher obtained each participant’s consent to contact him or her for a follow-up interview.

Interviews were done in person or via Skype or Messenger. Each interview was recorded, allowing this researcher to concentrate on what was being said. Notes also were taken to ensure that, if something went wrong with the recording, documentary material still would be available. This researcher finds that jotting down key phrases, sentences or concepts helps her focus and determine whether she should follow up on a response or idea raised. Furthermore, a quick review of the notes taken often provided insight into other topics that should be explored in subsequent interviews. The issue of trust, for example, was raised in an interview with one of the news producers and was later explored in the interviews

conducted with those asked to watch a 360 work. This topic would have been missed had this researcher not reviewed her notes.

The transcriptions of the recordings were done by the researcher herself. The task was time consuming but it allowed her to re-immense herself in the data. Transcriptions were done within two to five weeks of completing an interview. Additionally, as there was no indication that the *New York Times* would grant an interview, two podcasts in which representatives from the *Times* discussed their work on “The Displaced,” the publication’s use of 360 video and the role of virtual reality in journalism were downloaded and its contents transcribed. The interviews were conducted by the *Times Insider*, a service launched to give the paper’s subscribers an inside look into the workings of the organization.

The responses of the three Norwegians who chose to answer in their mother tongue were translated into English, the language in which this master’s thesis is written. Cognizant that nuances are often lost in translation, the three respondents also were given a transcribed copy of their responses to examine. This was done to ensure that the data collected reflects “as accurately as possible the viewpoints of the participants” (Oliver, 2010, p. 47). Each response was prefaced by the question that prompted it. Not one of the three expressed concern with this researcher’s translation of their statements.

4.3.2 Documentary evidence

In addition to interviews, documentary evidence in the form of news reports, podcasts and user comments about the individual 360 works posted on the organization’s website as well as on social media sites were collected and analyzed. The documentary evidence compiled was used to cross-check the data obtained from the interviews. The data comes from:

- User comments about “The Displaced,” “Oslo Lufthavn – Pir Nord” and “Visit Syria in 360 degrees – The Old City of Homs” posted on the websites of their respective publications.
- User comments about “The Displaced,” “Oslo Lufthavn – Pir Nord” and “Visit Syria in 360 degrees – The Old City of Homs” posted on Facebook, Twitter and YouTube.
- *Inside the Times* podcasts – “Virtual Reality at the *New York Times*,” released on 24 August 2016, and “The Magazine Leaps into Virtual Reality,” released on 5 November 2015 – as well as news reports produced by staff at the *New York Times*.

4.4 Working with and analyzing the data

Collating the data was no easy task. It called for an extensive review of the interviews conducted and the documentary evidence compiled. Each transcript was carefully scrutinized. Key words, partial phrases and/or sentences that the participant used to describe his or her experience with the 360 work were underlined and placed into a descriptive “category or class” (Merriam & Tisdell, 2016, p. 203). Moreover, each of the statements made was examined to determine the nature of the idea or ideas that the speaker was attempting to convey. These descriptions and the researcher’s impressions were noted on the right-hand side of each page.

The material compiled was again reviewed to determine whether the notes, comments, phrases and descriptions marked could be grouped together (analytical coding). For example, comments such as “feelings of being there,” “I was in the middle of it,” and “in the boat with them” uttered by TC, who watched “The Displaced,” were put in the category labeled “being there.” Similarly, phrases or descriptions such as “reflecting,” “I was imagining,” and “I put myself in that position” were grouped into a category loosely labeled “mental participation.” A list containing the different tentative groupings was then compiled.

The next transcript from the group asked to watch “The Displaced” was analyzed in the same way. However, when doing so, the categories assembled when examining the second transcript were checked against those contained in the list extracted from the first. This was done to see if the preliminary groupings or patterns present in the first list also were present in the second. The two lists were then combined to form a “master list” and the process repeated when analyzing the third transcript from the group. The final list, which consisted of 12 categories, was re-examined and re-worked and the initial descriptions used were revised.

Thus, the categories initially labeled “mental participation” and “physical participation” became subgroups of the category “Engagement” while the category “being there” was retitled “Present in the work.” The outcome was a list consisting of five categorical units or themes that, in this researcher’s view, best described or spanned the different examples placed under them. They are present in the work, increased understanding, engagement, autonomy and transparency. The same process was followed when analyzing the transcripts of those asked to watch “Oslo Lufthavn – Pir Nord” and “Visit Syria in 360 degrees – The

Old City of Homs.” It also was followed when analyzing the interviews conducted with the producers of 360 news as well as the user comments posted on the Internet.

4.5 Ethical issues

Steps have been taken to ensure that the integrity of this research study has been protected and to “ensure the peace of mind and fair treatment” of each of the participants (Oliver, 2010, p. 47). In November 2016, this researcher notified the Data Protection Official for Research (NSD) of her intent to conduct in-depth interviews. Furthermore, the agency was informed that the interviews would be taped and that personal information such as name, occupation, contact details and place of residency would be solicited even though each of the participants would be anonymized in the final work. Lastly, in keeping with the principal of informed consent, this researcher and the purpose of this study were clearly identified in the e-mails and texts sent to prospective candidates. Each of the participants also were told that their involvement was voluntary and that they could withdraw from the research at any time.

4.5.1 Anonymity

To preserve the confidentiality of the respondents, a pseudonym was assigned to each participant. Furthermore, this researcher decided that only initials would be used when referring to the individual person. To provide context, profile information about each news consumer was compiled. They include: the person’s age, residency, whether the person had watched 360 news before, the medium used to view the work and whether a headset was used. The profile of each of the nine respondents is contained in Chapter 5.

Increased interest in Internet research has led to discussions about whether it is ethically justifiable to use the material posted on websites. The crux of the debate revolves around the following question: How does one distinguish between “public” and “private” spaces on the Internet? One argument made is that, if the material is readily available to all, then one can assume that the material is fair game and that it can be used as research data (Oliver, 2010, p. 139). This, however, is not necessarily the case with posts on social networking platforms like Facebook, Twitter and Instagram where one must be a member of the community to access the site.

As media researchers Elizabeth A. Buchanan and Charles Ess note, the need for users to log in to access a particular site indicates that participants on social networking sites have an expectation of privacy (Buchanan & Ess, 2008, p. 280). They do, however, admit that this

contention is one that is subject to debate. With this in mind, this researcher chose to err on the side of caution. To ensure the confidentiality of those who posted on either an open website or on more restricted sites like Facebook and Twitter, she decided that no names or references that could be used to identify the contributors would be used. Furthermore, the comments made would not be directly cited. Posts applicable to this research have been categorized based on key descriptive words – i.e. boring, gray, heartwarming, interesting – contained in the individual comments. The findings, which have been used to cross check the interview data gathered, are to be presented in general terms.

4.5.2 Recording of the data

As noted in Section 4.3.1.2 – Interview guide and format – all interviews conducted were recorded and the material transcribed by this researcher. Permission to record the interview session was made prior to the start of every meeting. At the end of each session, permission was sought to follow up if needed. The material recorded is stored in two places: this researcher's computer, which is password protected, and in a secured area in this researcher's home. In both cases, only the researcher has access to the material. Once this master's thesis is completed and has been accepted and approved by the faculty at the Inland Norway University of Applied Sciences (INN University), all recorded data pertaining to this research study will be deleted.

4.6 Limitations

This exploratory research is not without limitations. This study represents an initial attempt to conceptualize the consumers' experiences of 360 news. Finding participants for this project, however, has not been easy. The challenge of locating volunteers has been discussed in section 4.2. By following up on references provided by friends, colleagues and the participants themselves, this researcher was able to source nine volunteers. Although steps have been taken to ensure diversity in the sampling population, the small sample size means that the results cannot be generalized to the wider population. Generalizability, however, is not the point of this study. The intent of this work is to examine the experiences of a handful of users in-depth, to provide thick, descriptive details and to establish a clear audit trail to show that the conclusions reached are viable and that they make sense.

Failure to interview representatives from the *New York Times* is yet another weakness. Having received no direct feedback from the *Times*, this researcher decided to draw on the comments made in two podcast interviews. These interviews were conducted by the *Times*

Insider, an affiliate of the *New York Times*. Those interviewed were the staff members involved with the making of “The Displaced” and other 360 works. The drawbacks of using this material are clear. First, the *Times Insider* podcasts are journalistic, not research, interviews and do not directly address the questions this researcher posed to the other producers of 360 news content (see Attachment 5). Additionally, as this researcher did not conduct the interviews herself, she could not follow up on the statements made and as such, the material presented in the podcast interviews, cannot be directly compared to the data provided by *Teknisk Ukeblad* and the Norwegian Red Cross.

Despite the potential issues, this researcher chose to use the documentary evidence because the themes addressed in the two podcasts, while not identical, are similar to those raised in the interviews conducted with the news producers in Norway. In addition, the focus of this research study is on what the nine participants (consumers) say about their encounter with the 360 work they were asked to watch. The information received from the news producers mainly will be used to provide a fuller and descriptive background narrative.

Use of data obtained from social media and other sites on the Internet also may be regarded as a potential weakness, especially as the material posted online may not necessarily be reflective of the views held by the general public. A 2017 report released by the Pew Research Center calls attention to the fact that not everyone has access to Internet and that even if they did, not everyone on the Internet uses social media. Case in point: at least 30 percent of those living in advanced economies like Sweden, the Netherlands, Australia and the US do not use social media (Poushter, 2017, paragraph 2). This figure is even higher in countries like France, Greece, Japan and Germany where about half of the Internet users surveyed say they do not use social media – a clear indication that there are a few people out there who have no desire to voluntarily share their personal information or thoughts on the world wide web (ibid, paragraph 3).

This means that the voices of the consumers who have no access to the Internet or are not active on social media are not heard. While problematic, this would have been more of a concern if the information obtained was the main source of data. This, however, was not the case. The user comments accessed – whether it be off the publication’s website or a social media platform like Facebook or Twitter – was used to cross check the data obtained from interviews.

4.7 Reliability and validity

It is the researcher's responsibility to ascertain that the integrity of the data is protected, that the investigation is conducted in an ethical manner and that the research findings are both reliable and valid. Therefore, a number of strategies were implemented to ensure that the reader finds that the conclusions reached are sound and that "*the results are consistent with the data collected*" (Merriam & Tisdell, 2016, pp. 251, emphasis in the original). Two types of triangulation methods – multiple methods of data collection and multiple sources of data – were implemented to assure the internal validity and/or credibility of this work. In the first instance, raw interview data was checked against documentary evidence – i.e. user comments posted about each of the 360 works examined. The user comments accessed were posted on the *New York Times*'s, *Teknisk Ukeblad*'s and Norwegian Red Cross' website and on Facebook, Twitter and YouTube. This was done to confirm initial findings and to determine if there were anomalies in the data that could give rise to alternative explanations.

Moreover, multiple sources of data were used to obtain different perspectives on 360 news. This researcher worked to ensure that the participants in this study came from diverse backgrounds. Five of the research volunteers, for example, live in different parts of Norway. The remainder live overseas. The 360 productions examined also varied (see section 4.2), making it possible to not only compare findings between participants but between the different works as well. In addition, the statements made by the individual participants were checked against one another, against the user comments found on the Internet and against information contained in four studies that examined the state of immersive journalism.

To further ensure the trustworthiness of the data, the English translations of the three interviews conducted in Norwegian were sent to the respective candidates to review (see section 4.3.1.2). The three (EØ, KS and EE) understand English but they felt more comfortable conversing in their mother tongue. In addition, follow up interviews were conducted with four of the participants to ascertain that this researcher had not taken their statements out of context. Moreover, a pool of participants who could provide different perspectives on the 360 experience (maximum variation) were interviewed and rich, thick descriptions were used to ensure the "transferability" of this research. Lastly, care was taken to ensure that the ethical guidelines and protocols were followed (see section 4.5) and that the work conducted was well documented (audit trail).

5. ANALYSIS AND FINDINGS

An analysis of the data obtained from the interviews conducted and the documentary evidence examined will be presented in this chapter. The information gathered will be detailed in three mini-reports. The format of each report is as follows: background material will be provided first, followed by a rich description of the data obtained. Information about the 360 work and the news producer's reasons for using 360 technology will be included in the background material proffered. This will be followed by a detailed analysis of the data. Each mini-report will conclude with a summary of the material compiled and the analysis conducted.

5.1 "The Displaced" by the *New York Times*

"The Displaced" was the *New York Times*' initial venture into 360-degree virtual reality news. The 11-minute long feature was released in November 2015 and follows three children who have been displaced by war or persecution. The three – Oleg Teryokhin, Chuol and Hana Abdullah – tell their tale directly. Viewers hear from Oleg, who was forced to flee from his home in eastern Ukraine after fighting broke out between Russia and the Ukraine forces in April 2014; from Chuol, who sought refuge in the swamps of South Sudan after a civil war broke out in the country in 2013; and from Hana, who has lived in a refugee camp in southern Lebanon since she and her family fled from their home in Syria in 2012 (see Attachment 6). "The Displaced" can be viewed on a smartphone – with or without a virtual reality headset. It also can be viewed on a computer and on an iPad.

In two podcast reports hosted by *Inside the Times*, representatives from the news division of the *New York Times* discussed their work with virtual reality journalism and their use of 360-degree technology. They note that the appeal of spherical (360-degree) video, often described as the gateway to virtual reality, is many. First, the technology is new and thus intriguing for journalists. Second, the medium places the viewers in the story. Third, it engages the audience in the work and lastly, it allows viewers to see and experience the event from the perspective of those involved. As the *New York Times*' associate editor for all things digital makes clear: The *Times* is not interested in "virtual reality for virtual reality's sake. We're interested in innovative and immersive storytelling. We're interested in covering the world and bringing our readers, all of you, closer to the story, as close as we can" (Holdner, August 24, 2016).

The representatives from the *Times* make clear why they are aggressively pursuing – and promoting – the use of 360-degree video. The question is: In what way do the consumers experience 360 content and what are their views about the use of spherical video in the delivery of news? To be presented next are the perspectives of three people who watched the work.

5.1.1 The consumers

Three of the nine participants in this research project were asked to watch “The Displaced.” A general profile of the three volunteers, who represent the consumers of news, is provided in Table 5.1.1.a.

“THE DISPLACED”

PARTICIPANT	MO	TC	EE
Work	Instructional assistant, Early learning program	Ground staff, Perth International Airport	Student
Age	51	55	20
Residency	Washington, USA	Western Australia, Australia	Oppland county, Norway
Have you watched VR content or 360 video before?	No	No	No
Medium used to watch the 360 work	Samsung S4 and Mac mini-desktop with 17- inch (43.18 cm) monitor	Samsung Galaxy S5 and laptop	Samsung S6
Viewed work with or without a VR headset?	Without	Without	With and without
Do you own a VR headset?	No	No	No but has access to it (via family and/or friends)
Subscriber or follower of publication/ organization?	Has read a few stories but is not a regular reader or subscriber	Has read a few stories but is not a regular reader or subscriber	Does not read or subscribe to <i>The Times</i>
Do you plan on buying a VR headset of your own?	Not at this time	No	Not at this time

Table 5.1.1.a: Profile of the three participants who viewed “The Displaced,” a 360 work produced by the *New York Times*

To preserve the confidentiality of the participants, a pseudonym has been assigned to each person. In addition, only initials have been used when referring to a specific individual. The

background information compiled above include: the person's age, residency, whether he or she has watched 360 news before and whether a virtual reality headset was used to view the work. The three participants range in age and come from different backgrounds. None of the three have watched 360 news content before and only one used a virtual reality headset when viewing "The Displaced." The other two watched the news feature on their mobile, on a computer or on both. No one has expressed any desire to invest in a headset to view 360 works in the immediate future.

5.1.2 The consumer perspective of 360 news

An analysis of the interviews conducted with the three who were asked to watch "The Displaced" indicate that the discussions centered around five themes. The first is the sense of being present in the work. The second is increased understanding. Third is engagement, fourth autonomy and the fifth is transparency. Each of these themes is addressed below.

Present in the work

Each of the three participants reported a feeling of being there, of being transported from their homes and placed in the center of the action. TC described the experience as follows:

I felt that I was in the middle of it, particularly when I looked at the video the first time and I was able to use it as it was intended, as a 360-degree apparatus, and maybe as well, strangely enough, it has something to do with the clarity of the picture. What I saw online on my laptop on YouTube, the picture was there but perhaps I've got a clearer picture on my phone anyway. Uhm so that made it even more uhm the sensation of feeling like it was very realistic.

As TC had never been exposed to a virtual reality work prior to watching "The Displaced," the experience had an immediate effect on her. She described it as "a voyage of discovery" and said that she was struck by the fact that the 360 production elicited responses that went beyond those experienced when watching a traditional news video. For TC, viewing the news in 360 was "highly emotional and very stark." Furthermore, it made her feel as if she was no longer in her home but in South Sudan with Chuol and in the Ukraine with Oleg. In her words:

It was possible to look up, down, see the rushes around them, see the other people who were in the boat, experience what it was like right there and then, be in the boat with them. And I could say exactly the same for the little boy in his bombed out classroom in the Ukraine as well.

For MO and EE, the sense of presence was particularly strong in scenes of transport. MO, for example, was so immersed in the work that she would not have been surprised to find herself sitting in the boat with Chuol. She noted:

It's like when uhm especially, I think the boat, where there's more of a movement. You kind of get a sense of movement where you kind of move the cameras around. You sort of feel like you're in the boat, especially when he was uh pushing it out of the docks or the reeds.

As exemplified by the statement above, the sense of movement that MO “experienced” enhanced her belief that she was there, in the boat, gliding through the swamp, watching Chuol and listening to him tell of how he and his grandmother fled to these swamps to escape being slaughtered. MO’s statement also makes clear that she understands that these feelings of movement are an illusion (“you sort of feel like you’re in the boat”). Even so, she is willing to suspend judgement and lets herself be drawn into the work.

EE also cites the transportation scenes as among the times in which she completely forgets that she is at home watching a news documentary. As she notes:

When I sat in the boat because it felt that I sat and the boy stood because he was over me, even though he was very small. It was there that I felt the most in a way uh yeah. And when I sat in the truck also. Then I saw that all sat around me and when I looked ahead, I only saw the side of the truck and I sat on the side. (my translation)

EE, like TC and MO, uses terms that convey the sense of being physically present in the scene – i.e. “When I sat in the boat;” “I sat;” “I saw that all sat around me;” “when I looked ahead.” Unlike the other two, however, EE’s comment above draws attention to the fact that the 360 medium places her in a fixed place. She is, for example, only able to see those who sit beside her, to look ahead and to see “the side of the truck” from where she sat. No mention is made of being able to move or shift position or of being able to engage with the others around her. This, however, does not seem to shatter EE’s belief that she is there in the South Sudan with Chuol or in southern Lebanon with Hana. In fact, she makes clear that, “when I was in the boat or in the truck, I sat in a set place and it made me feel like I was in there with them” (my translation).

Increased understanding

TC discussed how the 360 work offered a new perspective on an ongoing conflict. She suggested that “maybe it was because of the virtual reality, the VR aspect of it, that I really started to appreciate, if I can put it that way, what life must be like in a country racked by

war and destruction and death.” TC is fully aware that the news is full of stories about conflict and the effect of conflict on others. However, it was not until she saw and experienced the stories firsthand that she was able to appreciate the difficulties that Chuol, Hana and Oleg have encountered and the strength of will required for them to survive. As she noted, “it’s as though a light goes on because you realize that this is a real-life situation.” The following scene, according to TC, is one of many that brings this message home.

Uhm, for example when um, the little boy from the Sudan mentioned that his father and grandfather didn’t make it because they were burned alive in their home. I couldn’t even imagine the terror that that must have evoked for both the boy and his grandmother because then they both lost someone. He said he lost his mum in the confusion and I can’t remember if he said he found her again, but to have to flee to an island with your grandmother and then knowing that your father and your grandfather uhm haven’t survive is beyond our comprehension. ...

According to MO, the 360 worked gave her the chance to walk in Oleg’s shoes. The story became personal and the experience, she said, offered greater insight into the trauma to which he had been exposed. She explained:

And so when the kids were telling them like uh when the boy and his mom were in the garden saying you know: “We came back and the war was bad because my grandfather was killed first and he was laying out in the garden.” I was thinking: “OK, when they came back, they found him there and this must have been horrible and now they’re planting, you know, food where his grandfather died.”

The quote above reflects MO’s struggle to grasp the horrors Oleg has endured and her astonishment at his resiliency. The garden as MO notes is the site of life and of death. It is in the family’s garden that Oleg’s grandfather was killed and it is in this same garden that Oleg and his family must cultivate the fruits and vegetables they need to survive.

EE also made it clear that the 360 work was pivotal in helping her to experience – and better understand – Oleg, Chuol and Hana’s world. EE described how she stood in the open fields with Chuol and the other villagers, waiting for a UNICEF food drop. Similar to everyone around her, EE looked up at the sound of a plane and, while she could not run out and pick up any of the packages falling from the sky, she watched as Chuol and the others scrambled for the bundles as they landed. She also spoke about the experience of being with Oleg and his friends as they played in the ruins of their old school and of being with Hana as she worked in the fields, harvesting cucumbers. As EE noted: “The children explained a little and then one gets the chance to dive into their lives and then they told us a little bit more” (my translation).

Engagement

The three indicated that they engaged with the material on a physical and on a psychological or emotional level. With reference to the former, TC, MO and EE discussed how, unlike traditional news videos, they could not sit still while watching “The Displaced.” They had to physically interact with the medium. For instance, they had to move their phone around if they wanted to take in the scene before them. This required them to move their arm and/or twist their upper torso. TC and MO, who also watched the 360 work on a computer, described how they used the mouse and/or keyboard to navigate the scene.

For EE, this physical engagement further enhanced the belief that she was there. As she explained, “one thing that struck me was that when one moved the phone down and then up, one saw both the sky and the ground as well and that makes one feel even more that they are there” (my translation). TC and MO made similar observations. TC, for example, described how she “looked more closely” at the scene in which UNICEF drop needed food and supplies onto the island on which Chuol and 80,000 other Sudanese villagers have sought refuge.

That’s when I started moving around. On the spot and moved my phone more to enable me to see exactly what the camera was filming.

MO, on the other hand, moved her phone around to gain a better perspective of the scene unfolding before her. She said that panning the area where, for example, the UNICEF food drop occurred, allowed her to “get an idea of how wide the field was and you know movement ... a little bit of that kind of thing.”

With regard to interacting with “The Displaced” on a psychological or emotional level, TC discussed how the nature of the 360 medium, combined with the content of the news documentary, made it difficult for her to remain detached from the events unfolding before her. She described how she often found herself thinking about what she would have done and how she would have reacted had she found herself in the same situation.

Almost immediately there was this feeling of: “Oh my goodness. This is real life for these people.” So it can be uh a little bit confronting and often when that happens, you at the same time may be watching something, but at the same time, you’re reflecting upon your own station in life and for me I was thinking: “Geez, how lucky am I to be in Norway and to live in Australia and in countries that aren’t affected the way they are in the first instance in Ukraine. And I thought immediately of my friend who worked with me in Perth last year who is currently in the Ukraine with her husband for a three-month extended visit.

MO also found herself interacting with the work by drawing on the familiar to understand the incomprehensible. She described how she related Oleg's experiences to one in which she was more familiar with – the destruction caused by a super typhoon. It was, according to MO, the only way in which she could make the unfamiliar familiar. She explained:

So when people say, my town was bombed and I had no idea what that meant, I would probably relate it to the closest thing which would be a typhoon. What happens to a school when it gets hit by a typhoon? You know. Things are blowing in. Things are wet. But in actual reality where they have bombs where things were broken up into little pieces of what not, that's a different view and it might not have the same impact as you know my typhoon-strewn classroom versus the actual reality of a bombed concrete classroom kind of thing.

For EE, the belief that she was being addressed directly, helped her to mentally connect with the three children. According to her, “the children spoke directly to me and I felt that they, in a way, they saw that I was there.” Even more intriguing, however, was the ability to be a part of the children's lives. “This is a way to experience it. It's not just to learn about the news,” she says. “That people can do by reading or watching *Dagsrevyen*. This here is for something more, for if you want to investigate, to go deeper into an issue” (my translation).

Autonomy

All three liked the fact that they had control of their viewing experience. Each related the empowerment experienced when they realized that they could decide what to look at, when and for how long. EE elaborated: “What I thought the most of while I sat in the boat was that I was so fascinated by the fact that the boy stood over me. When I looked straight, I saw his legs and so I had to look up to see him.” A normal news report, EE said, would not allow her to do this. “When one looks at a regular video, one only sees straight ahead. ... Here you can see up and down and it's not often that one can do that” (my translation).

MO seized the opportunity to explore a part of the world to which she has never been. She described how she panned the camera to look around her when travelling through the swamp with Chuol, when out in the fields with Hana and when watching the UNICEF food drop. As MO explained: “To me, it's one of the first things I do when I'm out in the open field is kind of look around to kind of see as much as possible the open spaces and what's around you.”

TC, on the other hand, took advantage of the ability afforded by the 360 medium to closely examine the things that interested her. For instance, she moved her phone around to look around the swamp area in which she and Chuol were travelling. Then she swung the phone

from left to right to look around her, zoomed in to look at the rushes and tilted her phone up to look at the sky and down to peer into the water. TC also explored the fields in which Hana and her friend worked and, as indicated in the quote below, the UNICEF food drop.

The other scene that I looked at more closely as well was when the families in the Sudan had their food drops and it was possible to actually see these packages being dropped on the ground and literally bouncing before people ran. It wasn't as mad a scramble as I thought it would be; it was much more controlled, but I started thinking: "What would it be like for me and my family if we had to rely on food packages being dropped from aircraft overhead?" And then they were helping each other to put the big food packs uh I think they were balancing them on their heads or at the very least balancing them behind themselves so that was another scene that I looked at more closely because I realized I could this with the 360.

Transparency

Watching a 360 work is not like watching a regular video. As EE noted, the 360 allows you to see everything. A regular video does not. As EE mentioned earlier, "when one looks at a regular video, one only sees straight ahead." With 360, however, one can look up and down and pan left and right. Furthermore, EE said, "you feel that you are standing right there in the middle of things because there are others right beside you and because it is not one sided. When you stand in a room and you turn yourself around, there's somebody behind you as well" (my translation).

TC agreed. She said that, because the 360 medium put her in the story, she was able to see and experience much more of the scene. Therefore, although she was not able to zoom in on particular objects, she was able to "pan from left to right and therefore capture more of the scene." TC said that "it was a bit of an eye opener actually." More importantly, she added, "this experience gave me a glimpse of something that I perhaps otherwise would never have given any thought to."

For MO, however, the more open the work, the greater its credibility. She explained.

With the print media, you can make things up. But here, you can see the bombed out shelter. You can actually see someone rowing through the swamp. You can see the airplane dropping food and you can see the bags of rice dropping onto the field. So you sort of have a visual confirmation that it's happening, that it happened.

5.1.2.1 Additional impact of spherical video on the viewing experience

When asked to discuss the issues encountered when watching 360 news, all three of the participants reported encountering a few technical issues. The first was locating the subtitles,

which, according to TC, were hard to find because they had not been anchored to the scene.

She said that:

There were times when I perhaps had been moving my phone and a voice started ... and I caught, just at the very edge of the screen of my phone, that subtitles had come up. I knew instinctively just to move my screen back a little in order to capture the subtitles so that I'd understand what they were saying because the subtitles were pretty important even though there wasn't that much dialogue or monologue, if you will.

EE encountered the same problem when watching "The Displaced" on her mobile. The subtitles, she said, were never where she thought they should be. They would, for example, float in from the lower left side of the screen. Other times, they came in from the bottom right. This irritated EE and made it difficult for her to fully immerse herself in the story.

It was a little frustrating having to search for the subtitles and then I didn't get the experience that I wanted to have. The text wasn't always in the place that I naturally assumed it should be so I had to search for the text. Then you begin to feel like you start to withdraw from the film, that you're not there because you're looking for a text and it doesn't exist in reality. (my translation)

MO, on the other hand, reported that that it was difficult for her to read the subtitles, even when viewing the work on a 17-inch desktop monitor. She noted:

The subtitles were too small on my Samsung. It was kind of hard to read. That's why I went to my 17-inch desktop monitor and even with the desktop monitor, the text was still small. I think with the VR glasses it would not be an issue. So if there's a way to say: "OK I'm watching VR content but it's not on VR glasses, if there's a formatting issue that can be fixed that way, that would be good." Because uh on the screen, I see the subtitles three different ways, left, right and center. And they were tiny. And they were white subtitles so it would get lost in the scene depending on the background. ... So I don't know if they had an option to make the subtitles, or a way to make the subtitles better.

In addition, two of the three said they encountered problems with video buffering. TC and EE noted that it took time to download the video from the NYTVR application, so much so that they chose to stream it. Even so, they continued to experience a number of breaks, starts, stops and pauses. As TC pointed out: "I think I would have enjoyed it more if I hadn't had that pesky start-stop happening." EE shares this sentiment, noting that, in this day and age, "you should be able to see it without having to experience buffering problems" (my translation).

Lastly, MO, who occasionally suffers from motion sickness, reported feeling dizzy and a bit nauseous throughout parts of the film. She said this tended to occur in scenes where she "experienced" movement such as riding in the boat with Chuol or in the back of a pickup

with Hana. As she explained, “sometimes with a lot of the camera movements, like jerky camera movements, I sort of feel dizzy or like, you know, nauseous.” Surprisingly, TC, who is extremely prone to motion sickness, was not affected.

5.1.2.2 Using a virtual reality headset to view 360 news

EE, who had access to a virtual reality headset, used it to view “The Displaced.” She also watched the work on her smartphone. When asked to compare the two experiences, she said that:

The first thing I noticed is that I saw the subtitles much better. I didn’t need to search for it as much as I did before. Uhm and there was in a way, I was able to see a wider area. At the same time, when I looked straight ahead, I was able to see a lot more, which is probably why it was easier to see the text. Uhm, I saw more details that I didn’t see before because I saw a larger screen and at the same time I was able to see around a lot. (my translation)

According to EE, watching the work through a virtual reality headset made for a better experience. The headset, she said, blocked out the world around her, making it easier to immerse herself in the work and to focus on the documentary and the stories being told. Furthermore, she did not have to work as hard when using the headset. She could look around as she normally would. In her words:

You’re able to look around instead of having to turn yourself, turn the mobile, around. It felt more like I looked around instead of that I searched for something. It was a much better experience with the VR headset. (my translation)

5.1.2.3 Appropriateness of using 360 video in news

The three contend that spherical video cannot – and should not – be used for every type of news story. For MO and EE, the 360 medium is best suited for works where one has to be in the environment to better understand an issue or a “subject that they otherwise would never have given thought to” (TC). As each of the three points out, the 360 medium is extremely visceral and its use may have unintended repercussions. MO explains:

I think that with the nature of the 360-degree VR, you do have that feeling of being in the picture. And for a lot of people, that might be more of a shocking uh effect in terms of they might be experiencing something that they have no clue of because they’re living in rural America where everybody’s safe. And then suddenly you’re in this building wrecked by bomb shelling or you’re in the swamp or you’re uh working in a farm or riding in the back of a pickup. So for some people who view the video those might be new experiences for them and being in a 360 VR it might make the experience more uh realistic.

EE and TC raised similar concerns but TC took it even further. She expressed her fear that there would come a point in time when people would choose the virtual world over the real. As she noted:

There's no doubt about it. In five years time when it's more commonplace or in 10 years time when it's part of our daily news experience, perhaps then the greatest risk is that, in trying to bring reality to people, it actually becomes entirely virtual. So, ironically, it becomes a victim of its own popularity and, yeah, virtual reality, stops being virtual and starts becomes reality.

5.1.3 Document analysis

In addition to the interviews with the three participants above, user comments posted on the commentary fields attached to the work were examined. The comments analyzed were limited to those made in the commentary fields found in the Introduction of “The Displaced” and “Tricky Terrain” – articles published on the *New York Times*' website – as well as the commentaries attached to “The Displaced” video placed on YouTube, Facebook and Twitter. The findings of the documentary analysis generally reflect much of TC, MO and EE's experiences with the 360 work. The details of the analysis are presented in Table 5.1.3.a.

TABLE 5.1.3.a: Analysis of user comments: “The Displaced” as of 7 June 2017

Category	Examples of some of the descriptions and/or actions found in statements	Total
Present in the work	Hear the children, free to look around, inside the story, can see pain	2 (“Tricky Terrain” - <i>New York Times</i> site) 1 (Twitter) 1 YouTube
Questioned use of 360 technology	Waste of money; gimmick; great for entertainment, disaster for journalism; hype; simulacra and spectacle; counter to the telling of reality; distracted by the pictures; branded conflict; new dimension of business getaway; prefer regular video; message should be the focus; poverty porn, vicarious viewing	13 (“Tricky Terrain” - <i>New York Times</i> site) 2 (“The Displaced” – Introduction: <i>New York Times</i> site) 1 (YouTube) 1 (“The Displaced” - Facebook) 1 (clip of Chuol in boat - Facebook) 2 (Twitter)
Approved of/impressed with the use of 360 technology	Another technological advance in continuum; brings closer to the real thing; appeal to a younger demographic; amazing; video worth a million words; look forward to more reporting via	2 (“Tricky Terrain” - <i>New York Times</i> site); 6 (“The Displaced” – Introduction: <i>New York Times</i> site)

	<p>this technology; VR at its best; will change world; make more, powerful stories; impressive; format great; incredible; awesome; bring story to life; worth the \$20, innovative new lens</p>	<p>6 (YouTube)</p> <p>8 ("The Displaced" - Facebook)</p> <p>4 (clip of Chuol in boat - Facebook)</p> <p>7 (clip of airdrop in South Sudan - Facebook)</p> <p>4 (Twitter)</p>
Increased understanding	<p>Better understand the humanitarian implications; reality will touch people; sensitize them; opens people's eyes; new perspective; suffered a lot; sympathetic for children; "in someone else's shoes"; through the eyes of refugees</p>	<p>3 ("The Displaced" – Introduction: <i>New York Times</i> site)</p> <p>4 YouTube</p> <p>5 (Twitter)</p>
Affected by content	<p>Wow, epic, powerful, brilliant, love it, astonishing, use of sad face emoticon, speechless, nearly cried, so emotional, heartbreaking</p>	<p>11 (YouTube)</p> <p>2 (Twitter)</p> <p>1 ("The Displaced" - Facebook)</p> <p>1 (clip of airdrop in South Sudan - Facebook)</p>
Problems with the technology	<p>Cannot use with Windows phones; nauseous; application crashed; Cardboard won't hold a Galaxy; can't read subtitles*; slower than a snail doing laps</p>	<p>3 ("Tricky Terrain" - <i>New York Times</i> website)</p> <p>2 ("The Displaced" – Introduction: <i>New York Times</i> site)</p> <p>1 (clip of airdrop in South Sudan - Facebook)</p> <p>1 (Twitter)</p>
Others	<p>Not like Cardboard glasses</p> <p>Posts in a language other than English</p> <p>Video shared by another media website; placed on person's video playlist</p> <p>Technical: users and a New York Times representative provide advice on how to view work, how to watch in 360, etc.</p> <p>Raises two or more points named above</p>	<p>3 ("The Displaced" - Facebook)</p> <p>3 (YouTube); 23 (Twitter)</p> <p>1 NYT video posted on media's Facebook site; 1 (Twitter)</p> <p>1 (Twitter); 3 (YouTube)</p> <p>2 ("Tricky Terrain" - <i>New York Times</i> site); 2 ("The Displaced" – Introduction: <i>New York Times</i>)</p>

		site); 1 (“The Displaced” - Facebook); 4 (YouTube)
Viewed		298,508 (YouTube) 38,853 (clip of Chuol in boat - Facebook) 49, 546 (clip of airdrop in South Sudan - Facebook)
Shares	Shared video posted on <i>The New York Times</i> ’ site or YouTube video site on Facebook or Twitter	558 (“The Displaced” - Facebook) 67 (clip of Chuol in boat - Facebook) 262 (clip of airdrop in South Sudan - Facebook) 26 (Twitter)
Comments		43 (YouTube) 15 (clip of Chuol in boat - Facebook) 37 (clip of airdrop in South Sudan - Facebook)
Use of emoticons	thumbs up (like)	811 (YouTube) 315 (clip of airdrop in South Sudan - Facebook) 247 (clip of Chuol in boat - Facebook)
	thumbs down (dislike)	113 (YouTube)

*** Representatives from the *New York Times* as well as other Facebook users responded by posting technical advice**

As the data contained in Table 5.1.3.a shows, not every person who watched “The Displaced” chose to publically comment on the work. For example, of the 298,508 people who saw the work on YouTube, only 43 chose to post a comment. A similar pattern is seen in the video clips of Chuol poling through the swamp and the UNICEF food drop in South Sudan, which were posted on the *New York Times*’ Facebook site. According to the figures in Table 5.1.3.a, 38,853 people viewed the clip of Chuol and 49, 546 people viewed the clip of the airdrop. However, only 15 and 37 people respectively commented on the videos. Furthermore, it does appear that the use of emoticons (thumbs up, thumbs down, smiling face, sad face) are a popular way of expressing one’s sentiment, whether one did or did not chose to post a comment.

A review of the data compiled also found that many of the sentiments posted touched on three of the five themes examined in section 5.1.2. For instance, 12 of the comments submitted indicate that the users felt that viewing the 360 work increased their understanding of the issue. Four user comments indicated a sense of presence in the 360 work and 15 indicated that the viewers had been emotionally affected (engagement). Moreover, seven viewers wrote that they had difficulties viewing the work. Similar to TC, MO and EE, those experiencing technical issues encountered problems with buffering and with locating and reading the subtitles. Furthermore, just like MO, a few reported that they had experienced nausea while others said they were not able to view the work on their phone.

There were, however, several (31 viewers) who expressed approval of the *New York Times*' use of 360 technology in news, noting that it makes for more powerful stories and "breathes new life" into stories that are as old as time itself. Others (20 users) disagreed, claiming that the technology, not the story, had become the focus. Yet others raised ethical concerns about using 360 technology in news.

Of further interest is the fact that while not everyone who viewed the 360 video chose to post a comment, they still engaged with the work. Some (913 viewers) took time to share the video with friends, family members and followers on social media platforms like Twitter, YouTube and Facebook. A review of the raw data also shows that, in a few instances, the interaction went both ways. For example, representatives from the *New York Times* – as well as other viewers – responded to the questions posted by those who were experiencing technical difficulties.

5.1.4 Summary

Data compiled from the interviews conducted with the three participants asked to watch "The Displaced" found that each reported feeling a sense of presence in the work. The volunteers also noted that viewing news in 360 provided a new perspective on an age-old story, was more engaging, gave them greater control of their viewing experience and made the work more transparent. Furthermore, the findings of the documentary analysis conducted reflected many of these experiences. It also showed that engagement comes in all forms, not just viewer comments. Some clicked on or posted emoticons to express their feelings while others shared the work on social media sites like Facebook, YouTube and Twitter.

5.2 “Oslo Lufthavn – Pir Nord” by *Teknisk Ukeblad*

Spherical (360-degree) video was used to produce “Oslo Lufthavn – Pir Nord,” a news report designed to give the audience early access to the newly constructed North Terminal at Gardermoen. Produced by *Teknisk Ukeblad*, the seven-minute video offers viewers the opportunity to explore the area as project leader Hans Petter Stensjøen discussed the merits of the new terminal, its structure and its operations (see Attachment 7). The video was released on 13 October 2016 and can be viewed on a smartphone – with or without a virtual reality headset. It also can be viewed on a computer and on an iPad.

“Oslo Lufthavn – Pir Nord” is one of about 24 spherical works produced by *Teknisk Ukeblad* (TU). The organization is an early leader in the use of 360 video in Norway and is determined to play a key role in the production of 360-degree virtual reality news. The group began experimenting with spherical video in 2016 after it received funding from Google’s Digital News Initiative (DNI) Fund. A portion of the 300,000 euros awarded to the organization was used to establish a virtual reality news division within TU. DNI money has also been earmarked to train TU personnel and to purchase the equipment it needs to produce 360 news content.

In an interview conducted in November 2016, two representatives from *Teknisk Ukeblad* elaborated on the company’s decision to use 360 technology in news. According to the two, the appeal of 360-degree video is many. First, it is new and the reporters on staff are eager to explore the potential of a technology that would allow them to place the audience in the story. “It’s a new method of storytelling,” one of the two representatives explained. “The big thing about VR is that, when you use video or when you write or when you take pictures, you show something and you can tell about something. But with the VR, the audience can actually be there and experience it themselves” (TU interview, November 14, 2016).

The two men add that watching a news report in 360 gives audiences greater control over their viewing experience and allows them to look at the issue from another perspective. Moreover, similar to the *New York Times*, TU is looking to capitalize on this new technology to increase the appeal of its brand and to generate revenue – two goals that fall outside the scope of this particular research. The two TU representatives make clear why their organization has elected to pursue this new technology. The question is: In what way do the consumers experience 360 content and what are their views about the use of spherical video

in the delivery of news? To be presented next are the perspectives of three people who watched the work.

5.2.1 The consumers

Three of the nine participants in this research study were asked to watch “Oslo Lufthavn – Pir Nord.” A general profile of the participants, who represent the consumers of news, is provided in Table 5.2.1.a.

“OSLO LUFTHAVN – PIR NORD”

PARTICIPANT	KS	EØ	MØ
Work	Bachelor student, nursing	Consultant, auto mechanic vocational school	Bachelor student, primary and lower secondary school education
Age	50	47	20
Residency	Oslo	Akershus county	Oppland county
Have you watched VR content or 360 video before?	No	Once but not VR news	A few times but not VR news
Medium used to watch the 360 work	Huawei P9	iPad and iPhone 6s	Samsung Galaxy S5 and HP computer where she clicked and grabbed screen to navigate
Viewed work with or without a VR headset?	Without	With and without a VR headset	Without
Do you own a VR headset?	No	No but has access to it (via a family member)	No
Subscriber or follower of publication/organization?	Aware of TU but does not follow it	Not a regular reader but has read some TU articles in the past	Has heard of TU but does not read or follow the publication
Do you intend to buy a VR headset of your own?	Not at this time	No	Not at this time

Table 5.2.1.a: Profile of the three participants who viewed “Oslo Lufthavn – Pir Nord,” a 360 work produced by *Teknisk Ukeblad*

To preserve the confidentiality of the participants, a pseudonym has been assigned to each person. In addition, only initials have been used when referring to a specific individual. The background information compiled above include: the person’s age, residency, whether he or she has watched 360 news before and whether a virtual reality headset was used to view the work. The three participants range in age and come from different backgrounds. Two – EØ

and MØ – have seen 360 content before but not one of the three has watched news in 360. Only one, EØ, used a virtual reality headset to view the work. The others watched the 360 work on their mobile, on a computer or on both. Moreover, not one of the three has expressed any desire to invest in a virtual reality headset to view spherical works in the near future.

5.2.2 The consumer perspective of 360 news

An analysis of the interviews conducted with the three who were asked to watch TU's "Oslo Lufthavn – Pir Nord" indicate that the discussions centered around five themes. The first is the sense of being present in the work. The second is increased understanding. Third is engagement, fourth autonomy and the fifth is transparency. Each of these themes is addressed below.

Present in the work

Each of the three participants reported experiencing a sense of being on location. During our interviews, all three related how they felt as if they had been placed in the middle of the North Terminal at Gardermoen. EØ said that it felt like he was "standing right there beside" the TU reporter and Pir Nord project leader Hans Petter Stensjøen. KS felt the same, noting that:

I could look around, see downwards and upwards and to the roof and from above and from below. Nearly the same feeling as if one was there on site. So I thought it was really interesting. I could never have done this with other videos that I have seen. I would not have been able to move around. I thought that it was great that this was possible. (my translation)

MØ, on the other hand, described a more active experience. She explained:

I like the first part of the video where you were sort of sliding over the floor, you know sort of like you were on a skateboard and you could sort of look around and there's people and you could just feel like you are going down. I feel that might be more uh feel more real because you're actually moving, not just standing still.

The use of the active tense in the statements above reinforces each of the three participant's belief that they had been "transported" into the work. Phrases like "standing right there beside me," "I could look around," "see downwards," "you were sort of sliding over the floor" and "you could just feel like you are going down" are indicative of those who are physically on site. They also suggest that the speaker was no mere observer but that he or she carried out the action described. KS, for example, speaks of moving around the terminal and

of looking “downwards and upwards to the roof.” MØ echoes these sentiments when she says that “you could sort of look around.” Also of interest is the fact that both MØ and KS reported that they felt as if they were moving – a sensation similar to that reported by MO, who watched “The Displaced” (see section 5.1.2).

Increased understanding

While project leader Hans Petter Stensjøen discussed the construction, layout and operations of the North Terminal, EØ took advantage of the 360 technology to look around the site. He said that: “you experience more of the surroundings because you can move around and see a lot more of the place or the area where you’re standing” (my translation). MØ also grabbed the opportunity provided to explore the facility and to examine the check-in counters and the newly installed computer system. As she noted, “being able to see the different things discussed helped me to understand what they were saying.” When asked to clarify, she said:

Uh maybe like, especially like when they talked about how they built the place and being able to look around and see how it looked and how maybe how he (Stensjøen) talked about how they were going to put in another station.

KS agreed. He said that:

One receives both the viewer’s experience that one gets from the conversation and, at the same time, gets the practical information about how the area will be used and what the different floors will be used for, etc. I thought it was very exciting to hear what he (Stensjøen) had to say about the building and at the same time I could move around and look around the building. (my translation)

Engagement

EØ, MØ and KS made clear that they could not sit still if they wanted to fully experience the 360 work. They had to physically engage with the video and its content. This meant that if they wanted to explore the scene before them, they had to move the phone or the iPad around. For MØ, who also watched the 360 work on her computer, it meant using the keyboard to navigate and to zoom in and out of scenes.

KS admitted that when he first saw “Oslo Lufthavn – Pir Nord,” he watched it as he would have watched a regular video. It did not go well. He said: “I didn’t think it was so exciting because I didn’t get to experience more than just what had been filmed, what the camera was focused on” (my translation). In this case, the lens of the 360 camera were trained on the TU reporter and on Stensjøen, both of whom spent the majority of the time standing in one place.

The next time KS watched the 360 work, he followed the instructions provided by TU and moved his mobile around. The experience the second time round, KS said:

... was much more exciting because I then could see from different perspectives and that was a new experience for me that I have never done before. This is a stylish building and that's what makes it interesting. Had it just been the inside of an office, it wouldn't have been as exciting to look around because there's not a lot to see but here in this instance where the building is new and modern with really nice architecture, then I thought it was quite exciting to look around. (my translation)

Physical involvement in the work is also exhibited in the following quote by EØ: "I could twist the screen and look around the area there and I did that, looked at how the airport looked even though there wasn't much to look at but yeah, I looked at it. So it was OK to see it using the iPad" (my translation). MØ made a similar observation but added that:

Sometimes when I did something weird and uh held it (phone) like one way, it sort of changed. When I held it one way, I saw something but when I did something this way, it was something else because I did something weird with the 360.

This physical interaction with the 360 work intrigued the three participants and kept their attention fixed on the screen. Furthermore, each of the three noted that their presence at the scene and their ability to explore the area helped them to better understand the subject. As EØ explained:

You get more out of it when you sit and watch this in the VR format or 360. Yup, you get a much better experience of what's happening, if you will. (my translation).

MØ agreed, adding that: "it (360 format) was a new and sort of fun way to learn and listen to news."

Autonomy

What struck KS, EØ and MØ most about the 360 medium was the fact that they were in control of their viewing experience. Had it been traditional news, MØ said, one would only be able to see the information that the journalist or news director chose to display. "Now, with the 360, you can look around and learn more about the building." EØ, for example, spent time examining the areas of the North Terminal that normally would be off limits to the general public. He explained:

I looked at the check-in area there. I studied it a bit, looked at the screens and the keyboards and looked around the vicinity. (my translation)

KS, on the other hand, was happy to learn that he could take his time and examine the sections of the new terminal that interested him. The decision on what to do and how long he would spend in a particular area, he said, was his to make.

I stood completely free. I could look at the men from different perspectives as well. For example, from the passage or from the sides or, whichever way I wanted to. So if I wanted to wander off and take a look at some cables or the architecture, I could do it. It was great. (my translation)

MØ shares his view. Similar to KS, MØ likes the independence and the choices afforded by the technology. She states:

I think that's actually a really good thing cause it's sort of like real life. When you talk to someone, you can choose. Like, do I actually want to look at them or do I want to look away? Uh if you're just listening to someone talk, then you can also choose where to look and then if they're talking about their environment you can choose to look or, if they point over there, you can look at what's over there. It's a lot like real life.

Transparency

According to EØ, KS and MØ, unlike traditional video, the nature of the 360 medium allowed them to see everything. There is, as EØ pointed out, no hiding from the camera. "You can look around and examine the surroundings." Furthermore, as the medium gave them greater control over their viewing experience, the three said they were free to investigate, to examine and to evaluate the information provided. As KS explained:

You can look around and you can go back to those who are speaking and watch them. So you have all the opportunities to choose yourself what you want to do. And for me, who would rather decide myself what to do, that's extremely good. (my translation)

MØ essentially agrees noting that the "openness" of the medium makes it easier for one to evaluate the credibility of the report. Nothing, she says, is hidden. It is all there for everyone to see.

I think it increases the credibility of the report in the sense that you can see what he's talking about and therefore know that he is "telling the truth." I feel like many humans in this "modern society" tend to jump on the wagon and believe everything that people tell them, but then are often shown that they are wrong through different sources. When showing proof (the hangar itself) while talking about it they eliminate "all" doubt as to whether or not it is actually true that they have built this new hangar. If the report had been a guy in a completely white room with just the 360-degree camera and nothing else, then the credibility would have been much less and being able to turn the camera around and not just have to watch a still photo, which the reporter has chosen, gives more information and therefore more credibility.

5.2.2.1 Additional impact of spherical video on the viewing experience

EØ and MØ were distracted by the novelty of the 360 medium. According to MØ, she spent so much time looking around and trying to *see* what was happening that she often forgot to *listen* to what Stensjøen of Pir Nord was saying. It did not help that the TU reporter merely stood there and said nothing. “There was,” MØ said, “a lot of space to get distracted and if what they said wasn’t that interesting, you can easily get distracted by looking around at all the other things.”

EØ, on the other hand, found it difficult to do two things – listen to the information being given and explore the area – at the same time. According to EØ, the minute he focused his attention elsewhere, he lost track of what the representative from Pir Nord was saying. He explained:

He’s (Stensjøen) giving a lot of information but on the other hand, if you turn around and look at other things in the same area, then you start to miss a little of what he is standing there and talking about. So that’s a minus, that you can chose to focus on something else and look around instead of listening to what he is saying. (my translation)

Moreover, EØ finds it tiring to watch the news in 360. Its format, he says, demands much more from the viewer. One cannot just sit back and relax or flip through a magazine or the day’s paper while viewing the work. One has to physically engage with the material. As EØ notes:

You need to be more active with your body. Now, one can just sit on the sofa, have a motorcycle magazine on your lap and sit and watch the news. For 360, if you’re going to get more from the report, you need to twist and turn, do more than just sit there. It’s a bit like being at the carnival. (my translation)

Therefore, unless the 360 work is exciting, EØ says that he would rather get his news via the regular channels – i.e. television, newspapers, magazines or radio.

5.2.2.2 Using a virtual reality headset to view 360 news

EØ, who had access to a virtual reality headset, used it to view “Oslo Lufthavn – Pir Nord.” He also watched the work on his iPad and on his mobile. When asked to compare the experiences, EØ said that using the headset put him “closer to the action. It seems as if they are standing there, right beside you.” Unfortunately, it also made him “feel a bit strange in the head.” When asked to elaborate, EØ said:

I think it's like you become not quite dizzy but you feel a bit strange. You are there and it seems as if you're there but then I feel a bit odd in the head when watching this with a VR headset. It could be the set up or maybe adjustments need to be made to the headset but yup, I liked it better watching it on the iPad. (my translation)

Therefore, while it was interesting to view the 360 work through a headset, EØ does not think he will be repeating the experience anytime soon. If given the choice, he said, he would rather watch spherical video on his iPad. "The mobile is OK," he said, "but the screen is a bit small."

5.2.2.3 Appropriateness of using 360 video in news

Both EØ and MØ questioned TU's use of 360 technology in this particular work. The Pir Nord story, they felt, was better suited to traditional video. EØ said that 360 video should only be used in pieces that require that the viewer be there to fully appreciate the experience. The "Oslo Lufthavn – Pir Nord" story, EØ said, does not fall into this category.

It really was quite a boring place where they stood. It was basically an empty hall in the airport. ... There was a lot of wooden floor space and the two men who stood there. One who talked and the interviewer, who didn't say a single word. It would have been a bit more exciting had it been a dialogue, but it was only a monologue. (my translation)

MØ made a similar observation. In her words:

It was interesting, I guess but I didn't quite understand the reason for the 360 because it wasn't like, there wasn't anything special when you turned it around. It was just like, it was sort of more a distraction because you can focus on things in the background and didn't quite listen to things they said all the time.

Each of the three participants made clear that they do not believe that it would be appropriate to use 360 technology for every news event. In KS's view, the medium is best suited for stories where "there is something interesting to see – i.e. beautiful nature or an interesting building or an interesting city – some place where it can be exciting to look around and examine different things." MØ, on the other hand, believes that the public would best be served if 360 technology was used to present "pieces where things are happening around you, not just sort of right in front of you but where they are moving around and pointing things out." She adds that by "putting you in the middle of things, then you're sort of there in a way, which makes it more real to you and you pay more attention."

EØ agrees. He says that the viscerality of the medium lends itself to reporting on conflicts such as the ongoing war in Syria. The 360 medium, EØ notes, would allow the audience to look around and obtain a sense of the destruction inflicted. He states:

If you are standing in Aleppo, you can see how terrible it looks all around you. At the same time, you can hear the interviewer so you can get a very strong impression of the area and its surroundings through the film. At Gardermoen, it was really boring. There was nothing around there. ... It's OK for one round but if the report had been done in a place where things are happening, where there is an activity, then it would have been much more actual to follow another around instead of just looking at one person who's standing there being interviewed. (my translation)

5.2.3 Document analysis

In addition to the interviews with the three participants above, user comments posted on the commentary fields attached to the “Oslo Lufthavn – Pir Nord” video were examined. The comments analyzed were sourced from the *Teknisk Ukeblad* site, YouTube, Twitter and Facebook. The statements posted generally reflect KS, EØ and MØ experiences of the 360 work. The details of the analysis are presented in Table 5.2.3.a.

TABLE 5.2.3.a: Analysis of user comments: “Oslo Lufthavn - Pir Nord” as of 7 June 2017 (my translation)

Category	Examples of some of the descriptions and/or actions found in statements	Total
Poor content	Gray, boring, strange for a professional work	1 (<i>Teknisk Ukeblad</i>); 1 (YouTube)
Poor use of 360 technology	Dry facts belong in text; shorter video	1 (<i>Teknisk Ukeblad</i>)
Approved of/impressed with use of 360 technology	Tweeted work from TU site; watched it in 360 degrees	1 (Twitter)
Raises two or more points	Poor content and poor quality video (technical)* didn't show people around (content) + poor camera equipment (technical)	1 (<i>Teknisk Ukeblad</i>) 1 (YouTube)
Viewed		4,285 (YouTube) no figures available from <i>Teknisk Ukeblad</i> site
Use of emoticons	thumbs up (like) thumbs down (dislike)	3 (YouTube) 1 (YouTube); 1 (Facebook)

*TU responded to the criticisms. A TU representative explained how the work was produced (8K with synchronized Omni system), provided guidance on how to best view the work and explained the rationale

for the approach taken. Users also were told that the publication is experimenting with different spherical (360-degree) formats.

As the data contained in Table 5.2.3.a shows, not everyone who watched the “Oslo Lufthavn – Pir Nord” video chose to comment on it. For example, of the 4,285 people who viewed the work on YouTube, only six engaged with the work. These six either posted a comment (2 viewers) or ticked the like (3 viewers) or dislike emoticons (1 viewer). Similar to EØ and MØ, five viewers questioned the appropriateness of using 360 video in this particular piece. As one viewer noted, the work lacked excitement and the material presented was better suited to regular video.

There were, however, a few who enjoyed the piece. Three viewers “liked” the work. One enjoyed it so much that he or she shared the video on his or her Twitter site. Also of interest is the fact that, while the majority of those who viewed the video may not have chosen to post a comment, there were a few who engaged with the work by either sharing the video or by taking the time to tick the thumbs up or thumbs down emoticons. A review of the raw data also shows that the interaction went both ways, with a representative from TU responding to some of the more critical comments made.

5.2.4 Summary

The data compiled from the interviews conducted with the three participants asked to watch “Oslo Lufthavn – Pir Nord” found that each reported feeling a sense of presence in the work. The volunteers also noted that viewing the news in 360 increased their understanding of the subject. Moreover, the three indicated that the 360 format was more engaging, gave them greater control of their viewing experience and made the work more transparent. The findings of the documentary analysis conducted reflected some of these experiences. Moreover, it showed that engagement with the material comes in all forms. For instance, a handful of viewers posted comments. Some responded to an existing discussion thread while others clicked on emoticons (thumbs up, thumbs down) to convey their feelings about the work.

5.3 “Visit Syria in 360 degrees – The Old City of Homs” by the Norwegian Red Cross

“Visit Syria in 360 degrees – The Old City of Homs” is a four-minute spherical video produced by the Norwegian Red Cross. The work, released in December 2015, takes viewers through the Old City of Homs, a once-thriving area that now lies in ruins (see Attachment 8). Buildings have been destroyed. Rubble lies everywhere and the city’s residents, like their compatriots throughout the country, struggle to obtain the supplies – i.e. food, clean water, medicine and blankets – needed to survive the winter and rebuild their lives. The 360-degree video can be viewed on a smartphone – with or without a virtual reality headset. It also can be viewed on a computer and on an iPad.

In an interview conducted in November 2016, a spokesman for the Norwegian Red Cross discussed the appeal of spherical (360-degree) video and the organization’s decision to incorporate this technology in its work. The use of 360 video as a journalistic tool is new and the Norwegian Red Cross, like the *New York Times* and *Teknisk Ukeblad*, is eager to explore its potential. The “Visit Syria in 360 degrees – The Old City of Homs” video was the first of 10 spherical works produced by the Norwegian Red Cross’ communications department whose media team wanted to determine whether the 360 format:

Could contribute to the stories that we are trying to tell. Our goal was to check whether this could fly or not, if this was something that could support our communication or if it would be another platform to drain our resources. (Norwegian Red Cross interview, November 14, 2016)

The response from the public has been positive, which, according to the agency spokesman, shows that there is an appetite for spherical works. He attributes this to a number of factors. The first is that the 360 work gives the audience access to places that many have never been too before. Furthermore, it allows people to look around, explore and experience a place or an event on their own. Most appealing of all, the Norwegian Red Cross spokesman claims, is that there is no hiding from the lens of a 360-degree camera. Therefore, the work is open and transparent, which, according to the agency’s spokesman, is vital for an organization like the Red Cross, which relies heavily on public donations. He explains:

For us, being open and transparent is very important to establish trust and the 360 medium gives us a good opportunity of doing that. It lets people have a look behind the scenes, lets them come out with us out into the field to experience a food drop in the South Sudan, look at a city or a village in North Korea or experience the destruction caused by the conflict in Syria. (Norwegian Red Cross interview, November 14, 2016)

The Norwegian Red Cross has made clear why it is investing in this new technology. The question is: In what way do the consumers experience 360 content and what are their views about the use of spherical video in the delivery of news? To be presented next are the perspectives of three people who watched the work.

5.3.1 The consumers

Three of the nine participants in this research project were asked to watch “Visit Syria in 360 degrees – The Old City of Homs.” A general profile of the participants, who represent the consumer of news, is provided in Table 5.3.1.a.

“VISIT SYRIA IN 360 DEGREES – THE OLD CITY OF HOMS”

PARTICIPANT	PK	EG	TM
Work	Teacher, writer	Program testing coordinator, Department of Defense school system	Front office manager, hostel
Age	57	50	35
Residency	Tblisi, Georgia	Guam, USA	Oppland county, Norway
Have you watched VR content or 360 video before?	No	No but has seen a Simpson’s 360 video made by Google	No
Medium used to watch 360 work	iPhone 6 and an ASUS mini-PC; clicked and grabbed screen to navigate	Del desktop PC using Firefox browser; clicked and grabbed screen to navigate; tried to watch film on her mobile but became dizzy	Samsung Galaxy s5 and Acer PC
Viewed with or without a VR headset?	Without	Without	With and without a VR headset
Subscriber or follower of publication/organization?	Has worked alongside Red Cross and other aid personnel	Red Cross was a former client, takes first aid certification and re-certification courses from Red Cross	Aware of Red Cross but is not actively involved in the organization
Do you intend to buy a VR headset of your own?	No	No	No

Table 5.3.1.a: Profile of the three participants who agreed to watch “Visit Syria in 360 degrees – The Old City of Homs,” a 360 work produced by the Norwegian Red Cross

To preserve the confidentiality of the participants, a pseudonym has been assigned to each person. Moreover, only initials have been used when referring to a specific individual. The background information compiled above include: the person's age, residency, whether he or she has watched virtual reality news before and whether a virtual reality headset was used to view the work. Participants range in age and come from different backgrounds. None have watched news in 360 but one – EG – has seen 360 content before. Only one of the three participants –TM – used a virtual reality headset to view the work. The others watched the 360 work on their mobile, on a computer or on both. Moreover, not one of the three expressed any desire to invest in a virtual reality headset to view spherical works in the near future.

5.3.2 The consumer perspective of 360 news

An analysis of the interviews conducted with the three who were asked to watch “Visit Syria in 360 degrees – The Old City of Homs” indicate that the discussions centered around five themes. The first is the sense of being present in the work. The second is increased understanding. Third is engagement, fourth autonomy and the fifth is transparency. Each of these themes is addressed below.

Present in the work

Each of the three participants reported that they felt as if they were there in the work. The experience, TM said, was almost physical. In her words:

The filming was so it was almost like you were drag into it, if I can say that? I felt like I was actually walking around the city together with the production team.

For PK, this sense of being in Homs, was particular strong in the scenes where Red Cross personnel drove through the city. She explained.

Yeah... uhm it was especially like when he was riding in the car. For some reason I felt, because he was in there, he was in the picture and you could see outside the window of the car. Uhm so that does kind of put your right in there with him and all of what you're seeing as you're driving by.

EG attributed this strong sense of “being there” to the producer's use of 360 video, a medium that allows viewers to look around them. According to EG, this ability to view the scene from different angles and different perspective made her feel as if she were on site.

She said:

I panned right and I said: “Oh look. Look how many people are in the car with me.” I’m facing this guy and I’m looking over his shoulder so I felt like I was there in the vehicle with them for a moment in time. But you know the whole time, you know, you’re like: “I know I’m not with them but it’s pretty cool that I’m getting this close to being there as possible with this 360.”

Increased understanding

TM said that viewing the scenes in 360 brought home the extent of the devastation inflicted by Syrian President Bashar al-Assad and his supporters. Homs, a key battleground in the uprising against President Assad, is a shadow of its former self. As the “Visit Syria in 360 degrees – The Old City of Homs” video shows, many buildings have been destroyed and the city’s residents have either died, fled or sought refuge elsewhere. TM was struck by the emptiness, the desolation and the destruction.

I did not get the feeling that there was someone living there. I felt like it was empty, like everything is broken, that they have run away from everything. There is no one here uhm except for those couple of but I still didn’t get the feeling that they were living there either because they were out in the outside of the film so maybe they were like living in another part of the city. I felt like this part was completely destroyed.

Struggling to hold back tears, TM said that her heart aches for all those who have been affected by the ongoing conflict, for all those who have lost their homes and for all those who have lost loved ones.

It really came close to me. ... What I noticed was the destruction. And then it came close to me. I was sad and angry because I felt that I’m there. And if I was really there, I would have been like mad about the bombing and stuff.

EG expressed a similar sentiment. Watching the news in 360, she said, “makes it feel like you’re actually there with the people and that you’re experiencing their life.” In this particular case, the feeling was not a pleasant one. She explained.

At one point I was navigating and I could see the buildings on the left and on the right and the destruction and just the situation they are in. And I felt, oh wow this is not a good place.

For PK, however, the scenes of devastation, juxtaposed against scenes of residents’ attempts to lead a normal life, struck a chord.

So I’m looking forward in the car with the people who are sitting there in the car. Uhm and it just I mean: “Wow, their cars all look good for their houses looking so bad. They take care of their cars.” The mundane little things that people do like wash their cars. I mean, here they are trying to make a normal life of just washing their car. That’s the thing that struck me.

Engagement

PK, EG and TM reported that they engaged with the 360 work on a physical level. PK described the experience as follows:

All I had to do was click and grab and I could just watch everything. Uhm I like the street scenes a lot better because you're able to see what you're going towards instead of just seeing what's behind us. ... As I'm watching it and I'm moving it, I'm like OK I can stay in the car here where it's nice and simple and I'm with other people who look like me and uhm speak like me uhm I can sit here safe in the car or I can move those few inches and be totally outside amongst all the people in that devastation and walking around and washing the car and just being there.

As indicated by the narrative above, PK could not be a passive bystander. If she wanted to experience the work in full, she had to interact with the material. That meant using the keyboard on her computer to navigate the scene. It also meant clicking and grabbing on to the areas that she wanted to explore. EG did the same. She describes the experience below.

I was thinking, "How far can I go to the left and how far can I go to the right? And how much to the bottom and the top can I look?" Yeah, and that's what I was doing. I was trying to find the limits of my vision or the 360 and I wasn't even paying attention to the guy. Whatever he was doing I was just: Oh, can I move more to the right? Can I move more to the right?

In addition to physically interacting with the work, each of the three women indicated that they connected with the work on a psychological and on an emotional level. As EG explained:

In my mind, I knew that I was not there (Homs) but it's the closest thing I'll get to being there. I felt, yeah I guess, sort of like a connection to them. ... I was lost in the experience.

TM said that the most difficult part for her to handle was the debilitating sense of helplessness that overwhelmed her. When asked to go into details, she said that:

You feel as a person that you're actually walking next to uh people who have experienced something really bad and you like maybe feel like you can touch them but you still can't help them. Uh so in that way, it's right, using the 360. It makes it very real but it makes me feel helpless that I cannot help.

PK, on the other hand, found herself drawing on her experience with living in developing nations and working with international aid organizations to help her make sense of what she saw. Throughout the interview, she talked about her shock at the destruction wrought on Syria's third largest city and her struggle to comprehend why people would still want to remain. In her words:

I'm just, wow! I mean, I know there's people there. But when I see all of that damage, I just think: "How do these people live and survive and just keep going amongst all of that?" I mean, I know so many Syrians from Armenia and uhm I know that some of them still have family there. But there's a part of me that wonders: "Why are they still there? But I know the answer to my own rhetorical question. ... I mean, it's their home and so they stay and they keep hoping that it's going to stop or get better so they can rebuild and they don't want to lose what little they have in the world.

Autonomy

Each of the three participants said that they liked the fact that the 360 medium gave them control of their viewing experience. This was particularly important for TM, who does not like watching stories from the front line. Therefore:

If there was something bad on the right side, I could just turn my head and I wouldn't have to see it. So I'm in control of what they've made, choosing what in the work I wanted to see. The first time I saw it, I just mainly looked straight ahead and didn't move around. Now, I saw a new part of the film that I didn't see the first time. I was moving around. You have more control over it.

Being in the director's seat, however, could be overwhelming. According to TM, she never felt like she could relax, that she could ever sit still. There was, she said, this overwhelming need to see everything. She explained.

If you don't move your head at the correct time, you might miss something that could have been a point of the film. If they had done something to the side and I didn't move my head, I would have missed that part of the film. So then, you have to go right, left, right, left all the time. And then you get dizzy because you may have moved too fast.

EG, on the other hand, was captivated by the ability to explore at will. The 360 format, she said, allowed her to "pick what I want to look at, instead of being forced to look at the picture or pictures that they wanted me to look at." EG was not bothered by the fact that she could not move around or look behind or under things. It was enough to be able to look out over the horizon or examine the objects or people closest to her. According to her:

The first time I saw it, I was like: Oh wow! This is cool. Like I'm thinking about, you know, being able to navigate."

PK also felt empowered by the choices offered. She noted:

I feel that I have more control over my comfort zone, which is important for anybody watching anything. So I can control my comfort zone. Therefore, yes, if I chose, I can be outside the car, not just with the Red Cross people, but out amongst the people so I can feel a better connection to the uhm destruction, to the few people who are out on the street, to the pain and suffering that's going on. I cannot feel the cold but I can see what's needed and what's going on and I can do that just by turning my head.

Transparency

TM liked the fact that she could see what was happening all around her. She noted that she could see “on both sides,” could “look out the car window and see what it was like outside” and could “wander around, investigate and satisfy her curiosity.” EG raised a similar point. Furthermore, she stated that, in her view, the openness of the work increased its credibility and its trustworthiness. When asked to explain she said:

If you’re talking about truth in media, I’m thinking that the 360 might be a better option because you’re not manipulating and focusing the audience on one thing.

In addition, EG said:

Because of the 360, if they were talking about something, I could actually pan to it and then focus on it. And if they’re saying: “Do you see the buildings and the devastation?” I could swing away from the guy and swing over and look at the devastation or situation that they are talking about. I liked that.

PK agreed. She said that the more transparent the work, the greater the chances are that the audience will “get a better sense of the full picture.” She explained.

It allows those who are especially interested to click onto the work and they get the full view. ... It’s not just the 90 degree angle of one camera. You can look around everywhere and see how many production people are standing behind the cameraman. I mean: How many Red Cross people are there? OK there’s four of them. OK, there’s those four and you and see what they are doing and at the same time you can see what’s happening at the front of the camera and to the left and to the right. ... You’re more able to break beyond this whole fake news thing or orchestrated news to see what are other people doing. So that makes it more real for the person watching or for the sceptics. ... Now they can at least see the other parts to try and validate what Red Cross is seeing all the time and is trying to appeal to. This gives you the option to look around, to see if somehow some orchestration going on.

5.3.2.1 Additional impact of spherical video on the viewing experience

EG said she was so taken with the 360 medium that she often forgot to pay attention to what was being said. According to her:

You don’t pay attention to the message that they are trying to get across because you are so fascinated that you can scroll and look at the side of the building. ... You’re like they’re talking: And this is what’s happening in Syria. And you’re sort of hearing it but you’re like: “No, I want to see what’s going on with the sky, on the bottom, on the left. ... So I was getting lost in the 360 experience and not focusing on the message that they were trying to get across.

As indicated by the statement above, the novelty of the 360 medium overshadowed the message. Similar to EØ and MØ who watched “Oslo Lufthavn – Pir Nord,” EG was so focused on experiencing the 360 work that she forgot to listen. In addition, EG, who is prone

to motion sickness, reported feeling nauseous when viewing the 360 work on her mobile and on her computer. She said:

I am prone to motion sickness so watching the video made me dizzy. ... If it had been any other circumstances, I wouldn't have continued watching it because I was getting dizzy. I said: "Oh my God. I'm going to watch this because I'm asked to watch it." But if I was just cruising through the Internet or otherwise just come across it, I would have logged off because I was getting dizzy.

TM, who like EG is susceptible to motion sickness, also reported feeling nauseous, but only when viewing the work through a headset. "No," she said. "This (indicating the virtual reality headset in her hands) is not for me. My body can't take it. I get sick."

5.3.2.2 Using a virtual reality headset to view 360 news

TM, the only one of the three who had access to a virtual reality headset, used it to view "Visit Syria in 360 degrees – The Old City of Homs." She also watched the work on her mobile phone and on her home computer. When asked to compare the experiences, she said that the feeling of being in Homs was much stronger when using the headset. TM attributed this to the fact that the headset immersed her in the work. It blocked everything out, allowing her to focus on the story. She noted:

I can go all the way around. ... I saw more of the guys, and I saw more that I didn't see the first time. Now, I saw even more because I looked to the sides. I saw even more how big the city actually is and how people still are living there now.

Furthermore, TM said, the sense that she was in the Old City walking alongside the members of the Red Cross delegation was extremely strong. "I was like this (positioned right index finger less than a centimeter away from thumb) close to the people staying there or living there still," she said. However, experiencing the destruction firsthand and in such close quarters was not a pleasant experience. It became worse when TM began experiencing vertigo and dizziness.

It was awful. ... No, I don't like to see news like this (through headset). I'm nauseous. I feel dizzy. I'm sure it's my body that can't take being so close. It has nothing to do with the content. It's the technical side, technical and physical.

5.3.2.3 Appropriateness of using 360 video in news

As EG, PK and TM point out, spherical works are more visceral than reading, watching or listening to the news. Therefore, they recommend that much more thought and care be given to the contents of the news reports generated in this medium. TM, for example, believes that 360 videos would work well with feature or travel stories. "It would be nice to see where I

can spend my summer holiday and then feel like you're really there," she said. Stories with a lot of blood or unnecessary violence is, for her, a no go.

All three women admitted that being placed in the middle of Homs allowed them to experience – and better understand – the consequences of war. However, as PK and TM were quick to point out, placing a person in the middle of a conflict can be traumatic. PK explained:

I think it (360 video) has its place and it can be very powerful. But I would not want to see it done for every single thing every appeal because then it won't have the same impact, the same magic that it has right now.

Moreover, PK said:

I also don't know if we really want to be in the middle of war. I mean, I can see where some people would want that and there could be an application there, especially when you really want the general public to feel what is happening, not just to see it but to feel it, to break beyond just what's on the camera on the TV screen, the static TV screen.

EG also sees the advantages and the disadvantages of using 360 technology in news. As she notes:

Some people of the older generation might be averse to it but I think that the younger generation would eat it up because it's cool. I mean, this is what they were born into and this is just the way it is. However, I think that for our age group, well, it's like: we like technology but we want the practicality of it.

5.3.3 Document analysis

In addition to the interviews with the three participants above, the user comments posted on the commentary fields attached to the "Visit Syria in 360 degrees – The Old City of Homs" video were examined. The comments analyzed were sourced from YouTube and the Norwegian Red Cross' Facebook site – two areas in which the 360-degree work was made available. The findings of the documentary analysis reflect PK, EG and TM's experiences with the 360 work. The details of the analysis are presented in Table 5.3.3.a.

TABLE 5.3.3.a: Analysis of user comments: "Visit Syria in 360 degrees – The Old City of Homs" as of 7 June 2017 (my translation)

Category	Examples of some of the descriptions and/or actions found in statements	Total
Good content	Clever, great	2 (Facebook)

Approved of/impressed with use of 360 technology	Effective informative tool	1 (Facebook)
Affected by content	Use of sad emoticons, link to melancholic music	2 (Facebook)
Tagged others	Stated names of those tagged	3 (Facebook)
Raises two or more points	Innovative (technology) + sad (affected by subject)	1 (Facebook)
Viewed		1,190 (YouTube) 11k (Facebook)
Shares		112 (Facebook)
Comments		0 (YouTube) 9 (Facebook)
Use of emoticons	thumbs up (like)	9 (YouTube) 130 (Facebook)

As the data contained in Table 5.3.3.a show, not all of those who watched “Visit Syria in 360 degrees – The Old City of Homs” chose to post a comment. For instance, of the 11,000 people who viewed the video on the Norwegian Red Cross’ Facebook site, only 251 engaged with the work. Nine posted comments; 130 ticked the like emoticon and 112 shared the work with others.

Similar to PK, EG and TM, those who chose to post comments on the Norwegian Red Cross’ Facebook site felt that the use of the 360 medium enhanced the final product. Two noted that the work affected them on an emotional level and two expressed their enthusiasm for the technology itself. Three users were so impressed by the video that they tagged their friends, further exposing others to the work. An examination of the commentary field in YouTube, on the other hand, depicts a different pattern. Here, the data indicates that 1,190 people watched. However, not one of them chose to post a comment or share the work.

5.3.4 Summary

Data compiled from the interviews conducted with the three participants who were asked to watch “Visit Syria in 360 degrees – The Old City of Homs” found that each reported feeling

a sense of presence in the work. They also noted that 360 news gave them additional insight into the issue, was more engaging, gave them control of their viewing experience and made the work more transparent. The findings of the documentary analysis conducted reflected some of these experiences. It also showed that engagement comes in all forms, not just viewer comments. Some clicked on or posted emoticons to express their feelings while others shared the work on their Facebook site.

6. DISCUSSION OF FINDINGS

Immersing the audience into the story has always been a goal of journalism. Take for example the literary journalist George Plimpton, who wrote for publications like *Sports Illustrated* and *Harper's Magazine*, and the American broadcast journalist Walter Cronkite. The two men “inserted themselves into the stories in imaginative ways” to bring the audience closer to the action (Koski, 2015, paragraph 4). Now, with the arrival of spherical (360-degree) video, journalists have yet another tool that they can use to realize their goal. As advocates of this new form of storytelling note, the 360-degree technology, with its close affiliation to virtual reality, “affords us the opportunity to see the world through a fresh pair of eyes” (Gannett, 2015, p. 6). It also offers the potential “to create a sense on the part of the audiences of being present at distant, newsworthy locations and events” (Biocca & Levy, 2010, p. 138).

The producers of 360-degree content, the *New York Times*, *Teknisk Ukeblad* and the Norwegian Red Cross among them, are quick to extol the virtues of this new form of storytelling but are their praises justified? Does 360 news place viewers on site? Moreover, is there an appetite for this kind of news? It was with this mind that the following research question was posed: In what way do consumers experience spherical (360-degree) news?

The responses received from the nine (two men and seven women) who agreed to participate in this research show that only three of the participants (EØ, MØ and EG) have either seen or been exposed to a 360 work. None, however, have watched news in 360. Nor were they aware that the media had begun to use 360 video in news. As TC made poignantly clear:

To be honest, if you hadn't told me about the *New York Times* VR app, I would never, ever have discovered that for myself, and I wouldn't even have realized that there was a VR world out there on so many different levels.

Although it was coincidental that the nine participants selected had never watched 360 news before, this researcher could not help but wonder whether this would have a bearing on the results and whether she would be able to find a common thread in the experiences related. Interestingly enough, there were. Each of the nine participants reported that they experienced a sense of being present in the work. They also said that the 360 medium gave them a better understanding of the subject, was more engaging, gave them control of their viewing experience and made the work more transparent. Each of these themes will be discussed further.

6.1 Present in the work

Although immersion is limited when one watches a 360 video on a mobile device or in a browser, not being privy to the fully immersive experience did not seem to bother the six who were not able to view the work on a virtual reality headset. Each of them, similar to the three (EE, EØ and TM) who used a headset, reported that they felt as if they were there – a phenomenon that researcher Mel Slater refers to as place illusion or “the strong illusion of being in a place in spite of the sure knowledge that you are not there” (Slater, 2009, p. 3551). Take for example TC, who watched “The Displaced” on her mobile and again on her computer. In both instances, she said she felt as if she was “in the middle of it (story).” As did KS, who watched *Teknisk Ukeblad*’s report on “Oslo Lufthavn – Pir Nord” on his mobile and on his computer. He said that, in both viewings, he felt that he was on site, a feeling enhanced by his ability to look around. He explained:

I could look around, see downwards and upwards and to the roof and from above and from below. Nearly the same feeling as if one was there on site. So I thought it was really interesting. I could never have done this with other videos that I have seen. (my translation)

The sense of being in the virtual environment also is reflected in the user comments about “The Displaced” posted on the *New York Times*’ website as well as on social media platforms such as Twitter and YouTube. Phrases such as “hear the children,” “free to look around,” “inside the story,” “see pain in the face” indicate that these viewers felt that they had been “transported” into Oleg, Chuol and Hana’s world. In essence, the 360 medium had, as described by Marshall McLuhan, extended the individual’s sight and hearing and in doing so, it propelled the viewer into another world. Several of the comments posted indicated that, like EE, MO and TC, many viewers felt that they were able to look the children in the eye as they listened to them and to walk alongside them as they lived their lives. The 360 camera became the viewers’ eyes and the headphones their ears. As a result, they no longer were observers looking in. They were in the frame, standing with Chuol and the other refugees from South Sudan, hearing the rumble of the plane as it flew overhead, looking up like the others around them and watching as sacks of food came falling out of the sky.

These findings would not surprise researchers like Brett Stevens, Jennifer Jerrams-Smith, David Heathcote and David Callear, who have long argued that one does not have to be fully immersed in the work to experience telepresence, or presence as it is commonly called. As the four note, even though nonimmersive displays have a limited field of view, they are able

to provide “a realistic natural stimulus to a user” (Stevens, Jerrams-Smith, Heathcote, & Callear, 2002, p. 91). Note for example the strong sense of presence – i.e. the sensation of being in the mediated environment – depicted in the following remarks by PK and EG.

According to PK:

For some reason I felt, because he was in there, he was in the picture and you could see outside the window of the car. Uhm so that does kind of put your right in there with him and all of what you’re seeing as you’re driving by. (“Visit Syria in 360 degrees – The Old City of Homs”)

EG, on the other hand, described the experience as follows:

I panned right and I said: “Oh look. Look how many people are in the car with me.” I’m facing this guy and I’m looking over his shoulder so I felt like I was there in the vehicle with them for a moment it time. (“Visit Syria in 360 degrees – The Old City of Homs”)

As the comments above indicate, both women “forgot” that they were watching a mediated experience. They appear to have accepted the fact that they were seated beside representatives of the Norwegian Red Cross and that they were touring the Old City of Homs in Syria. PK noted that she could “see outside the window of the car” while EG made it clear that she was “facing this guy” and was “looking over his shoulder.” These descriptions are indicative of activities conducted by those sitting in the vehicle with others, not activities conducted by those who are watching a film of the event. Therefore, it appears that, while EG and PK were consciously aware that they were viewing a mediated work, somewhere along the line, the two women “forgot” or were willing to overlook the fact that the experience was not real and allowed themselves to be “fooled” by the multisensory work (Sturken & Cartwright, 2009, p. 177).

One’s willingness to suspend disbelief and engage with the experience further increases the sense of presence in the virtual world (den Dekker & Delleman, 2007, p. 13, section 5.5.2). KS, for example, grabbed the chance to explore the new North Terminal, which officially opened to the public in April 2017. As he explained during the interview, he felt that there was a possibility that he would find himself in this part of the airport when traveling. Therefore, he wanted to take advantage of the opportunity afforded to examine the areas that normally would be inaccessible to the general public.

I felt that it was extremely interesting because I saw that it had very interesting architecture and I was interested in seeing how the whole area looked like. And, as it is possible that I, myself, will be going there, I thought it would be exciting to see it. (“Oslo Lufthavn – Pir Nord,” my translation)

MO, who watched “The Displaced,” and MØ, who watched TU’s report on Pir Nord, were so caught up with the experience that they felt as if they were moving. MO described the feeling as follows:

It’s like when uhm especially, I think the boat, where there’s more of a movement. You kind of get a sense of movement where you kind of move the cameras around. You sort of feel like you’re in the boat, especially when he was uh pushing it out of the docks or the reeds.

MO knew that she had not physically left her home in Washington State but, having bought into the illusion so completely, she was willing to accept that she felt the boat glide forward when Chuol pushed off from the “docks or the reeds.” MØ, on the other hand, likened the sense of movement experienced to the feeling of skateboarding through a room, similar to the way in which the “Skateboard Girl” in the 1978 RC cola advertisement weaved in and out among the pedestrians (Bionic Disco, 2013).

You were sort of sliding over the floor, you know sort of like you were on a skateboard and you could sort of look around and there’s people and you could just feel like you are going down. I feel that might be more uh feel more real because you’re actually moving, not just standing still.

MØ’s use of phrases like “sliding over the floor,” “feel like you are going down,” “you’re actually moving” seems to indicate that she was there and carried out the actions herself. Moreover, who is to say that she did not? As Blascovich and Bailenson note, “virtual reality begins in the mind” (Blascovich & Bailenson, 2011, p. 18). Therefore, it is up to each individual to decide whether or not the perceptions experienced are real. The two men hold that, “if the mind buys into an experience, it deems it “real,” otherwise it judges it to be unreal. And if enough people share the perception that an alternative reality is real, then who’s to say that it isn’t?” (Blascovich & Bailenson, 2011, p. 15).

As a study conducted by researchers Maria V. Sanchez-Vives and Mel Slater show, immersing oneself in a virtual environment can “transform the consciousness of a person” (Sanchez-Vives & Slater, 2005, p. 338). This means that the individual “will respond to the virtual place and to the events within that place, feel their body to be in that place, and even transform their body ownership to ‘their’ body that they can see in that place” (ibid). Although Sanchez-Vives and Slater were referring to fully immersive virtual works, as the comments made by MO, MØ and the other participants in this study indicate, the pair’s observation is equally applicable to news in 360.

Simulator sickness, whose symptoms include, but is not restricted to, nausea, dizziness, disorientation, eyestrain and blurred vision, is a common problem reported by those participating in a virtual experience (Barrett, 2004, p. 4; Schuemie et al., 2001, p. 188). In this particular study, four of the nine participants reported feeling dizzy or ill when watching the spherical work. Two (EØ and TM) reported experiencing motion sickness when watching the work through a virtual reality headset. EØ said he felt “a bit strange in the head” while TM described the experience as follows:

It was awful. ... No, I don't like to see news like this (through headset). I'm nauseous. I feel dizzy. I'm sure it's my body that can't take being so close. It has nothing to do with the content. It's the technical side, technical and physical. (“Visit Syria in 360 degrees – The Old City of Homs”)

MO, who watched the “The Displaced” on her mobile, felt queasy when watching scenes of movement – i.e. riding in the boat with Chuol or when riding in the back of a pickup with Hana – while EG became nauseous the minute she began watching “Visit Syria in 360 degrees – The Old City of Homs,” no matter what the medium – mobile phone or computer. In her words:

If it had been any other circumstances, I wouldn't have continued watching it because I was getting dizzy. I said: “Oh my God. I'm going to watch this because I'm asked to watch it.” But if I was just cruising through the Internet or otherwise just come across it, I would have logged off because I was getting dizzy.

Reports of this psychological side effect to watching a virtual work has been documented since the 1990s but to date, researchers remain divided on whether improved technology will solve the problem (Barrett, 2004, p. 4). They also are divided on whether or not there is a correlation between presence and simulator sickness (den Dekker & Delleman, 2007, p. 3, section 3; Schuemie et al., 2001, p. 188). Investigations into this area have resulted in contradicting results. Some hold that one would not experience such a severe reaction if one did not feel that he or she was there in the work. For MO, EG, EØ and TM, the link is clear. Not only did each of the four report a strong sense of being in the work, they also reported that they experienced no adverse reaction when reading, watching or listening to the news. Therefore, it is of no surprise that EØ, EG and TM have expressed a reluctance to watch more 360 works until the technology improves. Furthermore, EG notes that there may be many others, like herself, who are prone to motion sickness and who “may have difficulties watching it (360 video) or will not watch it because of that.”

6.2 Increased understanding

Part of the attraction with 360 video is that it allows audiences to view the world through a fresh pair of eyes. Moreover, by allowing the public “to see, hear and step inside a moment, a place, a community other than one’s own,” it “breaks down barriers like nothing else” (Doyle et al., 2016, p. 9). TC, EG and TM are a case in point. Their comments indicate that the 360 experience personalized the issue. TC became privy to the loss and the helplessness Chuol experienced when he was forced to flee from his home. For her, Chuol no longer is a faceless statistic in a newspaper article or a news broadcast. He is someone that she has come to know, someone with whom she has established a connection.

Uhm, for example when um, the little boy from the Sudan mentioned that his father and grandfather didn’t make it because they were burned alive in their home. I couldn’t even imagine the terror that that must have evoked for both the boy and his grandmother because then they both lost someone. He said he lost his mum in the confusion and I can’t remember if he said he found her again, but to have to flee to an island with your grandmother and then knowing that your father and your grandfather uhm haven’t survive is beyond our comprehension. (“The Displaced”)

Similar sentiments were expressed in a number of posts placed on the *New York Times*’ site as well as on YouTube and Twitter. One viewer wrote that the 360 work helped to “better understand the humanitarian implications” of war. Another noted that watching the news in 360 allowed him or her to walk “in someone else’s shoes” while yet another touched on the medium’s ability to present the issue “through the eyes of refugees.”

Comments like these underscore Chris Milk’s contention that virtual reality is the “ultimate empathy machine” (Milk, 2015). In a TED2015 session, Milk, founder of the interactive works company WITHIN, discussed the power of using virtual reality technology as a narrative tool. According to Milk, virtual reality, of which 360 video is an integral part, is far more than just “a video game peripheral” (Milk, 2015). It is, he said, a medium that connects people “in a profound way” – a medium that, unlike any other media, “can change people’s perception of each other” (ibid).

Such was the case for EG and TM, who reported that after having experienced the devastation inflicted on the civilian population of Homs, they were better able to empathize with those caught up in the ongoing conflict. As EG noted:

At one point I was navigating and I could see the buildings on the left and on the right and the destruction and just the situation they are in. And I felt, oh wow this is not a good place. (“Visit Syria in 360 degrees – The Old City of Homs”)

TM, on the other hand, was struck by the emptiness, the desolation and the destruction. Clearly affected by the 360 work, TM struggled to hold back tears when relating her impressions.

I did not get the feeling that there was someone living there. I felt like it was empty, like everything is broken, that they have run away from everything. There is no one here uhm except for those couple of but I still didn't get the feeling that they were living there either. ... I felt like this part was completely destroyed. ("Visit Syria in 360 degrees – The Old City of Homs")

For EØ, experiencing the news firsthand helped him better understand the material presented. He noted that, after having explored the terminal, he had a better sense of the area. As he explained:

You experience more of the surroundings because you can move around and see a lot more of the place or the area where you're standing. ... You get more out of it when you sit and watch this in the VR format or 360. Yup, you get a much better experience of what's happening, if you will. ("Oslo Lufthavn – Pir Nord," my translation)

EØ used the opportunity presented by the 360 medium to examine the check-in counters for domestic flights as well as the computer system – areas not generally accessible to the general public. MØ did the same, noting that "being able to see the different things discussed helped to understand what they were saying." Therefore, when:

... they talked about how they built the place and being able to look around and see how it looked and how maybe how he (Stensjøen) talked about how they were going to put in another station. If that had been like just a straight picture, then they would have to turn the camera around but here you can do it yourself or you could choose not to do that and just watch the two guys and then you could turn around and imagine, "OK here, there's going to be something else." ("Oslo Lufthavn – Pir Nord")

KS agreed. He said that, unlike regular news footage, the 360 work allows one to evaluate the perceptions gained when exploring the scene against the viewpoint presented by the news producer. It is KS' firm belief that both these perspectives are needed if one is to obtain a better understanding of the subject. He explained:

One receives both the viewer's experience that one gets from the conversation and, at the same time, gets the practical information about how the area will be used and what the different floors will be used for, etc. I thought it was very exciting to hear what he (Stensjøen) had to say about the building and at the same time I could move around and look around the building. ("Oslo Lufthavn – Pir Nord," my translation)

It is this exact point – the way in which knowledge is obtained – that Wendy Powell raised in her discussions about the differences between 360 video and virtual reality. According to Powell, virtual reality is used to offer consumers a more interactive

experience. Spherical or 360 video, on the other hand, is used when one wants to share an experience or a location. She states:

Experiencing an encounter with a whale in 360 video gives me a far greater sense of its enormity and power than a good documentary film ever could. Done well, this sort of experience adds a layer of richness to our vicarious experiences. The scene or narrative is predetermined by the producer, and all that remains is for us to look around and enjoy the content. (Cave, 2016, paragraph 17)

6.3 Engagement

Today's consumers are more active than those in the past. They want to engage with the work, do their own investigations and provide feedback. This is particularly true of the Net Generation, those born between 1977 and 1997 who grew up with the computer, Internet and other digital technologies. According to Tapscott, this group of consumers are:

... active initiators, collaborators, organizers, readers, writers, authenticators, and even strategists, as in the case of video games. They do not just observe; they participate. They inquire, discuss, argue, play, shop, critique, investigate, ridicule, fantasize, seek, and inform. (Tapscott, 2009, p. 21)

As indicated by the analysis of the interviews conducted, 360-degree video encourages the audience to “participate” in the work. Each of the nine volunteers, for example, reported that they interacted with the 360 work on a physical level. They also indicated that they mentally engaged with its contents. For instance, those watching the work on their mobile said they moved their phone around to explore and examine the scene from different perspectives. Meanwhile, those using a virtual reality headset looked up or down or swiveled their head from side to side while participants like PK and EG, who watched the 360 work on the computer, navigated the scene by clicking and grabbing onto different parts the screen. According to EE, this physical interaction with the work enhanced her sense of “being there.” She explained:

When one moved the phone down and then up, one saw both the sky and the ground as well and that makes one feel even more that they are there. (“The Displaced,” my translation).

PK made a similar observation.

All I had to do was click and grab and I could just watch everything. Uhm I like the street scenes a lot better because you're able to see what you're going towards instead of just seeing what's behind us. (“Visit Syria in 360 degrees – The Old City of Homs”)

Most enjoyed interacting with the 360 work. Therefore, even though MØ, EØ and KS, the three who viewed the Pir Nord video, may not have emotionally connected with the piece,

they still felt that the 360 format was a “new and sort of fun way to learn and listen to news.” This comment draws attention to a point raised by a number of media scholars – the need for journalists to provide information in “such a way that people will be inclined to listen” (Kovach & Rosenstiel, 2014, p. 215). The advent of digital technologies has made it easier to meet this demand. Furthermore, the nature of the technology means that journalists no longer need to restrict themselves to the traditional narrative. The *New York Times*, for example, is aggressively pursuing the use of 360 technology hoping that this highly visual medium will connect audiences to stories that they might otherwise ignore and, in doing so, re-engage their interest in news.

If the comments from the nine participants are anything to go by, this is a strong possibility, provided of course that the media continues to deliver high quality and interesting news content. TC, for example, tends to skip over stories like “The Displaced.” Moreover, she said that, even if she had read or watched stories about the global refugee crisis, she “probably would not have comprehended it or seen it with the same eyes that the VR experience allowed.” That may be because, as indicated by each of the participants, their interactions with the work was not limited to the physical. They mentally engaged with its contents as well.

MO and PK, for instance, found themselves drawing on the familiar to make sense of the unfamiliar. MO described how she used her memories of the destruction caused by tropical storms to gain a better understanding of the devastation wrought by the bombing of a village. She noted:

So when people say, my town was bombed and I had no idea what that meant, I would probably relate it to the closest thing which would be a typhoon. What happens to a school when it gets hit by a typhoon? You know. Things are blowing in. Things are wet. But in actual reality where they have bombs where things were broken up into little pieces of what not, that’s a different view and it might not have the same impact as you know my typhoon-strewn classroom versus the actual reality of a bombed concrete classroom kind of thing. (“The Displaced”)

MO admitted that while the experiences were not the same, it was a way for her to connect with Oleg’s reality. PK, on the other hand, tapped into her knowledge of living in developing nations and working with international aid organizations to make sense of what she saw.

I’m just, wow! I mean, I know there’s people there. But when I see all of that damage, I just think: “How do these people live and survive and just keep going amongst all of that?” I mean, I know so many Syrians from Armenia and uhm I know that some of them still have family there. But there’s a part of me that wonders: “Why are they still

there? But I know the answer to my own rhetorical question. ... I mean, it's their home and so they stay and they keep hoping that it's going to stop or get better so they can rebuild and they don't want to lose what little they have in the world. ("Visit Syria in 360 degrees – The Old City of Homs")

According to TC, "The Displaced" allowed her to live Oleg, Chuol and Hana's experiences and in doing so, it gave her a glimpse of something that she "otherwise would never have given any thought to." Not surprising then that TC found herself empathizing with the children and reflecting on what she would have done had she found herself in the same situation. Take the UNICEF food drop. TC said that, while she watched Chuol scramble for the packages bouncing on the ground, she began to contemplate what it would be like if she and her family had "to rely on food packages being dropped from aircraft overhead." This, she said:

... really gave me a lot of food for thought because in the Western world, we often take for granted the security that we have, the lifestyles that we lead and the ability to have whatever we want, whenever we want. ("The Displaced")

The user comments and reactions to the individual works also indicate that many had interacted with the works on either a physical level, a mental or emotional level or both. Physical engagement ranged from a simple click on the emoticon – thumbs up, heart, smiley face, sad face, etc. – that best described one's reaction to the work to sharing the video on Facebook or Twitter to posting a comment. For instance, although not explicitly stated, one can assume that the 298,508 people who viewed "The Displaced" on YouTube physically engaged with the work during the viewing process – i.e. moved their phone around, turned their head from side to side or clicked and grabbed on the screen. Physical interaction also is seen in the number of those who indicated that they liked the work (811 clicked on the thumbs up symbol), disliked the work (113 clicked on the thumbs down symbol) or posted a comment (44).

Furthermore, an examination of the 44 comments posted on YouTube indicates that at least 15 viewers felt that they had established an emotional connection with Oleg, Chuol and Hana or had been touched by the content of the 360 production. Included in this category are statements that empathize with the children as well as emotional outbursts like "speechless," "nearly cried," "heartbreaking" and "suffered a lot." What this researcher finds interesting is that these findings are consistent with the feedback received from early tests of people's experiences with immersive works, the results of which were "characterized by more visceral and emotional reactions" (Doyle et al., 2016, p. 21).

However, for media scholars like Sybil Nolan, Terry Flew and Mark Deuze, these interactions fall short of the democratic intent behind the concept of engagement and interactivity. As Nolan and Deuze point out, the fundamental task of interactivity is to establish a forum where consumers can openly and thoroughly discuss the material presented between themselves and with the producers of news. This entails that there exists a two-way communication between all parties. This is not the case. As Nolan and Deuze note, the mainstream press appears less concerned with promoting “democratic participation” and more focused on “engaging website audiences in active rather than passive usage that boosts site traffic and meets commercial objectives such as marketing parent publications or attracting web advertising” (Nolan, 2003, pp. 2, paragraph 7). Also a concern is that commercial interests – not the desire to hear from the consumers or address their needs – lie behind the industry’s adoption of immersive technologies and its drive to develop media forms that are “based around engagement and distraction, that draw the user away from ‘reality’ into a thoroughly ‘mediate’ space” (Flew, 2002, as quoted in Nolan, 2003, pp. 3, paragraph 15).

Nolan and Deuze’s concerns are shared by a number of journalists and media critics who note that media organizations appear to be more focused on page views and “likes” than on the quality of the story. According to Allison Linn, a senior economics reporter for *NBC News Digital*, “to some people, *engagement* is just a code word for *traffic*” (as quoted in Batsell, 2015, p. 144, emphasis in the original). However, as journalists like Linn and Batsell point out, the goal of journalism is not to cultivate traffic (Batsell, 2015, p. 144). The goal of journalism is to cultivate an engaged and loyal audience. Therefore, while Batsell freely admits that page views, re-tweets and Facebook likes can serve as a useful barometer of consumers’ overall interest, he argues that more needs to be done if media outlets are to retain and grow their audience. “To be effective engaged journalism must actively consider the needs of an audience and wholeheartedly embrace constant interaction with that audience” (Batsell, 2015, p. 157).

6.4 Autonomy

Use of 360-degree technology allows viewers to explore scenes and discover characters and information at their own pace. There was, as each of the participants in this research study noted, no one who had “framed” the shot. Thus, they could look where they wanted, for as long as they wanted. They even could look in the “wrong” direction if they wanted to. This, according to the nine volunteers in this study, was a huge plus. As KS stated, he had the

chance to look around, to investigate the bits that interested him and hop over the parts that did not. He explained.

You can look around and you can go back to those who are speaking and watch them. So you have all the opportunities to choose yourself what you want to do. And for me, who would rather decide myself what to do, that's extremely good. ("Oslo Lufthavn – Pir Nord," my translation).

MO, who likes to take stock of her surroundings, was happy to discover that she was able to do so when watching "The Displaced." As she stated:

To me, it's one of the first things I do when I'm out in the open field is kind of look around to kind of see as much as possible the open spaces and what's around you. ("The Displaced")

The 360 medium, MO said, allowed her to scan the area, take in the scenery and soak in the atmosphere, just as she would have done had she been standing there in the real world. Therefore, she was quite happy to immerse herself in the story and to look around her when travelling through the swamp with Chuol, when out in the fields with Hana and when watching UNICEF drop needed food and supplies onto the island on which Chuol and 80,000 others have sought refuge. That a virtual experience is able to "evoke the same reactions and emotions as a real experience" is, according to Schuemie et al. (2001), probably "one of the most important consequences of presence" (p. 187).

For MØ, this ability to "move" around, explore and look others in the eye comes closest to replicating one's normal interaction with others – something that one cannot do when watching a regular news program. In her words:

I think that's actually a really good thing cause it's sort of like real life. When you talk to someone, you can choose. Like, do I actually want to look at them or do I want to look away. Uh if you're just listening to someone talk, then you can also choose where to look and then if they're talking about their environment you can choose to look or, if they point over there, you can look what's over there. ("Oslo Lufthavn – Pir Nord")

For the nine, the ability to direct their gaze where they wanted and uncover information at their own pace was empowering. In this respect, all nine are representative of today's consumers who prize independence and freedom of choice (Tapscott, 2009, p. 6). EG for example, appreciates the fact that she can "pick what I want to look at, instead of being forced to look at the picture or pictures that they want me to look at." PK is the same.

I feel that I have more control over my comfort zone, which is important for anybody watching anything. So I can control my comfort zone. Therefore, yes, if I chose, I can be outside the car, not just with the Red Cross people, but out amongst the people so I can

feel a better connection to the uhm destruction, to the few people who are out on the street to the pain and suffering that's going on. ("Visit Syria in 360 degrees – The Old City of Homs")

This particular feature of the 360 medium, however, is one that poses a challenge for the producers of 360 news. They have had to accept that it will not be easy "to get people to follow a narrative story arc when they can look, move and explore in any direction" (Gannett, 2015, p. 29). They also have had to rethink their approach to storytelling. As Watson writes, many have elected "to approach every story with the understanding that there may be a key action in (their) scene that the viewer may miss" (Watson, 2017, p. 22). Such was the case with four of the six participants. EØ, MØ, TM and EG stated that, in their eagerness to explore, they became distracted and lost track of the narrative. EG explained.

You don't pay attention to the message that they are trying to get across because you are so fascinated that you can scroll and look at the side of the building. ... You're like they're talking: And this is what's happening in Syria. And you're sort of hearing it but you're like: "No, I want to see what's going on with the sky, on the bottom, on the left. ... So I was getting lost in the 360 experience and not focusing on the message that they were trying to get across. ("Visit Syria in 360 degrees – The Old City of Homs")

For TM, being in the director's seat was a bit overwhelming. She never felt as if she could relax. She was constantly looking around because she did not want to miss something important. The experience, she said, was exhausting and may have been part of the reason why she experienced motion sickness. As she noted:

If you don't move your head at the correct time, you might miss something that could have been a point of the film. If they had done something to the side and I didn't move my head, I would have missed that part of the film. So then, you have to go right, left, right, left all the time. And then you get dizzy because you may have moved too fast. ("Visit Syria in 360 degrees – The Old City of Homs")

6.5 Transparency

Yet another feature of the 360 medium is that it allows viewers to see everything that takes place before the camera. The nine who participated in this research felt that this "openness" enhances the credibility of the work. As PK points out, the old adage – seeing is believing – is particularly fitting.

It's not just the 90 degree angle of one camera. You can look around everywhere and see how many production people are standing behind the cameraman. I mean: How many Red Cross people are there? OK there's four of them. OK, there's those four and you and see what they are doing and at the same time you can see what's happening at the front of the camera and to the left and to the right. ... You're more able to break beyond this whole fake news thing or orchestrated news to see what are other people doing. So that makes it more real for the person watching or for the sceptics. ... Now

they can at least see the other parts to try and validate what Red Cross is seeing all the time and is trying to appeal to. This gives you the option to look around, to see if somehow some orchestration going on. (“Visit Syria in 360 degrees – The Old City of Homs”)

For Kovach and Rosenstiel, the willingness to be transparent is one of the key building blocks to retaining the audience’s trust and to maintaining the media’s credibility.

Transparency, the two men say, is at “the heart of establishing that the reporter is concerned with truth” (Kovach & Rosenstiel, 2014, p. 115). The 360, as noted in PK’s statement above, provides viewers with a tool that they can use to critically evaluate the scene and the information given. The point made is clear: Viewers need not be passive recipients of news. They can, via the 360 medium, explore the work on their own and make their own judgements.

However, as the recent CNN controversy (resignation of three high-ranking journalists who incorrectly reported that a Russian bank linked to a close ally of US President Donald Trump was being investigated by the Senate) and the works by Fox News show, facts can be distorted. Although MO does not dispute that facts can be twisted, she does note that, with the 360:

You can see the bombed out shelter. You can actually see someone rowing through the swamp. You can see the airplane dropping food and you can see the bags of rice dropping onto the field. So you sort of have a visual confirmation that it’s happening, that it happened. (“The Displaced”)

TC agreed. She said that, because she could see what was happening in front, behind and to each side of the camera, she felt that the information presented was more real. As she noted:

That’s when I started moving around. On the spot and moved my phone more to enable me to see exactly what the camera was filming. (“The Displaced”)

Although the three who watched the Pir Nord video generally believe that the news provided by the media is trustworthy, they agreed that TU’s use of 360 technology made it easier for them to verify the information. As KS pointed out:

You can look around and you can go back to those who are speaking and watch them. So you have all the opportunities to choose yourself what you want to do. And for me, who would rather decide myself what to do, that’s extremely good. (“Oslo Lufthavn – Pir Nord,” my translation)

MØ agreed but added that:

I think it increases the credibility of the report in the sense that you can see what he's talking about and therefore know that he is "telling the truth." I feel like many humans in this "modern society" tend to jump on the wagon and believe everything that people tell them, but then are often shown that they are wrong through different sources. When showing proof (the hangar itself) while talking about it they eliminate "all" doubt as to whether or not it is actually true that they have built this new hangar. If the report had been a guy in a completely white room with just the 360-degree camera and nothing else, then the credibility would have been much less and being able to turn the camera around and not just have to watch a still photo, which the reporter has chosen, gives more information and therefore more credibility. ("Oslo Lufthavn – Pir Nord")

6.6 Secondary research questions

The concerns raised about the viscerality of the 360 medium and the media's desire that the audience use a virtual reality headset when viewing the 360 work gave rise to two secondary questions. The first is: Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news? The second is: Should spherical (360-degree) video be used in news? The participants' responses to both questions are explored below.

6.6.1 Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news?

Three – EE, EØ and TM – of the nine participants used a virtual reality headset when watching the 360 work. Each of them said that they noticed a difference in the viewing experience. EØ, who watched the Pir Nord video, said that using the headset put him "closer to the action" and enhanced the feeling of being present in the work. According to him, it felt like the TU reporter and the Pir Nord project manager were "standing there, right beside" him.

TM had a similar experience. She noted that "I was like this (positioned right index finger less than a centimeter away from thumb) close to the people staying there or living there still." Therefore:

If there was something bad on the right side, I could just turn my head and I wouldn't have to see it. So I'm in control of what they've made, choosing what in the work I wanted to see. ("Visit Syria in 360 degrees – The Old City of Homs")

For EE, the headphones and the virtual reality headset blocked everything out, allowing her to concentrate on the work and lose herself in the experience.

Now it was a little more because now there was nothing around that I could focus on in a way. I couldn't look away. It's the only thing that one can look at and I felt that it was a little that so I now have the mobile there and so then you see up, you're able to look around instead of having to turn yourself, turn the mobile around that you maybe it felt

more that I looked around instead of that I searched for something. It was a much better experience with the VR headset. (“The Displaced”, my translation)

Using the headset, EE said, allowed her to see details that she had missed when watching the “The Displaced” on her mobile where the field of view is much smaller. She explained.

The first thing I noticed is that I saw the subtitles much better. I didn’t need to search for it as much as I did before. Uhm and there was in a way, I was able to see a wider area. At the same time, when I looked straight ahead, I was able to see a lot more, which is probably why it was easier to see the text. Uhm, I saw more details that I didn’t see before because I saw a larger screen and at the same time I was able to see around a lot. (“The Displaced,” my translation)

Watching a 360 work on a headset, however, is not for everyone. While EE enjoyed the experience, EØ and TM did not. EØ, who is not keen to repeat the experience, said that he felt “a bit strange in the head.”

I think it’s like you become not quite dizzy but you feel a bit strange. You are there and it seems as if you’re there but then I feel a bit odd in the head when watching this with a VR headset. It could be the set up or maybe adjustments need to be made to the headset but yup, I liked it better watching it on the iPad. (“Oslo Lufthavn – Pir Nord,” my translation)

TM also became nauseous and still shudders at the recollection.

It was awful. ... No, I don’t like to see news like this (through headset). I’m nauseous. I feel dizzy. I’m sure it’s my body that can’t take being so close. It has nothing to do with the content. It’s the technical side, technical and physical. (“Visit Syria in 360 degrees – The Old City of Homs”)

Therefore, while those working in journalistic virtual reality would like to see more consumers put on a headset to watch 360 news, they recognize that much still has to be done if they are to attain this goal. As Watson observes, “if people are going to strap a headset to their head, they need a good reason to do it” (Watson, 2017, p. 28). EØ and TM echo this sentiment. Both have said that headset technology will have to improve before they would even consider undergoing this experience again. Until that day arrives, EØ and TM are content to obtain their news in the more traditional way – i.e. television, newspapers, magazines and radio. A possible alternative to the headset, which is being watched closely, are advances to smartphone technology that would allow for “highly immersive smartphone-based virtual reality experiences” (Watson, 2017, p. 14).

6.6.2 Should spherical (360-degree) video be used in news?

Each of the nine volunteers in this study made it clear that they do not believe that it is appropriate to use spherical video for every news story. MO and EE, for example, believe

that the 360 medium is best suited for works where one needs to be in the environment to better understand the issue. EØ feels the same. He suggests that, as 360 works allow viewers to be witness to an event, it may be appropriate to use this technology when presenting stories about conflicts such as the war in Syria. He notes that:

If you are standing in Aleppo, you can see how terrible it looks all around you. At the same time, you can hear the interviewer so you can get a very strong impression of the area and its surroundings through the film. At Gardermoen, it was really boring. There was nothing around there. (“Oslo Lufthavn – Pir Nord,” my translation)

It is EØ and MØ’s belief that straight news, like the opening of the North Terminal at the Oslo Airport, should be presented using standard video. User comments attached to the Pir Nord piece support the pair’s contention. According to one viewer, “dry facts belong in texts, alternatively keep the video short.” Journalists themselves are calling for the industry to put more thought into their endeavors.

As Ståle Grut for NRKbeta, the Norwegian Broadcasting Corporation’s research and development laboratory, points out: “Virtual reality and 360° video will only go mainstream when people are starting to have great experiences and start to talk to each other about them” (Grut, 2016, paragraph 21). Therefore, he suggests that journalists consider the following question before they launch their next 360-degree video shoot or virtual reality project: “Is it really for everyone – and everything – every time?” (Grut, 2016, paragraph 1). Failure to do so says Watson (2017) will result in the production of “bad content that will keep people away from watching it” (p. 33).

Also to be taken into account is the visceral nature of the medium. As raised in the report, *Bringing You Into the News: The State of Virtual Reality in Journalism*, not everyone may be prepared to be plunged “directly into the life pulse of stories and causes” (Gannett, 2015, p. 30). MO would agree. She notes that, for some, the use of 360 video can be a shock to the senses. Some may be traumatized while others may be overwhelmed by the sensations – and the details – encountered. She explains.

For a lot of people, that might be more of a shocking uh effect in terms of they might be experiencing something that they have no clue of because they’re living in rural America where everybody’s safe. And then suddenly you’re in this building wrecked by bomb shelling or you’re in the swamp or you’re uh working in a farm or riding in the back of a pickup. So for some people who view the video those might be new experiences for them and being in a 360 VR it might make the experience more uh realistic. (“The Displaced”)

EE and TC raise the same point, as do PK and TM, both of whom say they would rather not engage in news content that contains a lot of gratuitous violence or gore. Therefore, while PK acknowledges that there may be some justification in “bringing” people to the front lines, she remains unconvinced that this would be the right thing to do. She states:

I don't know if we really want to be in the middle of war. I mean, I can see where some people would want that and there could be an application there, especially when you really want the general public to feel what is happening, not just to see it, but to feel it, to break beyond just what's on the camera on the TV screen, the static TV screen. (“Visit Syria in 360 degrees – The Old City of Homs”)

For TC, however, the concern is one that McLuhan warns strongly about – the unintended or unanticipated consequences of constant exposure to 360-degree works. TC's worry is two-fold. The first is that the focus will be on experiencing the news and not on the news itself. The second is that what is now referred to as “virtual reality” soon will become reality. She explains.

There's no doubt about it. In five years time when it's more commonplace or in 10 years time when it's part of our daily news experience, perhaps then the greatest risk is that, in trying to bring reality to people, it actually becomes entirely virtual. So, ironically, it becomes a victim of its own popularity and, yeah, virtual reality, stops being virtual and starts becomes reality. (“The Displaced”)

6.7 Summary

This chapter has discussed the findings obtained from interviews with the nine volunteers who agreed to take part in this research study and from the document analysis conducted. As discussed above, the consumers' experience with 360 works can be categorized into five thematic units. They are: present in the work, increased understanding, engagement, autonomy and transparency. Each of these concepts have been discussed and the data collected have been analyzed against one another and against the relevant theories presented in Chapter 3.

The results of the research conducted show that watching the news in 360 engaged and empowered the viewer. As the nine participants explained, they were not merely spectators. They were there in the work and they participated in the experience. Obtaining the information first-hand, they said, gave them a deeper understanding of the issue – one that they would not have received from traditional media. They also noted that viewing 360 works does have its problems. Some discussed the technical issues encountered, others the feeling of motion sickness experienced. Also made clear is that, although each of the

participants were dazzled by the novelty of the medium, content, not form, will be the basis on which they will decide which 360 works – if any – they will watch in future.

7. SUMMARY AND CONCLUSION

Audience research in journalism is so focused on the producers of news that it often overlooks the voices of the consumers. Alternative media scholar John Downing has called on researchers to redress this problem by focusing more attention to those on the receiving end of news (Harcup, 2015, p. 680). Reiterating Downing's call are Loosen and Schmidt (2012), Harcup (2015), Gannett (2015) and Watson (2017) – all of whom stress the importance of obtaining – and addressing – the views and perspectives of the news consumer. The issue, researcher Tony Harcup says, is not that researchers are ignoring the audience. The concern is that “audiences tend to be more often written about than heard from in their own words” (Harcup, 2015, p. 681).

This basic qualitative study, which relies extensively on in-depth interviews with nine participants, attempts to re-dress the imbalance. The focus of this work is to obtain – and conceptualize – the consumers' perspective of 360 news. The audience voice is particularly important because this study seeks to answer the following research question: In what way do consumers experience spherical (360-degree) news? It also seeks answers to the following two secondary questions: Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news? and Should spherical (360-degree) video be used in news?

As the responses received from the nine (two men and seven women) who agreed to take part show, three of the participants – EØ, MØ and EG – have either seen or been exposed to 360 work. EØ and MØ have looked at a few of the 360-degree video clips posted on Facebook. EG, who visited Google's global headquarter in Mountain View, California earlier this year, has seen a short clip of “The Simpsons” in 360, a joint production between Fox Broadcasting and Google Spotlight Stories. Interestingly enough, not one of the nine has watched news in 360 nor were they aware that the media has been using spherical video in its news coverage. This should raise warning flags especially as the last two years have seen extensive media coverage of the industry's use of 360 technology.

Take the *New York Times* for example. The organization is a key player in the development of 360 works and has been promoting this new form of visual storytelling since it released “The Displaced” in 2015. In Norway, the Norwegian Red Cross has been promoting its 360 productions at all Red Cross events held throughout the country while *Teknisk Ukeblad* has

been a strong advocate of using 360 technology in news. As part of the condition of TU's grant from Google, it has been training its reporters to produce 360 news content and has been sharing its experiences and knowledge with other media professionals. They also are working to promote headset use among the consumers of news.

Yet in spite of all these efforts, as well as those exerted by many other key players in the industry, very little of the information released seems to have reached – or made an impression – on the nine who participated in this research. As the sample size is small, it is difficult to determine if this is reflective of the general community. It is a question, however, that warrants further investigation and one that producers of 360 news should pose directly to the news consumers themselves. As Watson's research makes clear, without adequate public backing, virtual reality news will remain a niche product, one only watched by virtual reality news journalists and news junkies (Watson, 2017, p. 36).

7.1 In what way do consumers experience spherical (360-degree) news?

The empirical data presented in Chapter 5 and discussed in Chapter 6 show that, in the main, each of the nine participants were intrigued by the “newness” of 360 news. Beyond the “wow” factor, however, the participants' descriptions of their experience with the 360 work can be placed into five thematic units. They are: present in the work, increased understanding, engagement, autonomy and transparency.

From a medium theorist's point of view, it can be argued that all five of these experiences may be attributed to the characteristics of the medium. For example, the nature of 360 video, combined with the viewing platform used, contributed to the feeling of being “transported” into a different world. The virtual reality headset, for those using it, extended the viewers' sight while the headphones extended their hearing. Those who watched the 360 work on their smartphone, computer or iPad underwent a similar, albeit less intense, experience. This extension of the senses created the illusion of being in a particular place. For TC, it was the South Sudan. As she recalled: “It was possible to look up, down, see the rushes around them, see the other people who were in the boat, experience what it was like right there and then, be in the boat with them” (“The Displaced,” section 5.1.2).

Those who advocate the use of headsets are quick to note that watching a 360 work on a smartphone or other mobile device is less immersive than if the work had been viewed in a smartphone-driven headset or in a sophisticated headset like the Oculus Rift. Even so,

reports from the six who had no access to a headset indicate that the sense of presence that they experienced was strong. For some, like TM, who watched “Visit Syria in 360 degrees – The Old City of Homs,” the sense of being there was almost physical. In her words: “The filming was so it was almost like you were drag into it, if I can say that? I felt like I was actually walking around the city together with the production team.”

This sense of presence is enhanced by viewers’ ability to engage with the work – due in part to the “magic window” technology in smartphones – and the vividness and depth of the three-dimensional content. The gyroscope or “compass” embedded in smartphones is able to track where the person is looking (Holdner, August 24, 2016; Lehman, November 5, 2015). Therefore, the viewer need only turn his or her head to look at something – just as the person would do in the real world. On the other hand, those watching without headsets, must either move their mobile around or scroll around on their screen with their finger to explore the views. On a computer, however, the viewer must click and grab on the screen to navigate.

One would think that this clicking and grabbing motion would be much more disruptive and ruin the illusion of being on site. Comments by PK and EG, both of whom watched “Visit Syria in 360 degrees – The Old City of Homs” on a home computer, indicate otherwise. As EG notes:

I’m facing this guy and I’m looking over his shoulder so I felt like I was there in the vehicle with them for a moment in time. But you know the whole time, you know, you’re like: “I know I’m not with them but it’s pretty cool that I’m getting this close to being there as possible with this 360.” (“Visit Syria in 360-degrees – The Old City of Homs”)

Being on the scene, according to the nine participants, made it easier for them to obtain a first-hand account of the event. Furthermore, the nature of the 360 medium allowed the nine to participate in the action. As TM stated, she was able to “conduct her own investigations” and draw her own conclusions, rather than be steered by the news director. For some like KS and MØ, both of whom watched “Oslo Lufthavn – Pir Nord,” this sense of autonomy is important. As KS stated, with the 360, “you have all the opportunities to choose yourself what you want to do. And for me, who would rather decide myself what to do, that’s extremely good” (my translation). MØ agreed. As she noted:

If it had been normal news, you could just watch them (TU reporter and Pir Nord project representative) and then maybe the other pictures if they put them in. But now you can look around and learn more about the building. And I got to choose like, “Oh, they’re talking about something over there. OK. I’ll go and watch that.” And then I’ll go back to

them on my own free will and not because they took the picture or something. (“Oslo Lufthavn – Pir Nord”)

The use of 360 video may not have alleviated the concerns raised in Nolan (2003). However, the statements made by the nine participants in this study indicate that the use of 360 technology has enabled the industry to meet some of its journalistic aims. The 360’s ability to draw audiences into the story and the “openness” of the medium, for example, has given each of the participants unique insight into the issue – one that they would not have received had they read the story on the printed page, watched it on television or heard it over the radio. EE summarized it well when she noted that viewing “The Displaced” in 360 helped her to connect with the three children. It also made their stories more personal. She explained.

After they told their story, I was then given the chance to be with them in their lives and that’s not something one gets in a normal news report. (my translation)

As noted in the quote above, being with Oleg, Chuol and Hana effectively drew EE into the story. It was the same with the other eight participants. Moreover, as the details contained in Chapters 5 and 6 show, the nine did not just watch the experience; they participated in it. They engaged, either on a physical or a psychological level, with the 360 work and, in doing so, obtained a deeper understanding of the material. TC, who watched “The Displaced” noted:

All of a sudden, I was living their experience. And because it was almost instantaneous, once I started watching, that feeling, that sympathy or empathy, actually lasted throughout the entire video with each of the three children and uhm it really gave me a lot of food for thought.

Furthermore, each of the nine participants indicated that they felt empowered by their ability to engage with the work. They were pleased with the fact that the work was open and that they could see all around them. They also were pleasantly surprised to discover that they had greater control over their viewing experience. This, many of them said, gave them the freedom to explore, to investigate and to form their own opinions about the material presented. According to PK, watching the news in 360:

Allows those who are especially interested to click onto the work and they get the full view. ... It’s not just the 90 degree angle of one camera. You can look around everywhere and see how many production people are standing behind the cameraman. I mean: How many Red Cross people are there? OK there’s four of them. OK, there’s those four and you and see what they are doing and at the same time you can see what’s happening at the front of the camera and to the left and to the right. (“Visit Syria in 360 degrees – The Old City of Homs”)

7.2 Does it make a difference if one uses a virtual reality headset to view spherical (360-degree) news?

Data obtained from EE, EØ and TM indicate that the three had a fuller and richer experience when watching the 360 work through a virtual reality headset. They were drawn deeper into the story and brought even closer to the action. As EE and TM said, the use of the headset and the headphones blocked out the world around them and made easier for them to focus on the story and the events unfolding before their eyes (See sections 5.1.2.2 and 5.3.2.2).

The headset also provided a much wider field of view, one that is much greater than that offered by the screen of one's mobile phone. As EE said: "I was able to see a wider area. At the same time, when I looked straight ahead, I was able to see a lot more, which is probably why it was easier to see the text. Uhm, I saw more details that I didn't see before because I saw a larger screen and at the same time I was able to see around a lot" ("The Displaced," my translation).

One is not required to use a headset to view 360 works. However, for Watson and other journalists who are trying to deliver the full potential of virtual reality to audiences, the headsets matter. As Francesca Panetta with the *Guardian* newspaper stated: "If you're in a headset then you're immersed in another world. If you're clicking around on a 360 video then you're not" (Watson, 2017, p. 18). PK and the five others who viewed 360 news without a headset would disagree. Therefore, this researcher believes that it would be prudent to explore the issue further. Do the consumers really feel the need to be fully immersed in news? If so, what kind of stories would they watch in a fully immersive virtual environment?

Furthermore, as EØ and TM's bout with motion sickness highlights, headsets are not for everyone. EØ, who reported feeling "a bit strange in the head" after watching the Pir Nord report on a headset, quickly switched to watching the work on his iPad (See section 5.2.2.2). TM, on the other hand, needed a few minutes to recuperate from the nausea and the dizziness. The experience, she said, was awful.

No, I don't like to see news like this (through headset). I'm nauseous. I feel dizzy. I'm sure it's my body that can't take being so close. It has nothing to do with the content. It's the technical side, technical and physical. ("Visit Syria in 360 degrees – The Old City of Homs)

7.3 Should spherical (360-degree) video be used in news?

From the data obtained from the nine participants, it appears that there is no single answer to this question. The consensus from the nine is that the issue must be addressed on a case by case basis. The question to ask, the participants say, is whether the story warrants the use of 360 video. This is the approach that Watson takes in her work for the BBC. Watson's mantra is: "If you can shoot it better in 169, don't bother with 360" (Watson, 2017, p. 21).

Most of those who took part in this project suggest that 360 video is best suited to stories where one needs to be in the environment to better understand or fully appreciate the experience. Travel or feature pieces would fall into this category. According to TM, "it would be nice to see where I can spend my summer holiday and then feel like you're really there." The appropriateness of using 360 video in hard news on the other hand has received mixed reviews. Again, it appears that the answer is dependent on the nature of the story. For instance, EØ and MØ, both of whom watched the Pir Nord video, said they could not understand why TU chose to use 360 technology on this particular piece. They noted that the work was static and did little to hold viewers' interest (See section 5.2.2.3). It was, according to EØ and MØ, a clear example of the kind of story that should have been delivered using regular video. Their view is shared by several who commented on the work on TU's website and on YouTube.

KS, who also watched the Pir Nord report, disagreed. He said that the 360 work allowed him to examine areas of interest at his own speed, something that he could not have done while watching a regular newscast. In addition, it helped him to understand the material much better. As he stated:

I stood completely free. I could look at the men from different angles as well. For example, from the passage or from the sides or, whichever way I wanted to. So if I wanted to wander off and take a look at some cables or the architecture, I could do it. It was great. (my translation)

The viscerality of the 360 medium also is a concern. On the plus side, the richness of detail heightens the feeling of being present in the work. TC, for example, said the vividness of the scene made her "feel as if she was in the middle of it" – a feeling that TC attributed to "the clarity of the picture" (See section 5.1.2). This clarity of detail, however, may be a shock to those who are not expecting it and, as MO points out, it can be hard to handle. She explains.

For a lot of people, that might be more of a shocking uh effect in terms of they might be experiencing something that they have no clue of because they're living in rural

America where everybody's safe. And then suddenly you're in this building wrecked by bomb shelling or you're in the swamp or you're uh working in a farm or riding in the back of a pickup. So for some people who view the video those might be new experiences for them and being in a 360 VR it might make the experience more uh realistic. ("The Displaced")

Moreover, as McLuhan has noted, no medium is neutral – an observation reiterated by TC and PK. For now, 360 news is in its infancy and much of the buzz associated with it is due to the “wow” factor experienced. Journalist Niko Chauls from USA Today Network said that it took several exposures to virtual reality technologies before he was able to view the medium in a more objective light (Watson, 2017, p. 36). If this is the case, then one would have to assume that it would take consumers as long if not longer to look beyond the novelty of the technology. TC and PK, however, are not worried about whether or not 360 news will take off. Their concern is: What will happen when 360 news becomes mainstream? This is yet another question that warrants further investigation.

As the comments received in the course of this research indicate, it appears that journalists' decision to embrace 360 storytelling not only has had an effect on the narrative process, it also may have begun to affect how news is viewed. Implicit in the following quote by PK is the fear that, in future, news will become less about providing information and more about providing “experiences.”

I think it has a place in the spectrum of all the media that we have out there, yes. And I think that it can be a powerful one if it's used by organizations for the “right” things. ... I mean I think immediacy or something like this would be good but uhm after a while if everyone does it, then it's going to be old. Then you're going to want to transport people to Aleppo for, you know, ... for like three minutes or two minutes so they get a taste and then beam them back home. (“Visit Syria in 360 degrees – The Old City of Homs)

Yet another question that bears further examination is: What will happen when the boundary between the virtual and the real world are forever blurred? TC points out that as the boundary between the two worlds already is fuzzy, she has no doubts that:

In five years time when it's more commonplace or in 10 years time when it's part of our daily news experience, perhaps then the greatest risk is that, in trying to bring reality to people, it actually becomes entirely virtual. So, ironically, it becomes a victim of its own popularity and, yeah, virtual reality, stops being virtual and starts becomes reality. (“The Displaced”)

The points raised by PK and TC are similar to that expressed in McLuhan's *The Medium is the Message*. Similar to McLuhan, PK and TC are warning consumers to ensure that their current enchantment with 360 works does not blind them to the potential impact of this new

technology. As McLuhan's writing makes clear, the effects of any technology are insidious. They will, he writes, "alter sense ratios or patterns of perception steadily and without any resistance" and, in doing so, will effectively affect people's relationship with themselves and with others (McLuhan, 1964/1994, p. 18). As TC notes, the "unintended consequences" of using digital media have begun to show themselves. The use of virtual reality technologies in news, she says, may hasten the process. She explains.

I'm sure there's a lot of people out there who are addicted to their gadgets, to technology, that it's now starting to be difficult for them to separate their real life from their virtual life. And something like this, because it's so real, could actually – and I'm sure that it already has – take over people's lives, that they have begun replacing reality with the virtual because they think that virtual reality is reality. So, good and bad. It can be a double-edged sword. ("The Displaced")

7.4 The way forward

The aim of this research was to conceptualize people's experience with 360 news. Thus, it was important that the consumers of news be given the opportunity to be heard. The small sample size necessitates that the findings of this work cannot be generalized. However, it is interesting to note that on a number of points – presence in the work, engagement and increased understanding among them – the findings of this particular study are similar to that contained in a 2015 Usability Study conducted by the Open Mind Strategy research firm (Gannett, 2015, pp. 38-39). Therefore, this researcher would suggest that an extensive study – one that incorporates a more diverse group of people and a greater selection of works – be conducted into the users' experience of 360 news. It also would be interesting to see whether the experiences of those who have had constant exposure to 360 and/or virtual reality works differ from those who have had little to no exposure to the technology. Further research also is needed to obtain answers to the questions raised in the discussion above. However, no matter what step is taken next, it is vital that the consumers' views be sought and that they be included in the discussions around journalism.

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APPENDIX

Attachment 1: Example of a request to participate sent to a potential research volunteer

19/12/2016 01:09

Hi [REDACTED] My master thesis examines the use of VR technology like 360-degree video to produce news. Therefore I'm looking for people who would be willing to watch a VR piece done by the New York Times and be interviewed about their experience. Participation is voluntary and while participant's identity will remain confidential. Would you be able to help?

APPENDIX

Attachment 2: Request to participate with instructions on how to watch the 360-degree work

28/12/2016 09:17

Hi [REDACTED]

My master thesis examines the use of VR technology like 360-degree video to produce news. Therefore I'm looking for people who would be willing to watch a "VR" piece produced by the Red Cross in Norway and be interviewed about their experience.

The task is not hard and should not take up a lot of your time. You need only watch a 5 - minute video and talk about your experience in an interview with me.

The piece is in English and you can watch it as often as you like. The link to the Red Cross material is: <https://www.youtube.com/watch?v=wWXEFDUL6go&index=4&list=PLVeSuU92xVaPasi4vHm4JS0nlf7p1FURW>. The title of the work is: Visit Syria in 360 degrees - The Old City of Homs.

To watch the work on your mobil, download the YouTube App and click on the video. Put on your headphones, watch and enjoy. Make sure to move your phone and/or your body to follow the action.

For a fuller experience, it's best to use VR glasses. If you use VR glasses, make sure to click on the goggle/VR glass symbol before starting. This work can also be viewed on the computer but you need to use Firefox. Safari and Explorers does not support 360-degree VR content. If viewing on the computer, use your mouse to maneuver around the piece. "Click and grab" the navigation pointers. This allows you to zoom in or out and look up, down to the left or right.

I hope you can help. Participation is voluntary. Your name will not be used in the final report but details like age, occupation and residency will be included.

What say you? Would you be willing to take part? If so, please send word via Messenger, email - [REDACTED] - or Skype - [REDACTED]

Hope to hear from you soon. Until then, have a fantastic holiday and a fabulous New Year.

Fråle

APPENDIX

Attachment 3: Requests for interviews sent to two producers of 360 news

Frale Øyen  7 February 2017 at 13:53

Use of VR in news
To: help@nytimes.com

7 February 2017

To: The New York Times
Fr: Frale Oyen
Innland Norway University of Applied Science in Hamar, Norway

Dear Sir or Madam,

My name is Frale Oyen and I am a master's candidate at the Innland Norway University of Applied Science in Hamar, Norway. I am in the last year of a master's program in digital communication and have begun work on my thesis, which explores the use of virtual reality technology in news. Specifically, I am examining the media's use of 360-degree video to create VR content.

As *The New York Times* has taken a lead role in the way VR technology is used in journalism and has invested heavily in the production of 360-degree videos, I am writing to request if it would be possible for a representative from the organization to respond to the questions attached. It would be wonderful if I could speak with that person directly. However, I understand that time and work constraints may make this difficult. Therefore, I would appreciate if you would direct the attached questionnaire to the appropriate person (Jake Silverstein, Sam Dolnick and Jenna Pirog are often cited in articles addressing *The Times'* expansion into VR storytelling).

Thank you in advance for your help. If you have any questions, I can be reached at  mobile or via Skype 

Kind regards,
Frale


NYT - Interview
questions.docx

Memo 1: Interview request sent to the *New York Times*

Frøle Øyen

VR-journalistikk

To: [REDACTED] [REDACTED] (TU), Cc: [REDACTED]

Til: [REDACTED]
Teknisk Ukeblad

Fr: Frøle Øyen
Masterstudent

Hei!

Jeg er underveis i masterstudier i digital kommunikasjon ved Høgskolen i Hedmark på Hamar og jobber nå med masteroppgaven min som omhandler bruk av VR og 360-degree video i nyhetsmedia.

Teknisk Ukeblad er blant noen få medieorganisasjoner i Norge som har begynt å produsere VR innhold. Jeg beveger meg inn i den kvalitative delen av masteroppgaven og søker muligheter til å lære mer gjennom intervjuer. Det hadde vært interessant å intervju dere om hvordan dere bruker VR teknologi i TU og hvordan dere ser VR teknologien bidrar til opplevelsen av nyheter blant folk. Jeg er også interessert i å høre mer fra dere om fordelene og utfordringene av bruk av VR teknologi og 360-degree VR video som et journalistikk verktøy.

Tenker at intervjuet ikke vil ta for lang tid, men jeg håper å få anledning til oppfølgingsintervju om nødvendig. Siden engelsk er morsmålet mitt og jeg skriver masteroppgaven på engelsk, foretrekker jeg å gjøre intervjuet på engelsk. Jeg håper at det er greit.

Jeg håper at dere kan hjelpe meg. Jeg kan ringe dere om noen dager for å følge opp.

Hvis dere har noe spørsmål, ta kontakt med meg på e-post: [REDACTED] eller mobil: [REDACTED]

Mvh,

Frøle Øyen

Memo 2: Interview request sent to *Teknisk Ukeblad*

APPENDIX

Attachment 4: Interview guide for viewers of 360 news content

1. Age? Occupation? Place of residence? (informational purposes only. Name not used in the final report)
2. Have you watched VR news before? If so, how often?
3. Did you watch this work with or without a VR headset?
4. Would you tell me about your experience?
5. What did you like about it? What did you not like about it?
6. Could you tell me whether presenting the news in 360 VR added to your understanding of the subject? To your feelings for those involved?
7. How is this experience different from watching this report on regular video? From reading about it in the paper?
8. (If used VR headset) Could you compare the difference between watching this piece with VR glasses and without?
9. Could you talk about whether watching news in this format makes you feel that the information given is credible/reliable?
10. What, in your view, could/should have been done to make the report better?
11. Can you see any problems with using this technology in news?
12. Would you tell me whether, based on your experience, you would watch VR content again? Please explain.

APPENDIX

Attachment 5: Interview guide for producers of 360 news content

1. Name and position in the organization? (informational purposes only. Name not used in the final report)
2. A little background about your organization: Organizational makeup, focus, aims & goals, circulation (readership/viewership), etc.
3. When/Why did you and your organization decided to use VR technology to create news content?
 - a. Benefits of using this technology?
 - b. Challenges of using this technology?
4. Would you explain what 360-degree VR is?
 - a. What is the difference between 360 VR video, regular video and print?
 - b. How does the use of 360-degree VR fulfill the publication's mission?
5. Would you explain the process of creating VR content?
6. What kinds of stories are done using 360 VR?
7. What is the effect of 360 VR on the storytelling process?
8. Would you discuss if there are concerns of privacy and/or ethical issues raised with the use of this kind of technology? How do you address/plan to address these concerns?
9. Would you discuss the reactions to your organization's release of VR content?
10. Cost of production? How does this compare to production of other news? How is this offset now and in future?
11. Revenue opportunities with use of 360-degree VR?
12. Way forward or fad? Please explain.

APPENDIX

Attachment 6: “The Displaced”



Photo 1: Oleg in his old classroom in the Ukraine (The New York Times, 2015)



Photo 2: Chuol poles through the swamps in South Sudan (The New York Times, 2015)



Photo 3: Riding in the back of the truck with Hana and her friends (The New York Times, 2015)



Photo 4: Hana stands before her new home – a refugee shelter in southern Lebanon (The New York Times, 2015)

APPENDIX

Attachment 7: “Oslo Lufthavn – Pir Nord”



Photo 1: Check-in area in the North Terminal (Teknisk Ukeblad, 2016)

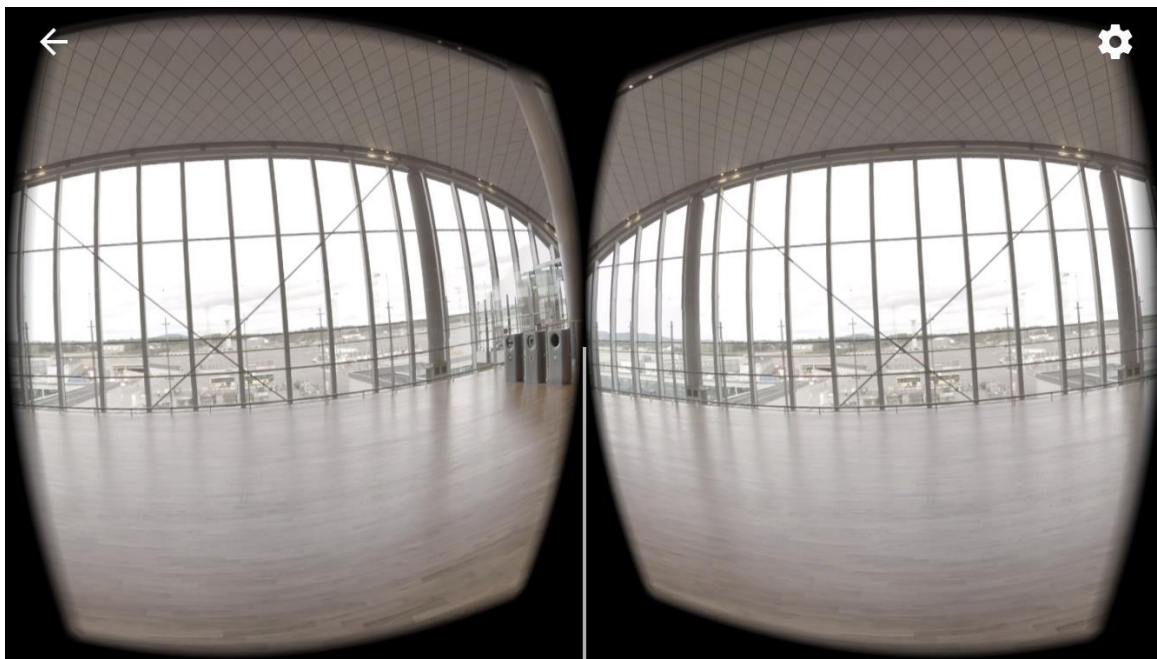


Photo 2: A view of the flight path (Teknisk Ukeblad, 2016)

APPENDIX

Attachment 8: “Visit Syria in 360 degrees – The Old City of Homs”



Photo 1: Inside looking out (Norwegian Red Cross, 2015)



Photo 2: Residents of the Old City of Homs go about their daily lives (Norwegian Red Cross, 2015)