Context photojournalism

Eva Aussems.

¹ LIACS, Leiden University, Niels Bohrweg 1, Leiden, The Netherlands.

Supervised by Fons Verbeek.

Abstract. This paper investigates the value of reality in photojournalism by arguing that a 360-degree photo in addition to a framed photo makes a news-event more objective. Nowadays a 360-degree photo is as close to reality as it can get. Will a 360-degree photo add valuable context to a framed image?

1 Introduction.

Photographs, which fiddle with the scale of the world, themselves get reduced, blown up, cropped, retouched, doctored, tricked out.

- Susan Sontag, On Photography, 1977.

Ever since the existence of photography there has been an extensive debate about the framing/manipulation by the photographer. According to Loup Langton, "News photographs (most times) depict something that actually exists. But the reality contained within the photographs is created within cultural frameworks and through cultural interpretation" [1].

One could state that a journalistic photo is manipulated on multiple levels. First of all by newspapers that frame their information. American broadcasting channel CNN for example provides a different perspective on events than for instance Qatar based news channel Al Jazeera. A second aspect involves the reporter who has his own cultural background and frames the news through his or her perspective. And the third aspect is the audience that consumes and interprets the news from their specific cultural perspective. The public disassociated from their own cultural perspective, can most likely only form an objective opinion about news events if there is no manipulation by the reporter and the media [2]. A solution would be to circumvent the problem of manipulation by photojournalists and media in general, by making a 360-degree image simultaneously to the camera of the photojournalist that takes a framed picture. By linking these two images together afterwards, the public will be provided with a framed picture that consists of the photographer's interpretation of the news-event and an additional 360-degree image that serves as the context for the framed photo.

In section two the background and the cultural framework of photojournalism will be discussed. First a short overview will be presented at the history of photography and photojournalism. After which a closer look will be taken on the philosophical aspect of images in relation to a truthful representation of reality and context. This will be examined on the basis of theories of Jean Baudrillard, Susan Sontag

and John Berger. The reason to use these specific theories is because John Berger wrote essays specifically on images and context, Susan Sontag wrote extensively on the photo/image in relation to the aesthetic and the conflicting moral. Jean Baudrillard explained the concept of reality versus simulations through icons, image in *Simulations and Simulacra*. These themes are implemented into the research of context photojournalism and how to achieve the goal of creating more context for news events. Furthermore the *Ricoh Theta m15* camera, henceforth Theta, will be analyzed. Is it a photo camera? One could argue that it lacks a lot of features and functions a standard photo camera nowadays is equipped with. The image that the Theta produces will be analyzed as well. For instance can the images be considered or categorized as photos? This section will not include an in-depth research on how often photographers and media deliberately manipulate an image, or what ethical rules exist or should exist for photojournalism because the space given for this paper will not allow a discussion of all different opinions and answers to these problems.

The third section will consist of a description of the prototype and will be tested and discussed. Research questions will be examined through multiple user tests; will this prototype enhance the objectivity of a framed photo? Will this provide a valuable context? Or are these 360-degree images lacking the intention of providing a more objective display of the captured events?

The fourth section of this paper will consist of an evaluation and the conclusion will be provided in section five.

2 BACKGROUND

The following section will provide a broader understanding of the cultural framework of photojournalism; it will make clear why this research into truthful context creating for photojournalism is meaningful. The Theta and the images created by this device will be subject to an in-depth analysis in order to provide a clear definition of what it is we are looking at.

2.1 Cultural Framework of Photojournalism.

History

A short overview of the photo camera and the beginning of photojournalism is of importance in order to understand the application of Theta's promising possibilities to provide context to a photo. The earliest existence of a written record of the *Camera Obscura*¹ can be found in the writings of Aristotle (384-322 BC)[3]. The Camera Obscura was the predecessor of the contemporary photo camera, it only

¹ Camera Obscura; (Latin: Dark Chamber) is an optical device that led to photography and the photographic camera. The device consists of a box or room with a hole in one side. Light from an external scene passes through the hole and strikes a surface inside, where it is reproduced, inverted (thus upside-down), but with color and perspective preserved. The image can be projected onto paper, and can then be traced to produce a highly accurate representation.

gave a reflection of reality and it took until 1882 before the Frenchman Joseph Nicéphore Niépce [3] took the first photo. He was able to fixate an image on a plate covered with light sensitive bitumen and it took roughly eight hours of exposure time to take one picture. This meant, in practice, that a family had to sit still for hours when having their picture taken. It would take more than hundred years to develop a camera where the exposure time was short (a fraction of a second) and where the film rolls were portable (so no immediate development was needed). That happened in 1925 when German manufacturer Leica put their first model on the market, the Leica 1 [4], which was a compact camera that worked on film rolls of 35mm. A small negative that has the possibility of enlargement when being printed out. There were already cameras on the market that made that possible, but the Leica I made it affordable for the average household. Suddenly a photographer could make dynamic pictures and show life in a more realistic way. This meant the beginning of photojournalism, hence this moment; pictures could be taken everywhere at any moment without complicated development procedures or long exposure times.

The Second World War was the first war that was photographed extensively [5]. Pictures remind us of the horrors that took place in concentration camps. Not only was the war well documented, the Nazi's were the first to extensively use photography and film for propaganda (Fig. 1 shows an example).



Fig. 1 Youth around Hitler by Heinrich Hoffman. The propaganda drew often on heroic realism. Nazi youth and the SS were depicted monumentally, with lighting posed to produce grandeur. (Source: https://en.wikipedia.org/wiki/Nazi_propaganda)

On November 23rd 1936 LIFE magazine published their first issue [6], it would run until 2001 and was the most influential photojournalistic magazine of the 20th century. 1969's issue "One Weeks Toll," that had a profound impact on the public opinion's stance towards the War in Vietnam. A young

man's face was depicted on the front-page, what followed were ten pages consisting solely of pictures and names of 242 young men that were killed in the last seven days. This was controversial and attributed to a change in the public opinion of the United States on the Vietnam War. As Fred Ritchin states "The modern turning point in war's portrayal, transitioning from the heroic to the excoriating, was that of the Vietnam War. Allowed a large amount of freedom to cover almost anything they wanted by officials who initially thought the photographs would serve a public relations effort, the photographers in the field – by making images, such as one of a grimy, exhausted G.I.; a point-blank range; terrified Vietnamese children running down a road away from a napalm attack – effectively contested the U.S. government's claims about the nature and progress of the conflict." After the Vietnam War the policy of the U.S. government changed drastically on the allowance of photojournalists on war territory. In the First and Second Persian Gulf War photojournalists were (if they were allowed at all) allowed only in a military embedded environment [7] the same holds for the Iraq war in 2003. "The limitations of embedding, along with a facile tendency to initially see the war as a battle between good and evil, contributed to the circumstance that the most revelatory photographs to emerge from that conflict were those made by soldiers in the Abu Ghraib prison" In this quote Fred Ritchin is saying that the United States by only allowing photojournalists on the ground when they were embedded in a U.S. military environment. Photojournalists were only shown the U.S. military perspective on the war in Iraq, which ended up in a biased view on a conflict that was complex and had more sides to it than solely the U.S. military standpoint. Fred Ritchin continues by arguing that the most interesting photos came from the Abu Ghraib prison where U.S. soldiers made shocking photos of tortured prisoners while posing next to them with thumbs up, like a sinister holiday postcard. These images gave another view on the Iraq war, a rather less one-sided than the United States tried to communicate to their citizens. The photos showed so-called terrorists that were tortured brutally. One could state that the value and power of photos became clear and recognized by not only the public but also by governments.

Manipulation & Perception

Photos can be very informative. Especially journalistic photos have the tendency/urgency to claim this intrinsic quality. They inform the public on events in conflict areas far away but also show us problems that might occur closer to our homes. Examples can be as varying from a civil war in the Middle East to the problematic situation of the Red Light District in Amsterdam, where a large group of women are forced to work in prostitution. Photojournalists inform us about certain issues and the public has to trust the integrity of the photographer to be sincere in his reproductions. This is not always the case; there are numerous examples of photographers and editors who cut and pasted photos together for aesthetic and moral reasons. There are photographers who seek the boundaries of what is still to be seen as truthful or ethical responsible photojournalism. Damon Winter is a photographer that is pushing that boundary, in 2010 Winter shot a cover and a feature story "A Grunts Life" for the New York Times on the yearlong deployment of the women and men of the First Battalion, 87th Infantry

Regiment of the US Army, situated in North Afghanistan, among he lived for six days [8] (Fig. 2 shows an example). The photos are made with a Smartphone and the application Hipstamatic. Hipstamatic is an application where the user can add different filters that apply a retro aesthetic to the photos. The application is inspired on the original Kodak Instamatic [9] from the seventies. As Meryl Alper says; *"It touches upon an endless discussion about understanding all photography as a manipulated interaction between style and substance, and a timeless debate over the ethics of combining photojournalism with aesthetic."* Damon Winter made photos that create a supposed feeling that all is during a family picnic and most certainly omits the actual presence of a serious war.



Fig. 2 An image taken from the series "A Grunts Life" by Damon Winter, soldiers in action (Source: http://www.poyi.org/68/17/third_01.php)

Traces of Reality

In the following section I will apply the concept of simulation to briefly discuss the notion of reality in relation to photos. As the French philosopher Jean Baudrillard explains in *Simulations and Simulacra* it can occur that something has all the appearances of something but is still not that thing. For instance when somebody acts like he has an illness, he simulates the symptoms; looks pale and moves slowly because he acts dizzy. People around him see the symptoms and believe that he is ill, slowly he starts to believe the simulated symptoms and feels really ill himself. But still in reality he is not ill; he is just acting (Baudrillard, 2). This example can never be unmasked because it isn't false either, the person has all the symptoms and therefore he is ill, whether simulated or not. As Baudrillard argues, "*Truth, reference and objective causes have ceased to exist.*" A photo is an image with no sound or movement,

it is a moment of reality in a fraction of a second. It has no continuity in time but it does have interconnectedness with the world, there are references to be made with reality. Therefore it can be possible that a subject that is photographed makes a suggestion or transfers an emotion in a picture, which in reality was there at that fraction of a second, but when one places the photo in continuity of the reality, the suggestion that the picture makes is not realistic at all. That picture could be regarded as a trace of reality. This trace of reality can have the ability to be a simulation. Although it is a trace of reality it can still have the ability of bearing no truth towards reality when looked at the image and placing the image in a continuous way in reality.

Hyperreality

In *Simulations and Simulacra* Baudrillard also explains the concept of Hyperreality, Baudrillard suggests that, "*simulation involves the construction of it's own referential ground, a process which he terms "hyperreal,"* Or in other words, "*It is the generation by models of a real without origin or reality: a hyperreal. It is no longer a representation, there is no abstraction.*"[10] According to these definitions of Hyperreality the foremost conditions for such an image is that there must be no referential ground or ties to reality that places the image in a context. An example of Hyperreality is Disneyland where fictional characters and environment are created and afterwards made palpable on an actual piece of land, a place that you can visit [11]. Another example of Hyperreality is the reality tv show Big Brother were a group of strangers that have very diverse backgrounds are filmed living together. No longer are real experiences presented; instead, one finds the Hyperreality of "real living". Were contestants are thrown out of the television show if viewers don't vote for them, find them interesting enough. The simulation of everyday life is the knowledge of contestants to be liked by viewers on their performance in daily life as goal to stay in the program. This makes a TV show like big brother nothing to do with reality, but a simulacrum of reality [12].

In photojournalism there are also cases of photos that are Hyperreal. Hyperreal photos can occur when photos are being framed, cropped or manipulated in such a way that it doesn't do any justice to the reality it tends to depict and has no referential ground. The fundamental idea of photojournalism is showing an "honest" view on the real world regardless if it is manipulated. It's not similar to Disneyland because it has ties to reality; photojournalism is here to show the viewer what is happening in the world. There are examples of photojournalists that tricked and manipulated their photos to such extend that they bare no trace of reality. Those photos are Hyperreal but that is not the profound intention of photojournalism. Another way of seeing Hyperreal photo's is much more difficult to define, there are dozens of journalistic photo's that became iconic. The meaning of the photo became something else than the actual picture. In this sense we could perhaps speak of Hyperreal photos.

An example of an iconic photo is for instance the image a Vietnamese girl running from a Napalm attack (Fig. 3) She became the symbol for the horrors of the Vietnam War where a lot of innocent citizens were brutally killed or harmed. Or as James Nachtwey [13] argues *"The pictures that were*

coming out of Vietnam were showing us what was really happening on the ground level. And it was in contradiction to what our political leaders and military leaders were telling us. They were straightforward documentary images. A powerful indictment of the war, how unjust it was, how cruel it was, simply by showing what was happening there." The iconic meaning of the photo has no tie to the reality of that moment in the photo as it shows a nine-year-old girl named Phan Thi Kim Phúc who was running in utter despair. She was naked because the napalm set her clothes on fire that burned into her skin. Aldo the iconic meaning for Americans (how wrong the Vietnam war was and the U.S. stance towards the Vietnam War) is different to the literal meaning of the photo of the girl running from a napalm attack, this cannot be seen as Hyperreality. Because what was happening to her was real, she was running for her life from a napalm attack that actually happened in Vietnam that was indeed initiated by American soldiers. That this photo was made and by that she became an icon for the Vietnam War changes nothing about the truth that lies within the photo. There is more to this iconic photo in a literal sense. The photo was cropped and the full/original photo shows a soldier standing on the side of the road replacing the film roll of his camera. This small difference of cutting a soldier out the photo results in a significant change in composition of the photo. By cutting the soldier that is replacing his film roll, the girl is in the centre of the photo. But does this cropping make a photo Hypperreal? The answer is no. It is true that the photo was cropped and yes the girl is centred in the photo so that the world revolves around her. This doesn't change the meaning or the reality of the moment. She is still a little girl running down the street while being naked and badly injured. Therefore this change does not make this photo Hyperreal. The prototype build for this research is to capture the context of where a photo is literally taken from. The 360-degree image captures everything around you, so it does not have the ability to point out in a way a framed image can. This makes a 360-degree image more honest in a way that it treats everything that is around the camera the same, there is no framing. In a more metaphorical way there is a possibility that a 360-degree image could become an Iconic image. But since the prototype is using a 360-degree image in combination with a framed image it tends to give more referential ground to where a photo is literally taken from. Metaphorically it is hard to determine what meaning an image is given and if that is truthful.



Fig. 3 Iconic photo of the 'Napalm Girl', left is the iconic-cropped photo, right is the original photo is made by: Nick Ut, 1963. (Source: https://en.wikipedia.org/wiki/Phan_Thi_Kim_Phuc)

Context missing

"Photo itself does not preserve meaning, only that which narrates us can make us understand." —John Berger, About looking, 1980.

Context is always sidelined since the lens of the camera frames a photo, technically speaking. One is biased by the subjective viewpoint of the photographer; it narrows down the public's position and interpretation on the covered subject. Leaving them in a certain state of ambiguity. Because there is no context provided it is sometimes impossible for the public to give meaning to the point the photographer has made/intended. To give meaning there is need for context like for instance; written underlines, a voice-over or more pictures to illustrate what it is that is pointed out to us [14]. There is no absence of context when looking into our family photo albums; the relevant context exists in our memories. Memories that are perhaps not the most objective ones [15]. The photographer who took the photograph that is now in the family album will most likely know the subject that he photographs on a personal level, so even if there is a subjective viewpoint of what was the context there is a personal level of knowing. The pictures serve often as triggers for our memory to remember and tell the stories around the pictures, hence it is interconnected with the world, and there is continuity (Fig. 4 shows private and public context). In this personal context John Berger suggest that photos work more meaningfully, because the context is known. There is no such thing when looking at public photos, due to the loss of context. The context between photographer and subject (what was happening in the direct surroundings of the taken picture?) and the context between image and media (why did the editor selected this photo?), the context we see as public is the choice of the media to communicate that particular image. Because the first two contexts are lost we can never truthfully understand the photos, we simply do not have enough information [16]. In this way the public photos are empty shells, with only form and no meaning. Berger argues for a system where there is always a first person context, so the public is always able to know the stories behind the pictures. With the rise of the digital age a first person context is created, with the ubiquity of the Smartphone's photojournalism has become a practice available for practically everyone who owns such a device. As was seen during the Arabic Spring, a lot of the imagery was first person, shared on social media and picked up by the large media sites. Fred Ritchin states "With the advent of "user-generated sites, the publics role as producer and disseminator of media resembles a conversation in which people share, in words and pictures, the details of their own lives with every expectation that others will do the same. It is as if imagery is presented, as in an older oral tradition, to incite discussion and attract attention – success, if it is to be, is in the conformation in the group." The context of this new form of journalism derives from first person. But that has no connection to how much reality the imagery bears. Since the rise of the digital age it is not only easier to manipulate images [17] it has also become more accepted/known that the image that is presented is always biased. For example the family album, the story is always told through the perspective of the maker. Which creates a context that places the images in continuity, but perhaps not a truthful one [18].



Fig. 4 Public and Private context. Public: Context 1, between photographer and subject, Context 2 between image and media (newspaper), Context 3 between media (newspaper) and public. Private: Context between photographer and subject (Source: Julianne H. Newton, *the burden of visual truth, p.* 40)

Sub conclusion

Photojournalism has the urgency to inform, however this is a problematic practice since it is hard to determine when a photo bears truth to reality. This is due to the fact that a photo has no ties that place it in continuity with reality. There is also no broader context where the photo can be placed in, which leaves a photo with ambiguous meanings. A context that embeds the photograph and places it in the larger perspective of continuous reality is required in order to provide truthful meaning for the public to a journalistic photo.

2.2 What is a Ricoh Theta Camera?

Functionalities

The Theta camera has an unconventional size; the user can operate the Theta by holding it with only one hand. This is in contrast with most of the photo camera's that are currently available, whereby users need two hands to operate a camera. The Theta camera (Fig. 5) has the physical size of: 44 mm (W) x 130 mm (H) x 22.9 mm (D) and has a rectangular shape. A shutter button is placed on the front side of the camera and takes a capture when pressed. The format of the captured images is full HD format (1920 x 1080). On both the front and backside is a lens which both capture when the button is pressed; it allows making 360-degree pictures. On the right side of the device are two smaller buttons the top one is to set the Theta camera on or off, or can be used as an alternative to or to capture an image or to capture a movie when being pressed longer. The lower smaller button is to activate Theta's Wi-Fi network which enables the user to connect with a Smartphone, tablet etc. Hence it has it's own Wi-Fi surrounding so it is not connected to the Internet. A mountable USB port enables a connection to a computer or other compatible devices.



Fig. 5 The functionalities of the Ricoh Theta Camera (Source: https://theta360.com/)

Application

Ricoh developed a free application named Theta that can be downloaded on a Smartphone. The Wi-Fi network on the Theta camera needs to be activated in order to connect to the application. After a connection is established, it allows users to transfer images and pictures to a Smartphone and share them on Twitter and Facebook. There is also the possibility to operate the Theta camera from the application; one can make captures, which allows the user to operate the Theta camera from a distance. It is possible to adjust the ISO speed², the shutter speed³ and there is the possibility to manually adjust the white balance⁴ up to 10 different settings varying from outdoor to white fluorescent light. Another function is to make interval shots, varying from 5 seconds between captures images till 11 minutes. However the application is in my opinion lacking some important feedback. The Theta application for instance does not show a preview of the image, which makes it hard to see what certain implemented functions do (like for instance, white balance). Especially since there is also no feedback on the amount of available light, hence there is no light meter⁵. This makes functions like ISO speed, shutter speed and white balance hard to judge since there is no feedback given one has to guess what the amount of light is.

Camera or Photo Camera?

What exactly is the Theta? Is it a camera or a photo camera? According to the oxford dictionary a camera is, "A device for recording visual images in the form of photographs, films or video signals." The Latin meaning of camera is dark room, space or a closed space of a box with a hole or a lens that can reflect what is seen. Considering abovementioned definitions, the Theta is a camera. When we start looking at photography and photo cameras it becomes much more complex. The photo camera has as long as it exists a view hole, where the photographer can look through to see what it is he is taking a picture of (framing). This means that most of the time the photographer is not in the picture itself (except for when he uses the self-timer function and walks around the camera, into the frame). During the years all sorts of functionalities have been added to photo camera's like ISO speed, white balance, shutter speed, flash, self timer and so on. These functions are available only in the application of the Theta and as explained in the section above they are lacking functionality to make it user-friendly. However the question remains, can the Theta be seen as a photo camera? When you look at a photo camera you see a photo camera but when you slowly start to disassemble the photo camera into smaller parts slowly the photo camera is not a photo camera but all kinds of different objects (lens, box,

² ISO Speed is the measure of a photographic film's sensitivity to light, when used a higher ISO value is more sensitive to light. ISO is the abbreviation for International Organization for Standardization.

³ Shutter Speed is the length of time when the film or digital sensor inside the camera is exposed to light. This means that $1/800^{\text{th}}$ of a second will let in twice as little light as $1/400^{\text{th}}$ of a second.

⁴ White Balance is a function that corrects the color of lightning. Example; a white light bulb gives a different color to the image than a yellow light bulb, this function is implemented so the colors stay truthful to reality. ⁵ Light Meter is a device that measures the amount of light; in photography a light meter is used to determine the

[•] Light Meter is a device that measures the amount of light; in photography a light meter is used to determine the shutter speed and the ISO speed.

buttons, viewfinder). When the parts are put back together the photo camera is a photo camera again. The crux is at which point of the disassemblement process do we point out that the photo camera is not a photo camera anymore but a collection of different parts [19]. With the Theta in relation to a photo camera the argument is along that same line, which causes for some ambiguity. Can we still describe the Theta as a photo camera when the photographer is not able to look through the viewfinder to frame the image? In my opinion the Theta is not a photo camera but a camera. Except for the fact that it captures images, the most crucial feature of a photo camera is missing, that is the role of the photographer who is not able to look through the view hole to frame a photo. The relation between the Theta and the user is therefore very different; the user can only hold the camera and press the capture button. There is audio feedback (a whistling sound) when a capture is made. This means that the user is always in the picture when holding the camera, except for when the user puts the Theta on a tripod and then controls the Theta from a Smartphone. The Theta application enables user to control the Theta over distances ranging from 10 to 20 meters.

2.3 What is a Ricoh Theta Image?

The practice of capturing an image is different with a Theta camera than with a photo camera. The user could question what it is that the Theta is capturing since there is no visual feedback before the capture is made. The user has less amount of control on what is depicted in the image than the conventional framing of a photo. The Ricoh Theta captures images that are spherical, 360 degrees, hence all around you. Taking an image with the Theta only allows the user to look around him and check if the reality is worth taking a picture of, or trying to mold reality to his or her own satisfaction. According to Susan Sontag, "Photographers are always imposing standards on their subjects. Although there is a sense in which the camera does indeed capture reality, not just interpret it, photographs are as much an interpretation of the world as paintings and drawings are. Those occasions when the taking of photographs is relatively undiscriminating, promiscuous, or self-effacing do not lessen the didacticism in the whole enterprise." Imagine the use of a Theta camera in Afghanistan vis-a-vis Damon Winter's Smartphone while he was shooting his "A Grunts Life" series, when simultaneously pictures with the Theta camera and the Smartphone are taken. I would argue in this setting that Theta imagery could be seen as indiscriminating images. The user of a Theta is not able to influence the image to the level Damon Winter is able to influence his photos. The user of the Theta is simply not a photographer anymore; he has no function except for pressing the capture button. To view the Theta images realistically, one could look at the images on a computer or Smartphone but only after the images are captured. This enables the user to scroll through the spherical image, which provides a full representation of the location where the picture is taken. Even more realistic is it when one looks at the imagery through an *Oculus Rift⁶* or a *Google cardboard⁷*, it immerses the viewer in the scene (reality)

⁶ Oculus Rift is a virtual reality head-mounted display. The Oculus Rift measures movement of the user's head as control over the virtual environment. It also has integrated headphones that provide spatialised audio.

that is captured. When one would print the image captured on a Theta camera, it would be deformed like a globe out of scale (Fig. 6). This is due to the image that has to be converted from a 3D readable file into a 2D readable file. When the Theta camera captures an image it actually captures two images that are converted together. This is what creates the spherical 360-degree view. When one would want to print out this spherical image it needs to be converted again from spherical 3D to a flat 2D surface. When this is done it loses the 3D qualities that the image has when seen digital; realistic, immersive.



Fig. 6 A 360-degree image when it is converted from 3D to 2D (source: http://worldindustrialreporter.com/)

In the above section I argued that the Theta is not a photo camera but a camera. The images that the Theta produces are therefore also not photo's, they are images that resemble some of the characteristics of photos. However intrinsically they are very different devices, photos and Theta imagery; photos are framed images that lead the eye of the viewer to the subject that is being framed. Theta images are not framed, they do not point out, but simply capture the whole scene. There is also a physical difference between a photo and a Theta image. A photo can be printed out be picked up and then glued in a photo album. This is not the case with Theta images; they can ideally be viewed on digital devices.

 $^{^{7}}$ Google Cardboard is a virtual reality head display that one can simply build by folding cardboard and placing their Smartphone inside.

3 REVEALING THE THRUTH

Photos are an excerpt of reality and it is evident that everything that is not in the photo frame is lost forever [1, 11]. Photos often have the tendency to point out a specific matter; this is caused by the unavoidable restrictions of the photo lens. It provides viewers with a clear framework in which things tend to happen. However 360-degree images capture everything that is around the camera without focussing on one specific part. Context matters in photojournalism, news events are often more than what the photo depicts [20]. Therefore a photo is almost always accompanied by written text that explains and places the photo in a context. A solution to this problem "loss of context" could be the attachment of a 360-degree camera to a photo camera, so that every time a photojournalist takes a photo it simultaneously takes a 360-degree image shot. This enables the user to see a 360-degree image in which the photojournalist points out a certain aspect of the entire surrounding using one photo. The result could be that journalism would become more transparent because we as viewers can see where the actual framed picture was taken. Which supposedly reveal surroundings that make up for a large part of the context. As viewer you are provided with the reality of where the photo is taken from. Therefore a prototype is developed to test if it could possibly enhance the feeling of capturing and understanding the context and to test if viewers would value this 360-degree context image.

Prototype functionalities

The prototype enables users to make captures with a Theta camera and a photo camera simultaneously. This is being done by adding an extra push-button underneath the capture button of the photo camera (Fig. 7). With the index finger the user can operate the photo camera. With the middle finger the user can press the push-button to trigger the Theta camera after which the push-button sends out a signal to the *Arduino Uno*⁸. By using Arduino software a program is written which tells the servomotor to go back and forth in a angle of 45 degrees whereupon two captures are made. Due to the given time for this research project it was impossible to create a system that solely exists out of one push-button that triggers both cameras. The Theta camera is fixed on a "z" shaped frame causing it to rise above the photo camera subsequently allowing captures of the surroundings in 360-degrees. The initial plan for the prototype was to read out the capture signal of the photo camera by using a hot-shoe to send an electrical signal to a Wi-Fi chip. That chip would be connected to the Theta camera which would cause the shutter to capture. Unfortunately it was impossible to not only get the Wifi chip up and running but also reading out a clear signal from the hot-shoe failed to work. This is due to my lack of experience in programming Wifi chips as well as the technical ins and outs of a photo camera.



Fig. 7 The prototype.

Exposing viewers and experts

Several test photos were made with the prototype to examine if a 360-degree image would be a valuable addition to news photos. The test photos consist of outdoor scenes in the city center of Amsterdam. Photos are captured by respectively employing a wide-angle and a long-focus lens. Viewers and experts were shown six pairs of photo's and 360 degree-images. The participant would first see the photo and after clicking on that photo the user would get into the matching 360-degree image [Fig. 1.0, 1.1, 1.2, 1.3, 1.4, 1.5]. The participants were interviewed while viewing the images. The focal points of that interview consisted of; context, quality, meaning, purpose, orientation and value.

4 RESULTS EVALUATION

Both a user and an expert test took place in order to evaluate if the abovementioned statements are plausible. The tests were equally done in the form of an interview. The results of the viewer tests are being quantified in Fig. 1.6.. The expert tests have a more qualitative and exploratory character, which are ordered in Fig. 1.7. The main ideas and outcomes about the prototype and functionalities are summarized in the following section.

Viewer test

For the viewer test nine participants were interviewed [21]. In general participants found the 360degree image in relation to the photo telling two different stories. Shiko argued, "these are two different stories. The photo is about the subject and the 360-degree image is about how the photo is made." Raoul states, "these are two completely different worlds". Marjolijn provided the insight that the first photo you is in first-person and it gives you the feeling of being there. However, she experienced the 360-degree image in third-person because she saw the photographer taking the picture and was looking right over his shoulder. Following that sense one can argue that the 360-degree image also tells us something about the photographer. Most of the users agreed because the photographer is literally the center of the 360-degree image. Sophie pointed out that the photographer in the 360-degree photo also has an indicating role. The lens of the photo camera points out in the direction to where the framed photo is to be found. A great share of the participants stated that they did miss some objects that were seen in the framed photo but could not be seen in the 360-degree image. The reason for this is that the focus is lying 1,5 meter around the 360-degree camera. As a result everything that is further away loses quality. However participants did not experience the quality of the 360-degree image as disturbing or poor. Also orientating was for no participant a problem as they all understood naturally how to move around in the 360-degree image. To understand what the photographer was pointing out to the viewer, participants all agreed that the framed photo was a necessity. Debby for instance argued,

"You really need the photo to understand what the subject is, so much is happening in a 360-degree image that it is hard to know what the focus is or what it is about". To locate the framed picture in the 360-degree image was for some of the participants troublesome. Most participants could more or less point out where the framed picture was in the 360-degree image. Almost all of them agreed, to the question if participants were surprised by the 360-degree image. Debby claimed, "I know what happens in the Red Light Disctrict, I even recognize the alley but when you see the john's walking behind the photographer and the sexual advertisement in the 360, it surprises me." But does the 360-degree image also add context to a framed photo? Eight out of nine participants agreed, a few of them marked that it might not fit every news item. Because the 360-degree image needs to add something to the picture by either surprising or creating a new view/perspective on the subject. They stated that not

every news item will have that same effect. Positive notes where that news would become more transparent, more honest. Bob stated, "You can't hide anything anymore."

Expert test

The expert test consisted out of six interviews with experts in the field of photojournalism [22]. The interviewees were; Hans Aarsman who is a photographer that nowadays analyses photos for the Volkskrant⁸. Sake Elzinga is a photojournalist that works for the NRC⁹. Robin Utrecht is a photojournalist who works for ANP¹⁰ and the Volkskrant, Arend Hulshof is chief-editor of the human rights magazine of Amnesty International, Martijn Beekman is a photojournalist working for ANP and Raymond Rutting he is also a photojournalist currently working for the Volkskrant and National Geographic. All above-mentioned are experts in the field of journalism, they were interviewed and shown the same photos as the participants in the viewer test. Following is a short summary of their findings.

In general the experts regarded the concept of taking a photo and simultaneously also capturing a context 360-degree photo as insightful. Martijn Beekman states, "the combination of the two photo's is a great concept, it adds up." Robin Utrecht and Arend Hulshof both had concerns that it would not be interesting for every news event. Arend Hulshof states, "Yes I think it would work, but only if it adds something, that will certainly not be with every photo." Martijn Beekman contradicted that by arguing it would also be interesting (to see nothing special) even if nothing is added within the 360-degree photo. All interviewed experts agreed that a 360-degree image adds context to the photo. Regardless of the question if a 360-degree image would provide the same information for every news photo. Hans Aarsman says about this, " I can imagine that you think that journalistic photo's would get more exciting. That there is something of real substance to see, this gives an insight in the making off the news, which in general is a mystery." Sake Elzinga said, "This is interesting, it shows so much more, it is like having an angel watching over your shoulder." Raymond Rutting commented about this feeling, "It is just like having someone watching over my shoulder. This would mean I am not free anymore because I am always aware of the 360-degree camera. In my mind I would take in account how viewers would interpret the photos that I make and they might disagree." Sake Elzinga values the 360-degree images as something positive from which interesting discussions can emerge. This in contradiction to Raymond Rutting, who sees 360-degree images as something that would put pressure on the way he works as a photographer. All experts agree that the 360-degree image tells a different story, that story is centered around the photographer in that image.

⁸ De Volkskrant is a Dutch newspaper.

⁹ De NRC is a Dutch newspaper.

¹⁰ ANP is an independent news agency in the Netherlands.

Sake Elzinga and Raymond Rutting also note that it might be possible that photographers start to work in a different way because the 360-degree image provides viewers much more information. Robin Utrecht doubts if the public would like to see these context photos, Sake Elzinga and Hans Aarsman both state that it will probably work due to the voyeuristic nature of humans. They also both think that it is problematic that the 360-degree image is fairly distorted with round lines. All the experts found the quality of the 360-degree image better than expected. To recognize the photos in the 360-degree image is for some experts problematic. Suggestions are made to mark the place where the photo is situated in the 360-degree image. The prototype in its current state is unsuitable for professional photographers. Sake Elzinga argues, *"it needs to have one button and be much more compact, without all these wires."*

5 CONCLUSION

The general opinion of the viewers and experts towards the 360-degree image in relation to a photo is predominantly positive. Both viewers and experts agreed that a 360-degree image adds context to a photo. Viewers were curious and surprised to see how a 360-degree image added value when presented in combination with a photo. The feeling of being there looking over the shoulder of the photojournalist provides viewers insights in not only the literal context around the photo but also the practise of photojournalist. All viewers agree that the 360-degree image provides a more transparent view on a photo and therefore it is being considered as a more honest approach. A few experts gave concerns regarding the 360-degree image that could function as a controlling medium, in which the public and the operator gain more insight on the *how* and *what* is captured in a photo. Viewers and experts have doubts if the 360-degree image is rather distorted, however when observed with intended viewer, three of the experts perceived that as a disturbing characteristic. Retrieving the photo in the 360-degree image tends to be difficult for some viewers and experts. They suggested marking the place where the photo is situated in the 360-degree image.

This research raised questions about the changing practices of photojournalism; will a 360-degree image in combination with a photograph change the practise of photojournalists? Will photojournalists by being aware of the Theta make different photos? Will news consumers see news-items in another more immersive way? Will these 360-degree images indeed add contextual value to the photos? Will it change the view of news consumers of what is happening elsewhere? What could happen if 360-degree cameras are integrated in Smart Phones [23]? Which would enable citizens to capture news-events 360-degrees. Will photojournalism get more citizens driven? Citizen driven journalism can already be seen in the Arabic Spring were a lot of citizens posted movies and images that were included in media news-items all over the world. Will the practise of being a photojournalist perhaps shift more from being on

the ground, shooting the actual footage to being a curator of the images that are posted online by citizens?

Future Work

Prototype

The prototype needs to be adjusted accordingly before photojournalists are able to actually test and subsequently work with it. The photographers that have been interviewed in the expert test were all willing to test the prototype once the prototype has made some improvements. The experts stated that the prototype should be more compact and easy to adjust to different types of cameras. Moreover, the positioning of the Theta camera is something that should be tested more thoroughly. The Theta camera can for instance be placed on top of the camera instead of being situated besides it. Extensive tests can be accomplished with the 360-degree image where it is important to try out different markings that make it for viewers easier to recognize where the photo is situated in the 360-degree image. The distortion of the image, i.e. the projection of the theta image, should also be further investigated. Probably not all 360-degree cameras have this amount of distortion and it is most likely that the distortion decreases when a 360-degree image is observed in a virtual reality head mount. Abovementioned assumptions should be investigated to a greater extent in order for the prototype to reach its full technical potential.

Journalism

Journalism has different channels to communicate their news events: television, radio, newspapers and the Internet. Newspapers are slowly shifting from print to digital. Digital channels are growing rapidly and exploring new ways of communicating news events. The Internet has two main points of difference to define; websites and Smartphone-applications. Websites can be, for instance, the Website of the New York Times, where they remediated [24] the physical newspaper into a digital clone to publish their news-items. But also for instance a website which is specifically made for a specific topic, i.e. digital storytelling such as '*Life on Hold*' [25], This digital story is made by Al Jazeera, '*Life on Hold*' is supposed to broaden the view on the subject of Syrian refugees. Al Jazeera states about the website; '*Four years of unrelenting violence in Syria has claimed the lives of an estimated 200,000 people and laid waste to countless towns and cities. Close to four millions more Syrians have been displaced. Al Jazeera's immersive interactive video experience Life on Hold takes you to Lebanon to uncover the daily realities of these refugees.'' With websites like 'Life on Hold' news media create more context around the refugee problem in North Africa by telling the personal stories of ten refugees. In doing so Al Jazeera is making the issue of four million Syrian refugees less abstract by making it more personal.*

Another approach that is made possible by the technological progress is that of user-based websites. For example Africa Today is a website that is made for and by people who live on the continent Africa, giving a view on daily life. Users can upload their own images they made with their Smartphone's showing a more diverse perspective of their daily life. Often these images give a more positive view then the images that are shown on media.

In various Smartphone-applications provide the option of reading the newspaper on your Smartphone, but there are also more innovative ways of telling news items. The New York Times has launched on a new application the 5th of November 2015 called "*NYTVR*" [26]. News stories can be viewed with a Google cardboard or with another compatible viewer on your Smartphone that provides a 360-degrees immersive experience. After the terrorist attacks in Paris on the 13th of November 2015 the New York Times filmed the candlelight vigils that became gathering places for mourning and singing. The movies published on "*NYTVR*" give a glimpse in the atmosphere of those mourning places. With applications like "NYTVR" there might be a new era in journalism, an era that attributes more context to news events.

References

- 1. Sontag, Susan. On photography. Macmillan, 1977.
- 2. Langton, Loup. Photojournalism and today's news: Creating visual reality. Wiley-Blackwell, 2009.
- 3. Friedman, Avner, and David S. Ross. "History of Photography." *Mathematical Models in Photographic Science*. Springer Berlin Heidelberg, 2003. 3-6.
- 4. Leica Camera, https://en.wikipedia.org/wiki/Leica_Camera
- 5. Time magazine world war 2 photos, http://time.com/3638649/world-war-ii-photoswe-remember/
- 6. Time Magazine Vietnam 1969, http://time.com/3485726/faces-of-the-americandead-in-vietnam-one-weeks-toll-june-1969/
- 7. Ritchin, Fred. Bending the frame: Photojournalism, documentary, and the citizen. Aperture, 2013
- 8. Alper, Meryl. *War on Instagram:Framing conflict photojournalism with mobile photography apps.* Sage, 2015.
- 9. Kodak Instamatic, http://instamatic2014.com/
- 10. Baudrillard, Jean. Simulations. Semiotext (e), 1983.
- 11. Woolley, Benjamin. Virtual worlds: A journey in hype and hyperreality. Benjamin Woolley, 1993.
- 12. Chin-Yi, Chung. Hyperreality, the Question of Agency, and the Phenomenon of Reality Television. Nebula, 2007.
- 13. War Photographer. Dir. Christian Frei. Perf. James Nachtwey, Christiane Amanpour and Hans-Hermann Klare. Christian Frei Filmproductions, 2001. Docu.
- 14. Newton, Julianne. The Burden of Visual Truth. Lawrence Erlbaum Associates, Publishers, 2001.
- 15. Baddeley, Alan D. Human memory: Theory and practice. Psychology Press, 1997.
- 16. Berger, John. About looking. Phanteon Books, 1980.
- 17. Wheeler, Thomas H. *Phototruth or photofiction?: Ethics and media imagery in the digital age.* Routledge, 2005.
- 18. Ritchin, Fred. After photography. WW Norton & Company, 2009.
- 19. Margolis, Eric, and Stephen Laurence, eds. Creations of the Mind: Theories of Artifacts and their Representation: Theories of Artifacts and their Representation. Oxford University Press, 2007.
- 20. Becker, Howard. "Visual sociology, documentary photography, and photojournalism: It's (almost) all a matter of context.". Visual Sociology, 1995.
- 21. Viewer test, transcription.
- 22. Expert test, transcription.
- 23. The Guardian, 2016,

http://www.theguardian.com/technology/2016/feb/24/smartphoneaccessory-virtual-reality-samsung-lg-sony-xiaomi-hp-alcatel-mwc-2016

- 24. Bolter, J. David, and Richard Grusin,. Remediation: Understanding new media. Mit Press, 2000.
- 25. Life on Hold, http://lifeonhold.aljazeera.com/
- 26. NYTVR, http://www.nytimes.com/newsgraphics/2015/nytvr/

Appendix.

Figures





Fig. 1.0 Framed photo shown, 360-degree images shown right, link to full view <u>https://theta360.com/s/4E3Q30IP14m3qIbXr7MAT4eES</u>.









Fig. 1.1 Framed photo shown, 360-degree images shown right, link to full view https://theta360.com/s/b7cLBM11IXz06OG5BRQAHMDDM.









Fig. 1.2 Framed photo shown, 360-degree images shown right, link to full view <u>https://theta360.com/s/dOEOXGHNVgSgwny9JvWdlrayG</u>.









Fig. 1.3 Framed photo shown, 360-degree images shown right, link to full view <u>https://theta360.com/s/mbHbdBMzR27KSbyptlodbpKPQ</u>.









Fig. 1.4 Framed photo shown, 360-degree images shown right, link to full view <u>https://theta360.com/s/lsai17y2E3DhaE01mAbBM0gAy</u>.









Fig. 1.5 Framed photo shown, 360-degree images shown right, link to full view https://theta360.com/s/eBQn51bFaINnzwtdqfuWTpwEC.

	strongly disagree	disagree	neutral	agree	strongly agree
The 360-degree image tells another story than the photo			1	3	5
Objects are left out in the 360-degree image			1	5	3
The 360-degree image is what you expected	6	1	1	1	
The 360-degree image tells a more personal story (photographer)			1	4	4
The 360-degree image adds context			1	4	4
The photo clarifies the subject					9
It is hard to locate the photo in the 360-degree image	1	4	3	1	
It is hard to orientate in the 360-degree image	5	4			
The quality is bad in the 360-degree image	1	6	2		
You need the photo to understand the subject	1	1			7

Fig. 1.6 Quantitative figure of viewer interview.



Fig. 1.7 Qualitative figure of expert interview