News in Pixels: Digital Photojournalism

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Abstract

Photojournalism is a form of journalism which emphasizes the use of photography. Until the late twentieth-century, photojournalists used analog cameras and modifying the photographs after taken was a difficult task. With the invention of digital cameras, photojournalists' workflows changed, allowing them to take more photos and capture faced-paced action with ease. Digital cameras also introduced tools to easily and almost undetectably modify photographs, bringing an element of untrustworthiness to the field. Photojournalists are also experiencing decreased job security as citizen photojournalism is on the rise with the widespread use of smartphones.

The invention of digital cameras in the late twentieth-century swiftly redefined photojournalism. Although comparable to the traditional film camera, the digital camera has an entirely different workflow. The introduction of tools to process digital images enabled journalists to enhance the impact of their photos and alter the content.[1] Photojournalism changed due to the adoption of digital cameras, becoming a popular form of journalism, but also an increasingly frequent source of untrustworthy images.

What is Photojournalism?

Photojournalism is a form of journalism which utilizes images, rather than text, to tell a news story. While often accompanied by written text or commentary, photojournalists use pictures of striking or emotional scenes to construct the foundation of their news stories. Although considered photographers, photojournalists differ from amateur photographers by their skill level, ethics, motivations, and training.[2] Twentieth-century photojournalism relied upon the ability "to hold time still and really look at moments of life in parts of the world most people would never see."[3] Photojournalists attempt to take images which will inform people about events, global issues, wars, and news in general; often seen as a truthful reporting medium, photojournalism influenced the public since the nineteenth century.[4]

[1] Diana Hulick states "Just as painting was seen as more artistic in the nineteenth century, analog photography will be seen for some time as more objective or 'true'." Diana Hulick, "The Transcendental Machine? A Comparison of Digital Photography and Nineteenth-Century Modes of Photographic Representation," *Leonardo* 23, no. 4 (1990): 423, doi:10.2307/1575345.
[2] Inbal Klein-Avraham, and Zvi Reich, "Out of the Frame: A Longitudinal Perspective on Digitization and Professional Photojournalism," *New Media & Society* 18, no. 3 (2016): 429–446, doi:10.1177/1461444814545289.
[3] Newton is a professor of visual communication for the School of Journalism and Communication at the University of Oregon. Julianne Newton, "Photojournalism: Do People Matter? Then Photojournalism Matters," *Journalism Practice* 3, no. 2 (2009): 234.
[4] Newton, "Photojournalism": 234.

The available camera technology shapes and molds photography, and therefore photojournalism as well.[5] In the mid-nineteenth century when the field started taking hold, photographers took striking images of the US Civil War using bulky wet-plate cameras; the images of the wet-plate cameras needed to be processed on site, meaning photographers brought even more equipment to the field.[6] As camera technology improved, the mobility of photojournalists increased as they needed less gear and could process their photo plates off the field. The less bulky 35 mm film camera in the twentieth century made it even easier to take photos in the field with film contained in small cartridges. By the turn of the twenty-first century, digital cameras became mainstream and drastically changed most aspects of photojournalism.

Analog Photography and Photojournalism in the 20th Century

Photojournalists of the twentieth century used the analog film camera which uses chemical processes to capture a photo. One of the most popular cameras among photographers, the 35 mm film camera, used film rolls/cartridges that could capture about 36 photographs before it would need to be swapped out.[7] The photographer would then send the individual rolls to a vendor for processing, which could take several weeks unless a rush order was submitted, or had them

[5] "Photojournalism, like many professions, is intimately connected to technological change." Gabriel B. Tait, "'Really Social Photojournalism' and a Photojournalistic Changing of the Guard: Observations and Insights," *Visual Communication Quarterly* 24, no. 4 (October - December 2017): 230, doi:10.1080/15551393.2017.1388726.
[6] Department of Photographs, "Photography and the Civil War, 1861–65," Heilbrunn Timeline of Art History, The Metropolitan Museum of Art, October, 2004, Accessed November 10, 2018, http://www.metmuseum.org/toah/hd/phcw/hd_phcw.htm
[7] Klein-Avraham, and Reich, "Out of the Frame": 434.

processed back in the studio by trained staff.[8] In the late twentieth century, processed photos could also be scanned digitally for faster transmission.[9]

Photojournalists took many precautions while in the field to avoid the need to reshoot a scene, which is both costly and time-consuming. To get better success in the field, photographers would bracket frames, meaning the same shot was taken at different exposures, to help reduce underexposure or overexposure of the image.[10] Photojournalists were also accustomed to identifying the proper exposure settings needed based on the available light, a skill that was made nearly redundant by digital cameras in the twenty-first century.[11]

Many people viewed analog photography as a medium of objective truth, which could be used in scientific and journalistic applications.[12] Chemical photography allows for the prediction of what images would look like when taken on a camera, and other photographers knew exactly how they were produced.[13] Digital cameras changed the objective value of an image in the public's eye, as the imaging technology became complex and unpredictable, and the average person became aware of how easily an image's content can be modified.[14]

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[8] Matt Pearson, Carolyn Frisa, and Monique C. Fischer, "How We Got "There" From Here: An Overview of the Design and Implementation of a Digital Documentation Photography Studio," *Journal of the American Institute for Conservation* 48, no. 2 (2009): 104, doi:10.1179/019713609804516974.
[9] Klein-Avraham, and Reich, "Out of the Frame,": 431.
[10] Pearson, Frisa and Fischer, "How We Got "There" From Here": 104-105.
[11] Galasso, a photojournalist for the Record of Bergen County, describes what it was like to take photos using the D-1 camera during a shoot in Israel. Dave Walker, "Fire in the Hills," *Photo District News* 21, no. 10 (2001).
[12] Scientists used to create atlases full of idealized paintings, but photography introduced a mechanical representation of nature when used properly – though modification to these images harms the objective truth of the photograph. Lorraine Daston and Peter Galison, "The Image of Objectivity," *University of California Press*, no. 40 (Autumn, 1992): 86.
[13] Wheeler states that "a photo was reality. It was a scientific document." Tom Wheeler, *Phototruth or Photofiction? Ethics and Media Imagery in the Digital Age* (Mahwah, NJ: Lawrence Erlbaum Associates, 2002), xiii.
[14] Wheeler, *Phototruth or Photofiction?*, xiv.

Digital Cameras and their Introduction to Photojournalism

Digital cameras use electronic components to capture a still image, apply photo adjustments, and display captured photos almost instantly. Steven Sasson of Kodak, the inventor of the first digital camera, intended for them to replace analog film cameras and the film that they used by storing an image directly into an electronic format.[15] A digital camera captures an image when light enters the lens and hits a photosensitive electronic array of pixels, which is connected to a computer within the camera. The camera then takes the raw pixel data and processes it to generate a standard image format; the processing within the camera typically accounts for variables such as contrast, brightness, white balance, and denoising which are tuned to factory specifications.[16] The image is then displayed on a screen or viewfinder for the photographer to see what they just took a photo of. Once a photographer finishes the shooting session they can transfer the photos to a more powerful computer for editing and publication.

The first digital cameras in the 1970s were large and recorded images in grayscale onto a magnetic tape/cassette which was compatible with a television receiver.[17] Eventually, the components of the digital camera became smaller and more affordable, allowing almost anyone to carry a camera. The representation of photographs in the electronic medium also became more efficient, allowing digital cameras to store more images than a traditional film camera, therefore reducing the amount of extra equipment needed for a photo shoot.

[15] Gareth A. Lloyd and Steven J. Sasson, Electronic still camera, U.S. Patent US4131919A filed May 20, 1977, and issued December 26, 1978.
[16] The amount of processing varies based on the camera and manufacturer. Mobile phones tend to have higher levels of processing than DSLRs due to the intended users and use cases.
[17] This is the patent for the first digital camera, created by Kodak as a research experiment. The patent describes how the original digital cameras worked and what they were capable of. Gareth A. Lloyd and Steven J. Sasson, Electronic still camera, U.S. Patent US4131919A filed May 20, 1977, and issued December 26, 1978.

Photojournalists were wary of adopting this new technology and were supported by the initial problems with the cameras. At the release of the first marketable digital cameras, they were not as reliable as film cameras, and some would malfunction during photo shoots.[18] The quality of digital photos was inferior to photographs taken with film. The way photographers operate digital cameras was also different, adding a seemingly unnecessary learning. As the technology became more robust, the benefits of making the switch to digital outshined the drawbacks and many photojournalists gave in.

As digital camera technology became more reliable and affordable, photojournalists became interested in seeing how it would change their profession. James Estrin, a long-time photojournalist for the *New York Times* recalled his first experience with the technology at the National Press Photographers Association's first Electronic Photojournalism Workshop in 1989 – more than ten years after the invention of digital cameras. Digital photography was still in its infancy during this time, and tools such as Photoshop were just beginning to take shape.[19] The group which met at this workshop published a sample paper, called the "Electronic Times," which consisted of photographs taken by digital cameras. Still, the cameras used took low-resolution pictures and the adoption of digital cameras in photojournalism was still a while away.

With digital cameras becoming more suitable for use by photojournalists, many news reporting stations experimented with the technology. The *Record of Bergen County* in New Jersey switched over to digital cameras at the turn of the century, which caused confusion among its staff, and questions about the reliability of the cameras. One of their photojournalists said,

[18] Newton, "Photojournalism": 235.
[19] This article is a primary source by a well-established *New York Times* photojournalist who discusses the early days of digital photojournalism and how it changed his field. James Estrin, "Digital Photography: A Look Back," LENS, July 31, 2014, Accessed October 28, 2018, https://lens.blogs.nytimes.com/2014/07/31/digital-photography-nppa-james-estrin/.

"the big advantage of shooting digitally is immediacy" as photos could be instantly viewed after being taken, so the journalists could decide what their next shot should be.[20] They also described the process of transferring the photos to their computers and being able to see all their photos from the day, which helped them see if they were missing coverage on anything, making their work more credible overall. They did mention that some drawbacks included having less control and confidence in their own instincts, which were established through film, and the dynamic range of the digital cameras was reduced when compared to film cameras.[21]

Once adopted, digital photography changed the way photojournalists took photos in the field and the whole process around it. Digital cameras contain computers within their frames, so they can automate many tasks that photographers once needed to worry about, such as exposure, white balance, and focus. This allows the photographer to focus more on the content of their photo, rather than the settings of their photo – though many still use manual modes on the cameras. Faster-paced subjects can be captured effortlessly because of the ability to quickly capture photos without worrying about settings.[22] Also, the digital camera allows the photographer to see their photo in real time and review it immediately after they have taken the photo; the ability to instantly view and share a photo from the field reduced the turnaround between the photo shoot and the publication of the photos.

Eventually, most photojournalists adopted the digital camera and it proved superior to the analog camera in many ways. The number of frames does not limit digital cameras, unlike the film camera which would need to be reloaded every 36 frames, a number that photographers would have to keep track of to ensure they don't run out of film. The digital camera can also take

[20] Walker, "Fire in the Hills."
[21] Walker, "Fire in the Hills."
[22] Klein-Avraham, and Reich, "Out of the Frame": 434-437.

photos faster, allowing a photographer to take many photos of a scene in rapid succession and decide upon the best photo in post-processing.[23] Photographers, now able to take photos very quickly can utilize features of modern digital cameras, such as continuous auto-focus to get a series of crisp photos of scenes in action rather than a stationary subject.

Photojournalists can utilize the real-time monitor on digital cameras to frame their subjects properly and ensure they are properly exposed and in focus. The monitor can also display information relevant to their photo, such as a histogram to ensure that the photographer doesn't accidentally blow out any colors in their photo. This also saves the photojournalist time at the scene because they will know once they took a photo that they want and can then leave.[24]

Finally, users of digital cameras benefit from the ability to quickly share, edit, organize and search the photos.[25] Photojournalists can share photos from the field to an editor or news media for quick publication or feedback. Photographers are also able to edit their photos to correct any minor issues present within their photo after it is shot, such as white balance or dust on the lens. Finally, they can easily organize photos after a shoot to allow for easier archiving and searching for photos from past events.

News media organizations keep an in-depth archive of the photos that have been shot or published by their photojournalists. During the age of analog cameras, the organizations kept the slides of the photograph with labels attached to them. This system ensured that the photograph was preserved and could be located with a moderate amount of searching. Digital cameras changed the way photographers archive their photos because they deal with digital files rather

[23] The researchers of this study conducted interviews with several experienced photojournalists to discuss the transition from film to digital and the benefits that they believed it brought with it, as well as some of the downsides. Ibid, 434-437.
[24] Ibid, 434-437.
[25] Ibid, 434-437.

than physical slides. The Library of Congress publishes guidelines on which formats to use to archive digital images, and once archived the searching is much easier.[26] As digital storage algorithms improve, organizations may opt to convert their archived images to the new formats, which could save them storage space. Photographers will typically add tags or metadata to their photographs which helps with archival searching of images.

Digital photography also brought with it a few problems, namely easy photo manipulation and decreased job security. Photographers can easily and almost undetectably edit a photograph digitally using a tool such as Photoshop. The public also understands how easy it is to edit a digital photo; therefore, the digital image is perceived as a less trustworthy medium than its film ancestor.[27] Also, with digital cameras becoming much more widespread and being easy to use, amateur photographers are getting contracts from news organizations as freelancers to take photojournalist quality photos, and in some instances, photojournalists have lost their jobs to this.[28]

Manipulating Images – From Film to Digital

[26] Pearson, Frisa and Fischer, "How We Got "There" From Here": 104.
[27] Wheeler, *Phototruth or Photofiction?*, 4.
[28] Klein-Avraham, and Reich, "Out of the Frame": 437.

Figure 1: Dorothea Lange took the famous "Migrant Mother" photograph in 1936. This photograph was sponsored by the US government, and the woman's right thumb was also removed in post processing – both of which were not mentioned with the original publication of the photograph.[29]

While the tools and techniques to modify a photograph have been present since nearly the start of photography,[30] photographers would find editing a chemical-based photo much more difficult and labor intensive than modifying a digital photo. Editing a film photo in the darkroom is a complex task involving careful manipulation of the negative slides and skill to seamlessly blend them together.[31] This is not a task that all photographers would have been able to do with success.[32] Another technique for manipulating the film is a double exposure, which occurs when the photographer does not advance to the next frame of film after taking a photo, and another image is superimposed on it. A more common way of "modifying" the contents of a photo is careful selection of what appears in the frame or cropping the slide to eliminate portions of it;

[29] Robert Hariman and John Louis Lucaites, *No Caption Needed: Iconic Photographs, Public Culture, and Liberal Democracy* (Chicago: University of Chicago Press, 2007): 53 – 54.
[30] Wheeler, *Phototruth or Photofiction?*, 15.
[31] Wheeler talks about the process of using composites to add subjects to a photograph, citing the example of "'The Harvest of Death—Gettysburg, July 4, 1863' by Alexander Gardner [which] is actually a composite made from three negatives, one of which pictures a body that the photographer used in several other photos." Ibid, 17.
[32] Wheeler describes how difficult it was to create a modified image in the darkroom and explains that modern image editing software vastly expands the number of people who can edit photos. Ibid, xiv-17.

photojournalists may use this to hide some details that they don't want the public to know by not including them in the frame.[33]

Before digital photography, the easiest way to manipulate the scene of a photo was to physically change what was being photographed. For example, if a political agenda motivates a photojournalist they may manipulate the physical environment to give a false impression of the scene to the public. A famous example of this occurred during the war in Crimea where the Times photojournalist, Fenton was politically motivated to not photograph any of the dead British soldiers, and he even "moved cannonballs hidden in a ditch into the centre of the road where the camera picked them out more clearly."[34]

Digital photography brought with it a wide variety of editing tools which could be used to completely change a photo after it was taken. Manipulations to digital images may be as inconsequential as adjusting the brightness, contrast, or color, but may also cause the image to become misleading through adding, modifying, or removing people or elements.[35] The ability to edit the photos in misleading ways causes people to "discard their faith in the photograph's ability to deliver objective truth."[36]

Adding or modifying elements of a photograph can change the message of a photo in ways that may mislead the viewers to believe something that is not true. Software for photo editing makes the process of adding people or items easy and assists with blending them into the original photo; this makes it difficult to tell when a photo has been modified. It is no longer uncommon to

[33] Robin Laurance, "Through the Lens," *RSA Journal* 158, no. 5549 (2012): 26-27
[34] Laurance, "Through the Lens": 26-27.
[35] Ellen Gamerman, "ARENA --- Arts & Entertainment: When Pictures Are Too Perfect --- Social Media and Editing Tools Are Recasting the Digital Landscape -- and Its Rules -- for Photography; 'A Perfect Storm of Manipulated Images,'" *Wall Street Journal*, Eastern edition ed., August 12, 2016, D.1.
[36] Geoffrey Batchen, "Phantasm: Digital Imaging and the Death of Photography," *Aperture*, no. 136 (1994): 46-51.

see modified and misleading images, especially with the widespread use of social media platforms, and these photos may even influence beliefs or decisions made when thought as being real.[37]

Removing elements of a photo can be as misleading as adding things. Tools such as Photoshop have intelligent autofill, which allows an editor to remove something from a photo and have it fill in with the background, making it hard to tell that something once existed in that location. Photographers are also more likely to remove items from a photo to reduce the distraction and chaos in a scene, but this reduces the credibility of a photo.[38]

Other ways of editing or modifying a photograph are cropping, color adjustments, brightness changes, smoothing and retouching, and filters. These techniques to modify a photo can be done with nearly any photo editor, including ones preinstalled on smartphones.[39] Adjustments such as these may change the effect and mood of a photograph, which may not be an authentic representation of the scene.[40]

The number of heavily modified photographs is rising, and they are easily spread through social media and used to promote social or political agendas. Authoritarian governments use photo editing techniques to maintain their image among their people and show power to the outside world. For example, in Iran, a missile test went wrong, and one missile did not launch; the fourth missile was edited into the photos taken to give the impression that it was a completely successful launch – unfortunately for the Iran government, a few other photojournalists captured

[37] Gamerman, "ARENA," D.1.
[38] Gamerman, "ARENA," D.1; Newspapers discussed adding an 'M' next to any photo which was modified in any way – but they found that this would decrease the credibility of the photo overall, even if only minor edits were made. Batchen, "Phantasm", 48.
[39] Gamerman, "ARENA," D.1.
[40] Laurance also states that the way a photo is presented may also influence its meaning and brings up the problem of using old pictures as current news as well. Laurance, "Through the Lens": 27.

the true scene, featuring only three missiles.[41] Other cases include celebrities or politicians having their faces added to the bodies of others, causing people to think differently of them.

Figure 2: The Iranian Revolutionary Guard released an image showing four successful missile launches – the missile outlined in red was edited into the photo - the actual fourth missile didn't launch.[42]

To help combat allegations of untrustworthiness, many journals created codes of ethics for editing photos that all their journalists must follow. These codes typically bar photojournalists from adding, removing, or modifying elements within their photos (including staging some shots) and may even be as drastic as banning color and contrast adjustments.[43] Violating these codes may entail a forced resignation from the news organization, as was the case with a photojournalist who staged a shot with a firefighter during a fire in California.[44] Even with these

[41] Laurance, "Through the Lens": 27.
[42]Mike Nizza and Patrick J. Lyons, "In an Iranian Image, a Missile Too Many," *The Lede*, July 10, 2008, Accessed December 2, 2018, https://thelede.blogs.nytimes.com/2008/07/10/in-an-iranian-image-a-missile-too-many/
[43] Gamerman, "ARENA," D.1.
[44] Meadows of *LA Times* staged a photograph of a firefighter cooling off using a swimming pool. He denied the allegations, but they were backed up by the firefighter. Problems like this are becoming more common within the field of photojournalism. Howard Kurtz, "L.A. Times Gets Burned by Disaster Photograph," *The Washington Post*, February 2, 1994, D.1.

ethical codes in place, "some of the industry's biggest names and most established contests have been tarnished recently by accusations of tampering".[45]

The Internet, Social Media, and Citizen Photojournalism

The Internet changed the way photographs are shared, allowing them to be sent out almost instantly after they are taken. In the early days of the Internet, photojournalists would have to painstakingly upload their photos at a slow rate using dial-up connections, but as networking technology improved, the speed of photo sharing increased. Some photojournalists report that they are assigned a smartphone to take a few initial photographs for quick publication before they even set up their DSLR cameras.[46] This means that photojournalistic content can be produced at a much faster rate than before, and the time between the photo shoot and publication is a fraction of what it was in the twentieth century.

With the rise of social media, sharing photographs has become a very easy and commonly done event, which has the potential to influence what news people see and believe.[47] Popular content on social media networks differs from the popular content in traditional news media platforms, therefore photojournalists need to adapt their images to see success on social media.[48] Users of social media prefer simple, clean imagery which catches the eye; images which are

[45] Gamerman, "ARENA," D.1.
[46] Virginia G. García and Bella Palomo, "The crisis of photojournalism: rethinking the profession in a participatory media ecosystem," *Communication & Society* 28, no. 4 (2015): 33, doi:10.15581/003.28.4.33-48.
[47] Tait, "Really Social Photojournalism": 232.
[48] Ilbd, 230; T.J. Thomson, and Keith Greenwood, "I 'Like' That: Exploring the Characteristics That Promote Social Media Engagement with News Photographs," *Visual Communication Quarterly* 24, no. 4 (2017, October 2): 203–218.

wider and more contextually rich do not perform well on social media and therefore are better suited to be linked from a simple cover photo.[49]

Around 45% of Internet-using adults share images online, giving a source of free photos to news organizations but also harming the careers of photojournalists.[50] Many photojournalists do not believe that citizens can compete with their knowledge, training, and tools yet many news organizations are cutting their photography departments in favor of citizen photojournalists and journalists with smartphones.[51] The amount of citizen-generated content varies by medium, for example, "the presence of citizen content is much greater in the digital medium than in the printed one."[52] Quality photographs are expensive to produce, therefore news organizations take advantage of the policies of social media networks to reproduce images taken by citizens who are aided by the abundance of smartphones.

Professional photojournalists are experiencing decreased job security, which is correlated to the rise in citizen photojournalism.[53] For example, López Perujo, a photojournalist with AFP said, “in day-to-day work you realize that there are fewer colleagues covering the news stories; sometimes I’m the only photojournalist who attends an event.”[54] Many news organizations are also lowering the wages of photojournalists, in attempts to compete with other organizations that

[49] A study of how social media users engage with photos from news organizations revealed that there is a difference between what works in traditional news media photographs and what works on photos published on Instagram. Thomson and Greenwood, “I ‘Like’ That”: 217.
[50] As of 2015, 45% of American adults posted images in some form on the Internet. García and Palomo, “The crisis of photojournalism,” 34-35.
[51] *The Chicago Sun-Times* replaced its photography department with news writers with iPhones in 2013 and *Diario de Alcalá* removed its department all together in favor of non-professional citizen taken-images. Ibid, 34-35.
[52] Ibid, 43.
[53] Ibid, 34-35.
[54] Ibid, 42

outsource their photography; this makes it hard for professional photojournalists to maintain a livable income off of this career path.[55]

Citizen photojournalists help cover events which professional photojournalists can't;[56] the citizen-contributed photos of 9/11 in the United States is held as a turning point in the evolution of citizen photojournalism, as most of the initial coverage came from untrained photographers.[57] Although many photos from ordinary citizens are considered personal memories or experiences,[58] the consumer digital camera has enabled citizens "to produce and disseminate images to document their experiences, mobilize and recruit, sway public opinion, contest the legitimacy of authorities, secure legal evidence, and appeal for humanitarian relief."[59] Citizens with digital cameras, such as smartphones can also help expose the atrocities happening within authoritarian regimes, where photojournalists may not be allowed, and some have personal experiences closely tied to their dramatic imagery, such as the Syrian refugees looking for entry into Europe.[60]

Citizen photojournalists are not held to the same ethical standards as professional photojournalists, and therefore there is "the threat that citizens will purposefully break the ethics of manipulation and privacy due to personal bias."[61] Edited photos may be hard or impossible to

[55] Newton, "Photojournalism": 240.
[56] Laurance does state that occasions where major events occur, and photojournalists are not present are rare, but are possible – and therefore news organizations rely on "citizen photojournalists." Laurance, "Through the Lens," 27.
[57] García and Palomo, "The crisis of photojournalism," 36.
[58] According to Pantti and Bakker (2009), citizen photojournalism can be split into three categories: misfortunes, memories, and sunsets. Misfortunes include disasters, accidents, and crime. Memories include personal lives, experiences, and memories. Sunsets include nature photography, weather and clouds. Ibid, 37.
[59] Mobile digital media has changed the role that images play in conflicts by easing access to creating and sharing them. Bolette Blaagaard, Mette Mortensen, and Christina Neumayer, "Digital images and globalized conflict," *Media, Culture & Society* 39, no. 8 (2017): 1112, doi:10.1177/0163443717725573.
[60] Ibid, 1117.
[61] García and Palomo, "The crisis of photojournalism," 38.

identify, even by amateur photographers posting documentary photos on social media.[62] News media organizations are using these photos in their content, yet the inability to verify the authenticity of the photographs undermines the trustworthiness of the publication.[63]

In conclusion, photojournalism has changed drastically since the invention of digital photography. Photojournalists can take more photos, get quick feedback on their photography, and easily share and edit their photos, saving both time and money. The easy access to digital images, through both social media and the ability to take more photos at events, increased the popularity of the field. On the other hand, digital photography has opened the floodgates for modified images, which hurt the trustworthiness of the profession; the belief that photographs were objectively true has faded since digital imagery has become popular. This is aided by citizen photojournalism, which has also decreased the job security of professionals. So, digital photojournalism differs from its analog predecessor in ways that are both beneficial and detrimental for the field.

[62] Ibid, 37-38.
[63] Ibid, 42-44.

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The Department of Photographs in the Metropolitan Museum of Art published this article. They discuss pieces of their collection and the history behind them, including the wet-plate photographs of the Civil War, which this article focuses on. This source can be

considered credible because it is published by a reputable museum by historians studying the photographs.

Estrin, James. "Digital Photography: A Look Back." *Lens*. July 31, 2014. Accessed October 28, 2018. https://lens.blogs.nytimes.com/2014/07/31/digital-photography-nppa-james-estrin/.

This primary source article provides an in-depth look at how digital photography changed the field of photojournalism. The author of this article, James Estrin, has been a photojournalist since before the switch to digital technology and was one of the first to experiment with this technology within the field of photojournalism. This source was published online on *New York Times*' Lens blog. This source can be considered credible because it is a firsthand account of the change from analog to digital photography. James Estrin is the founder of the Lens blog and is a senior staff photographer at the *New York Times*, therefore he has the proper credentials to write about this topic and may be considered an expert within his field. Estrin was also a recipient of the Pulitzer Prize for his work on several articles.

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