

The Invention of Photography

Chris Clarke
ETEC 540

Transcript:

Slide 2

Before photography, people relied on a number of different techniques to create images of themselves, their surroundings, and the natural world. For hundreds of years paintings were the main form of image creation.

Slide 3

They were time consuming and the accuracy of the images was dependent on the skill of the artist.

Slide 4

By the 15th century, linear perspective was being used throughout Italy (Lenman, 2005). This style of painting focused on the idea of creating images that deceived the eye through realism.

Slide 5

For this to occur, architectural and mathematical tools and principles were required to create the precision needed for this deception.

Slide 6

Delmas (2011) described the state of mind of citizens towards the end of the eighteenth century. By this time, science had become popular. Past theological understandings of nature were being refuted and our own frailty was being exposed. Confirming what was presented as truth became vitally important. In particular, Delmas (2011) stated:

Slide 7

“The 18th century was not only characterized by Reason’s reign but also by philosophical speculation, the popularization of science, and mass entertainments that together exposed a wide segment of urban society to the unsettling tension between truth and skepticism.”

Slide 8

For centuries, religion had been the center of both truth and knowledge. Science provided an alternative approach and insisted that measurable proof be provided when determining how the world functioned.

Slide 9

A painting was merely an artistic representation of the natural world. There was no guarantee it accurately portrayed the scene it was meant to depict. It may have represented the artist's truth, but the population wanted the objective truth. Delmas (2011) referred to this as a crisis of knowledge that primed the population for the invention of photography.

Slide 10

In an attempt to create a more realistic image, drawing machines were created. An early example of this technology was the camera obscura. In essence, it was a pinhole camera that would create an inverted and reversed image of the projected scene. While this was a large step forward in projecting images onto a surface, it did nothing to permanently capture them like a photograph eventually would. It was a transient exercise, but still a necessary step down the path of discovery.

Slide 11

One of the missing links needed to create permanent images would come through the science of chemistry. Exploration, experimentation, and collaboration from both inventors, naturalists, and scientists would be required to create, improve, and refine the process over many years.

Slide 12

The year 1839 isn't considered to be the year that photography was invented, but it is considered to be its big unveiling to the world. Lenman (2005) shows that, "the invention had occurred in stages, incorporating many earlier developments in chemistry, physics, and the visual arts". Even after it was revealed to the broader world, the process of photography would continue to be explored and researched through to the present day and, presumably, beyond.

Slide 13

The ability to permanently capture images of natural phenomena allowed communication through visual means to evolve. The first known photo was done by French inventor Joseph Niépce at some point between 1826 and 1827 (Sheehan, 2014). It is commonly referred to as *View from the Window at Le Gras*. His process would have taken many hours of light exposure

to create the image (John, 2012). For this to have been an effective method of communication, it would have needed to be limited to communication based on static objects or locales.

Slide 14

If an individual wanted to share an image of their house in England with a person in France, this would have been possible. Trying to convince a bird to stand still for hours so a photograph could be taken would have been an exercise in futility. If the ornithologist studying the bird wanted to share the bird's physical appearance with a distant colleague, a sketch and an accompanying description would have still been a better form of communication compared to a blurry photographic image.

Slide 15

Photography can be viewed through the lenses of art and science. In science, photography can be used to show the viewer exactly what the scientist was studying. It provides objective images that can be analysed and compared to the descriptions provided in the supporting articles. The goal is to show exactly what was viewed. It is even possible to use photography to capture images of phenomena not visible to the human eye.

Slide 16

An excellent example of this would be explorations of the electromagnetic spectrum. When relating photography to the study of science, the photograph represents measurable, repeatable facts. A photograph contains a frozen image of an exact moment in time. Used in this form, a photograph is a promise to a viewer that what they are seeing exists. There is a social contract in place that lends the picture validity.

Slide 17

On the flip side of objective truth is artistic truth. Art can take on many different media. Music comes from the manipulation of sound. Paintings mainly focus on the manipulation of colour and perspective. For photography, it was inevitable that people would start working on the manipulation of light.

Slide 18

Time, location, and intensity of the light exposure all came to bear on the artistic side of photography. Images could appear washed out through overexposure, or unnaturally dark due to underexposure. With the right set of conditions, it became possible to alter the image being captured so it was no longer a replica of the original object being photographed.

Slide 19

Over time, this led to claims of fantastical images of such things as fairies and apparitions. Since they were photographs, there was an immediate sense of legitimacy ascribed to them. It was one thing to paint a fairy, as it could easily be explained away as an imaginative artist. It was another thing entirely with a photograph. They were harder to refute due to the perceived ability to capture exactly what was in front of the camera.

Slide 20

If a person claimed to have seen a fairy, there were many reasons to dismiss their claims: they lied, didn't see clearly, or were inhibited in some way. If that same person had a photograph, that was physical proof just like scientists used to support their claims. It was not something that could be immediately dismissed. It was tangible. A common expression is "seeing is believing". More often than not, people need to see or experience something for themselves before they believe it happened or existed.

Slide 21

How many times have you watched a person test a door knob to find out that it's locked and then immediately test it yourself? It's a common practice in redundancy, but a necessary one based on the average person's psyche.

Slide 22

Photography provided people with a faster way of creating visual images. Developing the techniques needed to create realistic paintings takes years of practice and dedication. Once the process of photography was published, anyone with the desire could replicate the process with a bit of experimentation. The time necessary to learn photographic skills could be measured in days, weeks, or months instead of years.

Slide 23

It may take years to perfect the craft, but if a photograph of a leaf and a painting of the same leaf were completed by the same person after practicing each technique for a month, the photograph would most likely more accurately represent the true nature of the leaf.

Slide 24

If a naturalist with no artistic ability wanted to create a floral guide to India, complete with images, the invention of photography opened a new path towards achieving this goal. Images could be taken without the need to hire an artist, and the time needed to complete the task would have been significantly reduced. With the reduction in cost, time, and skill level, photography allowed for more information to be transferred through visual media.

Slide 25

Imagery itself is important. As Otto (1956) states:

“illustrations play an important role in determining whether the book is actually read; the quality and interest value of illustrations are more important than the number or size of illustrations.”

Choosing the correct image to use within a book or publication can be immensely important to the success of the product.

Slide 26

An English idiom that is often used is “a picture is worth a thousand words”. It suggests that the image can convey a whole breadth of information within its confines. The correct photographic image on the cover of a publication can pull potential viewers to it. In many ways this is epitomized in newspapers and the rise of photojournalism.

Slide 27

Jensen *et al.* (2010) provide an excellent example of how photography can catch people's attention and be a catalyst for change by comparing two tragedies. They compared, “the New York Times coverage in the year following the 1876 Brooklyn Theater fire—which killed 297 people and was associated with few changes in policy—and the 1911 Triangle Shirtwaist Factory fire—which killed 146 people and has been celebrated for catalyzing the “Golden Era of Remedial Factory Legislation”.

Slide 28

Photojournalism in the U.S. newspapers emerged between these two events. The coverage of the Brooklyn fire had a single illustration and no photographs (Jensen *et al.* 2010), while the Shirtwaist Factory fire had 17 photographs of victims and the destroyed factory rooms. Jensen *et al.* (2010) posit that the dramatic contrast between the two coverages and the emergence of photojournalism allowed for increased metaphorical invention and helped foster social change in the working conditions of factories. Photography, when mixed appropriately with text, created a significantly larger impact on the hearts and minds of America.

Slide 29

The invention of the photograph provided a new avenue for visual communications. It promised to replicate nature itself and allowed scientists to more easily provide visual proof of their findings. Unfortunately, this promise would inevitably be broken. Photographs could be manipulated away from the original image. This was not necessarily a bad thing though, as it allowed individuals a new creative way to express themselves through the manipulation of light itself. Photography is a precursor to the audio-visual communication pathways we are now a part of.

References

Delmas, D. (2012). *Show me the truth: The conditions of possibility for the invention of photography* (Doctoral dissertation). Retrieved from ProQuest Dissertations Publishing. (NR78766).

Jensen, R. E., Doss, E. F., & Ivic, R. (2011). Metaphorical invention in early photojournalism: New york times coverage of the 1876 brooklyn theater fire and the 1911 shirtwaist factory fire. *Critical Studies in Media Communication*, 28(4), 334-352. 10.1080/15295036.2010.515233 Retrieved from

John, W., & Project Gutenberg Online Catalog. (2012). *Evolution of photography: With a chronological record of discoveries, inventions, etc., contributions to photographic literature, and personal reminiscences extending over forty years*. Project Gutenberg.

Lenman, R. & Nicholson, A. (2005) *Invention of photography*. (1st ed.) Oxford University Press.

Otto, H. J., & Flournoy, F. (1956). Printed materials. *Review of Educational Research*, 26(2), 115-124. DOI: 10.2307/1168835. Retrieved from <http://www.jstor.org.ezproxy.library.ubc.ca/stable/1168835>

Sheehan, T., Zervigón, A. M. (2014). *Photography and its origins*. London; New York: Routledge. DOI: 10.4324/9781315740096.

Slide Photos (In order of appearance)

1. By Unknown. *Antique Camera* [Photograph]. Retrieved from:
<https://pxhere.com/en/photo/889651>
2. Janeb13. (2016). *Bison cave of altamira* [Painting]. Retrieved from:
<https://pixabay.com/en/bison-cave-of-altamira-1171794/>
3. Da Vinci, L. (1504-1506). *Study of horses* [Painting]. Retrieved from:
https://commons.wikimedia.org/wiki/File:Leonardo_da_vinci_Study_of_horses_02.jpg
4. Da Vinci, L. (1490-1495). *Christ figure* [Painting]. Retrieved from:
https://commons.wikimedia.org/wiki/File:Vinci,_Leonardo_Da_-_Christ_Figure_-_c._1490_-_1495.jpg
5. Adams, W. (2014). *Fooling the eye* [Slide]. Retrieved from:
<https://www.slideshare.net/ProfWillAdams/art1204-fooling-the-eye-brunelleschi-alberti-linear-perspective>
6. Davis, J. (2012). *Brunelleschi's Re-discovery of the Vanishing Point in Linear Perspective copy* [Slide]. Retrieved from:
<https://www.flickr.com/photos/centralasian/8163672329>
7. Barret, G. (2013). *Landscape* [Painting] Retrieved from:
<https://pixabay.com/en/george-barret-art-artistic-painting-85763/>
8. Mei, J. (2012). *Tribute money masaccio* [Photograph]. Retrieved from:
<https://www.flickr.com/photos/47357563@N06/8087572248>
9. *Frontispiece from A New Universal History of Arts and Science, London* (1759)
Retrieved from:
https://commons.wikimedia.org/wiki/File:Science_in_the_18th_Century_-_the_King_George_III_collection_board2.jpg
10. By Unknown (2017). *Apple* [Painting]. Retrieved from:
<https://pxhere.com/en/photo/1081784>

11. By Unknown (2017). *Apple* [Photo]. Retrieved from:
<https://pxhere.com/en/photo/1047706>
12. *Camera Obscura box 18th Century* [Painting] (1850). Retrieved from:
https://commons.wikimedia.org/wiki/File:Camera_Obscura_box18thCentury.jpg
13. By Unknown. *MIT Industrial Chemistry Lab* (1893). Science History Institute, Public Domain, Retrieved from: <https://commons.wikimedia.org/w/index.php?curid=16003275>
14. Moffat, J. (1864). *William Henry Fox Talbot* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:William_Henry_Fox_Talbot,_by_John_Moffat,_1864.jpg
15. Niépce, J. (1826-1827). *View from the Window at Le Gras* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:View_from_the_Window_at_Le_Gras,_Joseph_Nic%C3%A9phore_Ni%C3%A9pce.jpg
16. Townsend, P. (2014). *Ivy Pentecostal Church, Ashley Hill, Bristol* [Photograph]. Retrieved from:
<https://www.flickr.com/photos/brizzlebornandbred/15412628556/in/photolist-ptXKv7-aoB BYt-vzZmhu-9RFLAk-7NvSx2-c27aty-bHhLPe-d1TE1W-iCeYgW-dgunBY-9TgeYf-4riJs D-6xzzr7k-qw2Qjt-dVPpr7-62JiSF-eTeTNu-btH2vt-bMD9gr-mCX7Gf-fEVQNZ-6YnPVR-jz BJa-hM7Uf7-cSZQ61-dyLXgn-8SMqZo-am6uko-dTed62-qUfdvV-5bagxx-fLFuHo-cjRmQ 9-aGR9sp-dXqxai-b5nXor-4pm62Q-dXrbzF-cjRRXo-aeD8H3-nbA4XB-aDuLgV-idmjQT-pjYJ5e-kqWja-286YDyC-4dtS7Q-83s1WM-eYR6Sn-22Kjxqu>
17. Antony, S. (2008). *Bats* [Photograph]. Retrieved from:
<https://www.flickr.com/photos/stuant63/2669504532/in/photolist-54TUGd-jzFToe-TfwgG K-aH6pst-6wxkBr-ekuQe-Rdd8tW-7wBmrA-8Z3oeo-pfVyL-9hur6Y-dAvfVw-bpc52k-9HJ Y7w-FfQr5L-76gFQX-EVvif-62hJfu-hL8ap1-25Mkhq3-pCfJNz-UJdK7E-7yKyPT-go8NM6 -9xpkTX-9hm64F-7yFSeb-5xG5gU-5xj51A-aNVX4a-8TQbrV-6iZRY7-MkcY-bzhha5-5as gZQ-bEAFES-87UPfD-ZtPSwA-8bENGc-22rhxWA-dXRpfM-nMMpfm-b8ujEt-fwC1ds-cP Mmfj-9nEVGn-qjrHQ-7wrMaE-bKyXPF-qjrHP>
18. Bruce, W. (1908). *Starfish* [Photograph]. Retrieved from:
<https://www.flickr.com/photos/internetarchivebookimages/14762481501/in/photostream/>
19. By Unknown. (2013). *Dispersive prism* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:Dispersive_prism.png
20. Panasonic. (2015). *Overexposed photo* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:Overexposed_photo.JPG

21. Chana, C. (2016). *Hello- Light painting* [Photograph]. Retrieved from:
<https://www.flickr.com/photos/cchana/24681299382>
22. Griffiths, F. (1917). *Frances Griffiths and the Dancing Fairies* [Photograph]. Retrieved from: <https://www.livescience.com/25413-fairies.html>
23. Barrett, E. (2010). *Turn Doorknob* [Photograph]. Retrieved from:
https://en.wikipedia.org/wiki/File:Turn_doorknob.JPG
24. By Unknown. (1850s). *English portrait photographer in his studio* [Photograph]. Retrieved from: <https://commons.wikimedia.org/wiki/File:Photographer1850s.png>
25. Burmanni, N. (1768). *Plants, leaves, flora in 18th century Indian subcontinent* [Painting] Retrieved from:
[https://commons.wikimedia.org/wiki/File:18th_century_flora_in_Indian_subcontinent_\(27\).jpg](https://commons.wikimedia.org/wiki/File:18th_century_flora_in_Indian_subcontinent_(27).jpg)
26. Rackham, A. (1907). *Alice's Adventures in Wonderland* [Painting]. Retrieved from:
https://commons.wikimedia.org/wiki/File:119_1907_Cover_of_Alice's_Adventures_in_Wonderland.jpg
27. Waller & Schrader. (1876). *Brooklyn Theatre* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:BrooklynTheatre_From_Johnson_Street_Looking_East.jpg
28. Brown Brothers. (1911). *Triangle Shirt Fire* [Photograph]. Retrieved from:
https://commons.wikimedia.org/wiki/File:TriangleFire_25March1911_BodiesOnSidewalk.jpg
29. Schanin. (2017). *Clouds* [Video]. Retrieved from:
<https://pixabay.com/en/videos/clouds-wind-nature-rain-clouds-sky-12069/>