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Recovering the visual history of the Andrée Expedition: a case study in photographic research

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Abstract

This case study is about difficulties encountered during research involving a collection of historical photographs. It reflects on problems that can face visual researchers when trying to access original sources in archives or collections. It further reflects on the confrontation of old and new technologies. These problems are often defined by a lack of knowledge of important technological developments and their possibilities. The case study further highlights the sometimes problematic status of visual material in archives and their sometimes ignored potential value as primary archival sources in research.

About the author

Tyrone Martinsson comes from an art background specialising in printmaking and photography. Since 1993 his work and teaching has concerned the theory and practice of digital imaging and photography. He completed an MA in Media, Culture and Technology in 1998 at the University of Luton and a PhD in Visual Studies in 2003 at the University of Westminster, London. He is currently working in Hypermedia Studies at the University of Skovde in Sweden.

Introduction

In an increasingly image-conscious society, and one in which children are visually literate from a very early age, the learned journals stand out as one of the very few forms of publication on which historical illustration has yet to leave its mark. Except for art historians, pictures do not count as a source, nor is there any call for seminars and lectures to be turned into slide shows.

Raphael Samuel (1994: 38)

There is a need for a sustained focus on visual material as a primary source in research and to further develop the methods of visual research. Images are far more than just illustrations. It is further important that researchers involved in visual-based research get acquainted with visual technologies, since researching visual material often calls for a practical approach. Digital media based methods of presenting research findings can be a valuable option when visual material is involved in research. In a hypermedia format, written text and visuals can easily work together and inform each other. Hypermedia opens new opportunities for visual research as well as for communicating the results of such research. It is also of great importance that researchers in visual studies make use of the many,

often surprisingly unknown and unexplored, visual archives. This paper offers one example of the recovery of a visual legacy largely ignored by previous researchers.

The case study material for this paper is unique. It is based on *The Andrée Expedition* , a Swedish polar expedition that, in a Jules Vernien style, tried to cross the frozen North Polar Sea by balloon in 1897. Its scientific mission was to explore the geography of the north Polar Regions using aerial photography. However, when the balloon was forced down to the ice the goal of the expedition quickly turned into a struggle for survival for the three expedition members: Salomon August Andrée (1854–1897), an engineer and the leader of the expedition, Nils Strindberg (1872–1897), a scientist, photographer and navigator, and Knut Frænkel (1870–1897), also an engineer. The three men struggled for over two months on the ice until they finally died in 1897 at Kvitøya in Svalbard. Thirty-three years later, in August of 1930, the remains of the three men were unexpectedly found along with large parts of their equipment, diaries, notebooks and exposed photographic film. They had documented their entire ordeal using photography and written text. It soon became clear that seven copper cylinders containing film were found at Kvitøya – four of the rolls had been exposed. When the expedition camera's roll-cassette was found there was one roll of film in it that had been exposed. Docent John Hertzberg at The Royal Technical University (KTH) in Stockholm treated the five exposed rolls of film. Out of 240 possible exposures (based on the fact that each roll could hold up to 48 exposures), Hertzberg managed to save 93.

The photographic source material

The Andrée Expedition photographs represent a unique visual record from 19 th century Arctic exploration. Why then was there so little known about them? To answer this question it was important to trace the photographs' whereabouts and use from 1930 until today. In contrast to the written texts left by the three members of the expedition, which have been analysed and carefully preserved, the original photographic negatives were more or less forgotten until found in an attic storage space at the Royal Academy of Science (KVA) in Stockholm in 1997. They were identified as the originals by Dr. Urban Wråkberg, then the Assistant Director at the Centre for History of the Sciences at KVA. Any exact trace of how or when the negatives were stored away at KVA has been difficult to find. They were apparently deposited at KVA in 1944, but between 1973 and 1997 there is a gap in our knowledge as to where the negatives were. 1 After being found in 1997, they were stored in archival protection but no work on, or examination of, the negatives was performed. In fact, there has never been a reference catalogue made of the negatives or the prints. The two texts closest to a catalogue are the listing of prints in an exhibition catalogue *Fynden på Vitön* (*The Findings at White Island*) from 1931 (only 53 images were listed) and a thumbnail archive on the homepage of the Andrée Museum (92 images are listed, see: www.grm.se).

Information on the photographer, Nils Strindberg, was equally vague. In a major work on Swedish photographic history, *Den svenska fotografins historia: 1840 – 1940 (The history of Swedish photography: 1840 – 1940),* Rolf Söderberg and Pär Rittsel (1983: 132-133) described Strindberg as a professional photographer and expert on photogrammetrics. The photographs are not described in detail in the book, but the authors praise the graphic qualities of the *retouched* images saying they resemble etchings. The artistic quality of the images implies an aura of mystique, and, according to

the authors, strengthens the visionary quality of Strindberg's photographs. According to Rittsel and Söderberg, this mystique is further enhanced by the substantial diaries and notebooks left by the expedition. This romantic dramatization of photographs is not uncommon in photographic literature; the lack of detail and photographic quality are commented on by Rittsel and Söderberg as a way to enhance the expedition's visual history. I have on several occasions been confronted by the statement that if the aura of mystique is broken by research such as my own for example, the strength of the visual component of the historical narrative of the expedition might be lost. As a visual practitioner and as someone with a strong interest in the history of visual representation, I do not agree with such arguments. Despite that disagreement, I respect the arguments and the fear of loosing the aura of mystique in the images for the purpose of historical narration. Aesthetic quality should never be underestimated when dealing with any such narration, and especially not when the historical narration is part of a popular scientific approach.

In 1994, Rigmor Söderberg, the photographic archivist at the Technical Museum in Stockholm found the copy negatives made by John Hertzsberg in 1930. The following year she produced an exhibition with prints from the negatives as well as the retouched prints from the 1930s (Söderberg 1995). Despite the exhibition of the prints in 1995, until the autumn of 1999, when I started initial research on the original negatives and the photographic remains from the expedition, no research had ever been performed on the photographs. There was nothing more known about the images in 1999 than in 1930. The interest among researchers had been mostly literary, and the photographs, with a limited number being used repeatedly, functioned solely as illustrations. In 1982 the acclaimed Swedish filmmaker Jan Troell made the film *The Flight of the Eagle,* about the expedition, based on Per Olof Sundman's 1967 fictionalised bestseller novel of the same name. This film gave the expedition a visual framework that remains influential to this day. In 1997 Troell made *Their Frozen Dream* , his second film about the expedition, in which he used unretouched photographs in a way that no one had done before. Here, the content of Strindberg's images, and their aesthetic quality of worn, damaged and dated objects, was used to authenticate the narrative structure of the film and to echo the voice of Strindberg through his visual diary, which complements the fragments of the diaries in the soundtrack.

Despite the success of Troell's 1997 film, there was little further interest in the photographs. Previously there had been no easy accessible technology available that could be used to bring out the content of the original images. Although during the 1990s technology did become available that could be used to examine all the original negatives, in my experience there was a lack of knowledge within the institutions responsible for the original negatives about new technology and its possible application to the Andrée photographs. Therefore, no work was undertaken, even in 1997 when the negatives were rediscovered. There also seemed to be a suspicion about new technology and its use with this kind of material. There was concern about the impact of exposing the negatives to light in the scanner and the handling of the negatives during the scanning process. There were questions about what kind of quality would be obtained when transferring the traditional silver based negatives to digital files. Such suspicions are natural and possibly often a necessary filter when deciding what to do with delicate historical material. However, they need to be examined in a way that they function as a caution and not an obstacle to research.

Artefacts or content?

The Andrée museum has always regarded the photographs as central to its collection. The visual power of the photographs authenticates the voyage and brings 'the expedition history to life'. 2 The museum has used the paper copies it has held since 1930. Staff assumed that they were the best possible representations of the expedition photographs. It is rather remarkable, however, that when the negatives were rediscovered in 1997, 3 their possible value as visual research documents was never fully investigated. The negatives were treated as historical artefacts. They were nitrate-based negatives that had survived 33 years in ice and snow and then almost another 70 years under bad archival conditions. There was limited if any consideration of the images' content. This exemplifies the status of visual documents in research. This problematic approach became evident in initial discussions with the paper conservator at The Centre for History of Science at KVA. A long debate ensued after my initial requests in 2000 to scan the original negatives to determine whether it would be possible to acquire more data from the material. It took two years to come to an agreement with the Centre for History of the Sciences at KVA about the value of scanning the negatives in order to save and secure its content for the future and to give *Grenna Museum – Andréexpeditionen Polarcenter* new curatorial opportunities for using the material.

Accessing the material

During my first visit in 2000 to The Centre for History of Sciences at KVA in Stockholm, I was only able to examine three of the original negatives on a light table. This was due to the fact that the conservator assigned to the material had only taken out three examples; this was considered enough to convince me that there was not much there to see. Before I had contacted KVA I had used digital technology to go through all the photographs from prints available at the Andrée Museum. Based on that initial study I was able to identify the content of all three images that I was allowed to examine. Since such identification had not been believed possible by the conservationist I was granted access to view all the original negatives. On my second visit to KVA, to view all the negatives, I determined that there was great potential to retrieve more data from the originals using new technology. My argument was that the prints I had been working on earlier had been more than one generation away from the original negatives and they still had provided more information than any previous analysis of the material using more traditional methods. This time I also used an ordinary light table. It is interesting to note that although it was fine for me to have all the negatives at hand for a day using a light table without questions of exposure and possible damage from treatment being discussed, a request to scan the original images was denied on such terms. Knowing that I would possibly lack some data and that I would not get the same results had I the opportunity to work with the originals, I nevertheless decided that it was worth the amount of work involved to produce a complete reference catalogue. This decision was based on my assumption that even when working with prints from copy-negatives, digital imaging technology, in this case the widely accessible Adobe Photoshop, would enable the retrieval of more data from and information about the photographs. My assumptions about this use of Photoshop to assist my analysis were based on previous experiences working with digital imaging and photography.

Discussions about the value of scanning the originals continued for two years. Sweden's leading photographic conservator, Lennart Andersson, was then commissioned in early 2002 by KVA to

duplicate the original negatives using the same method that John Hertzberg had used in 1930. That commission was a direct result of my research inquiries into the Andrée negatives. I had argued two years earlier that a test should be done scanning a couple of original negatives to determine what could be retrieved from them and compare that to Hertzberg's copy negatives from 1930, but this argument was strongly denied. However, I had already made contact with Lennart Andersson, who was immediately interested in scanning the negatives and supported the idea of using new technology to see if more data could be retrieved. Despite Andersson's expert support, the KVA conservator denied our request until October 2002, when an agreement was made. The current Assistant Director at the Centre for History Science at KVA allowed three negatives to be scanned and compared to three duplicate-positives made by Lennart Andersson to determine whether there was any difference in quality and whether more data could be retrieved from the photographic material.[4] If a significant difference was found then the entire collection of negatives would be scanned.

New methods applied

The results of the visual based research using a method that I called *Photographic Archaeology* would finally initiate the scanning of the original negatives.[5] Since unprecedented results were achieved in the prints from copy negatives made from positive duplicates of the original negatives, it was plausible to assume even better results could be achieved using the original sources. Without the initial positive results, it is doubtful that this revival of Nils Strindberg's photographic work on the Andrée expedition would have taken place. Based on the comparison between results from the digitally based *Photographic Archaeology* project and Lennart Anderson's duplicates made with traditional conservationist methods it was eventually decided that the only plausible way of actually securing the *content* of the negatives was by scanning. The scanning of the original negatives took place during 2003. It was done at Proffskopia AB in Jönköping Sweden by Anders Dybelius and Jan Pålsson using a Fuji C-550 Lanovia Sprint scanner. The professional scanner works with a CCD-head that covers both X and Y-axis and gives ultimate focus and maximum resolution over the entire surface to be scanned. It can offer an optical resolution of up to 5000 dpi. Although the original negatives are mounted between two glass plates, the Lanovia scanner solved possible difficulties caused by the glass by working in 'Zoom axis', a form of 3-D scanning technology.[6] To operate this machine for optimum results, one needs both technical experience with digital imaging and with traditional photographic techniques. Pålsson and Dybelius at Proffskopia are skilled in both areas and were invaluable in this part of the research process. The initial tests were made on three images each damaged to differing extents. Both original and duplicates were scanned searching for the best profile for each individual image. They were scanned at the same size and resolution. The results were beyond all expectations. The digitally produced copies not only provided more data from the test negatives, but gave the negatives new life in terms of the quality of contrast and focus that had been lost in the previous duplication processes. As can be seen in the examples, when scanned the copy-negative is blurred, while the original appears sharp and clear. The tonal range also differed quite extensively. The scanner was capable of retrieving much more information from the negatives, while the duplicates lost 20% - 25% according to initial test results using a 24 grade tonal scale. The immediate conclusion was that traditional conservation methods were not adequate for this material and that the only way to secure the content and save the negatives was through the use of new technology. This result, of course, was very important to this research project as it was a test not only

of the possibilities of new image technology, but also of assumptions and arguments regarding these new possibilities and their application to research on photographs.

KVA's hesitation to scan the negatives is understandable considering that the conservator in charge there at the time had little or no knowledge of the capacity and function of new technology within photographic research. It should also be noted that there are few specialists to consult regarding the impact of high-tech scanners on deteriorating nitrate-based negatives from the 19 th century, and no definitive knowledge about the level of negative impact when scanning this type of material. However, it is clear that the material contains so much historical value in its *content* that any method that produces the best results should be considered and used, especially considering that the negatives are constantly deteriorating and will eventually be lost.

Conclusion

The new images that have been recovered by this research project not only provide the museum audience with a previously forgotten part of the history of the expedition, but also acknowledge the fact that photographs are so much more than authenticating illustrations. Photography can have an enormous impact on historical narration, both in bringing historical subjects to life through its mimetic structures but also as historical documents and visual evidence.

In this particular case the response I got, from several people involved, to the approach of finally allowing museum visitors a reappraisal of Strindberg's photographs, was rather surprising, but not irrelevant. The concern was that by exposing the visual evidence of the images in detail, I deprived not only the images and the story of the expedition, but also the audience, of the mystique and mythical status that had been ascribed to the images. There have even been arguments that this might have a negative effect on museum visitors. On the contrary, I believe the museum audience will be even more intrigued by the quality in the photographs that was gathered under such extreme circumstances.

The sad conclusion, however, is that in some sense the interest among researchers for this visual material came too late. When a comparison was made between the duplicate negatives from 1930 and the original negatives scanned in 2003 it is obvious that the failure to treat and conserve this historical collection has been devastating. The material has deteriorated to a great extent. Large parts of the emulsion on the negatives have been destroyed or are disappearing. This can of course be attributed to the natural process of deterioration among nitrate negatives, but it is likely that the poor conditions under which the negatives were stored is the most crucial factor for their current state, compared to the duplicates from 1930. We can conclude that the detail is much higher in the originals and that focus is sharp. Some images can give us more visual data in their detail but in general all the originals are heavily damaged. This is evident also in the pattern of wrinkles covering every original negative; this is not seen on the duplicates. According to conservationists this is likely the effect of the negatives being exposed to damp and cold winters and then hot summers when stored at the attic in Stockholm.

It is interesting to ask what might have happened if only the photographs were found along with, say,

Andrée's second, very fragmented diary? Would the status of the photographs have been different then? Would Strindberg have received more acknowledgment for his work, or would it have meant far less interest in the expedition?

During my work with this research into the history of Arctic expedition photography I have noticed that there are many visual collections awaiting research and exploration. One can only hope that we can get to them in time.

The photographs

Figure 1. (II.47orig) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This image from the landing site is part of the 360° panorama. This version of the image is from paper copies printed in the 1930s from duplicate negatives. S. A. Andrée can be seen posing on the balloon basket in front of the Swedish-Norwegian flag. The figure walking into the image is Knut Frænkel.

Figure 2. (II.47origN) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This image from the landing site is part of the 360° panorama. This version of the

image is from the original negatives scanned 2003. When compared to Figure 1 (II.47) printed in 1930 we can see that the poor archival storage of the negatives has seriously damaged the negative.

Figure 3. (II.47Compare) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This is a close up of II.47 showing details and the damages on the original negative. The top image is from paper copies from duplicate negatives and the one below from the original negatives.

Figure 4. (II.54Compare) Photograph by Nils Strindberg, 1897.

This image shows Andrée and Frænkel with what is a shot bear after removing the skin. The top image is from paper copies from duplicate negatives and the one below from the original negatives. The damage to the original is clear. See also the comparison of the bearskin image (Figure 6).

Figure 5. (II.56Compare) Photograph by Nils Strindberg, 1897.

This image shows another exposure of the same situation as figure 4. The top image is from paper copies from duplicate negatives and the one below from the original negatives. The damage to the original is clear.

Figure 6. (BearSkin) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This comparison shows the discovery of what is most probably the bearskin on the ice in front of Andrée, the figure to the left. This has never been discovered before and changed the meaning of this image in the expedition narrative.

Figure 7. (II.20PaperCopy) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This shows the balloon after landing with Andrée in front of the balloon basket and Frænkel on the ice to the right. The image is from paper copies from duplicate negatives.

Figure 8. (II.20OrigNeg) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

The image is from the original negatives. The damage to the original is clear when compared to the paper copies from the duplicate negatives.

Figure 9. (II.20Compare) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

A detail comparison between duplicate negative and original negative. The top image is from paper copies from duplicate negatives and the one below from the original negatives. The damage to the original is clear.

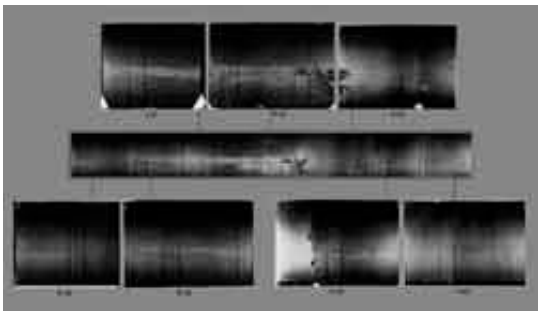

Figure 10. (PanStrukturB) Photograph by Nils Strindberg, 1897.
Copyright: Grenna Museum – Andréexpeditionen Polarcenter

This is an outline of the 360° panorama made by Strindberg at the landing site. The panorama can be seen in the QuickTime VR sequence. This discovery added a new curatorial practice for the Andrée museum and can be seen as a large screen projection that is controlled by the visitor. This sequence is also seen together with one 360° VR sequence from the base camp of the expedition and one from the death site of the expedition. Both photographed in 2001.

Figure 11. 360° Panorama by Nils Strindberg, 1897.
Copyright: Tyrone Martinsson

This is a smaller version of the QuickTime VR sequence made out of Nils Strindberg's images from the landing site. This version is based on paper copies. This is a low-resolution version and a new version based on the original negatives is planned for the museum. To operate the VR sequence just place your pointer in the film image at either the left or right side and then hold the mouse down and drag to the left or right.

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1. Karl Grandin Assistant Director at Centre for the Sciences, KVA confirmed this in a private conversation.

2. This role of the photographs have been pointed out within the many conversations I have had with the Director of the Andrée Museum, Håkan Joriksson about the use of the photographs in the museum exhibition.

3. Dr. Urban Wråkberg identified the original negatives in 1997. He was then Assistant Director at the Centre for the Sciences at KVA. When I started my requests to work with the originals he had left that position. He now holds a position there as researcher and is leading the Swedish Programme for Social Sciences in the Polar Regions and has been very supportive of the use of new technology to investigate the Andrée negatives.

4. As Andersson is considered the best photographic conservator in Sweden, the results of his work is not in question. Indeed, his work only confirms the limitations of the methods used. Andersson has supported the idea of using new technology to investigate and secure the negatives since I first approached him in 2000.

5. This was evident in conclusive discussions after the test scans with the assistant director at the Center for History of Science at the Royal Swedish Academy of Sciences, and photographic conservator Lennart Andersson and the Älvsborg's County Museum. Photographic Archaeology is a method using digital technology to analyse and clean the images in this study. It is based on Adobe Photoshop to provide an easy method to follow. The best comparison to another area, to describe the use of the method, is the reduction of "noise" in sound. The images have a layer of disturbance that more or less covers the photographs. To go behind this layer the only way seems to be actual hands on work, mouse click by mouse click. Such a close engagement with material also provide the best way of getting to know the material in depth.

6. Private conversations with Jan Pålson and Anders Dybelius at Proffskopia AB.

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