Digital Struggles for Film Restoration: La battaglia dall'Astico al Piave

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ABSTRACT

Our contribution is focused on the ongoing reconstruction and restoration of *La battaglia dall'Astico al Piave* (1918, 35mm, tinted and toned, mt 1255), by the University of Udine in collaboration with La Cineteca del Friuli, Istituto LUCE and Cineteca Italiana, and supported by MiC. To date, three versions are documented: the 1918 Italian and French versions, both realized by the Italian Royal Army Film Department, and a further version released in 1927 which was probably re-edited by Istituto LUCE. Archival prints collected after a first survey of the film archives have been used to reconstruct the text on proxies, with the help of edge-to-edge and "repro-set" documentation and the other non-film materials. The restoration is being carried out through the digital intermediate route, using witness from Kinoatelje ("K") as the main reference to reconstruct the order of the scenes and the colour palette for the digital Desmet procedure. The aim of our contribution is twofold: on one hand, we highlight specific restoration and reconstruction issues; on the other hand, we focus on the reloading and reframing of the long-standing and sensitive field of digital research and the educational-oriented critical edition of films, in order to document the restoration and reconstruction process and give a wider account of the material, visual and cultural history of film as a set of apparatus, discourses and practices, proposed here through an innovative digital design and environment and following new interdisciplinary approaches.

1. Introduction

La battaglia dall'Astico al Piave [1] was made by the Italian Royal Army Film Department in 1918. The film testifies the days between 15 and 29 June 1918 and shows many important moments of the battle, from the attack on Montello to the recapture of the village of Nervesa.

Three versions have been documented to date: the 1918 Italian and French versions, both made by the military film department, and a further version, renamed *Ta Pum*, released in 1927 and still in circulation around 1930–33 at least, which was probably re-edited by Istituto LUCE.

Starting from archival prints, the project aims to make a textual reconstruction of the first Italian edition of 1918 with the help of edge-to-edge, "repro-set" recordings and other non-film materials. The restoration is being carried out through the digital intermediate route, and the result will then be recorded back on film to reproduce the tinting and toning through the Desmet method and using witness preserved by Associazione Kinoatelje (from now, simply called "K") as the main reference (see Table 1 above). According to the philology of texts, "witnesses" are "all the facts and objects that have transmitted the work through time, from its origin to us" (Chiesa, 2020). Then the 35mm colour print will be scanned so that there is conformity at least between the photochemical and digital theatrical copies, which could not be achieved otherwise. At the same time, we will give an historical and visual account of the other versions, especially the 1927 re-release, through the digital environment we are designing for a digital critical edition of the film.

The aim of the project is to reconstruct the first Italian edition of 1918 and at the same time to give an historical and visual account of the other versions, especially the 1927 re-release.

2. Objective

"A (film) restorer according to the contemporary definition of the term has always relied on and been involved in philology. And the final aim of the philologist is the critical edition" (Marotto, 2008). Therefore, we will present our approach to film reconstruction, showing the numerous similarities with the methodological instrument with which philologists critically edit texts and manuscripts. In the first part, we present a survey of the primary film and non-film sources collected for the purpose of the reconstruction and restoration process which are also at the basis of the digital critical apparatus and their *examinatio*; in the second part, we focus on the actual restoration and reconstruction methodologies, practices and issues we are working on at the present moment while making a

morphological and qualitative evaluation and discussing some of the interesting *loci critici* we have found during the process. In conclusion, we hypothesize the creation of a single object that contains the restored edition plus documentation that puts the apparatus on view, in a very raw concept of the digital environment under construction.

3. Method

Our theorical background is based on a long film restoration tradition (Canosa, Farinelli, Mazzanti, 1997) with a philological approach deriving from the philology of printed texts, mainly focused on the analytical description of a book's physical characteristics and modes of production (Tanselle, 2020). Our methodological work involves disciplinary areas sharing common attention towards material culture and the relationship and inextricable links between formal and material artefacts (Fossati, 2018) that inspired the well-known historical evidential paradigm framed by Ginzburg (Ginzburg, 1986) and the pioneering application of this paradigm to film inspection by "excavator" Harold Brown (Brown and Bolt-Wellens, 2020). Furthermore, an effort to frame the relationship between formal and material artefacts was made recently in digital media studies in the shape of the forensic approach proposed by Kirschenbaum (Kirschenbaum, 2008).

In this perspective, to apply the philological method, the first step is to collect all the survived witnesses, and then to gain an adequate familiarity with them (Macé, 2015), that is the *recensio.* The next one is to describe and analyze them (that is the *examinatio*) and then to compare the texts they contain (*lectio*): this process is called *collatio* (Macé, 2015). The next and last phase is the *textual reconstruction*, made by editing and combining shots and sequences from different witnesses, according to the version chosen (in our case, the 1918 Italian version). The following paragraphs therefore describe the reconstruction process, according to the methodological steps just summarised.

Recensio. Table 1 sums up all the film elements found during the initial survey, carried out among several film archives, museum, and collections.

Witness "K" from Associazione Kinoatelje is a 35mm nitrate print on three reels, which is approximately 900 m long; it witnesses the 1918 Italian version and is the main reference for our reconstruction since it is a first-generation print, as attested by the edge codes and other clues; in addition, it includes handwritten information on the film edge about the colour palette. It retains most of the narrative order, the original Italian intertitles and the tinting and toning colours.

Witness	Title	Version	Format	Element	Support	Reels	Length	Colour
K Associazione Kinoatelje)	[La battaglia dall'Astico al Piave]	IT (1918)	35mm	Positive	Nitrate	3	913 m	Tinted and toned
G1 – G2 (Cineteca del Friuli/Lobster Films)	*La bataille sur le Piave*	FR (1918)	35mm	Positive Dupe Neg Dupe Pos	Nitrate Acetate Polyester	2	521 m	Tinted and toned
G3 (Cineteca del Friuli/Lobster Films)	*Da Capodistria a Fiume italiana*	IT (1918)	35mm	Positive Dupe Neg Dupe Pos	Nitrate Acetate Polyester	1	336 m	Tinted and toned BW
RM (Istituto Luce)	[La battaglia dall'Astico al Piave Ta pum]	IT (1927)	35mm	Dupe Neg Dupe Pos	Safety	4	1073 m	BW
MI (Cineteca Italiana)	*La battaglia dall'Astico al Piave*	IT [1927]	35mm	Positive	Nitrate	2	[402 m]	Tinted
TO (Museo Nazionale del Cinema)	*Dio segnò i confini d'Italia*	IT (1918)	35mm	CTN Positive	Acetate	1	540 m	BW

Tab. 1. Report of the witnesses collected after the film archive survey.

Witness "G" from Cineteca del Friuli, in Gemona, is a 35mm nitrate print further subdivided into three witnesses. "G1" and "G2" are two tinted and toned reels, respectively 290 and 230 metres in length, that witness the 1918 French version, whose first public screening in Paris is known to date from 7 August 1918 [2]; witness "G3" is a short fragment of the Italian version, found within the film *Da Capodistria a Fiume italiana*. During the 1990s, Cineteca del Friuli and Lobster Film duplicated and restored the film materials from 1918 (G1, G2 and G3) at the Haghe Film Lab in Amsterdam. Presently, the restored 35mm copies from the nitrate prints are preserved by Cineteca del Friuli, which houses the preservation master on acetate and the restored print on polyester, while the original nitrate copies are "missing in action", in other words, lost in some nitrate vaults in Paris.

Witness "RM" from Istituto LUCE in Rome is a 35mm duplicate negative and positive on safety stock, consisting of four approximately 1000 m-long reels, with flash intertitles; the black-and-white image contents and intertitles probably witness the 1927 re-edition of the 1918 version, preserving large segments which are missing in "K" and "G". Unfortunately, the materials from the 1910s–20s are no longer preserved at the Istituto LUCE in Rome.

Witness "MI" from Cineteca Italiana in Milan is a 35mm positive fragment on nitrate film consisting of two reels. It is close to the 1927 LUCE edition, as attested by the intertitles and the insertion of later documentary materials.

Witnessing the 1927 version, it was recently duplicated by L'Immagine Ritrovata.

Witness "TO" *Dio segnò i confini d'Italia*, became part of the collection of the Museo Nazionale del Cinema in Turin during the 1960s but no information relating to the donor or seller is known. It retains just a few scenes of *La battaglia dall'Astico al Piave*, but it is important because it gives us a missing intertitle with the relative scene of the 1918 Italian version. It was about 540m long and printed on negative film from which the museum printed a positive on triacetate film. In 2015 the museum decided to make a 2K digital scan of the CTN. Unfortunately, all the original information has been lost.

We made further comparisons with other films from the end of the 1920s onwards, such as *Resistere* (1918), *The Other Army* (1917), *Il piave mormorò* (1934), *Guerra Nostra* (1928), *Gloria – La Grande Guerra* (1934), and, like witness "TO" described above, we found them to contain minor parts of *La battaglia*, identifying relationships and contaminations between several films from the period.

We carried out the *recensio* on film as well as photographic and private archives, journals and so on. Indeed, the survey of non-film materials should not just be considered ancillary or secondary work to support, validate and aid the restoration and reconstruction tasks. Instead, it is a core activity central to placing the film artefacts (both in conceptual and material terms) in an intermedial and cultural chain and network. In other words,

it frames our research objects as contemporaneously archival, archaeological and historical artefacts within an entangled approach to preservation and restoration.

Our primary sources included the *Gazzetta Ufficiale del Regno d'Italia*, whose reviews attest a first screening of the French version of *La bataille sur le Piave* in Paris on 7 August 1918. Others are the many newspapers that demonstrate the continued circulation of the film, probably in the LUCE re-edited version, with the name *La battaglia dall'Astico al Piave*, till 1933 [3]. As seen, these findings prompt many doubts even about title of the film itself. Furthermore, we identified many primary sources such as texts and volumes of the time, diaries of the men who experienced these events, military reports, photographs, periodicals, etc. and matched them with the photographic documents produced in the same period as the film and the information about the activity of the Film Department [4] of the Italian Royal Army to establish precise correlations between the filmed sequences. This allowed us to reconstruct the days of the second Battle of the Piave and to date and locate most of the sequences in the film. The intersection of images and related captions circulating in the press of the time, such as *L'Illustrazione Italiana* and *La Guerra* series, both published by Fratelli Treves, enabled us to identify not just the same moments in the war operations and the same places of the battle, but also the key characters of the events, shown from different and complementary angles. Furthermore, the cover page of *La Guerra* special issue resembles the title blocks and the intertitles of the film. This comparison work also helped us exclude from the collation some passages of film footage present in the "RM" or "MI" witnesses but not consistent with the first Italian edition.

Fundamental support for the research was given by consulting diaries and sources in museums [5], most of which are accessible through the European Film Gateway (EFG). For example, we consulted the diaries of Major Maurizio Rava [6], preserved in the Museo del Risorgimento in Milan, in which he transcribed important takes from the film. Equally as important in this research phase was the knowledge of some experts of the historical period under investigation [7], which helped us identify, localize and date some sequences, over which there were still some doubts. This enabled us to decide whether to include those parts in our final reconstruction or not.

Examination and collatio. When a large number of witnesses are collected, such as in our case, each one of them requires comprehensive and meticulous study in order to highlight the innovations transmitted by two or more of them (and conversely to isolate deviations in the single versions), variants and errors (generally called *loci critici*) in order to identify and reconstruct the *restitutio textus*.

The restorer must look at the material and production methods, tinting and toning, splicing techniques, etc. to make choices consciously and with a "critical eye", like in an excavation (Carandini, 2000). In other words, a direct and instrumental diagnostic investigation of the artefact has to be made (Venturini, 2007b). The descriptive-analytical study of the physical characteristics of films has a long history, which partly derives from the pioneering application of the so-called evidential paradigm by "excavator" Harold Brown (Brown, 2020). A particularly important step in our workflow was the production of apparatus documenting the witnesses using a descriptive and morphological approach to the material artefacts, in order to produce both isomorphic and non-isomorphic descriptions.

The isomorphic descriptions consist of visualizing the artefact with different instruments. While the habit of using digital interfaces and "surrogates" progressively reduces opportunities to actually touch the physical artefacts, our field deals with this issue as the very latest in the long history of the mediation and representation of artefacts. Indeed, the historiography of material culture has learned how to operate from disciplines such as palaeontology and archaeology, which abound "not only in artefacts from the past, but also in ways to document and study them [...] visual media are indispensable in the process of documentation, that is, the practice of transforming things from the past into manageable and malleable forms" (Olsen et al., 2012). Three different ways of documenting "things from the past", such as film artefacts, supported our work: screeners, edge-to-edge scanning and "repro-set" shootings.

Screeners, to quote again from the archaeological field, are "proxies of our vision of the past" (Olsen et al., 2012) which allow historical practice, and especially practice on material culture and physical artefacts acting as intermediates, to come closer, as proxies [8], to us (Figure 1). The proxies of each witness indicate the frame number, which has been added to simplify identification and identify each one for the following documentation activities. This kind of visualization facilitates comparisons between the witnesses, even when they are not physically in the lab, as well as the non-isomorphic description as we will see below. Furthermore, we must consider that our screeners come from dpx sequences originating from different digital sources (such as from different film scanners, digital routes and laboratories) and that the witnesses were printed through different photochemical routes and laboratories.

Fig. 1. example of a proxy file taken from the reel 2 of witness "K" on which we have added the frame reference number (1453) to make it univocal.

Edge-to-edge visualization, practised in Udine since the early 2000s, could be framed as a mode of visualization grounded on the philological tradition and an equivalent to the so-called "mechanical" or "photographic" edition of a manuscript or a book (Venturini, 2007a). Edge-to-edge scanning is "digital representation of the complete film strip as opposed to the sequence of frames provided by conventional film scanners (which ignore the rest of the film strip area)" (Gschwind, 2002). It allows archivists, restorers and scholars to observe and analyse various pieces of information, such as the edge codes or other handwritten annotations. For our study, it was particularly useful for those witnesses ("RM" and "MI") that we were not allowed to observe directly but we needed to analyse for the reconstruction choices (Figure 2).

Fig. 2. example of an edge-to-edge taken from reel 1 of witness "RM" (frame 3093); even if it is a negative copy, it is possible to identify the overlapping of the positive perforations; it shows the Producers' Edge Marks "AGFA" on the left and the numbers "509" that are a part of the edge code, on the right.

Moreover, edge-to-edge representation and visualization relate a different media history, which is what we are looking for. "Repro-set" photographic documentation could be seen as a first and consolidated example of a diagnostic approach, originating from those used in the fields of traditional cultural heritage. It is an adaptation of the set-up proposed by Barbara Flueckiger to obtain diagnostic documentation using the photographic technique.

To date, we have produced documentation of the practices leading to the current morphology of witness "K" by taking pictures of all the useful evidence, such as splices, colour indications on the film edges and the brand of the film manufacturer, which will help us with the textual and visual reconstruction. Furthermore, this kind of documentation of the damage, errors or defects occurring in the copy will help us to distinguish them in the digital restoration phase (Figure 3).

For witness "G", the "repro-set" documentation was created with the sole purpose of mapping the colours reproduced on the copy through the Desmet process. This will be used as a reference for the reproduction of the tinting and toning colours in the reconstructed version. All the files produced have been made for different purposes and helped us with the non-isomorphic description.
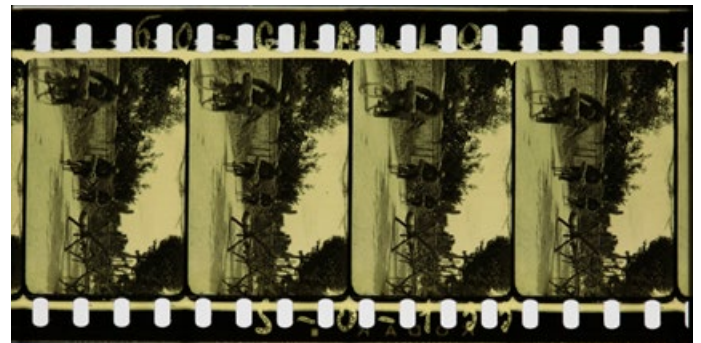

Fig. 3. example of a "repro-set" documentation with the handwritten indication for the tinting color to print "60-GIALLO" and the identification code of the film "S–O–155". It is also possible to see the edge code KODAK ▪ that allows to date the film strip to 1917. Picture taken at La Camera Ottica Lab of the University of Udine.

Non-isomorphic documentation is the description of the artefact through découpage and annotations. In a genealogical and archaeological perspective, before being thought of as equivalent to a present-day metadata recording and digital annotations, the non-isomorphic description is based on ancient layering tools such as so-called découpage. On one hand, this is a prismatic

theoretical concept, as recently re-framed by film scholars such as Kessler, Barnard and Le Forestier, which has grown up since the outset of classical European film theory (Le Forestier, Barnard and Kessler, 2020). In this meaning, découpage is seen as an anatomical and entomological approach to the formal and material artefact that can be used in order to dissect it. On the other hand, a second and specific meaning of découpage, which has played a particular role and function since the time of the inception of film culture in the 1920s and 30s, is the sceneggiatura desunta (usually translated in English as "technical screenplay"), a framework for understanding a film as a whole, both as a formal and conceptual structure and as a more concrete architectural artefact (May, 1939). More specifically for our interests, it is philological and archival attention to historical artefacts in an age of scarce study resources. In this perspective, to apply the philological method in order to critically frame the film tradition is to dissect and examine film as an organic and formal structure. Far from being a mere tool for textual analysis, the non-isomorphic description aims to document a material and editorial layout and at the same time lays the foundations for its reconstruction and transmission.

In practice, we created a first non-isomorphic description in Excel files in which we describe, annotate and report several pieces of information. By keeping the physical editing with the handwritten annotations on the borders as a reference, we transcribed the numbers of the scene/intertitle and its colour indications, the references to the first and the last frames in the proxy files (and the count of the frames) and/or the visual recordings produced through the "repro-set" documentation devices.

4. Results

We meticulously analysed all the witnesses, each of which retains its own specific material and cultural history. We deemed it very useful to subdivide the alterations into damage, errors and defects in order to create a series of rules of engagement for the subsequent restoration operations: both damage and errors can be amended because they are part of the later history of the film artefact; defects must be preserved since they are part of the original (Brandi's "Duration") and they describe how technical limits and/or specific non-normative practices can shape the film right from the start (Canosa, 2001).

Textual reconstruction. After the *découpage* of each witness, the non-isomorphic collation and annotation were reported in an Excel file. We then based the reconstruction on the numbering of the scenes. This was

done in an isomorphic way through non-linear multitrack editing programs and with multiscreen displays on DaVinci Resolve (Blackmagic) to compare all the witnesses with each other and identify the best element for our reconstruction. In this phase, we recognized variants and errors (*loci critici*) which needed to be resolved by applying mechanical law or conjecture (*iudicium or emendatio ope ingenii*).

Witness "K" turned out to be the best first-generation element for the reconstruction of the 1918 Italian version. If we found shots and sequences in several witnesses or if the images were too degraded to be clear and usable (the end of reel 2 of "K" suffers from gelatine and base decomposition), editorial choices were made by weighing up the quality of the image and the completeness of the scene, comparing the number of frames and preferring "G" for its temporal proximity to the reference witness and for the considerably higher image quality. When the scenes of "K" were shorter, but the sense was not lost, we always preferred a higher image quality and did not insert the few missing frames from other witnesses. In part, after a careful comparison of every witness, the missing sequences were found in "RM" and "G". From witness "MI", however, we chose the final sequence of the film since it is longer than the others and qualitatively better. Very recently, we finally found what we believe to be the lost scene corresponding to intertitle 26 in witness "TO" [9]. In addition, we are working on the comparison and inspection of twelve DVDs found in the George Eastman House Collection preserved by the Library of Congress and on a nitrate negative fragment very recently discovered at the Cineteca Nazionale in Rome, which, among other different materials, preserves a few missing shots, including the fourth Italian intertitle [10].

As regards the intertitles, we decided to maintain the original ones from the Italian 1918 version as surviving in "K". They display the code "R37" in the bottom-right corner to identify the film, which is the same for the Italian and the French version (in which an "F" has been added for French); in the bottom-left corner, it is possible to see the number of the intertitle, which helped us to find them in other films too, as was the case for intertitle 26, recently found in the film *Dio segnò i confini d'Italia* preserved by the Museo Nazionale del Cinema in Turin, which allowed us to add the corresponding sequence. Where missing in "K" but found in "G", we did not opt for a digital simulation and reconstruction of the title block, font and structure, but decided to report only the text and the numbers of the intertitle and the film on a neutral background, with the texts in square brackets. For the translations from the French, as a reference we took the intertitles found in the 1927 Italian version (witness "RM") or non-filmic documentation such as the captions of the

photographs produced at the same time by the Film Department of the Italian Royal Army, censorship approval, the intertitles list, and so on. We made the same decision to keep them as neutral and identifiable as possible within the filmic text for the intertitles attributed to the film found in witness "RM".

One of the *loci critici* we discussed during the reconstruction phase is the first four missing Italian intertitles. We found them in the French 1918 version, but they are the other way round and they do not fit with the Italian 1927 version (Figure 4).

Fig. 4. The four intertitles from the French 1918 version follow an unruly order but they are the only existing proof of the first intertitle. The number in the bottom-right corner identifies the film (R37, the same number for the Italian and the French version) and the version information (F, for French) while in the bottom-left corner it is possible to see the number of the intertitle: 3-2-4-1.

In order to reconstruct them, we had to rework the witness and ask many questions about how to deal with them since we do not have documentation supporting the choice to change the order. We should suppose it is due to the different importance of the Italian monarchy in France, which made the film information (title and director) more important, while in Italy the presence of the portrait of the King and other Generals of the Royal Army forced the audiences to stand up and pay tribute. Furthermore, the fourth intertitle identifies the "PREMIERE PARTIE" of the film, but during the film there are no other indications about where it ends or the overall number of parts in witness "K" or "G"; only in witness "RM" is the third part indicated, but we are not sure whether it should be taken it into account since it is a later and very contaminated version.

Lastly, we created a timeline including all the scenes and intertitles and, at the moment, we are working on restoring them through the digital intermediate route. Then, we will record it back on film to reproduce the tinting and toning through the Desmet method and scan the 35mm colour print for conformity at least between the photochemical and digital theatrical copies, which could not be achieved otherwise. However, we will produce a first release in DCP, applying the Desmet digital process for the reproduction of the 1918 tinting and toning palette, using the handwritten annotation on the edge of witness "K" as a reference since these notes come from the original camera negative. Here is another of the *loci critici*: in several cases, the indication does not correspond with the real colour in the surviving print, or the shades are different when the same colour is indicated (Figure 5).
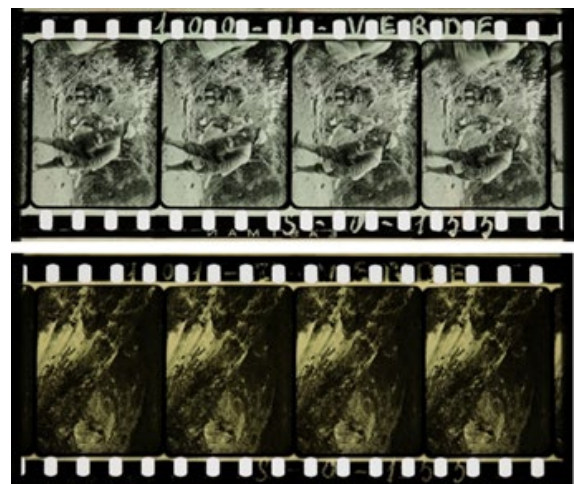

Fig. 5. Even though the indicated color is the same and the shots are in succession, they appear in two different colors. Above: shot n. 100 – Green Tinting (from witness K – reel 2 – frames 7931-7934) with the handwritten indication "100 – I – VERDE"; below: shot n. 101 – Green Tinting (from witness K – reel 2 – frames 7949-7952) with the handwritten indication "101 – I – VERDE"

We will have to discuss which shade to take as reference for the reconstruction and we will probably use the shots made with the "repro-set" documentation as a reference. Furthermore, we will screen the Italian ("K") and the French ("G") 1918 versions and make a comparison between the colouration of each scene, and we will discuss which colours to attribute to the "RM" scenes, since they are from a black-and-white negative duplication.

5. Conclusions

At present, the reconstruction covers more than 90% of the film (more than 1170 metres out of the 1255 metres recorded by the censorship visa), which is an exceptional result that can indirectly resolve and clarify the relationships and contaminations between several films and documents from the period.

In conclusion, as is more and more easy to understand, despite having chosen the 1918 Italian version as a reference, our aim is not strictly focused on the canonical reconstruction and restoration of this single chosen version. Rather our aim is to give an account of the restoration process of the final product and of the many different practices that shaped the multiple originals, the many relationships among the sources, the different genealogies, as well as the accidents, contaminations and finally the archival status and provenance of the film materials. Hence, we intend to build up a web-based historical-critical digital environment for the films and to document the film restoration process. In this environment, it will be possible to see the restored film like a normal cinemagoer, but, according to the audience's interests, it will also be possible to watch the original materials, analyse the variants and see the analogies or differences among them, while explaining the *loci critici*; to see the restoration interventions and make before-and-after comparisons; and also to see both the edge-to-edge and the "repro-set" documentation, and, obviously, all the non-filmic sources on which our reconstruction is based.

6. Conflict of interest declaration

7. Funding source declaration

8. Acknowledgment

9. Short biography of the authors

Serena Bellotti is a PhD student in History of art, cinema, audiovisual media and music at the University of Udine. She is working at the restoration of *La battaglia dall'Astico al Piave* (1918), carried out by University of Udine and at the restoration project of *Spedizione Franchetti in Dancalia* (1929) in collaboration with Istituto LUCE.

Simone Venturini is professor at the University of Udine and one of the founders of La Camera Ottica lab. He is the scientific coordinator of the FilmForum and director of Udine's IMACS. His research interests include history and theory of film archives, film restoration, media archaeology and production studies. He published in Springer, Berghahn, AUP, Carocci, Marsilio, and journals such as JFP, Cinéma&Cie, and Bianco e Nero.

Notes

[1] Film title: Battaglia dall'Astico al Piave (La). Produced and distributed by the Film Department of the Italian Royal Army. Metres: 1255; censor visas: 13649; requested on 5 November 1917; approved on 11 July 1918: http://www.italiataglia.it/search/opera (Last accessed: 5 July 2021).

[2] Gazzetta Ufficiale del Regno d'Italia, 8 August 1918.

[3] "Kinema", June 1930; "Il mattino illustrato", 9–16 June 1930 (23); poster announcing the projection of the film *La battaglia dall'Astico al Piave 1915-1918* in the Teatro Civico in La Spezia, 1933 (Preserved by Museo Centrale del Risorgimento, Id. Code: SIMP_071).

[4] The Film Department consisted of both the photographic and the cinematographic sections. They shared vehicles, equipment and shot several of the same contexts and events from similar points of view.

[5] Museo della Battaglia in Vittorio Veneto; Museo Storico Italiano della Guerra in Rovereto and Museo Centrale del Risorgimento in Rome.

[6] Starting in January 1917, and for remainder of the First World War, he directed the Army Cinematographic Section of the Press Office of the Supreme Command (Rome, Archive of the Historical Office of the Army General Staff, F1, Cs, Uv, b. 299, note 15 May 1917)

[7] We have talked to Camillo Zadra, director of the Italian War History Museum in Rovereto, the "Battaglia del Solstizio" Historical Cultural Association, Elena Nepoti (Imperial War Museum) and Alessandro Faccioli (University of Padua).

[8] In computer science, a proxy is an intermediary machine, while in digital post-production, a proxy is a "duplicate file of a project's source footage, a transcoded file that's smaller in file size and at a lower bitrate than the original". Etymologically, the concept of proxy is related to "procuracy", from the Latin *procuratio* "caring for, management", and *procurare* "to manage", in short, the agency of "one who acts instead of another". Lastly, proxy also recalls an idea of proximity, due to the etymology of "proximus", wherein the idea of "nearness" and "vicinity" does not so much recall what is near in terms of closeness to the origins but instead close to us: the "latest, the most recent; the next, the following".

[9] This evidence came from our talk with Alessandro Faccioli (University of Padua), whom we would like to thank.

[10] We want to thank the president of the Cineteca del Friuli, Livio Jacob, for his advice about the Library of Congress materials and Alberto Anile, Sergio Bruno, Valentina Rossetto and Maria Assunta Pimpinelli for their help about the material preserved at Cineteca Nazionale.

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