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Colourised Histories, reading digital/analogue photography and film archives now.

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Introduction.

What is at stake in the digital colourisation of photographic and film archives? Colourisation, which describes the addition of colour to archival photographs and films that were initially recorded and exhibited in a black and white format, is increasingly used in the interpretation of historic photographs for public circulation. However, the addition of colour to a black and white image can underscore or misdirect attention by either concealing, or highlighting, aspects of the image that the photographer considered significant to meaning. As such digital editing and colourisation, although proffered as a way of revitalising the archive or bringing the past back to life, marks the intersection of the artistic, cultural and political. Although digital scans of photochemical materials (glass plate photographs, thin flexible strips of celluloid nitrate or acetate, magic lantern slides) are sometimes perceived as benign ways of preserving archival materials whilst facilitating access, the rhetoric of 'restoration' that accompanies colourisation invests in the idea of privileged access to the past.

The recent focus on nonfiction film footage and photographic evidence of historic events conversely tends to overlook the provenance of the image, from the specific film stocks, cameras, photographers integral to its production, preferring to invest in the declarative aspect of the photograph as an image of past events. Such projects include Marina Amaral's print publications *The Colour of Time* and *All the World Aflame* , Jordan J. Lloyd's *History as They Saw It,* and films such as Peter Jackson's use of the Imperial War Museum archives in *They Shall Not Grow Old* (2018), and television programmes including *Auschwitz Untold* (Fulwell 73/ Channel 4, 2020), and the BBC's *Tutankhamun in Colour*

(2020) and Samuel F. Steininger's work for the Smithsonian Institutes' *America in Color* series and SBS' *Australia in Colour*. However, the technique can be tracked back to the 1980s 'colorization wars', which saw 24 Hollywood Studio films - including *Casablanca* (Dir. Michael Curtiz, 1942/colorized 1988) and *The Maltese Falcon* (Dir. John Huston, 1941/ colorized 1992) which had initially been made and circulated in a black and white format converted to colour (Wagner 1989, 1-75).

Colorization techniques developed by Color System Technologies and Colorization Inc., were intended to revitalise the economic potential of the films archive for distribution via cable television networks, yet incited vociferous debate amongst directors and actors around questions of authorship, copyright and ownership. The 1980s colourisations utilised preexisting computer – based imaging technologies to superimpose colour on to an existing monochrome image, a process which tended to diminish the visual delineation of figure and ground, which otherwise relied on variations in shadow, texture and light in the black and white image (Gendler 2013 199-208).[1] However, as Claudy Op den Kamp notes in 'Too Good to be Forgotten', 'a video copy of the film was colourised, while the original black and white film elements were left "untouched"', preserved in the archive (Op den Kamp 2016, 34). Further, the polemical response to colourisation led to the National Film Preservation Act 1988 in acknowledgement of fiction film as cultural heritage.

The conservation and restoration of film are addressed in the Federation of International Film Archives' [FIAF] Code of Ethics, which notably differentiates **between** the 'accretions of time, wear, and misinformation.' For example, characteristics of the materials used (the range of the spectrum each film stock can replicate, the variations of colour resolution that depends on the duration of exposure for still photography) can sometimes be differentiated from the deterioration during storage, which although unusual is a potential effect of poorly wound reels of film, the incorrect temperature for preservation, or screening (film scrolling through the projector). Further, FIAF advise against the 'material alterations' of editing the film text. Thus, whilst archive-led reconstructions focus on colour schemes specific to the initial production and circulation of a film, the 'restorations' undertaken by colourisation artists and commercial companies purport to revive the hues of the space in front of the camera. The complications of this claim – the interpretation of emotion or injury in the black and white image of a face (blushing, marks that might be blood or dirt) or the unacknowledged historically specific politics of First World War British home propaganda that is interleaved with Jackson's colourisations for *They Shall Not Grow Old*.

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[1] Edgerton 2000, 24-32. Grainge 1999, 621. Wilson Markle, Norman and Earl Glick focussed on developments at Colorization Inc., which absorbed by Hal Roach Studies in 1984. Ralph Weinger worked on colourisation technologies at Color Systems Technology from 1983. Turner Broadcasting Systems began colorizing black and white Hollywood studio films in 1986 following the purchase of the MGM Entertainment archive.

The Imperial War Museums' [IWM] policy on colourisation articulates a responsibility for the preservation of photographic and film materials, alongside their commitment to furthering awareness and understanding of the collection as primary resource for historical research (Sheppard 2021). The IWM insist that permission to colourise material is dependent on a presentational aesthetic, such as a gradual blend or transition from black and white to colour and the provision of contextual information that ensures the viewer or reader is 'clearly aware that they are looking at an artistic rendition of original black and white material.' However, the impact of colourisation on public perceptions of the past persists. For example, the selection of film footage for *They Shall Not Grow Old* (Dir. Peter Jackson, 2018) has been criticized for its focus on a specific geographical tract from Britain to the Western Front and back. Jackson's colourisation of War Office Cinematographic Committee approach reiterates the marginalization of soldiers from across the British empire and implements a 'politics of whiteness' through the homogeneity of skin colour (Das 2019; Allison 2021; Watkins 2021).

Digital colourisation technologies and techniques vary. The recent digitisation and colourisation of Burton’s films and photographs by companies including Composite Films for the TV documentary *Tutankhamun in Colour* (Dir. Paul Bradshaw, 2022), Semmel Concert Entertainment’s commission of Unseen Histories (formerly Dynamichrome) for the ‘Discovery of King Tut’, New York (2015- 2016) immersive touring exhibition ‘Tutankhamun: His Tomb and his Treasures’ (2020-22) has further underscored the continuing role of photography, film and colour in shaping public imagination of the archaeological excavation. There is historical precedence for the use of colour in the presentation of materials from the 1922 the incursion into the tomb of Tutankhamun. The excavation was documented using black and white glass negative photographs and films. The photographer, Harry Burton’s records were supplemented by notebooks, watercolours and object cards annotated with notes about the colours, materials and locations of funerary objects. The photographic and film records utilised Howard Carter’s public lectures, publications and exhibitions throughout the 1920s were displayed in black-and-white interspersed with three hand-coloured lantern slides. The study of the colour, translucency, and opacity of materials, which was integral to the archaeology of the tomb, has proven to a source of interest for filmmakers and digital colourisation artists working contemporary to the centenary of the excavation.

The colourisations commissioned by SC Entertainment in 2015 and 2022, were undertaken by Jordan J. Lloyd (Unseen Histories). The working file, used by Lloyd as Creative Director of Unseen Histories shows the greyscale scan of Burton’s black and white glass negative next to a section of the same image, which has been colourised in Adobe Photoshop identifies its referents (object identification to inform colour selection) from amongst archival resources (excavation diaries, object cards) on the Griffith Institute website. Here, the digital scan of Burton’s black and white photograph provided information about the composition and luminosity of the image, whilst each of the objects is masked (outlined) before multiple layers of colour swatches are added to convert the greyscale pixels into a colourised image. Lloyd estimates that between four and twenty layers of colour were used on each object.[2] The file shows the research and digital labour undertaken for the colourisation of Harry Burton photograph 0009 of funerary objects by the west wall of the Antechamber of Tutankhamun's tomb [Fig 1].

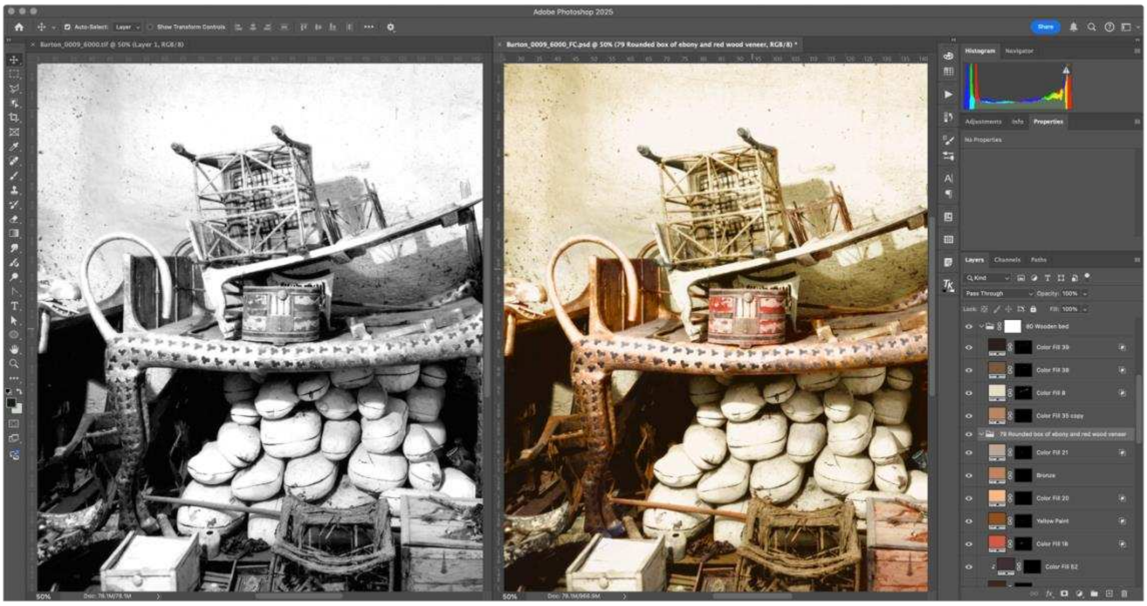
Adobe Photoshop 2025
Burton_0009_6000.tif @ 50% (Layer 1, RGB/8)
Burton_0009_6000_FC.psd @ 50% (79 Rounded box of ebony and red wood veneer, RGB/8) *
Histogram
Navigator
Adjustments
Info
Properties
No Properties
Layers
Channels
Paths
Kind
Pass Through
Opacity: 100%
Lock:
Fill: 100%
80 Wooden bed
Color Fill 39
Color Fill 38
Color Fill 8
Color Fill 35 copy
79 Rounded box of ebony and red wood veneer
Color Fill 21
Bronze
Color Fill 20
Yellow Paint
Color Fill 18
Color Fill 62
50%

Fig 1. Caption: Working file (Adobe Photoshop) showing the digital colourisation of Harry Burton's photograph of Tutankhamun's Tomb. December 1922. View of funerary objects against the west wall of the Antechamber. Lloyd's references for this image included online resources at the Griffith Institute http://www.griffith.ox.ac.uk/gri/carter/079.html and http://www.griffith.ox.ac.uk/gri/carter/079-c079-1.html alongside http://www.joanannlansberry.com/fotoart/tut/semicirc.html for the rounded ebony box with a redwood veneer. **Image credit:** Jordan J. Lloyd/Unseen Histories Studio (formerly Dynamichrome). Photographer: Harry Burton (black and white glass negative, 1922). **Burton photograph 0009** reproduced with permission of the Griffith Institute.

Lloyd stresses a preference for access to the artefacts (photographs, objects) where possible, else works from print and online access to archival materials, acknowledging that colour and image resolution depend on myriad effects of dust on the camera lens and photochemical material, Burton's use of artificial lighting, the digital scans. Lloyd's descriptions of his colourisations as a 'visualisation of the past' have been questioned by Christina Riggs in 'Reborn Digital' in drawing attention to the unnamed *ra'is* (leader or captain, in this instance an Egyptian archaeologist) working with Carter.

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[2] Lloyd, Jordan J.2024. Interview (online) with Liz Watkins. Monday 22nd July. This interview formed part of Watkins' Sloan Fellowship in Photography on Tutankhamun: Colourisation and the Archive at the Griffith Institute, University of Oxford.

> this photograph has led multiple material lives, first in analogue form and, since the early 2000s, in the digital realm, where it has gained such traction that it is the most frequent and consistent Google Image search result for "Carter Tutankhamun". Its ubiquity now extends to a digitally colourized version, too. Detached from its material biography and the conflicted historical circumstances of its creation, the photograph is free to signify in new ways what it arguably signalled from the start: the timeless allure of "ancient Egypt", the patient disinterest of science, and the unique ability of white, male archaeologists to unite the two. The presence of the unnamed *ra'is* supports, rather than challenges, such a reading. (Riggs 2021, 2)

The technologies, research methodologies and use of colourisation by different artists and companies vary. The provenance of the photochemical and digital image matters, as the political and cultural networks that intersect with the history of circulation.

Colorizer's Code of Conduct

Matt Loughrey's work has perhaps generated the most controversy. In a now notorious incident (Khmer Times 2021; Deinhart 2022, 280-290; Benzaquen-Gautier and Porée 2024, 1-2), *Vice* magazine published an interview in April 2021 with Loughrey, showing reworked identification photographs from the Tuol Sleng (S-21) interrogation and detention centre in

Bangkok, where thousands of prisoners were murdered under the Khmer Rouge regime.[3] Loughrey's explanation of any intervention he had made was confined to explaining how he had restored and colourised the photographs. The smiles on the faces were discussed as if they were prisoners' actual expressions in front of the camera. But this was not the case: Loughrey, or whatever process he had used, had added them. The backlash that ensued encompassed media outlets and institutions including the Tuol Sleng Museum itself and the Auschwitz-Birkenau Memorial Museum. This, combined with the fact that Loughrey's own accounts changed and were repeatedly found wanting (Deinhart 2022, 280-290), led to *Vice* withdrawing the magazine article within two days. Loughrey deleted all his social media accounts; his company My Colorful Past (such as it was) is apparently no longer doing business.

Combined with these issues of manipulation and falsification were also questions of animating still images, neo-colonial appropriation, the use of AI and perhaps even digitization itself. In supporting the Tuol Sleng museum, the Auschwitz museum's Twitter account noted that Loughrey had also animated an image of one of their registration photographs, which it denounced as 'disturbing, painful and disrespectful' (Auschwitz Memorial 2021).[4] The S-21 photographs had a history of being exhibited as if discovered and restored by Western specialists in photography (Hughes 2003; Deinhart 2022). Less the focus of the immediate criticism, the part played by AI was only really described through Loughrey's own claims about 'building an AI learning model' (iflscience 2020), although it was not clear what that meant. Finally, Loughrey's appropriation of these images could only take place because the Tuol Sleng museum had digitized its photo archive and made it available online less than three months earlier (Deinhart 2022, xxiii). This short time span indicates how easily digitized and open access resources can be reappropriated.

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[3] Out of an estimated 20,00 prisoners there are only 12 known survivors.

[4] Viewable in part at Mystery Scoop 2020 1:03-1:25.

The Colorizer's Code of Conduct (www.ccoc.online) responded directly to the Loughrey controversy, and included commitments that seem to be directly targeted at his work, such as a 'promise to never deliberately falsify or diminish the original work in any way'. Pledging that the 'derivative work' of colourisation would be 'an original work of skill, labour and judgement' would also seem to be vowing not to use (or at least over-use) artificial intelligence.

Loughrey's case is taken part of the range of activities practised by colourisers (even if at the extreme end). But much of the initial criticism he faced made a distinction between the different kinds of intervention. *Vice* apologised for the fact that their article had 'included photographs of Khmer Rouge victims that Loughrey manipulated beyond colorisation [*sic*]' (qtd in Ratcliffe 2021). One denunciation said: 'Matt Loughrey in Vice is not colourising S21 photographs. He is falsifying history' (Vink 2021). The implication of much of the original criticisms was that colourisation was not the problem, but rather the other ways that Loughrey had manipulated and falsified images. But is the problem represented by Loughrey's approach so easily contained? Is colourisation so easily disentangled from these other issues? The articles in this special issue show that it is not.

Taking as her case study the Troubles in Northern Ireland, **Emily Mark-Fitzgerald** places a consideration of digital colourisation in debates about how photography has served (or failed to serve) as witness and/or evidence of histories of violence.

Libby Saxton provides a compelling reading of *Auschwitz Untold* that is open to some possibilities of the technique, but shows how a greater awareness of the history of Auschwitz-Birkenau, and especially the presence of the major commercial partner I. G. Farben (German for 'colours' as well as 'dyes') throws into question claims that colourisation 'humanises' the subjects depicted in photographic and film records of the Holocaust.

Kamilla Simor offers a detailed analysis oof the digital ontology and aesthetics of colourisation through detailed readings of archival footage in *Revolution in Colour* (Martin Dwan, 2016) and *Warsaw Uprising* (Powstanie Warszawskie, Jan Komasa, 2014). Focussing on these two recent digitised and colourised documentary films, Simor shows how techniques which are described as restoring images and making them more fully present actually impart an uncanny and simulated feel to the films.

Martyn Jolly works with examples from New Zealand and Australian archives to provide a rich history of the use of colour before colour photography existed, noting the colouration of different photosensitive materials, arguing that while digital colourisation might be seen as part of this history, it in fact occludes and standardizes it.

Christina Riggs' insightful study of the uptake of digital colourisation by heritage organisations and museums in US and British contexts. Riggs examines the ways in which digitisation and digital editing reiterate the practice of smoothing out visual differences in photographic images is part of the construction of an imperialistic gaze as a normative view of the world. Further Riggs' article begins to decipher the gendered and racial biases that are sublimated in AI digital colourisation tools.

Lida Zeitlin-Wu's focus is directly on AI, especially as it has been made available to a wide consumer public in genealogy and ancestry databases. She shows both that machines 'see' colour differently from human sight, and that that seeing is nonetheless bound up in processes of racialisation.

Considering another case study of Holocaust images, **Liz Watkins and Dominic Williams** analyse the 'Faces of Auschwitz' project, in which the registration photographs of prisoners have been colourised. They contextualise the project within the extensive and passionate debates about Holocaust photography and especially perpetrator images, and the cinematic history of engaging with colour images and registration photographs. 'Manipulation' of perpetrator images, they show, has a lengthy genealogy.

André Habib examines the connections between memory and the resurgent desire to digitally colourise black and white archival photographs and films. Habib's archaeological approach to film, colour and emotion attends to the cultural history of Kodachrome, home movies and documentary materials to assess the connections between colourisation, fantasy and images of the past.

Photochemical and digital images are integral to shifting discourses of cultural heritage and public memory, provoking a series of ethical concerns that the contributors begin to address in *Colourised Histories, reading digital/analogue photography and film archives now.*

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