

International Conference *Colour in Film* 2017- ABSTRACTS

Chromolithographic Loops: Digital Restoration and Aspects of Presentation

Anke Mebold, Deutsches Filminstitut - DIF, Frankfurt am Main

From 1889 up to around 1930 German manufacturers of tinsplate toys were producing short animated films using chromolithographic printing techniques rather than photographic imaging processes. Bing, Plank, Carette et al. created strikingly beautiful colourful animation films, to be shown as loops on hybrid equipment both cinematograph and magic lantern. With printing methods adopted from the mass production of magic lantern slides, and subjects grounded in earlier traditions, these earliest animation films were extremely successful and widely distributed, but have been neglected in archival preservation.

The presentation will introduce the vintage 35mm prints and their specific physical characteristics, followed by discussion of successes & challenges encountered in identification, scanning and film data manipulation, in pursuit of authenticity while transposing these films to digital. Close attention will be paid to scene-by-scene colour grading with the aim of matching the colour as found in the analogue source, and to considerations in framing for presentation.

The Sirius system, a two-colour process marketed by Hans and Ludwig Horst from Berlin in the late 1920s will round off the presentation. It stands as representative of the many processes engendered as attempts to render 'natural colours', via applied colour in the positive prints.

The following films will be screened as part of the presentation:

20 'Lithofilms' (DE 1898 - 1930) - short lithographic animation films formerly shown on magic lantern / cinematograph combination equipment, mostly chromolithographic, ca. 13 min, DCP

[Farbfilmversuche] (DE ca.1930) - A demo reel for the Sirius colour system, 6 min, DCP

Anke Mebold works as film archivist, restorer and project manager at Deutsches Filminstitut – DIF in Frankfurt, Germany. Her main area of responsibility is film digitization and restoration. She holds a certificate in Film Preservation from the L. Jeffrey Selznick School at George Eastman House in Rochester, NY and a bachelor's degree in Media Arts from the University of Arizona.

This Room is Surrounded by Film!

Steve Bryant (Television Archivist) and Charles Fairall (BFI)

Colour television was introduced in Britain by the BBC 50 years ago this year. However, the production processes of the time, which mixed videotape and filmed content with live studio output, did not allow for the seamless flow of beautiful images we are used to today, while the limitations of domestic reception equipment further confounded the aspirations of the programme maker.

Using extracts of programmes from the early years of colour production, including *Monty Python's Flying Circus*, we will look at the colour quality of TV programmes from the first decade of production and consider the technical and aesthetic problems it had to deal with.

Chromolithographic Loops from the early 20th century: Aspects of History, Fabrication and Handling

Lea-Aimee Frankenbach, Student of Conservation / Restoration of Audiovisual and Photographic Heritage and Modern Media, HTW - University of Applied Sciences Berlin

At the end of the 19th century a new cinematographic technique conquered children's rooms: the "cartoon loops" (*Trickfilmschlaufen*), or chromolithographic loops.

These short films typically depict cyclical motion sequences and were played by what was effectively an enhanced lantern magica – the "kinematograf" – in can be seen as a very early form of home cinema. By connecting the beginning and end of the film, it could be played as an endless loop.

In Germany there were three big manufacturers for the cartoon loops and the related kinematograf, the Brothers Bing, Ernst Plank, and George Carette.

Fabrication of the cartoon-loops was possible in two different ways, either by recycling old film strips or by casting new foils to be cut apart and perforated after printing.

For the process of printing, the chromolithographic technique was used. However, select cases of loops printed in the technique of heliogravure are also extant, allowing for a monochromatic image only and showing differing surface texture than the coloured, lithographic ones.

Some of the cartoon loops can be assigned to a manufacturer through the specific quality of the drawings, the perforation, the numbering of frames and, in the case of George Carette, by labels on their first frame – unfortunately, however definitive conclusions remain elusive for a vast part of surviving loops also.

As shall be discussed in this paper, the digitisation of cartoon loops is an important aspect of conservation and preservation of these cultural-historic objects, but so are the handling and storage conditions in order to ensure their long term survival.

Impermanence in Images of the Antarctic

Dr Liz Watkins, University of Leeds

This paper discusses the use of colour in the 'synchronised lecture entertainments' (Dixon 2012) of Herbert Ponting and Frank Hurley as photographers on early 1900s polar expeditions led by Scott, Shackleton and Mawson. It also discusses the complexity of the relationship between analogue materials (lantern slides, photographic prints, sections of film) and the performative aspects of cinema lectures in the making of digital restorations of *South* (Hurley 1919) and *The Great White Silence* (Ponting 1924). The photographs of Scott's expedition were exhibited alongside Shackleton's after Hurley purchased a set of Ponting's slides and lecture script.

Herbert G Ponting's cinema lecture script for *With Captain Scott to the Antarctic* (circa. 1917) indicates a combination of lantern slides and film footage with instructions for their performance: the dramatic effect of silence and of 'words to be spoken in the dark' indicate a cinematic approach to exhibiting the image and its absence. A comparative analysis of Ponting's cinema lecture and two versions of *The Great White Silence* (Ponting 1924) indicates that the lecture script underpins the editing of still images, cinematography with the printed texts of intertitles of the 1924 edit of his film. The cinema lecture script utilised colour (tinting, toning and hand painting) to signal change, temporality and spectacle of the environment (sunrise, sunsets, the midnight sun, Aurora Australis) in combination with different photographic practices (time lapse sequences, flashlight and composite photography). These photographic and emergent cinematic techniques were integral to the performative aspects of the script.

The restoration of *Silence* and *South* to commemorate the centenary of each expedition invested in concept of authenticity and material specificity: the indexicality of the photographic image bearing a direct relationship to the filmed space (marks, scratches and exposure to light) and the elaborations of colour insinuates the significance of analogue materials. Can the specific material characteristics and uses of colour in lantern slides still be traced in their scripts and in their performative function –

variously signalling the spectacle of environment and technology, of memory, change - in the formation of film landscapes and narratives of expeditions for public exhibition? or in their digital simulacra?

Liz Watkins' research interests include the history, technologies and aesthetics of colour in narrative cinema, feminist theory, and gesture as register of discontent in the interactions of body and language. Her research includes a focus on intermediality, senses and perceptions - colour, sounds, touch - in silent cinema through discourse on polar expedition films and photography. She has worked as postdoctoral research fellow and lecturer in history of art and film at the Universities of Bristol and Leeds. She is co-editor of Color and the Moving Image (Routledge, 2013), Gesture and Film: Signaling New Critical Perspectives (Taylor and Francis, 2016) and has published essays in Screen, Paragraph, Journal of British Cinema and Television, NECSUS - European Journal of Media Studies and the Journal for Cultural Research. Her book, The Residual Image, which explores the history and theory of colour, sexuality and perception in film will be published with Routledge in 2017.

The Colour of Clay: Production and Archive Issues with Colour in Stop Frame Animation

Tom Vincent, Aardman Animations, Bristol

The modern digital delivery of film and television necessitates different formats with varying colour spaces. This paper will summarise the current state of play of delivery formats in the industry, and how it impacts both the production and archive process. Using Aardman Animations as a case study, there will be examples of how colour was used in some of its films, and also how colour was managed in the recent 4K restoration of *Sledgehammer*.

Novel Lighting Technologies for Scanning Historical Film

Julius Muschaweck, Film Restoration & Archiving, ARRI, Munich

To bring historical film into the digital age in a perfect way, we would need to reproduce how the film was seen many years ago by the historical audience when a brand new copy was projected. However, what we have is today's state of a surviving historical film copy. What would be needed, in addition, is a good understanding of (a) historical projectors and screens, (b) how ageing has affected our copy, combined with (c) full spectral transmission information (not just RGB values) with high spatial resolution for each frame. In this talk, we focus on (c): We discuss how using RGB, multispectral and true hyperspectral light sources in the scanning process retains varying amounts of information, and how these types of information loss fundamentally affect the reconstruction.

Julius Muschaweck, a physicist from Munich, has been involved with optics for illumination for 20 years, mainly working with LEDs. He founded and headed an optical design service company before joining OSRAM in 2006. There, he served as global coordinator of the optical designers. Since 2013, he has been Principal Optical Scientist at ARRI.

Resurrecting the Colors of Irvin Willat's *Behind the Door*

Robert Byrne, Film Restorer, President San Francisco Silent Film Festival

In this brief (and possibly interesting) presentation, film restorer Robert Byrne will describe the process through which the original color scheme was restored to Irvin Willat's *Behind the Door* (1919). Beginning with only the briefest of notations in the fragmentary 35mm black and white negative, the restoration team reconstructed the director's original color plan and then realized it in 35mm using a hybrid combination of digital-to-35mm color negative and Desmet Method printing.

Indigenous Colour: The Quest to Make Australia's First Colour Feature

Kathryn Millard, Macquarie University, Sydney

From early cinema and beyond, Australian inventors sought to develop an indigenous colour system. Solarchrome, which found the most success, was best suited to short newsreels and documentaries. Following the Second World War, companies from the United States, Britain and Europe competed to make Australia's first colour feature. How could their respective colour systems be successfully adapted to local filming conditions and Australia's notoriously harsh light? In the end, line honours went to Twentieth Century Fox and Technicolor for *Kangaroo* (1952). It was one of around 100 features shot or processed in Technicolour that year, as Hollywood studios sent production teams around the world in search of 'exotic colour'. For *Kangaroo*, Twentieth Century Fox settled on locations in the far north of South Australia with its vast expanses of red earth. A site where, unbeknown to them, parties of Australian Aborigines had long travelled from across the length and breadth of the country, along routes established for sixty thousand years, to collect high-quality red ochre deposits. This presentation, drawing on extensive archival research and film clips, examines the race to make Australia's first colour feature, an encounter between colour systems and world views in the Australia of 1952.

Kathryn Millard is an award-winning filmmaker and Professor of Screen and Creative Arts at Macquarie University, Sydney. Her credits span features (documentaries and dramas) and hybrids. Awarded research fellowships by the National Film and Sound Archive of Australia and the Tyrone Guthrie Writers' Centre, Kathryn publishes on topics including screen history, writing in a digital era and the after-life of images.

Spectral Analysis of Historical film Images

Giorgio Trumpy, University of Zurich

In the framework of the research project *FilmColors* funded by an ERC Advanced Grant, we, a team of researchers of the University of Zurich, are investigating the color appearance of historical film stocks with the aim to connect physical measurements to a broad aesthetic investigation, and to improve the scanning procedure.

The image appearance of a photographic film is strongly affected by the manner in which the film is illuminated.

An important factor is the spectral distribution of the light source that has a strong impact on 'colour separation' during the scan of subtractive 3-colour film.

The directions of the light rays hitting the film, on the other hand, play an important role on the contrast and sharpness of the image. The difference between images obtained with diffuse and direct illuminations was observed a long time ago for silver-based material, and it became known as 'Callier effect'.

The scattering phenomena that determine these differences are wavelength-dependent. The geometry of illumination (direct or diffuse) plays a role. For coloured silver-based material (e.g.

stenciled or tinted), a consistent colour difference can be observed between the image projected on screen (direct illumination) and the image observed on a light-box (diffuse illumination), which is the illumination type generally used by film scanners.

Seeing is Not Always Believing: Visual Illusions

Andrew Stockman, Steers Chair of Investigative Eye Research, UCL's Institute of Ophthalmology, Honorary Consultant at Moorfields Eye Hospital

Visual illusions occur when visual perception differs from objective reality. There are many examples of visual illusions, some of which are understood, but many of which are not. Illusions are also important in the cinema: the appearance of continuous motion on the screen, for example, is itself a form of visual illusion. From the point of view of a scientist, visual illusions are not only fun, but can also provide insights into how the visual system works.

In 2001, Andrew Stockman was appointed the Steers Professor of Investigative Eye Research at the Institute of Ophthalmology, now part of University College London, and he has been an Honorary Consultant of Moorfields Eye Hospital since 2004. He runs the small but successful Colour & Vision Research Laboratory within the UCL Institute of Ophthalmology, funded by a series of grants from the Wellcome Trust, Fight for Sight, the BBSRC and the EPSRC.

The Eastmancolor Revolution: History, Themes and Context

The Eastmancolor Revolution project team: Prof. Sarah Street (University of Bristol), Dr Keith Johnston (University of East Anglia), Dr Carolyn Rickards (Post-doctoral Research Associate, University of Bristol), Dr Paul Frith (Post-doctoral Research Associate, University of East Anglia).

The team will speak about their AHRC-funded project to start off the day with context for the speakers. Dr Paul Frith will be presenting a selection of award-winning amateur films taken from the Institute of Amateur Cinematographers collection held at the East Anglian Film Archive. These new 4k scans of the archive's 16mm master positives demonstrate the ingenuity of the amateur filmmaker through the creative use of both amateur and professional colour film stocks. Films to be shown include Ron Chapman's *The Magic Sea* (1979), which creates a tricolour effect on Kodachrome stock by re-exposing the film through red, green, and blue filters. These films will be discussed in an archive round-table, featuring Kieron Webb (BFI) and representatives from Studio Canal.

Installing Eastman: Early Implementations of Eastmancolor in US Film Laboratories

Dr Heather Heckman, University of South Carolina

In 1950, Kodak introduced a chromogenic film stock. Eastman Color would go on to become the industry standard, rapidly displacing a host of competing alternative processes, and gradually replacing Technicolor. Initially, Eastman Color had few advantages relative to Technicolor. Kodak's product was more expensive on a per-foot basis. Its sensitivity was slower. Somewhat easier to work with than three-strip Technicolor, Eastman Color was nonetheless much less user-friendly than black-and-white stocks. Perhaps most importantly, Eastman Color necessitated steep up-front investments in equipment and human capital, and Kodak, unlike Technicolor, fully delegated risk to its customers. This presentation considers what early adoption was like for the sector primarily affected, asking what Eastman Color installation meant for laboratory work (and workers) before the introduction of CinemaScope. Warner Brothers is a privileged example. Warners staff were among the first to work with Eastman Color negative on set, and were the first to see a feature distributed on Eastman Color prints. No other studio worked on more Eastman Color productions between 1950 and 1953, or more closely with the Kodak Hollywood office. Thus, Warners constitutes an appealing case study illustrating the risks and rewards, and the many daily irritations, of early adoption.

Dr Heather Heckman is the Director of Moving Image Research Collections, University of South Carolina.

Perverting the system: *Peeping Tom* and Eastmancolor

Kirsty Sinclair Dootson

Peeping Tom (1960) is perhaps best known as the film that ended Michael Powell's career through the critical opprobrium it generated in the press. By linking the act of looking with violence and sexual pleasure, *Peeping Tom* outraged critics by implicating the viewer as a willing participant in its depravity. Yet this paper suggests that it was also the film's use of Eastmancolor that contributed to its negative reception. Eastmancolor marked both an increased accessibility, flexibility and affordability of color at the level of production, as smaller studios working on limited budgets could now afford color for the first time. Yet this caused an increased anxiety about the consumption of color at the level of exhibition, as low-budget genres, particularly horror, could exploit color for sensational effects, and censors were concerned that certain scenes would be more shocking in colour than black-and-white. *Peeping Tom* is considered here as part of a cycle of late fifties colour horror films produced by Anglo-Amalgamated and Hammer studios, which used the affective potential of colour to enhance the potential to horrify, disgust and sicken, suggesting that it was this use of color that fuelled critical distaste for the film.

Kirsty Sinclair Dootson is PhD candidate in Yale's combined History of Art, Film and Media Studies programme. Her research examines the industrialisation of colour manufacture in Britain from the 1850s to 1970s. She is currently a Junior Fellow at the Paul Mellon Centre for Studies in British Art in London.

People Prefer Colour: the Wholesale Transition from Black and White to Colour in the 1960s

Dr Laura Mayne

The sixties was a decade of change and innovation which saw British cinema take pride of place on the international stage. The identity of British film in this era was defined by burgeoning new trends (pop music films, the New Wave cycle of 'kitchen sink' dramas, the 'Swinging London' phenomenon) but also by a high degree of continuity in both the industry and its products. One of the most notable trends of the decade was the wholesale transition from black and white to colour, a factor which was heavily influenced by new technology, the industry's relationship with Hollywood and by television's transition to colour in the late 60s. In 1960 24% of British films were produced in colour; by 1969 this figure was 99%. However, the use of colour was more important for some genres than for others (for example, crime thrillers were often produced in black and white, while colour is often associated with the 'Swinging London' cycle). Certain companies also tended to primarily utilise either colour or black and white in their products for a variety of reasons, both artistic and commercial. This paper will offer a broad historical overview of colour in 60s British cinema, drawing on findings extrapolated from a database of 1000 films which was compiled by the author for the AHRC 'Transformation and Tradition in Sixties British Cinema' project.

Dr Laura Mayne is a Post-Doctoral Research Associate on the AHRC-funded 'Transformation and Tradition in Sixties British Cinema' project, based at the University of York. In 2014 she completed her thesis on the cultural and industrial impact of Film4 on British cinema as part of the AHRC-funded 'Channel 4 and British Film Culture' Project. Her research specialism is in post-war British cinema with an emphasis on industrial histories, institutional practices and production cultures.

Colour Film and Cinema Advertising

Dr Richard Farmer

The cinema has a long history of screening advertising films; with examples dating all the way back to the medium's earliest years. However, the advent of commercial television in 1955 led the film exhibition and advertising industries to concentrate on producing advertisements that played to the strengths of the cinematic medium. Given that in Britain all television commercials were screened in black-and-white until November 1969, colour was a crucial element of the cinema's ability to attract advertising revenue.

This talk will provide a brief outline of the history of cinema advertising films in Britain, but will focus on the ways in which the cinema as an advertising medium sought to position itself as being distinct from television. Although the use of colour film was key to this process of differentiation, I will suggest that the cinema offered a range of technological and demographic advantages, and that colour worked alongside these other factors, rather than in isolation.

*Richard Farmer is Post-Doctoral Research Associate at the University of East Anglia, working on the AHRC-funded 'Transformation and Tradition in Sixties British Cinema' project. He is the author of two books – *The Food Companions: Cinema and Consumption in Wartime Britain, 1939–45* (2011) and *Cinemas and Cinema going in Wartime Britain, 1939–45: The Utility Dream Palace* (2016) – and numerous articles on British film and leisure culture.*