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Medicine on Film: A British Case History

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This article explores the historical and contemporary significance of medical film in Britain, particularly its role in education and practice for medical professionals. The key areas of inquiry are the emergence of medical filmmaking, focusing on the increasing research interest and visibility of non-theatrical film and to date the lack of British focus. While there is substantial literature on American and European medical films, British films have received less attention. Looking at the British Medical Association (BMA) Film Library, its establishment, purpose and then film competition, which ran 1957–1997, two cohorts of films are analysed (fracture treatment from the 1930s and then anaesthesia from the 1940s) that were part of the collection and still available to medical professionals until the BMA ceased to manage the collection in 2005. These films form a case study of how film communicated discourses of care. Ethical and practical considerations have hindered the preservation of these films; they have been hidden, shelved or disposed of, leading to questions of what they can tell us today and whether these films had a central role in medical education in the British, in comparison to the American, context.

Introduction

Medical film is a topic of increasing visibility in scholarship especially over the last twenty years with the emergence of critical studies of non-theatrical film. This is a field described by Thorn Chen and Gräfe (2021) as being 'necessarily polymorphous, referencing the use of motion pictures across a range of institutional milieus, technical configurations, and social contexts'. Furthermore, non-theatrical films existed in settings outside commercial cinema and its 'privileged space of the cinematic experience.' In their teaching bibliography for non-theatrical films, they list seventeen current sources for 'Medicine and Health Education Films' most of which are on public health written by American (David Cantor, Lisa Cartwright, Kirsten Ostherr) or European (Christian Bonah, Anja Laukötter, Tinne Claes, Katrin Pilz) scholars and looking at non-British contexts. The British story is missing in contemporary literature, with only Michael Essex-Lopresti (1923-2019) writing a history of the medical filmmaking genre from 1897–1997 (2009).

Until recently, British-made medical films have received less attention than those from the USA and Europe. The most current research on the major medical film producers working for or within pharmaceutical companies, teaching hospitals and clinicians is by Patrick Russell and James Piers Taylor. In their volume of essays (2010), Russell and Taylor touch upon the emergence of film aesthetics in the creation of industrial corporate identity influenced by the British documentary movement, mentioning Imperial Chemical Industries (ICI) and its film catalogue. Apart from this, there is no research which focusses just on the British economic and social context for medical film, although there is some intersectionality in scientific film (Boon 2008 & 2018). There is, however, substantial literature on American medical educational film (Curtis 2012; Orgeron & Orgeron, Streible 2012; Ostherr 2012; Ostherr 2013), and European medical training films (Hediger and Vonderau 2009; Bonah, Cantor & Laukötter 2018; Bonah & Danet 2020).

In this article, I extend the focus to look at the British non-theatrical film sector by looking at a corpus of British medical films from the British Medical Association (BMA) film library related to the changing practice of fractures treatment and anaesthesia from the 1930s and 1940s. Both film series are part of the BMA film collection of 900 titles which forms the largest single group within 2000 titles of medical films at Wellcome Collection (WC). The film collection formerly held at the BMA has significant interest beyond the field of medical humanities because it allows us to investigate the role of film not only in the training of British medical practitioners, but in the determination of medical practice itself in Britain. A distinct language of medical filmmaking emerged, opening the potential to explore medical film's medical,

historical and aesthetic contexts. The British medical films under analysis are nested within a wider framework of national industrial productivity; the second fractures series was sponsored by T. J. Smith and Nephew Ltd, a pharmaceutical supply company, and the anaesthesia series, by ICI, an industrial manufacturer, supplier and distributor. Post 1945, non-theatrical films were reported on widely in industry journals[1] and the business pages of the national press signalling the relationship of filmmaking to commerce (and especially public relations). Non-theatric film as a business activity and the reporting thereof is described as '[t]he most outstanding neglected fact about documentary's post-war media presence' (Russell and Piers Taylor 2010: 17).

Through a case study of these films, I will investigate whether the British medical filmmaking production ecosystem followed the same pathway that Ostherr claims evolved in the USA, one in which 'the ACS [American College of Surgeons] placed medical motion pictures at the center of surgical training and thus established moving images as fundamental to the practice of medicine' ('Medical Education through Film' in *Learning with the Lights Off* 2012: 169). The visual core of medical training in the USA has been analysed by Ostherr as the interface of narrative medicine and biopower in *Medical Visions* (2013: 9) and Ostherr dedicates her entire second chapter to 'How Cinema Became Part of Medical Education' (48–80) outlining an entanglement between Hollywood Studios and the ACS which in turn influenced the modes of distribution for British-made medical films made for professional audiences. Additionally, Ostherr writes about the establishment of a medical filmmaking aesthetic from the 1920s onwards as a result of the interplay (and sometimes tension) between these stakeholders (2012).

The whys and wherefores of pedagogical film go back to the early days of cinema and its adoption by Medicine; Scott Curtis considers the rationale behind this to be a 'presumption of mimesis' (2012: 162): educational film is a form of 'embodied spectatorship' that illustrates the kinds of efficiencies which might benefit a trainee medical professional such as learning surgical skills, it being an 'effortless', in terms of 'persuasive evidentiary power', means of learning (Robert Kutner 1911 in Curtis 2012: 163).

A secondary goal is to understand how these films mediated in the construction of 'discourses of care' (Holdsworth, Lury & Tweed 2020: 2) in British health care provision, with 'discourses of care' defined as a means 'to interrogate the agency of media texts, forms and technologies'.

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[1] *Film User*, *IPR Journal*, *Advertisers Weekly*, *Advertising Management*, *Industrial Advertising and Marketing* are some examples listed by Russell and Piers Taylor as conduits of news about non-theatrical film.

The doctor-patient relationship has been reframed over the course of the twentieth century. Bonah and Danet (2020: 150) assert that the medical training film from the 1950s onwards favoured cure over care by 'imparting knowledge and modifying behaviour' (2020:150). In their study of 'care-full cinema' in health-related filmmaking from the 1950s, 1970s and 1990s from France (although only films from the 1970s are specific to medical trainees), Bonah and Danet outline the role of these films; '[t]hey are not 'just' movies but agents within specific media practices, facilitating a mode of education concerning health and practices of caregiving' (2020: 152). The *mise-en-scène* of the doctor-patient-locale in particular has an important role in communicating this knowledge and behaviour.

In order to consider the role of medical filmmaking to the profession, I will first describe the corpus of films, then consider the role of pedagocial film in medical education as analysed by Curtis (2012) and Bonah & Danet (2020). This will lead to a demonstration of their role from the 1930s–1940s onwards in mediating the construction of 'discourses of care.' Finally I will interrogate some of the limitations of this evidence and outline some future avenues of research. I will make the case that these films formed part of an institutionalised film industry that was also, whether by happenstance or design, 'hidden' from the view of patients and the general public.

British Medical Association Film Library

The BMA, established in 1832, has become the 'authoritative voice of the medical profession' (Saunders 2018–19 from *People's History of the NHS* website).[2] Historically, there has been tension between the organisation's focus on the welfare of their members (working conditions and pay, gaining recognition as a trade union in 1971) and the desire to be a centre for excellence for medical and scientific knowledge. The latter aim was the rationale that led to the organisation's Council in 1938 to recommend that the organisation set up a film library. The timing of this, on the eve of war, meant that this was actioned in 1946 with the establishment of a Film Committee to map 'The Scope and Use of Medical Film in Education' 1947 which also reported on the pedagogical advantages and disadvantages of film in medicine. The author[s] stated that films could lead to 'furnish the requisite knowledge, develop judgment and skill, cultivate the right attitude towards patients and give opportunities for experience, and to encourage students to think for themselves'; the downside, according to the authors, was that 'experience, skill, and judgment cannot be materially influenced by means of the motion picture' (BMJ 1947: 141).

[2] *British Medical Association – People's History of the NHS (peopleshistorynhs.org) [Last accessed 1 October 2024].*

The BMA inititated its film collection by establishing a film competition which ran from 1957–1997. It was devised to promote excellence in medical filmmaking (creative filmmaking, clinical accuracy, and pedagogical value) and to create a cohort of high-quality titles for the collection (BMA 1993: viii). Titles were judged on eleven criteria, across a three-staged rigorous peer-review process.[3] Submissions were accepted from members and non-members alike, with calls for entries placed in the *British Medical Journal* (BMJ). Copies of the winning films were available for loan by its members, who could be GPs or doctors in teaching hospitals or other medical personnel. The BMA also engaged with film producers and industry sponsors to encourage the production of good quality films, being responsible in the production of several themselves.[4]

In order to create a cohesive collection, films were accepted from a range of sources and also collected 'vertically' ad hoc, by subject, to create depth in the film holdings. Although granular decision-making seems undocumented, this can be surmised from the film catalogue whereby certain sub-collections such as the ICI collection can be identified as distinct from the BMA's core collection. This explains why there were sets of films on fractures and anaesthesia which were either acquired or donated and cannot logically be explained as having been obtained individually via competition submissions (they do in fact pre-date this activity). This approach to collection development was designed to represent the range of medical audiences across disciplines and levels of experience. However, how representative this was is debatable: endeavours were made in the review process for the BMA's competition to include members of the target audiences (teenagers, nursing students and patients) only 'where appropriate' (Last and Robertson 1998: 58).

Later, when the management of the film collection became no longer tenable for the BMA, about 900 film titles still in distribution were transferred to WC and then made publicly accessible for the first time; these included entries to the competition up to 1986, after which the competition was video rather than film-based. Institutional history played a part in the rationale to this transfer, evidenced in the British Film Insitute's collecting policy which identifies WC as a collector of health-related audio-visual material (BFI 2024) and the fact that the first gold medal winner for the inaugural competition in 1957 (Anonymous 1957: 195) was produced by Wellcome

[3] Unfortunately, the deliberations over the relative merits of the films do not form part of the extant archives at the BMA, although the programmes for the gala awards ceremony do.

[4] These films can be viewed either online or onsite at WC; *Treatment of Infections of the Hand* 1950 https://wellcome-collection.org/works/nwqexfwe *[Not online awaiting sensitivity review] Haemorrhoids and the Early Detection of Rectal Cancer* 1957 https://wellcomecollection.org/works/yhwca6h3 *[Undigitized] The Romance of Orthopaedic Development* 1961 https://wellcomecollection.org/works/mjvvnxm8 *[Last accessed 24 May 2024]*.

Foundation Ltd,[5] the pharmaceutical and consumer goods business established by Sir Henry Wellcome 1853–1936. The library and a museum dedicated to the history of medicine across all media types, geographies and chronologies including film, provided an ideal home for the collection.

Upon acquisition, the first series of fracture films from circa 1936, *Recent Advances in Fracture Treatment* (Parts One to Four, Third Part is missing), was discovered uncatalogued. A subsequent series from 1937, *The Functional Treatment of Fractures* (1937, Parts One to Three), was still in circulation to BMA members with nurses identified as a target audience;[6] nurses, however, were unlikely to have been the original audience because the subject matter appears aimed at front line medical staff such as junior doctors and surgeons. Associated literature suggests that the films were produced and used to bring about transformational clinical practice which then led to immense benefits for patients by alleviating the risk of temporary or permanent disability caused by limiting functional ability. Adverse outcomes of the old approach to treatment had been gangrene and limb loss (Hey Groves 1935: 3876). The disappearance of some of these titles from distribution catalogues is indicative that the new recommendations for treatment had been adopted.

Shaping Medical Practice: the Case for Fractures

What role did film have in shaping medical practice? What role could film have in terms of speaking to the impacts of modernity and progress? One case study of how film mitigated against entrenched medical practices which had been proven ineffective, damaging and sometimes deadly is illustrated in an overlooked history of research into fractures by Reginald Watson Jones (1902–1972). Jones was a Lecturer in Pathology of Orthopaedic conditions, Liverpool University, and Honorary Assistant Surgeon, Liverpool Royal Infirmary and Shropshire Orthopaedic Hospital. He delivered a paper in March 1932 at the Liverpool Medical Institution on new ways to encourage physical movement after fractures had been set, a summary of which was later published with photographic plates in June of the same year in the BMJ (Watson Jones 1932: 1073–1075). According to his obituary, he was one of the 'greatest exponents and advocates' of the field of orthopaedic medicine (BMJ August 1972: 533). Here he is also described in terms of having a 'gift of magnetism plus glamour' and 'a master performer' (BMJ August 1972: 533).

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[5] *The Human Blood Fluke* 1952, Wellcome Foundation Film Unit https://wellcomecollection.org/works/z6mrq62t *[Not online awaiting sensitivity review]*.

[6] See *Catalogue of films and videos in the British Medical Association Library/British Medical Association Library*, 1993: 110–1.

Watson Jones acted as medical advisor to *Recent Advances in Fracture Treatment* (circa 1936), a series of four black and white silent films made for medical audiences, totalling 86 minutes, which cover in depth all categories of fracture and treatment pathways as they were understood at the time. Most of the patients shown are adults of working age. One clip shows the old way of treating a 'Pott's' fracture to the ankle joint of a male patient. On screen, an adult man of working age walks to and fro in a confined space (possibly a consulting room) with the assistance of walking sticks, his leg rigidly bound, bent at 45 degrees and immobilised by a looped bandage around his neck to his ankle. In consequence, during recovery the leg becomes fixed, suffers from lack of circulation and becomes puffy and swollen. Illustrated in the film, by using a plaster cast to protect the lower foot and ankle so that it is weight bearing, meant that full mobility to the joint returned.

Shaping Medical Practice: the Case for Anaesthesia

The second group of films, a series of films on anaesthesia, *The Technique of Anaesthesia,* comprises of 11 ICI distributed titles on anaesthesia made in 1944–45. These films were made during war-time to cover all the salient details of each type of anaesthesia and related patient care, which was not straight forward for the patient if they were nervous or had other medical conditions. All except one, *Respiratory and Cardiac Arrest* (1945) were still listed and in circulation in a catalogue, *ICI Medical Films 1963*. They were made at Westminster Hospital under the aegis of Ivan Magill 1888–1986 (a founder member of the Association of Anaesthetists of Great Britain and Ireland [AAGBI]) and Geoffrey Organe (1908–1989).

In the UK, the first chair of Anaesthetics was established by Lord Nuffield in 1944 in Oxford, recognising it as a distinct professional medical discipline. Bringing anaesthetics into clinical settings was contingent on established medical supply chains of gases, ICI being the largest company doing this in the UK. It was one of the few British organisations able to sustain its own film library (although some of the titles in its catalogue were distributed rather than made or sponsored by them). It published both a general and medical catalogue of films (the latter comprising of 51 titles in 1963). The way that ICI developed its portfolio of 300 films and distribution network under the supervision of Gordon Begg is described in Russell & Taylor (2010: 95–97). The films were available free but were not available to private individuals or commercial projection services (*I.C.I. Medical Films 1963*: inside back cover). To illustrate the breadth of filmmaking on anaesthesia from the 1940s onwards, non-BMA collections now held by WC are the Nuffield Department of Anaesthetics in Oxford (43 films), the Society for the Advancement of Anaestheisa in Dentistry (26 films) and the AAGBI (24 films).

The context for managing neglience is given in a history of the Medical Defence Union of Scotland, an organisation established to support medical professionals subject to litigation, entitled *A Century of Care* (Muir and Bell 2002: inside dust jacket);

> Medicine and dentistry remain inexact sciences and, despite further advances and discoveries, the professions will continue to face difficult dilemmas and risks. Against such a background, the issue of complaint remains dependent on individual circumstances, in which practitioner/patient communciation is often the determining issue.

The organisation dedicated a chapter to anaesthesia alone (Spence 2002: 180–7): the complexities of the different methods of anaesthesia led to specialism as the discipline evolved from practitioners administering anaesthesia themselves, then carrying out a procedure with limited apparatus (common in dentistry) to a multi-disciplinary, technological dependent profession of today.

The ICI film *Open Drop Ether* (1944), in two parts, was considered the best film in the series due to its wider utility in an emergency (relating to the availability of ether versus other anaesthetics and the small amount of equipment needed) and the way that the technique of induction is shown 'with great care'. In the film, ether is administered in several contexts outside medical settings; in the home and roadside, at an accident.

Discourses of Care: Fractures

The nature of the 'discourse of care' in these films follows the format of a textbook. Indeed, what Watson Jones did next is to publish a textbook on *Fractures and Other Bone and Joint Injuries* (1940) which ran to several editions. In the preface to the first edition, one of the advantages of a text based approach to fractures is clear from the amount of research which can be packed into a single volume; Watson Jones describes how he consulted 40,000 clinical and photographic records in preparation for the book. The second edition (1941: vi) produced in wartime reflects the sudden shift in medical practice with chemotherapy, blood and plasma transfusion being significant developments necessitating revising the chapter on war wounds. These examples reflect some of the advantages of a medical textual training aid: a book can be encyclopaedic and innovation can be accommodated in subsequent editions. However, the films which introduce the clinican to the discipline communicate the underlying pedagogy via rolling intertitles and then present patient care in an atomized fashion without the option of zoning into the exact point of interest in the way a reader can do by consulting an index.

There is little room for quirks in textbooks; in the films there is a short sequence introduced with the intertitle, "'Femoral Neck Follies", The 1936 Beauty Chorus' in which five older women sit on the ground and perform a choreographed series of exercises to improve neck mobility (timecode 00:10:10; see **Figure 1**). This is one surprising example of the way that cinematic aesthetics travel between different genres of filmmaking and spectatorship, here perhaps referencing Busby Berkeley's choreography in the popular musical films of the 1930s,[7] even though this medical film was not produced for the general public. In the Pott's fracture sequence, film is an ideal medium for showing case studies of movement before and after treatment. With the second example, the lighter tone of the 'Beauty Chorus', speaks to film as an entertainment medium and the ways that patients could be co-opted into performing for the camera as part of their therapy.

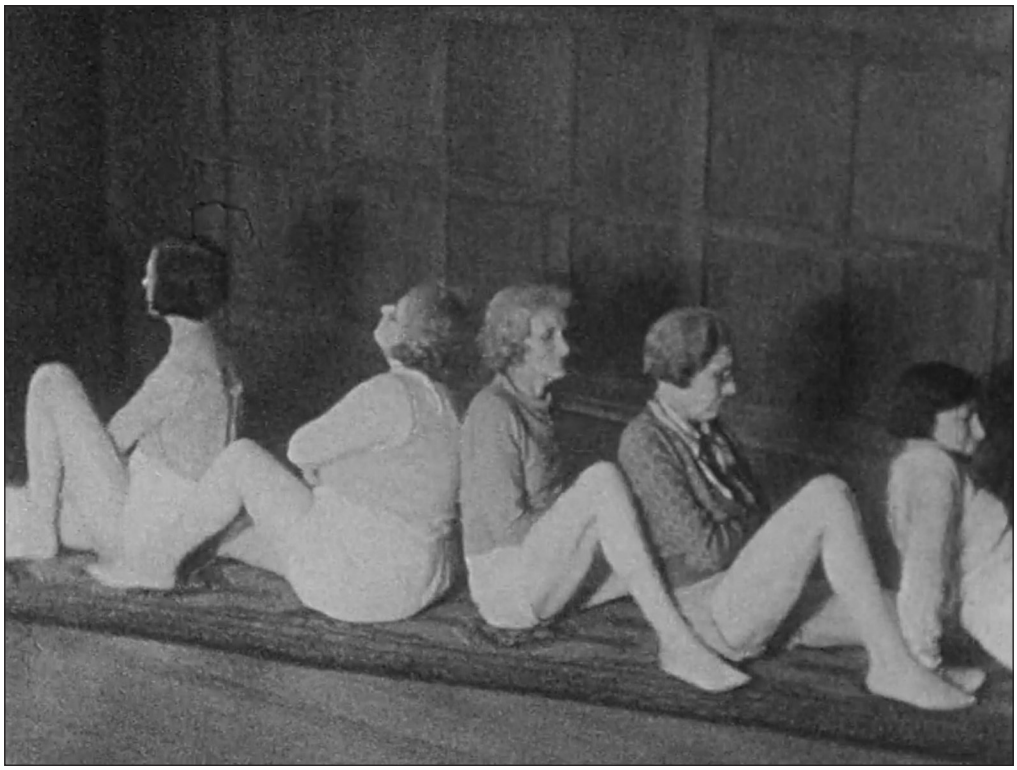

Figure 1: '1936 Beauty Chorus', *Recent Advances in Fracture Treatment (circa 1936) [video still]*, by R. Watson Jones. UK. Public Domain. Image courtesy of Wellcome Collection.

[7] An example being *Gold Diggers of 1933* 1933, Produced by Warner Bros. and directed by Mervyn LeRoy and Busby Berkeley.

Not long after the series *Recent Advances in Fracture Treatment* was made, a further series of three films, *The Functional Treatment of Fractures* was produced and distributed in 1937, also in black and white and silent, building on the growing evidence of how mobility was important in recovery after a fracture (total duration 45 minutes). The films aimed to raise awareness of the 'model scheme' for fracture clinics. These films were sponsored by T. J. Smith and Nephew Ltd, a pharmaceutical supply company; there is a notable improvement in production aesthetics, improved staging and lighting, and both the doctors and 'poster' patient teenage boy are smartly dressed. This later film series directly references a 1935 BMJ article about the organisation of fractures in British hospitals or the 'model scheme' (BMJ 1935: 813–817), using rolling explanatory intertitles at the beginning and throughout the films. An article written by Ernest Hey Groves outlined the urgency for change in this medical field; there were estimated to be 141,000 people treated in British hospitals for fractures annually experiencing financial loss and either temporary or permanent functional disability. Historically, the severity of the injuries were markedly improved from the beginning of the 1914–18 Great War when 80% of soldiers who had a gunshot wound to the femur died of complications.

Figure 2: 'Case examined by a visiting surgeon or the first assistant', *The Functional Treatment of Fractures Part 1* (1937) *[video still]*, Produced by T.J. Smith and Nephew Ltd. Photographed by Raymond Davies, Sutton Coldfield. UK. Public Domain. Image courtesy of Wellcome Collection.

One observation made by Hey Groves was that post-war, work-related civillian injuries increased due to the speed of economic change: people working in cities, factories and offices, daily working life requiring more exposure to machinery and different modes of transport (Hey Groves 1935: 3876). At this time, hospitals were not centrally funded by government and there was no welfare state, although men were often able to take out insurance through their employment. There were no specialist fracture clinics. By analysing outcomes of care, Hey Groves discovered that people's fractures were often not treated correctly through lack of supervision, mistakes in original diagnosis or cases in which oversight of care had been divided, causing insurers to pay higher than necessary levels of compensation as the patients needed more care or suffered permanent disability and could no longer work. One case in the article from the fifteen cases he cites is of a 27-year old healthy man who fractured his tibia (shinbone) whilst playing football. Due to a series of poor decisions, the injury led to gangrene and his foot had to be amputated. The discourse of care as suggested in the film and its surrounding literature is centred on economic efficiency: the article argued that insurers should fund specialist fracture clinics to save money.

Discourses of Care: Anaesthesia

The usefulness of medical films became more apparent for medical practitioners to mitigate the complications their patients faced when, for example, they were under anaesthesia and things went wrong. The discourses of care surrounding anaesthesia centres on being prepared and the expectation that medical professionals should, on balance, 'first do no net harm' (Sokol 2013: 347). An online blog, The Anesthetic Consultant, written by Richard Novak, Adjunct Clinical Professor of Anesthesiology, Perioperative and Pain Medicine at Stanford University (2016), noted that 'There are risks to every anesthetic and every surgery, and if a patient sustains a complication, it may or may not be secondary to substandard anesthesia care'. Furthermore, he cites a study from 2007–2012 of patients with complications after anaesthesia that suffered teeth damage, death, nerve damage, organ damage, pain and cardiopulmonary arrest. One quarter of these cases resulted in death and heart failure. Novak outlines the 'contract of care' which is part of the relationship between patient and clinician which should mitigate against the riskiest complications which occur mostly from lack of oxygen. Medicine today is hard to envisage without anaesthesia and the paradigm shift this has led to in patient care; modern medicine would not be possible without the development of drugs to induce anaesthesia, maintain it and mitigate these possible complications.

ICI's substantial *The Technique of Anaesthesia* series 1944–45 comprises of 250 minutes of instruction in black and white, produced by Realist Film Unit. In reviewing the series, the *British Medical Bulletin* (1946: 154–5) identifies a number of features

relating to the content and delivery with the first film being 'too long and contains rather too much diagram work'. This refers to detailed descriptions of the planes of anaesthesia using Guedel's chart, which is laboriously annotated with animations to illustrate the presentation of every reflex in anaesthesia using the inhalation method. The reviewer's comment suggests that a balance needs to be made between text and image, with, on this occasion, some fatigue creeping in regarding the chosen form of delivery. The second film, *Open Drop Ether* (1944), was considered the best film in the series due to its wider utility and the way that the technique of induction is shown 'with great care.' In fact, both film titles were written and directed by the same person, Margaret Thomson (1910–2005). As well as outlining the requisite apparatus, there is an emphasis on pre-operative care and making sure that the patient is comfortable and thus less anxious when they are induced. The doctor,[8] in a surgical gown and hat, is exhorted to have a 'few kindly words' with the patient and take her pulse for reassurance (see **Figure 3**). Another feature of the film is that there is footage of the patient

Figure 3: 'Feel her pulse, try to reassure her' [commentary], *Open drop ether (part one). No. 2.* (1944*) [video still],* Direction by Margaret Thomson, Photography by A.E. Jeakins. Produced by Realist Film Unit. Made with the co-operation of the Department of Anaesthetics, Westminster Hospital, London. UK: Public Domain. Image courtesy of Wellcome Collection.

[8] The doctor in the film is Geoffrey Organe. He was on the hospital staff at Westminster and served in the Military Emergency Service during the Second World War 1939–45. See: *Prof Sir Geoffrey Stephen William Organe | The Royal College of Anaesthetists (rcoa.ac.uk) [Last accessed 3 September 2024].*

records held up to the camera, accompanying the explanation of the pre-operative dosage. Addressing the viewer in this way creates an intimacy between the narrator and audience. Further comments outlined that film No. 3 on nitrous-oxide promotes the need for reassurance to be part of the interface between patient, practitioner, and treatment. However, in film no. 5 on *Endotracheal Anaesthesia* (1944), the 'care' which meets with the most approval by the reviewer relates not to the patient, but to looking after the medical equipment such as the catheters.

The series was wholly produced by women directors: Yvonne Fletcher (*Intravenous Anaesthesia* 1944 (Parts One & Two), *Spinal Anaesthesia* 1944 (parts One-Four), *The Carbon Dioxide Absorption Technique* 1944); Rosanne Hunter (*Handling and Care of the Patient* 1944 (Parts One & Two), *Respiratory and Cardiac Arrest* 1945), and Margaret Thomson (*Endotracheal Anaesthesia* 1944, *Nitrous Oxide-oxygen-ether Anaesthesia* 1944, *Open Drop Ether* 1944 (Parts One & Two) and *The Signs and Stages of Anaesthesia* 1944). The films authoritively cover all the salient details of each type of anaesthesia and related patient care. All except one, *Respiratory and Cardiac Arrest* (1945) were still listed and in circulation in 1963. The films were produced under the supervision of the Irish-born pioneer of anaesthesia, Ivan Magill and his assistant Geoffrey Organe who took a more 'hands-on approach' to the filming according to writer and director Margaret Thomson (he appears as the anaesthetist in many of the sequences; see **Figure 3**). In an oral history, Thomson stated she was proud of making this series (History Project 1989: Side 5, Tapes 2 and 3, although the medical advisor is incorrectly identified as McGill in the transcript). Additionally, due to the problem of getting ethical approval from the hospital to film actual patients or even medical staff acting as patients, all the identifiable anaesthetised subjects had to be members of the production crew. This made sense due to the medical risks of anaesthesia and the ethics of gaining consent from real patients, and also relates to the need to show the requisite stages and planes of deep anaesthesia in a clinical setting (for example, with the correct pupil dilation; see **Figure 4**).

There is a sophisticated choreography of visuals in these black and white films with real patients' identities during surgery disguised by cut aways, edits and the insertion of close ups of the medical professionals adjusting equipment. This speaks both to careful film story-boarding and the emergence of a distinct language of medical filmmaking which took into account these parameters. Each type of anaesthesia has its own downsides: the most dramatic films are *Handling and Care of the Patient* (Hunter 1944 Parts One and Two) which outlines a catalogue of mistakes due to clumsiness of the attendant staff and *Operative Shock* (Hunter 1945), which speaks to the perils of being a patient and the responsibilities of the clinicians to prevent death.

Figure 4: 'Eye movement under anaesthesia', *Open drop ether (part one). No. 2.* (1944), *[video still]*, Direction by Margaret Thomson, Photography by A.E. Jeakins. Produced by Realist Film Unit. Made with the co-operation of the Department of Anaesthetics, Westminster Hospital, London. UK: Public Domain. Image courtesy of Wellcome Collection.

Discussion

Historical contexts play a part in this account of medical filmmaking. Nineteenth Century scientists (Étienne-Jules Marey, Georges Demeney, Jules Janssen, Albert Londe, Ottomar Anschütz, Eadweard Muybridge) interested in the science of movement were early proponents of cinematography as an instrument of science (Gaycken 2015; Tosi 2005). In popular culture, medicine and film have been mutually entwined since the earliest days of cinema through depictions of doctors (Glasser 2010). Film as a pedagogical medium rather than scientific or entertainment has a contested beginning because film was actively disliked by some traditional medical educators (Ostherr 2013; Saward 2022). A screening convened by the BMA in 1945 was criticised for causing 'acute fatigue and confusion' and risked derailing medical students from 'the straight and narrow way' (BMJ 1945: 87). Rather than censor the film completely, it was proposed that it should contribute to the modernisation of the medical training curriculum by provoking discussion.

Holdsworth, Lury & Tweed (2020: 2) propose analysing the agency of media in creating discourses of care by looking at its practical and ethical dimensions. The historical context of film in education is an important consideration in determining how central to medical education these films were in the British versus the American

context. Ostherr makes a compelling case for this in the USA (2012; 2013). This aligns to educational medical film's role of having a 'kinesthetic empathy' (Curtis 2012: 165); for example, students of surgery could embody the qualified surgeon's techniques by viewing them onscreen and absorbing them. The films identified in this article from Britain have the same role in medical pedagogy; both fracture treatment and anaesthesia render well on film through illustrating the actions required to provide transformative (by reducing invalidity in fracture treatment) and safe (by reducing complications in anaesthesia) care. Both groups of films were shown long after their original stated purpose with more readings possible in the way that care was performed and given.[9] The fracture films quickly became redundant as a result of the inception of the NHS in 1948. The funding of National Insurance to pay for universal healthcare meant there was no longer a need to lobby for fracture clinics to be funded by insurers. Despite this, films were still available to illustrate different fracture presentations and best treatment pathways for treatment. The anaesthesia films indicate that kindly words and human contact – such as taking the patient's pulse – could lead to a better and safer patient outcome by modelling care.

Obsolete and Hidden Films

Cinema legislation and 'medical etiquette' dictated what films were available to the public, as outlined in a printed catalogue of the medical films in distribution in the UK (Kodak Ltd circa 1939). A condition of hire was that public screenings were prohibited as Kodak Limited was not licenced as Renters under the Cinematographic Act of 1927.[10] The only exceptions were 'public health lectures'.[11] Furthermore, '[n]on-compliance with this stipulation will be regarded as a serious breach of medical etiquette' (Kodak Ltd: 5). This code of practice is also outlined by Ostherr for screening medical films in the USA (*Medical Visions* 2013: 73) and was part of the Hays Office's 'Don'ts and Be Carefuls' for medical filmmaking, which included not showing childbirth or surgery. This came about due to a partnership between The ACS with

[9] The films still appeal to practising anaesthetists from comments posted to Wellcome library's YouTube channel. @nspeez27; 'As a current anesthesiology resident it is fascinating to watch this and see the clear lines of evolution between then and now. So much of what was demonstrated is still done today as well!' and @fl3bvl, 'Great video. Thank you for posting. Saved to my list to show students and residents'. https://www.youtube.com/watch?v=iiSV8XpRhnA&-t=8s *[Last accessed 6 September 2024]*.

[10] Cinematograph Films Act 1927 – Legislation.gov.uk *ukpga_19270029_en.pdf (legislation.gov.uk) [Last accessed 17 August 2024]*.

[11] 16/271 titles are listed as suitable for the public, one example of a British produced title in two parts is *Bathing and Dressing* (Infant Management) 1935. London. National Council for Maternity and Child Welfare and Carnegie Welfare Centre, Shoreditch.

the Motion Picture Producers and Distributors of America (MPPDA, later becoming MPA, also known as the Hays Office, established in 1922) and Eastman Kodak Ltd. They set regulations which became enshrined in American production distribution protocols. Notably, Will Hays was also 'Honorary President' of the Medical Motion Pictures Committee (Ostherr 2013: 76).

The film production codes which surfaced in the USA led to filmmaking for the public being made within a framework of 'aesthetic censorship' (Martin Pernick in Ostherr 2013: 75), although in reality these codes could be flexed using various shooting and editing techniques. By inference, what couldn't be shown to the public could be shown to medical professionals. In the British context of medical filmmaking, ethical parameters also shaped how the ICI anaesthesia series was produced. Films were 'hidden' from public spectatorship through the notion of 'medical etiquette' and also aesthetised for their medical audiences.

Whereas some of the films were 'hidden' as a result of deliberate actions and/or common practice, others were retired due to content obsolescence. The films cited in this article on treating fractures from the 1930s arose from an urgent need to provide a change in professional practice, but their distribution lifespan was relatively short once their purpose had been fulfilled. Content obsolescence in medical filmmaking leads to films being taken out of circulation, delisted from catalogues or disposed of. Efforts to save medical films deemed of importance had arisen in terms of the sector recording its history as outlined in a film, *The Medical Motion Picture* (1947), made by the American Medical Association (AMA), with Ralph P. Creer as medical advisor. In serving as the Secretary of the AMA Committee on Medical Motion Pictures in 1950, Creer was instrumental in developing a library of peer reviewed films for the AMA's membership. Milestones in the use of animation, and unusual or rare cases 'canonical' in medical literature, were considered important to the historiography of medical filmmaking.[12]

No longer hidden, both the fracture and anaesthesia films are now freely available to researchers because they have been sensitivity checked and are not considered data sensitive as the adults depicted in the films are deemed to be deceased. WC have a detailed framework regarding the organisation's approach to data sensitivity referencing museums, libraries and archives sector ethical codes and relevant

[12] Eastman Kodak chose a medical application as a first test of its new 16mm camera's practicability, filming a baby with amyotonia congenita, *Amyotonia congenita*, 1926 Produced by Eastman Medical Films for the American College of Surgeons; https://wellcomecollection.org/works/xdqc62e8 *[URL to video metadata last accessed 24 May 2024]*. This was in distribution via the *Catalogue of Kodak Medical Film Library*. A sequence with slightly different, possibly earlier, intertitles appeared in *Medical Motion Picture* 1947 American Medical Association; https://wellcomecollection.org/works/bs44aq39 *[URL to video metadata last accessed 24 May 2024]*.

legislation.[13] The fracture series presents fewer issues in this respect as the patients appear to have provided a level of consent in terms of their cooperation in filming. With anaesthetised patients, consent cannot be assumed. The highly regarded open drop ether films (according to the reviewer of 1946) were considered to be the best in the series due to their apparent veracity. Upon initial viewing, the identifiable patients appear to be genuine. However, context is everything: further research has revealed that these films did not feature real patients as the anaesthetised subjects (Thomson 1989) even though the members of the production crew who agreed to be anaesthetised appear to experience adverse effects of being anaesthetised such as vomiting and apparent rough handling through 'manipulations' whilst unconscious. Even though these films are not data sensitive and the films are freely available on WC's website, some of these films have been subseequnetly age-restricted by YouTube as they are not in line with the platform's community guidelines and require more context (in the form of a disclaimer appended to the title and/or onscreen).

Limitations and Further Research Questions

A limitation of researching non-theatrical film is the dearth of available paper archives on their production. Little information regarding funding of the films hidden in inaccessible institutional archives is available. Film catalogues hold invaluable information about target audiences, but records on viewership are minimal. How medical films were realised, distributed and received is parsed from a number of sources and often leans on anecdotes and testimonies from the medical profession itself, rendering the profession all-powerful over its historical narrative. The nature of medical filmmaking is that the patient, clinician and medical setting are brought together in different ways for a purpose, often educational, in the service of the profession.

Looking at the 1930s or 1940s versus now, there is an ethical dimension in making the material available today as our understanding of informed consent has shifted. The examples shown feature real practitioners and real patients, both are playing versions of themselves for the camera. Decisions about filming in hospitals and clinics appears to have been made on a local level and archival material relevant to this subject is dispersed and limited. Margaret Thomson's oral history is invaluable, although with the passage of time some of her assertions (e.g., that *all* the patients in the films were members of the production team) are inconsistent with a careful watching of the films.

[13] 86cda736-bfa1-44f2-bdda-11345632ce27_Wellcome+Collection+Access+Procedures+January+2022.pdf (prismic.io) January 2022 *[Last accessed 04 October 2024].*

Likewise, Organe, assistant anaesthetist to Magill, taking a 'hand's on approach' quite literally means that he played the anaesthetist in the films.

Bonah & Danet (2020) use a trans-chronological approach on considering 'care-full'cinema with examples of French health-related films across three time periods. Positioning this research on British material over two time periods across two medical disciplines limits its scope although further comparisons will be illuminating from more medical disciplines and chronologies. Regional and geographical centres of excellence are understudied together with the role of teaching hospitals in the evolution of medical curricula over time; it's not surprising that the anaesthesia films were captured in London, but there is more to unpick in the fracture films taking place in locales of medical excellence in other urban centres (Liverpool and Birmingham).

Conclusion

The exploration of British medical films, focussing on the BMA Film Library, reveals their significant role in shaping medical education and practice. These films, spanning from the 1930s to the 1940s, provided visual aids which aimed to transform clinical practice, especially in the treatment of fractures and the administration of anaesthesia.

The fracture treatment films were instrumental in advocating for improved clinical practice. They highlighted the importance of mobility in recovery and the need for specialized fracture clinics, which eventually became a reality with the establishment of the NHS in 1948.

Similarly, the anaesthesia films played a pivotal role in educating medical professionals about the complexities of anaesthesia and patient care. These films emphasized the importance of pre-operative care, patient reassurance, and the responsibilities of medical practitioners to prevent complications.

Despite their historical significance, many of these films were hidden from public view due to ethical considerations and were often retired once their content became obsolete. However, efforts to preserve these films have highlighted their value in understanding the evolution of medical practices and the development of medical education.

In conclusion, there is a compelling case for British medical films to have made a lasting impact on medical education and practice. They provided essential training tools for medical professionals and contributed to the broader discourse of care in healthcare provision. Preserving and studying these films offers valuable insights into the history of medicine and the ongoing development of medical education.

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Competing Interests

The author has no competing interests to declare.

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