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Revealing and Concealing Oil: The Hidden Screen Industry of Animated Petroleum Films

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This article explores the use of animation within oil industries and considers the various ways this could be understood as a 'Hidden Screen Industry'. This article begins by reviewing relevant literature in animation studies and environmental and energy humanities to understand why this industry and the films arising from it have been largely hidden from scholarly work at the intersection of the two fields of study. This article then documents the institutions and practices of the alternative petroleum film industry, which ran in parallel with, but often distinct from, the better-known entertainment industry dominated by Hollywood studios. Finally, it examines the aesthetic use of animation within oil industry films to analyse the ways this form of filmmaking both conceals and reveals different aspects of oil extraction and exploitation, including their implications for the present-day climate crisis. While the observations raised are intended to have broad applicability, each section uses examples drawn from the animated films made for BP by British animation studios during the twentieth century, and especially the 1951 film *We've Come a Long Way* made by the Halas and Batchelor animation studio.

Celebrated animator Norman McLaren famously defined animation as 'the art of manipulating the invisible interstices that lie between the frames' (Furniss 2007), which is to say that animation is determined as much by what is hidden as what is made visible. This may be understood not only in a technological sense, but also in terms of aesthetics, labour, and industry. Similarly, petroleum has been understood as at once omnipresent and hidden from view. Following Amitav Ghosh, Jennifer Wenzel suggests 'Oil is everywhere, ubiquitous in our daily life, and yet we so rarely see oil, either literally or metaphorically' (Wenzel 2014). This article will take these observations as provocations to examine the use of animation within petroleum industries and the ways it may be considered 'hidden'.

One reason oil companies have adopted film is for promotional and public relations purposes, to draw attention to their activities and make them more visible, while also hiding undesirable or unanticipated aspects of oil extraction. Yet, this 'useful animation' (Cook *et al.* 2023), in common with other 'useful cinema' (Acland and Wasson 2011), 'films of fact' (Boon 2008), 'non-theatrical film' (Slide 1992), 'sponsored film' (Prelinger 2006), or 'commissioned film' (Hediger and Vonderau 2009), is often intended for specialised purposes and specific audiences that result in the films being unseen by the general public. Such films' utilitarian purposes also mean they often do not adhere to prevailing expectations of cinematic art or entertainment, and have consequently been disregarded in critical, scholarly, and archival practices, at least prior to the recent sources cited above. The aesthetic difference of animated oil films was the result of its application to visualise oil in new ways, to reveal otherwise obscured or unobservable phenomenon, such as the deep time of oil formation, the subterranean extraction of oil, or the molecular transformations of refinery, while also stripping away and hiding unnecessary or unwanted details. This article thus asks of this industry: What do we mean by describing it as 'hidden'? How is it hidden and by whom? By what aesthetic means do such films hide or reveal their subject?

This article begins by reviewing relevant literature in animation studies and environmental and energy humanities to understand why this industry and the films arising from it have been *lacunae*, largely hidden from scholarly work at the intersection of the two fields of study. This article then documents the institutions and practices of the alternative petroleum film industry, which ran in parallel with, but often distinct from, the better-known entertainment industry dominated by Hollywood studios. Finally, it examines the aesthetic use of animation within oil industry films to analyse the ways this form of filmmaking both conceals and reveals different aspects of oil extraction and exploitation, including their implications for the present-day climate crisis. While the observations raised are intended to have broad applicability, each

section uses examples drawn from the animated films made for BP by British animation studios during the twentieth century, and especially the 1951 film *We've Come a Long Way* made by the Halas and Batchelor animation studio. This focus ensures suitably detailed and specific observations are made, while demonstrating methods and ideas that could be extended to other periods, countries, and types of animated films. The conclusion explores these wider implications of the findings of this article.

Hidden Oil, Hidden Animation

The idea that oil is hidden is a recurring but contested one in scholarly literature on the topic. In the modern world, echoing the quotation from Wenzel in the introduction to this article, oil seems to be at once everywhere and nowhere, depending on where the observer is viewing from. Is it the substance itself, crude oil and its derivatives, that are unseen? Is it the infrastructures of oil extraction and exploitation that are kept out of sight? Is it the social and political "hidden hand" of big oil that is concealed? Is it an absence of cultural representations of oil in the arts and entertainment?

Oil extraction and distribution have been addressed as part of the wider ethnographic study of infrastructures. Developing this field in her 1999 article, Susan Leigh Star argued infrastructure 'is by definition invisible, part of the background for other kinds of work' and only 'becomes visible when it breaks down' (Star 1999, pp. 380, 382). While offering keen insight into qualities of infrastructure, including its scale and the relationality of social practices around it, Star's claim of invisibility has been challenged by later work. Writing in 2013, Brian Larkin notes that Star's assertion of invisibility has been influential, however he challenges it as 'fundamentally inaccurate' (Larkin 2013, p. 336). He argues the visibility of infrastructure is situated and depends upon by whom and when it is considered. He instead suggests that we should consider 'how (in)visibility is mobilized and why' (Larkin 2013, p. 336). This is especially pertinent to the present discussion because animated oil films may themselves be considered a component of oil infrastructure. They do not simply represent oil, rather they are a constituent of its physical and social infrastructures, no less than pipelines or petrol stations. This integral status warrants an examination of the production, distribution, and exhibition infrastructures of industrial cinema and the extent to which those logistical channels are hidden.

Equally, film and other artistic and cultural forms may serve as an important venue for alternately visualising and eliding infrastructures of oil. Media not only represent pre-existing oil and its concomitant infrastructures and effects, but moreover may be understood as culturally constructing oil, the idea preceding and making possible the existence of the material reality. As with infrastructure studies, energy humanities

scholars in the twenty-first century have been grappling with the extent to which oil has been revealed or concealed within and by literature, film, music, photography, and other arts. In an often cited 1992 review article, novelist Amitav Ghosh decried the paucity of 'petrofiction' (Ghosh 1992). Subsequent scholarship has complicated such a position, noting that its hidden status is a product of critical practice and canon making, rather than an absolute absence (Szeman and Wenzel 2021, pp. 513–514). Artists and their works have increasingly sought to counteract that hidden quality of oil, for example Ernst Logar's gallery exhibition and subsequent artist's book *Invisible Oil* which explores the presence and absence of oil in Aberdeen (Logar 2011). Imre Szeman and Maria Whiteman similarly observe that oil is an 'all-too frequently hidden material dimension of globalization'. They see photography as a means to challenge this and make oil visible, incorporating photographs directly into their 'photo-essay' (Szeman and Whiteman 2012, p. 46). In their use of photography their analysis dwells on the realist associations of that medium, which they seek to problematise and reflect upon. The animated oil films that are the focus here are thus distinct in their use of graphic forms of representation. These matters are taken up by Heather Houser, in her analysis of what she labels 'narrative cartography', that is the use of drawing as a form of critical commentary on oil cultures (Houser 2021). Houser reiterates that 'Cultural theorists within the oil humanities often bemoan oil's ability to elude adequate representation' citing Wenzel and Ghosh, as well as LeMenager, Salvaggio, and Barrett and Worden as further examples (Houser 2021, p. 22). Houser argues that the drawn line offers distinct affordances for making oil visible in new, progressive ways. This recognition provides an important foundation for the study of animated oil films provided here.

Animated oil films provide a particularly rich and complex object of study for considering these questions, because animation has itself often been considered hidden or ignored. Paul Wells, writing in 1998 when academic scholarship on animation was still rare, argued that from the silent era animation held an 'apparently less credible position as a second cousin to mainstream cinema' (Wells 1998, p. 2). Even if Disney was the exception to this, the hypervisibility of that studio meant animation was seen as juvenile or trivial and that 'other kinds of animation and other important film-makers in the field have been further neglected' (Wells 1998, p. 3). Cinema and media scholarship largely replicated this historical neglect, a recurring observation and starting point for landmark books in animation studies (Pilling 1997; Furniss 2007). It is only with the emergence of digital image technologies that this has been properly reassessed. If the digital turn threw into crisis the assumed photo-indexical realist ontology of cinema, it also focussed attention on the way digital images, and perhaps all cinema, rely on construction and manipulation that can be considered animated.

Animation was no longer to be sidelined or hidden, a topic taken up by numerous scholars since the turn of the twenty-first century (Manovich 2001; Gunning 2007; Buchan 2013).

Questions of the (in)visibility of animation have also been important to discussions of animated labour and the presence or absence of the "hand of the artist", both aesthetically and industrially. In his pioneering study of early and silent animation, Donald Crafton identified the recurring appearance in such films of 'self-figuration, the tendency of the filmmaker to interject himself into his film' (Crafton 1982, p. 11). Derived from intermedial links with lightning sketch performances, the appearance of the animator's hand manipulating the scene was commonplace in the silent era (Cook 2013; Holliday 2024). Even where the direct appearance of the animator or their hand declined over time, the "hidden hand" of the creator has frequently been evident in animation, and this trope recurs even into the digital era (Holliday 2019). However, as a labour-intensive process, animation has relied upon industrialised production line organisation that subdivided work in a Fordist/Taylorist manner (Bukatman 2012; Sammond 2015). Industrialisation removes the creative control of the animators and often effaces their contribution to films in which the onscreen characters take on a technologically propelled life of their own, which can also be reflected in industrial practices, such as title credits. Questions of hidden labour remain highly relevant in the present day, as digital technologies such as motion capture and Artificial Intelligence exacerbate the erasure of the labour they depend on (Mihailova 2016; Mihailova 2023).

The animated oil films that are the primary focus here are thus situated at the intersection of these different accounts, which rethink the ways oil and animation individually might be considered hidden. A recent small body of literature has started to excavate that point of intersection in relation to screen media in general. Most notably, the collection *Petrocinema* (Dahlquist and Vonderau 2021) and other work by contributors to it indicate the rich material available, however animation has only rarely been the focus of these studies. As visual representations of oil and its infrastructures, animated films contribute to the cultural imagining of oil, while being distinct in their use of graphic representation, differentiating them from literary, photographic, and other artistic modes. As industrial films sponsored by the oil industry, they can themselves be considered a form of infrastructure and studied as such. This includes the labour underpinning the films and their circulation, which often went unacknowledged. Finally, if the environmental implications of oil usage were initially hidden or unanticipated in the first half of the twentieth century, our present-day climate crisis provides a timely imperative to revisit and reconsider the role of media in oil usage.

Hidden Distribution

The oil and animation industries have a parallel and entwined history dating back to the turn of the twentieth century, with antecedents traceable at least to the middle of the nineteenth century. There is a long and complex engagement between the two fields that contains considerable variation and exceeds the scope of this article, even while the observations and review of scholarly literature above are broadly applicable. The second half of this article will examine case study examples of these overarching principles of animated oil films taken from mid-century Britain, especially films made for BP. A case study film is used to exemplify broader principles at stake. *We've Come a Long Way* (1951) was made by the Halas and Batchelor studio, and offers a historical account of the development of oil tankers, combining evocative depictions of nineteenth century developments alongside factual diagrammatic accounts of more recent engineering developments.

The vast scale of oil company film sponsorship and production in Britain in the mid-twentieth century provides one exemplar of this hidden industry. Both Shell and British Petroleum (BP) invested heavily in moving image production, with some commonalities, but also differences, in their approaches (Russell and Foxon 2021).[1] Some aspects of this history are relatively well-known, with the Shell Film Unit (SFU) being widely acknowledged as a crucial part of the British documentary film movement from the 1930s (Swann 1989). Some examples of animation within this period have, likewise, received attention, notably Len Lye's *The Birth of a Robot* (1935), which used stop-motion animation to bring to life the mechanical man that featured in many Shell print advertisements, originally designed by Edward McKnight Kauffer. In contrast, the extensive technical animation undertaken under Francis Rodker, director of animation and special effects for the SFU, has had little consideration in later histories. Similarly, a substantial body of animated films commissioned by BP from two London animation studios, Halas and Batchelor and W.M. Larkins, in the post-war period have remained largely unexamined. In this case, the hidden nature of these films reflects two historiographical biases. The first is the tendency of film scholarship to favour formally innovative experimental aesthetic forms, over educational or scientific communications. The second is the erroneous assumption that animation is inherently juvenile or trivial, as raised earlier in this article.

[1] The company was known as the Anglo-Persian Oil Company (APOC) prior to 1935, after which it was the Anglo-Iranian Oil Company (AIOC) until 1954, when it was renamed as the British Petroleum Company. See Bamberg (1994) and Cook (2024) for further discussion and the political contexts for these changes.

Contrary to this academic oversight, the production, distribution, and exhibition of animated oil films was substantial, and conducted in plain sight, in common with the wider context of industrial film production. Russell and Piers Taylor, in one of the exceptions to this scholarly neglect, challenge the 'hidden' nature of these films in their question 'Films Nobody Sees?' (Russell and Taylor 2010, p. 20). Indeed, as a form of public relations, the purpose of these films was to be visible, to inform and persuade varied audiences about the activities and products of the oil industry. However, the distribution and exhibition of animated oil films, understood here as an infrastructure of the oil industry, may be hidden or unseen because they largely existed outside of the mechanisms of the mainstream commercial cinema. As raised earlier, Anthony Slide and other scholars have adopted the term 'non-theatrical film' to signal this alterity.

At a technological level, 16 mm film was a vital component of this alternative infrastructure. As Haidee Wasson has revealed in relation to North American circuits, from its initial production in 1923, 16 mm film proliferated in the following decades, especially stimulated by the Second World War and in quantity eclipsed 35 mm (Wasson 2020, p. 4). A similar pattern is evident in the production of animated oil films commissioned by BP for international distribution. For example, the initial print run of *We've Come a Long Way* asked for fifty-six 16 mm copies and twenty-six 35 mm copies (BP/1831149). This shows that 35 mm film was in use but was far outweighed by the volume of 16 mm prints made available.

As the continued minority use of 35 mm film might indicate, such films were shown in commercial theatrical settings in some cases. BP, for example, used 35 mm prints as part of their investor relations, seeking to inform shareholders and attract additional investment. In 1953 several of the company's films, including *We've Come a Long Way*, were presented to 11,500 people accommodated in seven London West End cinemas (BP/33526 *The Anglo-Iranian Oil Co.'s Film Show* reprinted from *The Petroleum Times* 9 January 1953), and similar large-scale screenings were held in other years (Jacobson 2021b, p. 282). This was not hidden, given its scale and use of prestige cinema venues in London, but was exclusive to eligible stockholders. 35 mm prints were also screened theatrically alongside feature films as part of the overall programme in commercial cinemas, and some films were shown on US and UK television, framed as informative and educational content (BP/33526 *The Anglo-Iranian Oil Co.'s Film Show* reprinted from *The Petroleum Times* 9 January 1953).

16 mm equipment allowed for a more flexible and diverse set of exhibition venues, visible to specific targeted audiences but hidden from a mass audience. *We've Come a Long Way* is exemplary of this varied distribution and application. Internal training provided one function, with films serving 'as an introduction to trainees and

newcomers to the Company' (BP/183149 Memo to Jackson from Tritton 16 June 1949). *We've Come a Long Way* was produced in consultation with maritime experts, but its short ten-minute length limited it to serving as an informative introduction for a lay viewer, such as administrators working in the BP Britannic House headquarters. Moreover, it was also seen as serving to 'foster the Group family spirit...[and] morale building appeal' (BP/183149 Memo to Jackson from Tritton 16 June 1949). Importantly, this internal communications purpose extended overseas to the many subsidiaries and partners BP worked with. Prints of *We've Come a Long Way* were distributed to five different UK offices affiliated with BP, as well as offices or agents in Tehran, Abadan, New York, Antwerp, Copenhagen, Hamburg, Paris, Oslo, Saleburg, Amsterdam, Stockholm, Zurich, Melbourne, and Wellington (BP/183149 Letter to Morden from Tritton 31 January 1951). Specific audiences could also be targeted based on the particular film. For example, at the instruction of Neville Gass (AIOC Managing Director), plans were made for *We've Come a Long Way* to be screened on-board oil tankers, utilising the portability of 16 mm equipment, as well as screenings at the Seaman's Hostel Cinema in Abadan. This would ensure those working for subsidiary the British Tanker Company could understand the longer history they were part of (BP/183149 Letter to Jackson from Tritton).

As well as the original English-language version of *We've Come a Long Way*, the script was translated and recorded in French and German to support these overseas contacts. Furthermore, BP's extensive operations in Iran at this time meant that for this film a Persian version was also produced, aimed not only at local workers but also for use in Tehran cinemas (BP/183149 Letter to Tritton from Stockil 5 May 1951). These films thus went beyond direct internal operational value and sought to engage specialist audiences with interests in the oil industry. For *We've Come a Long Way* this included screening the film for a cross-section of senior naval personnel (BP/183149 Film Show Invitation List), while another BP film, *Full Circle* (1953), was screened for government officials as well as the senior company management (BP/183126 Letter to Chisholme from Tritton 8 May 1953). Such targeted screenings sought their approval for the films, looked to shape the attendees' views on the topics raised, and promote the use of the film.

Extending one step further from this use, education was a key function for many animated oil films. Amongst the naval personnel invited to the screening of *We've Come a Long Way* were representatives of the Seafarers Education Service, Sir John Cass Nautical School, and King Edward VII Nautical School, indicating the intention to have the film adopted in their curricula (BP/183149 Film Show Invitation List). In the initial justification for *We've Come a Long Way* was an intention for 'wide non-theatrical distribution to universities, schools, societies and other groups' (BP/183149 Letter

to Jackson from Tritton 16 June 1949) which was fulfilled, for example with a joint screening with Shell at the University of London in 1951 (BP/183149 Letter to Morden from Tritton 29 March 1951). Alongside preparing prints of this film, animation studio Halas and Batchelor produced a series of stills 'for the purpose of lecturing' indicating that as well as relying upon the narration of the film, educators could make use of images and diagrams from the film as part of multimedia presentations (BP/183149 Letter to Tritton from Crick 7 June 1951). Educational use also ensured a remarkable longevity for these short films, with *We've Come a Long Way* reviewed and recommended over a decade after its release in a 1964 issue of *Teacher's World* (BFI/HAB-1-27-2 Clipping from Teachers' World 18 September 1964).

Fundamental to this widespread and long-standing distribution of animated oil films was the role of the Petroleum Films Bureau (PFB). Formed in 1939 and growing to considerable size and importance in the post-war period, it provided a centralised distribution hub for oil company films from BP, Shell, and others (Russell and Taylor 2010, p. 25). Making oil films available to 'any recognised organisation', the PFB especially targeted 'universities, schools, business and training colleges and scientific societies'. Reflecting the non-profit nature of those groups, the films were supplied free of charge ('Oil on the Screen' 1956). As with the other aspects discussed here, the PFB could hardly be considered hidden: it was frequently advertised in film journals like *Sight and Sound*, *Documentary Newsletter*, and *Film & TV Technician*, and was regularly mentioned in *The Times Educational Supplement*, women's magazine *She*, and other general publications. However, its existence was, in another sense, hidden in that it existed independently of conventional theatrical cinema distribution, for example receiving only a handful of mentions in trade paper *Kinematograph Weekly*.

A similar situation is evident in the role of film festivals that promoted and helped circulate the types of films that are the focus here. Industry trade press regularly reported on the presentation of films at these festivals and the awards given at them. In some cases, well-known festivals included industrial film sections, for example Halas and Batchelor films for BP were shown at Cannes and Venice in 1956 ('News from the Festival' 1956; 'Two British Cartoons for Venice' 1956). Likewise, the BFI Special Collection of material from the Halas and Batchelor studio includes certificates indicating that *Children and Cars*, made for BP in 1971, was presented at specialist festivals in Belgium and Poland, and both Trieste and Venice in Italy (BFI/ HAB-1-100-5). Brian Jacobson discusses in further depth the vibrant circuit of international industrial film festivals that thrived in the post-war period, describing the way these films were seen as an 'other cinema' (Jacobson 2024, p.318). These were high profile and well-attended events that were, nevertheless, 'less heralded' and, in this sense, hidden.

Hidden Labour

Kristin Thompson has demonstrated that the dominance of American studio production and distribution was established during the First World War and has continued ever since (Thompson 1985). Animation broadly aligned with this overall pattern, albeit with Disney standing as a singular point of competition and comparison. Consequently, local animation producers routinely struggled to maintain a consistent and viable industry, with Britain typical of this pattern (Cook 2018). Conventional accounting of British animation in the mid-twentieth century casts this as a barren period (Gifford 1987), however this overlooks the extensive activity in useful animation, such as the educational, sponsored and advertising oil films that are the focus here. The leading British animation studios were heavily dependent upon sponsored filmmaking, including Halas and Batchelor, W.M. Larkins, and Anson Dyer Studios, as well as specialist units with animation capacities such as the aforementioned SFU, Science Films, and Publicity Films. Distinct from the commercial entertainment sector, this resulted in a large output volume and considerable variety and innovation.

In examining labour in this industry, the useful animation sector provided a more egalitarian space for animation workers, including émigrés and women. The high-profile GB Animation studio was financed by British film giant Rank to compete in the entertainment market and was modelled on Disney. This included hiring David Hand, the American director of Disney's acclaimed and lucrative *Snow White and the Seven Dwarfs* (1937) to head the studio, and adopting the gendered hierarchy and discrimination embedded at the leading US studio, implicitly evident in Hand's memoir account (BDC/73659 Memoirs of David Hand, Animator). In contrast, the studios working on useful animation provided more diverse opportunities, albeit within the limits of social conventions of the period. Both John Halas (born János Halász in Budapest, at that time part of the Austro-Hungarian empire) and Peter Sachs (born in Allenstein, East Prussia, now Olsztyn in Poland) were émigrés (Halas 2006; Lloyd 2019). Halas and Sachs were the creative leads at their respective studios (Halas and Batchelor, and W.M. Larkins). Their European background clearly influenced the modernist aesthetics adopted in their films. Halas had worked with a number of modernist artists and designers in Hungary, most notably László Moholy-Nagy with whom he reconnected when they were both in London 1935–1937 (V. Halas 2006, 81; Walker 2006, 112). Likewise, Sachs' aspired to bring modernism to a wider audience, evident in films such as *Balance* (1950) for ICI and *Full Circle* (1953) for BP. As composers, Francis Chagrin and Mátyás Seiber had more limited participation in the animated films they scored, but their contribution as émigrés nevertheless indicates

the regular flow of personnel and ideas operating across national borders at this time (Frankel 1973; Scheding 2008).

This is not to say that this was an entirely meritocratic industry, with prevailing class and elite privilege evident in senior positions. For example, Ronald Tritton, who commissioned *We've Come a Long Way* from Halas and Batchelor for BP, had previously worked with Allan Crick, who is credited with 'Story and Direction' on the film. Crick had served in the Navy in the First World War and during the Second World War he was in charge of the Naval Instructional Film Section under the Director of Naval Training at the Admiralty, where he had produced *Handling Ships* (1945) (Stroller 1956; Halas and Wells 2006, p. 23) and had direct contact with Tritton. At that time Tritton was in the War Office and after the war became the Director of the Films Division in the Central Office of Information (roles that also saw him make contacts with other prominent British useful cinema proponents Jack Beddington and Arthur Elton) (Russell and Taylor 2010, p.105n72). Evidence of a more than business-like loyalty is evident in their early correspondence about *We've Come a Long Way*, for example Tritton addressing a letter to 'My dear Crick', a familiar greeting not matched anywhere else in the file (BP/183149 Letter to Crick from Tritton, 16 June 1949). Elsewhere Tritton makes direct reference to Crick as 'himself an ex-naval man' (BP/183149 Memo to Jackson from Tritton, 12 August 1949) indicating the importance of prior service and the hidden network it entailed.

A more inclusive employment pattern is evident in the number and seniority of women working on sponsored animation. Joy Batchelor is the most prominent example, sharing equal credit and contribution with John Halas in their eponymous studio (Halas 2006). Other female creative personnel working in this hidden industry included Irene Castellanos, Rosalie 'Wally' Crook, Nancy Hanna, Vera Linnecar, Rosalie Marshall, Alison de Vere, and Phyllis Windebank. Many of these women moved between studios, including Halas and Batchelor, W.M. Larkins, and Biographic, during their long careers in the twentieth century, with work dominated by advertising, sponsored films, and other forms of useful animation (Stewart 2021). Of course, these women were subject to wider social norms and discrimination, such as those surrounding marriage and childcare, which impacted their careers.

Similarly, these conventions can complicate the process of researching their careers. For example, the practice of adopting their husband's family name after marriage means they are not always accurately or consistently recorded in credits and archival records (Burgess 2014).[2] The contribution of these women to the animated

[2] I am indebted to Zoë Viney Burgess for her insight on this matter.

oil films discussed here was substantial and sometimes acknowledged. The credits for *Full Circle* (1953) give Nancy Hanna prominent billing under 'Backgrounds and Animation', with a larger typeface than the other four credited personnel (three of whom were also women mentioned above: Linnecar, Marshall, and Castellanos), and she was subordinate only to the director and composer for the film. Likewise, the *Journal of the Royal Society of Arts* in reviewing the film stated it was 'of a very high aesthetic quality and relies for its appeal…upon the excellent standard of design in its settings, for which Nancy Hanna was responsible' ('Film Evening' 1953). However, in other cases prevailing gender inequality combined with labour practices, such as inconsistent film crediting practices, have obscured their vital contributions. The version of *We've Come a Long Way* on the corporate BP Video Library does not contain any credits beyond the title 'A Halas and Batchelor Cartoon', giving full authorship to the sponsor as 'A BP Film…Produced with the cooperation of the British Petroleum Tanker Company'. Other versions of the film do give credit for 'Story and Direction: Allan Crick; Animation Direction: Bob Privett; Music Composed by: Matyas Seiber; Production: John Halas' however this still leaves out contributions from other animators working at Halas and Batchelor at the time, who are listed as uncredited in the BFI National Archive catalogue.

Critical and scholarly practices have also exacerbated this inequity, with Alison de Vere's career a key example. De Vere is better known than the other women raised here, however this is primarily on the basis on her independent animation undertaken towards the end of her working career, especially her celebrated shorts including *Café Bar* (1975), *Mr Pascal* (1979), and *Black Dog* (1987). That she received an obituary in *The Guardian* is a welcome recognition, however it is dominated by her short films framed through a conventional art/commerce binary (Taylor 2001). Likewise, other accounts of her career acknowledge her work in advertising and sponsored film in general terms, but don't credit specific examples on equal terms with her short films (such as animated oil films *Down a Long Way* (1954) or *Animal Vegetable Mineral* (1955) made by Halas and Batchelor for BP) (Kitson 2008; Stewart 2021, pp. 126–127; Roe 2024). The result of sponsored films being part of a hidden industry is that many women also remain hidden. This is especially the case for those women who did not, through choice or social constraint, work outside it in independent animation, or more conventional entertainment films and television.

Hidden Spaces

The previous sections on the industry and labour of animated oil films provide important insight into the ways in which these films and their production contexts might be considered hidden, as well as serving to revise that position by bringing them to light.

These characteristics are not unique to animated oil films, but rather are commonly shared with other petroleum films and a broad swathe of useful cinema, extending both historically and geographically beyond the mid-century British imperial context of the BP films used as case studies here. There are more specific ways in which animation served particular functions in hiding, but also revealing, oil, differentiating these films from photographic modes of representation prevalent in other forms of filmmaking. *We've Come a Long Way* again serves as a historically and culturally specific case study, standing as an exemplar of the pervasive ways the aesthetic mode of drawn animation has operated in many contexts.

As outlined above, *We've Come a Long Way* was commissioned by BP from the Halas and Batchelor studio to provide an introductory account of the history of oil tankers, 'sufficiently interesting and lively to please a lay audience, but should be technically sufficiently accurate and interesting to satisfy…people with intimate knowledge of ships' (BP/183149 Letter to Halas from Tritton 25 January 1950). The need to represent hidden history and design principles was fundamental to the choice of animation to make the film, with early production correspondence arguing it 'would allow for the representation of the old ships which could not now be filmed' (BP/183149 Memo to Jackson from Tritton 30 May 1949) and likewise spaces that are not directly visible to the intended audiences of the film. If understood as a form of animated documentary, the film utilises what Annabelle Honess Roe terms 'mimetic substitution', the animation representing something that could not be captured by conventional cinematography, in this case because the events historically predate that technology (Honess Roe 2013, p. 23). However, the film also exceeds this in its historiographic intentions to compress and depict temporal change and spatial expansion. The double meaning of the title, *We've Come a Long Way*, signals these two important vectors, intending to reveal what had previously been hidden from the spectator by both spatial and temporal distance.

The opening sequences of the film overtly signal that the film will represent temporally hidden aspects of the oil industry, providing a caption '1861, Pennsylvania' that orients the spectator, aided by the soundtrack of sea shanty arrangements. A draft of an article describing the production of the film (written by Allan Crick from the Halas and Batchelor studio) credits composer Matyas Seiber with the 'full use of sailor's favourite instruments, mouth-organ, accordion and guitar' and the use of a song '"Pittsburgh is a fine old town", a tune which was all the rage in the early '80s' (BP/183149 Letter to Jackson from Tritton 24 January 1951). The film thus reveals the century old history of the oil industry, but it also alludes to the much longer history of oil formation millions of years before. After showing an oil derrick, we see a cross section of the soil, with a drill penetrating through the stratigraphic layers to reach

the oil that lays beneath (**see Figure 1**). This visualises otherwise hidden oil both spatially, providing a subterranean viewpoint no human or camera could ever see, and temporally, reaching down through time just as a geologist's stratigraphic diagram depicts the layers of time. In *We've Come a Long Way* this is a brief part of the film, however it echoes sequences in many other oil films, such as BP films *Down a Long Way* (1954) and *As Old as the Hills* (1950) in which stratigraphic representation is used to communicate both the unseen oil underground and the 'deep time' of oil's formation over millions of years (McPhee 1981).[3]

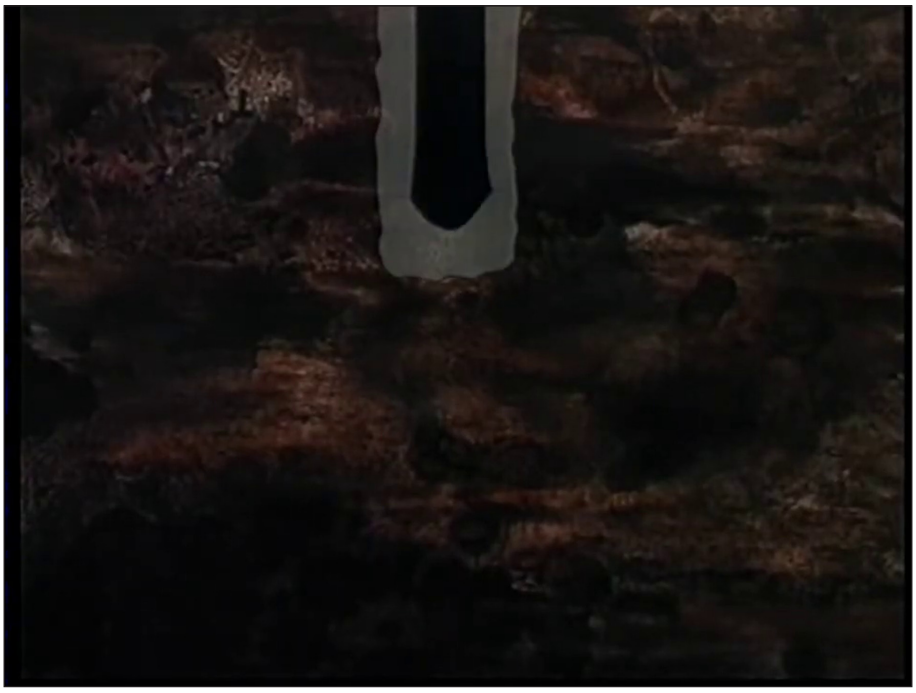

Figure 1: *We've Come a Long Way* (1951) Oil Stratigraphy.

Giving viewers access to otherwise hidden spaces is a key part of the educational function of the film, using diagrammatic cutaway representation of oil tanker designs over their history, a common strategy in many educational and sponsored information films. Where the first half of the film adopts a detailed historical reconstruction of the environment of mid-nineteenth century oil extraction and transportation, the second half provides an abstracted, isometric representation of oil tankers, removing extraneous detail to focus attention on tanker design elements and their development (see **Figure 2**). These diagrams may seem unremarkable, as they are typical of similar

[3] Originally coined by journalist John McPhee, the notion of a geologic 'deep time', one that exceeds conventional human understanding of history, has been widely adopted within environmental humanities.

diagrammatic forms evident in large numbers across a wide variety of useful cinema, and this may contribute to them seeming hidden because of their ubiquity. As such they adhere to what Cristina Formenti calls 'sober' animation (Formenti 2022, pp. 24–28). However, critical attention to these diagrams and their function reveals several noteworthy observations.

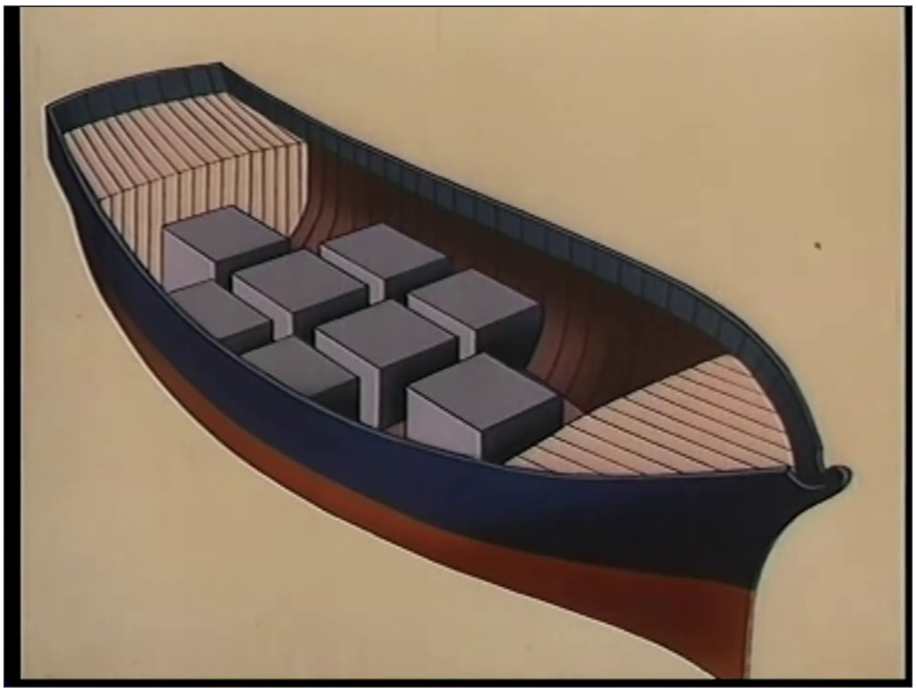

Figure 2: *We've Come a Long Way* (1951) Diagrammatic Representation.

The adherence of these films to conventional diagrammatic representation indicates that animation of this kind exists as part of longstanding intermedial graphic traditions, distinct from the photographic basis often assumed as the ontological basis of cinema. Cel animation in the twentieth century did depend on photography in the most basic sense of needing that technology to capture and reproduce the individual drawings (Frank 2019). Equally, animated sequences were often interspersed between, or even overlaid on, photographic documentary footage. However, that juxtaposition more often than not served to accentuate the differences between graphic and photographic forms of representation. Diagrammatic forms of animation exist in a lineage of specialised disciplinary expertise (Cook *et al.* 2023). In the case of *We've Come a Long Way* the tanker diagrams are most closely related to engineering. Amongst the production materials for the film is an information leaflet produced by the Petroleum Information Bureau (PIB, a sibling organisation to the PFB). The leaflet uses

multiview orthographic representation of a tanker (that is, three distinct perspectives on the same object that together allow the viewer to reconstruct a three-dimensional view of the object from the two-dimensional representations) (BP/183149 Petroleum Information Bureau 'The Development of the Oil Tanker', undated). Similarly, the animation studio personnel were directed to the book *Tanker Technique 1700–1936* written by B. Orchard Lisle as a further information point (BP/183149 Letter to Crick from Tritton, 19 December 1949). These specialist sources were used by the Halas and Batchelor designers and animators as a reference, although they primarily adopted the alternative isometric method of translating three-dimensional objects into two-dimensional drawings, occasionally interspersed with side or front cross sections to communicate specific design issues (see **Figure 3**). These diagrammatic forms are necessarily selective in their simplification, and their hidden discontents are addressed further below. Nevertheless, the intention of their abstraction is to provide insight and clarity, to communicate complex historical changes and unseen internal design choices in tanker design. For example, the PIB leaflet raised above describes in words the shift from 'longitudinal system of framing' to 'vertical framing' as a step-change in tanker design, but this is far more easily understood through the visualisation of this in the cutaway diagrams in *We've Come a Long Way* (see **Figures 4** and **5)**.

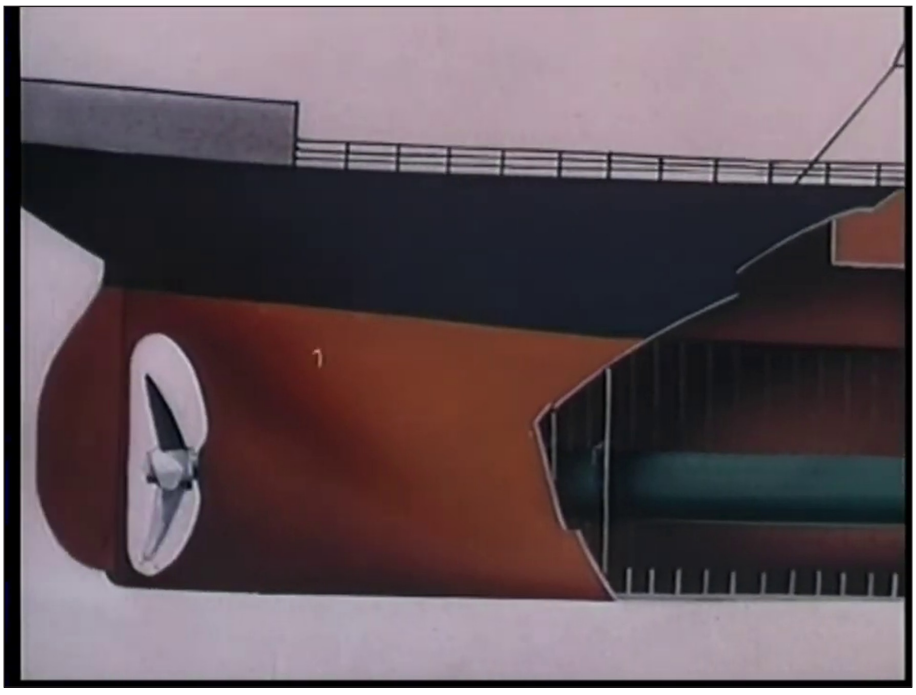

Figure 3: *We've Come a Long Way* (1951) Cross-section Diagrams.

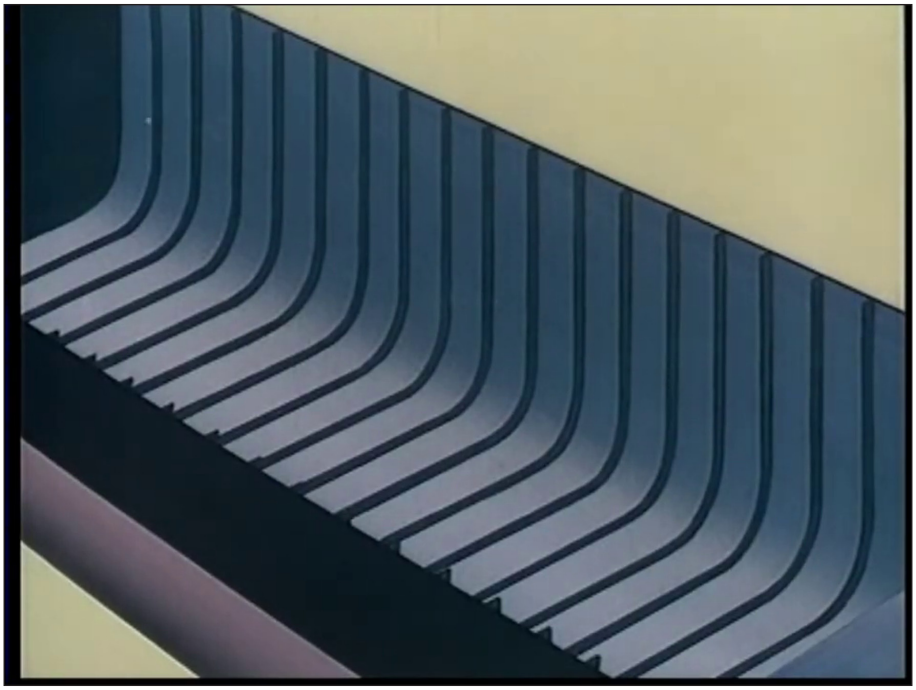

Figure 4: *We've Come a Long Way* (1951) Diagram of Longitudinal Framing.

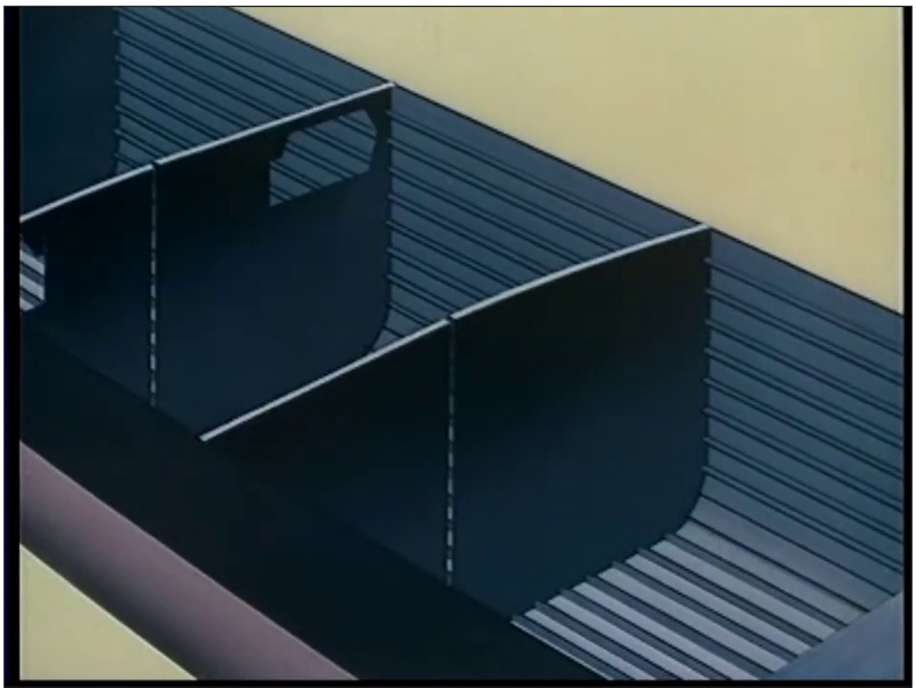

Figure 5: *We've Come a Long Way* (1951) Diagram of Vertical Framing.

Hidden Bodies

Alongside the diagrammatic animation described above, *We've Come a Long Way* also incorporates more familiar character animation. Halas and Batchelor had always been skilled practitioners of this form, stretching from their early wartime films for the Ministry of Information, such as *Dustbin Parade* (1942), to the work on their acclaimed adaptation of *Animal Farm* (1954). While distinct from the diagrammatic forms, character animation is likewise used in *We've Come a Long Way* as a way to reveal otherwise hidden aspects of the topic of oil transportation. The film opens with a sequence of a demonic figure growing and expanding (see **Figure 6**). The identity and meaning of this figure is initially unexplained, creating a sense of suspense and intrigue (but also potential audience confusion), enhanced by Matyas Seiber's orchestral soundtrack. The demonic figure is only fully explained two minutes into the film, when the voiceover describes how the whale oil previously transported in the 19th century was more stable than 'rock oil' because the latter 'gives off gas'. This dialogue accompanies shots of the demon figure squirming in a barrel, desperate to escape, making clear that the character is a metonym for the invisible but deadly emissions from crude oil (see **Figure 7**). This figure recurs throughout the film whenever the challenges of managing gaseous by-products of oil are raised, helping to visualise an important material aspect of transporting oil that would evade other forms of representation, such as conventional photography.

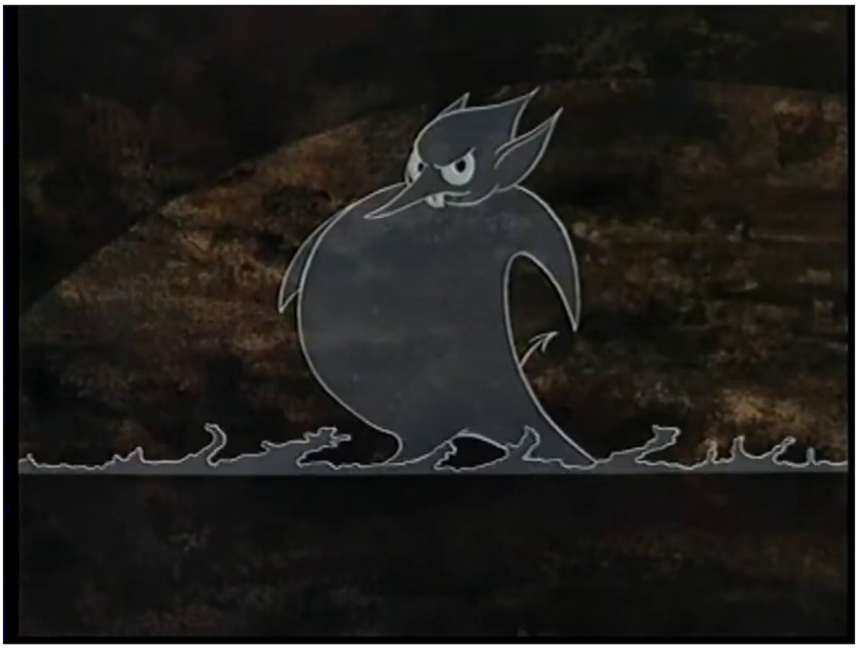

Figure 6: *We've Come a Long Way* (1951) Demonic Figure Representating Gas Escaping from Oil.

Figure 7: *We've Come a Long Way* (1951) Trapped Demon.

However, the decision to use an anthropomorphised character as a stand-in for unseen gases exceeds this initial purpose, which could just as easily be fulfilled by simpler graphic methods, such as cross-hatching or moving arrows. The engaging demon character certainly fulfils the need to create appeal for audiences, a necessary sweetener to make the dry educational subject matter palatable. Moreover, it serves to reveal the power of oil and its derivatives, and even constructs a sense of oil having its own life and agency. A number of writers have observed the way oil seems to be alive, most notably Stephanie LeMenager's account of 'Living Oil' (LeMenager 2014). This can be understood at many levels: materially in its huge energy capacity to accomplish physical work; as a market commodity that shapes geopolitics in seemingly independent and uncontrolled ways; as an aesthetic figure of imagination. Where other forms of representation, such as photographic cinema, struggle to represent this conceptual vitality of oil, animation provides a unique way to embody it. Yet this is not a neutral functioning, but rather a deeply political act. This animation doesn't simply represent and reveal, but also constructs a particular image of oil that equally hides and disguises. This is especially true when thinking about the labour involved in oil extraction and exploitation.

It is notable that apart from the demonic gas character, no human figures are seen in *We've Come a Long Way*. This may in part be explained in practical terms of both production costs and educational purpose of the film. Convincing character animation

of the kind used for the gas demon is highly skilled and labour intensive, requiring careful planning, hundreds of drawings, reworking, and clean-up to create the desired effect. The gas demon exhibits the capabilities of the Halas and Batchelor animators to fulfil this accomplished work. However, it would be an expensive part of production, and other sections of the film use more cost-effective methods to fill screen time. These include panning across static drawings, or simple dissolves between them, to reduce the number of drawings required. Similarly, the educational aims of the diagrammatic sections of the film benefit from an austere simplicity that is intended to keep the audience focussed on the information being communicated.

However, the elision of labour in the film goes beyond these economic and pedagogical imperatives, serving the fundamental aims of the sponsor to create a particular idea of oil as powerful and generative. Throughout the film, in the absence of human workers, oil production is shown as self-generating: we see untended oil derricks drill into the ground, oil barrels loading themselves onto ships, self-propelled steam pipes flushing out the dangerous gas from tanker holds (see **Figures 8, 9** and **10**). Unlike the gas demon, these actions are not anthropomorphised, but they occur automatically. The labour-intensive process of animation here paradoxically constructs a vision of oil extraction as effortless and self-fulfilling. In watching these seemingly self-propelled actions, both the animation labour that produced the images and the industrial labour necessary to the oil industry are hidden from view.

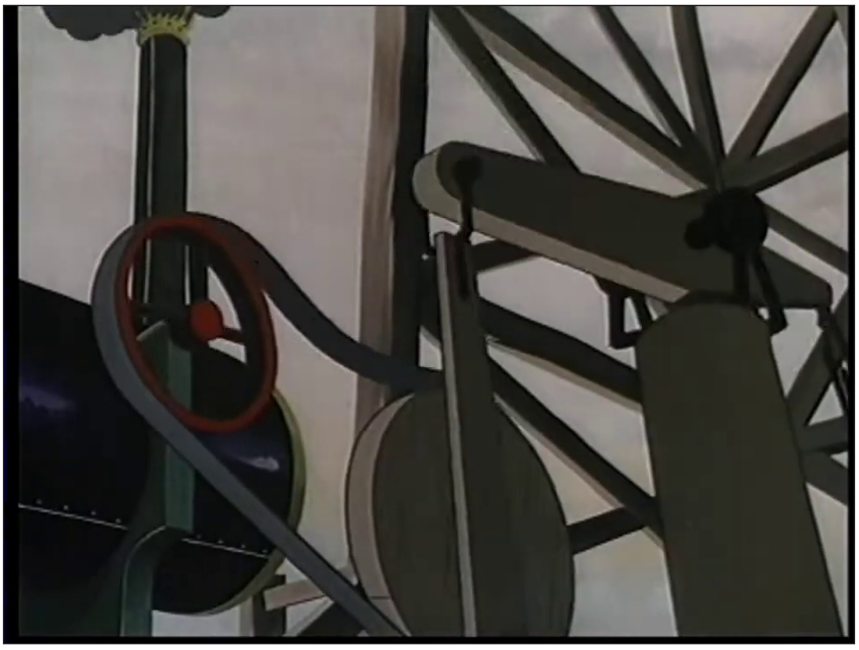

Figure 8: *We've Come a Long Way* (1951) Untended Oil Derricks Drill into the Ground.

Figure 9: *We've Come a Long Way* (1951) Oil Barrels Load Themselves on to Ships.

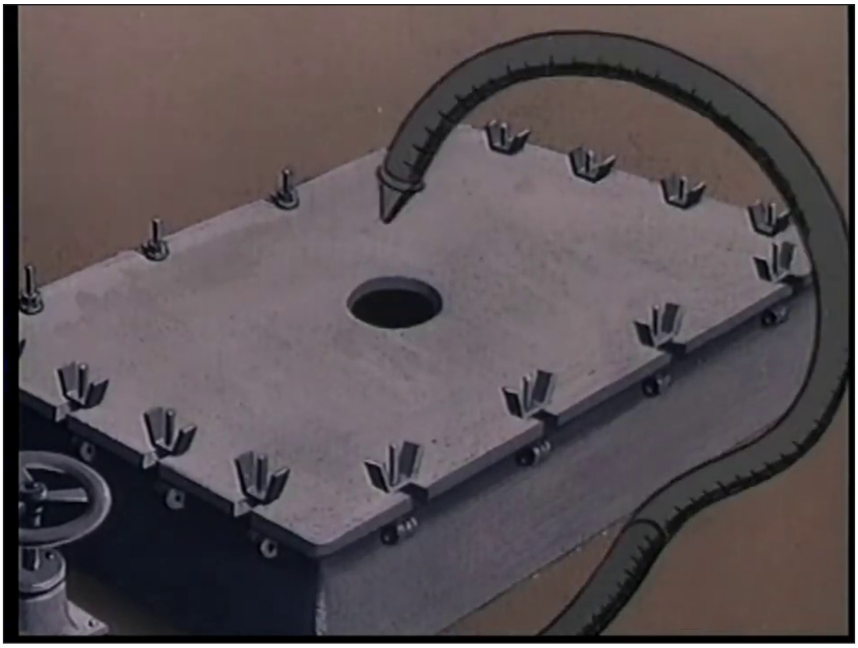

Figure 10: *We've Come a Long Way* (1951) Self-propelled Steam Pipes.

As well as these general elisions of oil and animation labour, the film also suggests a more specific comparison with the labour conditions of slavery, as the gas demon is shown wearing shackles within the cramped conditions of an oil barrel in the hold of

a ship. This second appearance of the gas demon occurs around two minutes into the film when the challenges of transporting oil in barrels is raised. At this point we hear dialogue between a shipowner and a sea captain, their identity only implied by a shot of a top hat and sailor's cap, serving as visual metonyms for the voices heard on the soundtrack (see **Figure 11**). Establishing both the potentials and risks of transporting oil, the shipowner notes the purposes of oil and the gas it gives off: 'paraffin lights your lamps, heavy oil greases your steam engine. Keep the devils chained up and you can put them to work'. This accompanies shots of the gas demon struggling against the shackles and looking menacing, enhanced by foreboding musical accompaniment (see **Figure 12**). In response, the sea captain states, 'this is going to be a tricky job, with all these fellas trying to escape'.

Figure 11: *We've Come a Long Way* (1951) Metonymic Top Hat and Sailor's Cap.

Accompanied by images of a traditional sailing ship, these references evoke the transatlantic slave trade, which was ongoing in 1861 when this historical reconstruction is set, the same year the American civil war began, with slavery a key factor in the conflict. However, a strong warning note is needed here, as these allusions and the film's implied equivalency between slavery and oil are undoubtedly insensitive and incoherent. There is no discussion of this analogy in the production materials for the film, suggesting it was adopted with little thought and relied on stereotyped and discriminatory fears of colonial revolt and the end of empire, rather than any substantial empathy or understanding of slavery and its ongoing legacy. Moreover, this is an affective comparison that does not hold up to logical scrutiny. For instance, a clear distinction is needed to recognise that slaves were dehumanised and treated as chattel,

Figure 12: *We've Come a Long Way* (1951) Gas Demon in Shackles.

whereas in this and other films oil, an inanimate commodity, is anthropomorphised and imbued with agency and vitality.

Nevertheless, these references have resonance with contemporary economic theories that correlate slavery and fossil fuel extraction as having provided a form of easy or unearned work and energy that drove economic growth and perceived prosperity. Andrew Nikiforuk makes this argument forcefully in his widely cited book *The Energy of Slaves*, stating 'once dependent on the energy of slaves, we are now slaves to petroleum' (Nikiforuk 2012, p. xii). The ambiguous collective pronoun and rhetorical reversal in this statement are indicative of the fissures in his sweeping historical and economic claims. The argument is superficially compelling, and it is used to make important points, such as the underpinning role energy plays in the political economy. However, it also relies on tenuous equivalencies between historically, socially, and ethically distinct phenomena. Energy humanities scholars have also broached the historical and conceptual comparison with slavery, with more critical nuance and rigour, to support their analyses of fossil fuel usage and its problems (Mouhot 2011; LeMenager 2014, pp. 4–5; Johnson 2016; Malm 2016, pp. 201, 215–216).

These contentions within energy humanities are not raised here to endorse or debate them, but more simply to note two interlinked points arising from the animated oil films under discussion. The first point is that analogies between slavery and energy sources are by no means new. *We've Come a Long Way* sits alongside other historical examples of useful animation that use slavery, or a genie in an orientalist variation, to visualise energy. Examples include oil as a genie in another BP film *Full Circle* (1953), atomic power as a 'giant of limitless power at man's command' in *A*

is for Atom (1952), atomic power as a genie in the *Disneyland* television episode 'Our Friend the Atom' (1957), and electricity as a slave or servant in the ongoing use of the Reddy Kilowatt spokescharacter in advertising, originally created in 1926 (Thompson 2019). Secondly, arising from this, all of these examples use the analogy with slavery to hide the true labour and costs of these energy sources and to frame their work as free, ignoring the social impact of capitalist-extractivist processes and the future environmental damage.

Related elisions of questions of labour are also evident in the diagrammatic sections of *We've Come a Long Way*. If, as raised above, these sections are intended to reveal and explain, they also equally hide the labour and contingencies of the long history of the technical development of tankers, in favour of a seemingly frictionless and inevitable teleological progression. In the space of four minutes two narrators in dialogue describe the goals of tanker design (increased capacity and efficiency, safety), the challenges that must be overcome to fulfil these (physical constraints of the open sea and harbours, limits of construction materials), and the design solutions that addressed them. Visually accompanying their voices is diagrammatic animation that presents this half-century history in the form of a single tanker that, through the metamorphic capabilities of animation, transforms into the latest in tanker design, seemingly responding to their voices (see **Figure 13**). Completely absent is any indication that each change in design was a hard-fought iteration over a long period. In doing so, the film equally excludes the human labour necessary to construct the many variations in tanker design, as no human figure is ever shown. Moreover, this also omits the material commodities involved, such as the use of steel, itself a product

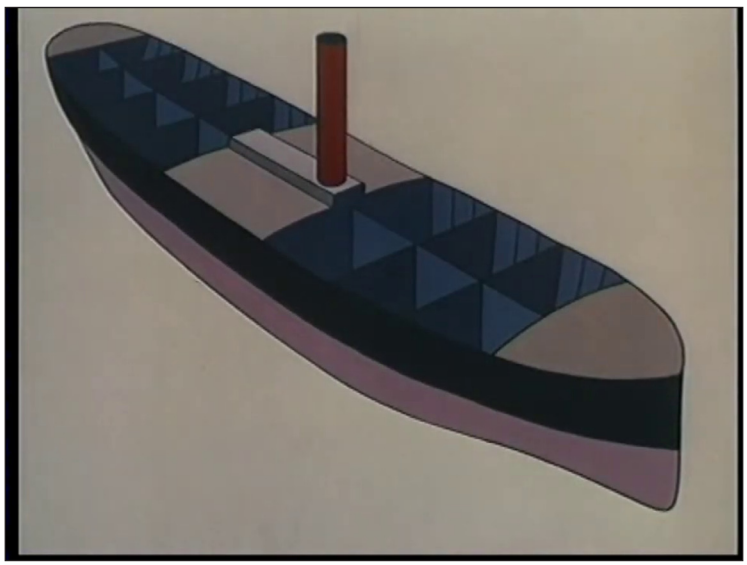

Figure 13: *We've Come a Long Way* (1951) Oil Tanker Design.

of intensive extractive processes no less than the oil it was utilised to transport. Time, labour, and materiality are all hidden in favour of a picture of effortless progression into modernity.

Hidden Futures

For present day viewers, watching any oil film from the prior century can entail what Jennifer Lynn Peterson calls an 'anthropocene viewing condition' in which 'old images of nature cannot be separated from our new knowledge of the climate crisis' (Peterson 2022, p. 20). Our heightened awareness of the environmental damage and social impact of fossil fuel extraction and usage can result in us finding in films new meanings that were unintended or only latent when they were originally viewed. Peterson's idea can be applied to the oil films under discussion here in the sense of the truism that 'a film's meaning can change based on the knowledge held by its spectators' (Peterson 2022, pp. 19–20). Beyond this, however, Peterson's specific attention to questions of endangerment resonate with the depiction of risks and perils in many oil films, including *We've Come a Long Way*.

The opening sequence of *We've Come a Long Way* immediately establishes the theme of the danger of oil extraction. The background to its place-setting title '1861 Pennsylvania' is a seemingly untouched natural landscape of rolling hills and trees, reminiscent of the Hudson River Valley school of painting. Numerous oil derricks appear upon this through cross-dissolves, accompanied by smoke trails rising from the machinery operating alongside them **Figures 14** and **15**. A series of closer framings show the drilling at work, as the viewpoint tracks down underground to the anthropomophised demon discussed earlier, depicting the trapped oil and gas hidden beneath the surface. At the moment when the drill bit breaches the oil reservoir the gas demon rushes up to the surface on top of an archetypal oil gusher, resulting in a powerful explosion and stylised flames, followed by a long-shot framing of the oil derrick in flames belching out black smoke (see **Figures 16, 17, 18** and **19**). This is accompanied and directed only by Seiber's dramatic music, which heightens the sense of danger, but with no explanatory narration. As such this adheres to the variable viewing conditions Peterson is concerned with. An audience watching this in 1951 would likely interpret it in terms of the immediate human and economic risk involved in oil extraction and transportation, setting up a context for the message of ordered management and teleological progress shown later in the film. In contrast, a twenty-first century audience might see a natural landscape despoiled and an arresting image of pollution and climatic blaze. Even if the oil prospectors in 1861 and animators and oil company in 1951 did not anticipate our ongoing climate crisis, there is a palpable sense of peril in this extractive endeavour that resonates.

Figure 14: *We've Come a Long Way* (1951) Natural Landscape.

Figure 15: *We've Come a Long Way* (1951) Oil Extraction.

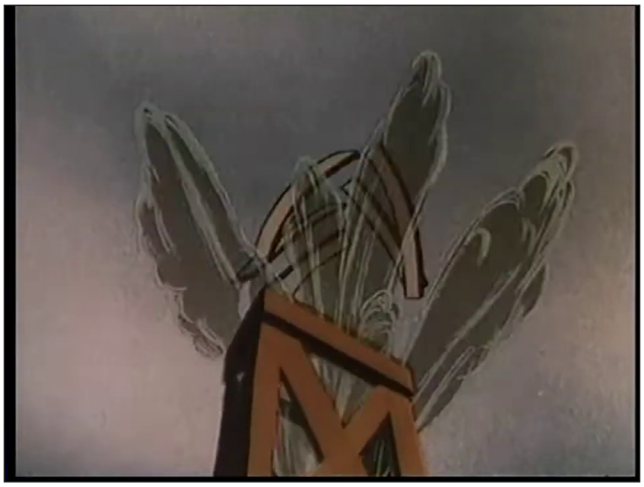

Figure 16: *We've Come a Long Way* (1951) Oil Gusher.

Figure 17: *We've Come a Long Way* (1951) Oil Demon Escaping.

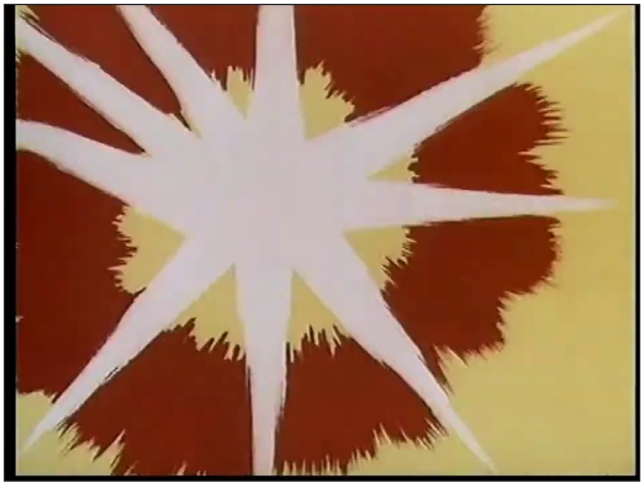

Figure 18: *We've Come a Long Way* (1951) Gas explosion.

Figure 19: *We've Come a Long Way* (1951) Oil Derrick in Flames.

The message of managed and contained risk recurs throughout the following pedagogical sequence depicting oil tanker design principles. Interspersed with the cross-section diagrams of tankers, the gas demon reappears to embody the peril of the invisible but deadly gas and the wider potential for disaster in transporting oil. Again, the ways this is interpreted by spectators would vary historically. For viewers at the time of release, the film narration frames the risks in immediate human and economic terms, including the death of workers on the tanker and the loss of a commodity cargo, as well as the desire to maximise economic efficiency. In contrast, present day audiences adopting an 'anthropocene viewing condition' are likely to be mindful of infamous tanker disasters such as the *Torrey Canyon* (1967) and *Exxon Valdez* (1989), as well BP's responsibility for the *Deepwater Horizon* oil platform maritime spill (2010), with their immediate and long-term environmental devastation.

While those disasters lay in the future from 1951, it is important to note that the potential for such events was already a known quantity for BP. The company's messaging in *We've Come a Long Way* was not simply naïve but actively conceals the inherent jeopardy in this endeavour. Amongst the tanker designs heralded as pioneering in the film, the *British Inventor* (launched in 1926) is framed as the perfected end result of the historical design process, opening up the possibility of ever larger tankers using the same principles. Absent from the film is the information that the *British Inventor* was wrecked in 1940 after hitting a German mine, off the south coast of Britain.[4] While no lives were lost, a first-hand account describes 'a tremendous escape of air, oil and gas' as it floundered (Knott 2016). The catastrophic loss of the tanker is hidden by *We've Come a Long Way* because it does not fit its account of technological progression and mastery of risk. In the present day the tanker is now also hidden in a different way, its wreck slowly being reclaimed by the seabed in a distorted reversal of the formation of the oil it once transported.

Applying Peterson's 'anthropocene viewing condition' to this context does extend it beyond the original boundaries of the concept as she defines it. Peterson is concerned with cinematographic images of nature, whether in fiction or non-fiction films. Conversely, in the latter half of *We've Come a Long Way* the focus is on human endeavours in the design and engineering of tankers, where nature is sidelined, reduced to the most simplified animated graphic representation of the sea as an oscillating line and variation in colour between above and below waves surrounding the tankers

[4] The tanker was on its way from Abadan in Iran via Gibraltar and sank near Lulworth Cove (50°35'24.0"N 2°18'22.2"W) on its way to the Hamble, in close proximity to the University of Southampton where the author is employed. While much of the tanker was salvaged, parts of it were abandoned and they remain a popular scuba diving destination, for example see the video https://www.youtube.com/watch?v=ZsfGqqdLSTM&ab_channel=DorsetDiving.

depicted. Equally, Peterson's account is formed in relation to photo-indexical images of nature under threat, a trace of the world out there, or at least that was once out there. Animation, as axiomatically human-made, might be considered to be excluded from such an account. However, such thinking would adhere to a binary opposition between human and nature that has become increasingly challenged within energy and environmental humanities, as in Dipesh Chakrabarty's assertion that 'anthropogenic explanations of climate change spell the collapse of the age-old humanist distinction between natural history and human history' (Chakrabarty 2009, p. 201). Peterson's discussion of *Way Down East* (1920) makes clear the degree of artifice and cinematic construction involved in its photographic depiction of natural spaces. No matter how natural a cinematographic image might appear, it is always mediated through the human technology that underpins it, and no matter how artificial an animated image may appear, it is always grounded in the physical materiality of the natural world. The difference between these image types is one of scale, not kind, and both entail a complex intermingling of nature and culture that cannot be neatly divided. Returning to our specific topic of oil, it provides an apt partner here as a substance which itself seems to complicate the nature/culture divide in being a product of natural biological decay and geological process, yet in its manipulated form is viewed as artificial or synthetic.

We've Come a Long Way reveals one of the inherent risks in oil extraction, in the form of the gas demon, only to hide it again to establish its sponsor's narrative of expert management and technological control. In the present day our understanding of the damage oil use entails, both immediate environmental and long-term climatic, lends the film a new resonance. Indeed, its title also takes on new meaning, as it asks us to reflect not only on the ninety-year period prior to the film's production, between 1861 and 1951, but equally we contemplate the seventy years since its release. We've come a long way in our understanding of the costs of oil usage, but we equally have a long way to go to halt and rectify the damage oil continues to inflict.

Conclusion

Although this article about hidden screen industries has used mid-century examples of animation made in Britain for oil company BP, the principles demonstrated by this case study are widely applicable and adaptable to other business sectors, countries, and periods. Since the silent era, animation has consistently been used by organisations looking to communicate with and persuade varied audiences. While this screen industry and the films produced are extensive, they commonly target specialised audiences, and this has made them appear hidden to more general audiences. This has contributed to later historical neglect, exacerbated by academic practices within Film

and Media Studies that emphasise art and entertainment and undervalue other uses of film. Aesthetically these films have great variety, which also contributes to them being overlooked. Some adopt a mode of address similar to entertainment films to engage audiences. Others draw on specialist intermedial forms of knowledge generation and representation from a broad spread of disciplines. Some offer hybrid combinations of these across a spectrum of styles and modes of address. Animation is commonly intended to reveal and explain, but often also conceals and distorts. The differences between animation and photographic forms of cinema contribute to distinctions between them, yet they are also often combined or intended to achieve the same end goal. The original purpose of these films may now have passed, but they can take on new meanings and values in the present day as archival objects. Three brief examples can demonstrate the broader applicability of these patterns while also indicating the need for specificity in addressing them.

Equal to the activity described here in Britain, the United States had its own substantial hidden screen industry producing useful animation. Large, long running studios like Jam Handy and the John Sutherland Productions had animation units or specialised in this form of production, with oil companies and related industries being particularly important clients (Amidi 2006, pp. 46–53; Prelinger 2012). Likewise, Brian Jacobson's work has demonstrated the growth of oil sponsored cinema in France in parallel with the British picture described here, with both close connections in aims and approaches, but also important distinctive historical and social contexts that require their own study (Jacobson 2021a).

Oil companies are an especially important business sector for study given the pervasive impact oil had and continues to have, however many other industries utilised similar film production. Animation and film studios rarely specialised in one industry, but provided a central point of contact and exchange through their need to attract a wide range of clients. In 1942 *Business Screen*, an important trade paper for this type of production in the United States, carried a prominent article on animation's capacity for 'Visualizing the Invisible', which anticipates many of the observations raised here ('Visualizing the Invisible' 1942). Petroleum as a subject and oil companies as clients are is strongly highlighted in the banner image and the lead-in of the article, but it also shows the wide range of other applications animated films were being put to, including medicine, telecommunications, engineering, and manufacturing.

Digital technologies have changed the production processes, distribution, and aesthetic results of useful animation in the twenty-first century in comparison to the mid-century case studies examined here. Nevertheless, there are also considerable overlaps and continuities with the issues raised here. The U.S. Chemical

Safety and Hazard Investigation Board is an 'independent federal agency charged with investigating industrial chemical accidents' (*U.S. Chemical Safety and Hazard Investigation Board*). CGI reconstructions of accidents are an important tool in their investigative and public communications function, which they publish on their YouTube channel and via their main webpage. These informational animations continue many of the patterns established here. As an industry this is a substantial US federal undertaking, with many of their videos reaching over a million views within a year of release, yet their target audience means they remain hidden to non-specialist audiences. The archive of their films on their YouTube channel, spanning from 2007 to the present, tracks the increasing complexity and sophistication of CGI imagery to achieve photo-real, if selective, effects enabled by off-the-shelf software. However, the adoption of animation often follows the same motivations raised in this article. This includes the capacity of animation to visualise events that were not, or could not, be captured with conventional photography; simplifying and clarifying the situations depicted to remove distracting extraneous detail; and eliding the labour and human involvement in the events depicted to focus on institutional processes and generalise the findings to make them applicable as recommendations for future situations. The USCSB videos, however, do include comprehensive production credits, breaking with the historic examples raised here.

These brief examples demonstrate the wider applicability of the ideas raised in this article, and the extensive range (historic, geographic, disciplinary, aesthetic) of hidden screen industries that remain open to further investigation.

Acknowledgements

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Competing Interests

The author has no competing interests to declare.

Primary Archival Sources

BDC Bill Douglas Cinema Museum, University of Exeter, UK.

BFI/HAB Halas & Batchelor Collection, British Film Institute Special Collections Berkhamsted, UK.

BP Archive, Modern Records Centre, University of Warwick, UK.

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