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RESEARCH

The Monopack Revolution, Global Cinema and *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953)

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This article discusses the impact of cheaper colour film stocks introduced in the 1950s on the global film market. After a contextual overview the cases of India and China are briefly considered before a more detailed examination of conditions in Japan, and how the world's attention was drawn to the achievements of Jigokumon/Gate of Hell (Kinugasa Teinosuke, 1953) as an exemplary colour film that was influenced by both Japanese culture and Hollywood melodrama, particularly The Mississippi Gambler (Rudolph Maté, 1953), an American film that was notable for its display of different colours, fabrics and silken textures illuminated by lighting. The history of colour filmmaking in the sound period is detailed, as well as how Japanese technicians visited Hollywood in the early 1950s to study colour. Following a textual analysis of Jigokumon, the article considers its reception by Japanese and British critics. Shifting attention away from the more prevalent analyses of colour in American, British and European cinema, the article highlights the need for transnational approaches to more fully understand a critical period in the history of global cinema. The contemporary context of film restoration is also referenced as of prime importance in recovering the chromatic qualities of films shot in Eastmancolor that were subject to deterioration. Conceptualising global colour as an expansive, fluid phenomenon that has been largely formed by transnational exchange constitutes an important step towards bringing colour more centrally into the frame of transnational studies as well as informing our understanding of colour's relevance to the development of national cinemas.

Keywords: Colour

After the Second World War the widespread introduction of colour to sound cinema was a serious proposition that was considered with varying responses, temporalities and results all over the world. While this potentially expanded the range of aesthetic

choices explored by filmmakers a major chromatic transformation did not immediately follow, with some countries adopting colour more readily than others. Drawing on 'The Negotiation of Innovation' as a paradigm for understanding how new colour systems fared in competitive film markets, this article considers how the various processes had to negotiate a space for themselves, often facing fierce opposition from vested interests concerned to preserve the status quo. How and when a colour process was introduced proved to be critical in determining its chances of gaining acceptance and of sustaining interest, as well as influencing how filmmakers actually responded. While economic issues were often important, cultural, aesthetic and political variables were highly significant as primary influences on whether colour was accepted or its introduction delayed. After a contextual overview the cases of India and China will be briefly considered before a more detailed examination of conditions in Japan, and how the world's attention was drawn to the achievements of Jigokumon/Gate of Hell (Kinugasa Teinosuke, 1953) as an exemplary colour film that was influenced by both Japanese culture and Hollywood melodrama. Shifting attention away from the more prevalent analyses of colour in American, British and European cinema, the article highlights the need for transnational approaches to more fully understand a critical period in the history of global cinema.

Although the majority of silent films were coloured by hand-painting black-and-white prints, tinting, toning or stenciling techniques, by the 1930s and after the relatively quick introduction of sound cinema, live-action films were shot predominantly in black-and-white. The reasons for this are multifarious, involving the higher costs of photochemical colour film stock, technical difficulties in perfecting various competing colour processes, as well as the persistence of taste cultures which appreciated black-and-white films as the norm. From the 1930s the USA and Britain were the main countries to experiment with three-strip Technicolor but the process was expensive, and the number of films released using its special cameras and bespoke dye-transfer processing methods remained relatively few (Higgins, 2007; Street, 2012). Using colour for animation was in technical terms more straightforward since a fully functional three-colour camera was not required.

Disney's *Silly Symphonies* series of short animated films was thus used in the 1930s as a platform for promoting Technicolor and as an inspiration for later landmark animated feature films including *Fantasia* (1940) that intertwined colour design with a film's narrative structure (Moen, 2010: 385). Live-action filmmaking however took less readily to colour, a situation that did not change until the introduction in the 1940s and 1950s of cheaper, single-strip 'monopack' colour film stocks that could be used in any camera. While the commercial availability of these stocks expanded the potential market for colour films, it was not until the late 1950s and 1960s that colour became the dominant aesthetic choice for filmmakers and audiences in Europe and the USA, a trend that has continued to the present and pertains across the world. As this article will explore, this process was even more delayed in India, China and Japan for cultural, economic and other reasons. But once it was achieved the world on screen was defiantly in colour, a momentous shift that occurred during the previous decades (Misek, 2010).

Unlike the relatively fast introduction of sound to cinema, colour faced a much longer, drawn-out series of practical obstacles and entrenched cultural and aesthetic issues. As emergent technologies, colour processes constantly had to make a case for their superiority in markets dominated by cheaper, black-and-white films that were often admired by critics as more aesthetically pleasing. Practitioners were faced with a central dilemma: to draw attention to itself colour had to be different, even spectacular, yet for complete acceptance in some countries it needed to take care to support, rather than challenge dominant aesthetic preferences and established codes of realism. In Britain, for example, although many preferred the 'restrained' aesthetic of Dufaycolor to Technicolor, it was Technicolor that ended-up dominating colour production. Dufaycolor was championed by supporters including artist Paul Nash who appreciated its 'understated' and 'natural' qualities in spite of several technical difficulties the process encountered (Street, 2012: 40). Yet the preference for a 'restrained' approach to colour that was deemed by many as appropriate for British aesthetic tastes influenced how cinematographers, directors, set and costume designers developed Technicolor in British films; the same technology but with a national inflection that was known as such all over the world (Street, 2012). In this way, the reception of new technology is only in part influenced by economic or scientific considerations. The negotiation of innovation involves a complex set of exchanges between interested parties that contest the cultural terms on which it is based. It is only by appreciating this fully that we can understand *how* technology works in the world.

What contemporaries thought about colour was of fundamental importance to its application within mass culture. While seeing the world in colour was a part of everyday life, on screen it was a complex engagement with notions of realism and the attractions of film spectacle. The boundaries between realism and spectacle were indeed stretched as filmmakers negotiated established aesthetic regimes while at the same time exploited colour's artistic potential. Much as with the critical elevation of silent cinema to the status of art cinema once sound was introduced, for many black-and-white films appeared aesthetically superior when colour was on the agenda but was far from totally accepted. Cultural preferences for black-and-white were underpinned by philosophical positions that privileged line and form over the addition of colours that might cause distraction. Roland Barthes wrote about colour as 'a coating applied *later on* to the original truth of the black-and-white photograph. For me, colour is an artifice, a cosmetic' (1982: 81, quoted in Batchelor, 2000: 53). As we shall see, concern over colour creating too much distraction as 'artifice' was voiced in very different national contexts, a position that revealed a wider cultural anxiety over colour as uncontrollable, even dangerous.

Within popular cinema experimental use of colour could therefore risk critical incomprehension and box-office failure, so most directors took care to use it selectively as a means of underscoring narrative. This view was reinforced by Technicolor's understanding of 'colour consciousness' as applied by Natalie Kalmus to many films in her role as Technicolor's Color Consultant (Kalmus, 1935: 139–147). Kalmus was influenced by Albert Munsell's three-dimensional theory of *hue* (colours such as red, orange, yellow etc), *value* (lightness or darkness) and *chroma* (saturation). On this basis colours were very carefully selected to provide harmonious, tasteful palettes or to emphasize dominant themes by selectively using 'warm' and 'cool'

colours. Kalmus was wary of a 'super abundance' of colour, warning against its random application and thus ascribing to dominant taste cultures that kept colour in its place, not to be used for its own sake. But once Technicolor's monopoly ended in the 1950s, the way was clear for new applications and aesthetic priorities to take root while at the same time established aesthetic 'looks' could cross borders to be adapted by new filmmakers for new contexts. In this spirit Jean-Luc Godard famously sought to break the contract between colour and symbol, stating: 'It's not blood, it's red', unlocking its creative potential for meanings that exceed conventional cultural association (Godard, 1965).

It is hardly surprising then that different countries had different experiences of colour, and their varied temporal histories reveal how difficult adopting a film process could be. In the post-war context colour become highly politicized. In recognition of its power to influence people, it became associated with propagandistic tropes in a range of different national contexts. In Germany, for example, Agfacolor's development under the Nazis implicated it with the totalitarian regime, showing how colour could be associated with dominant power structures and propagandistic aesthetic constructs in feature films such as Kolberg (Veit Harlan, 1945) and documentaries. After the war Agfa was broken up as its factories and studios were taken over by Soviet forces. Kamennyy tsvetok/The Stone Flower (Aleksandr Ptushko, 1946), based on a Russian fable, was the first Soviet colour film shot with the Agfa stock, celebrating in a different context the rich, pastel painterly aesthetic that was so prized by the Nazis. Agfa became the basis for Soviet and East German cinema, even influencing West German films such as the Heimatfilm wave of the 1950s with its nostalgia for Agfa's evocative tones to showcase rural communities and pastoral settings (Kapczynski, 2010). In this way, even though Agfa had been an integral part of National Socialist propaganda its 'look' nevertheless mutated as a desirable one for other regimes and national aesthetic sensibilities. The acquisition of the Agfa patents launched a new era in Soviet colour cinematography as the regime invested in new processes and films won international awards (Kuleshov, 1987 [1947]).

In India, the process was much slower and colour films were not made in significant numbers until the 1960s. The first colour film was *Kisam Kanya*

(Cinecolor, directed by Moti B. Gidwani), produced in 1937 and then after a gap of fifteen years a few films were made using Technicolor, Gevacolor and Fujicolor. Film stock was imported while the processing of Technicolor films was done in the UK. In this way colour processes developed in national contexts had much wider, transnational impacts. Although they might be associated with particular aesthetic qualities and national sensibilities, their transnational circulation provided scope for degrees of local variation that facilitated their assimilation into diverse national contexts. Mother India (Mehboob Khan, 1957) was the first Indian socially-themed colour melodrama to be a major box-office success as well as being highly regarded internationally. The film was shot using Gevacolor (a Belgian stock produced by an affiliate of Agfacolor) and processed in Technicolor. This was a common approach that underlined the shift in Technicolor's business from production to post-production in which dye-transfer imbibition printing was retained as the company's 'unique selling point' for many years. But it was the commercial success of Junglee (Subodh Mukherjee, 1961), an Eastmancolor film, which heralded a major shift to colour aesthetics in Hindi cinema that celebrated colour spectacle for a sustained period. Its popular music and distinctive filming of the Kasmiri landscape was a winning formula that was repeated with films including Kashmir Ki Kali (Shakti Samanta, 1964), Mere Sanam (Amar Kumar, 1965) and Jab Jab Phool Khile (Suraj Prakash, 1965). Since then Indian cinema has been identified with a rich, saturated look that is a vital component of popular Hindi musicals and melodramas.

Despite the chromatic density, vibrancy and particularity of Chinese films following the output of the acclaimed 'Fifth Generation' filmmakers of the 1980s and early 1990s, in the past engagement with colour was spasmodic and is patchily documented. The first major colour film, *Shengsi hen/Remorse at Death* (Fei Mu, 1948), was an opera film that benefitted from the technical input of 'chromatic pioneer' Yan Heming who visited Hollywood in 1945 to learn about cameras, stocks, lighting and colour film production. Yan was involved subsequently in sound and colour design at the Huayi Studio where *Shengsi hen* was shot. The film deployed colour to reproduce the visual splendor of costumes, face-painting and stage lighting used by Peking opera performer Mei Lanfang. It had to be sent to the USA to be printed in colour

but the results were criticized for producing too strong blues and failing to deliver the qualities associated with the stage performance (Xu, 2012: 460). Shengsi hen did not herald a breakthrough to a sustained period of colour production. In subsequent years films were more often shot in black-and-white, with critics reluctant to discuss technologies that had been developed in other countries or the aesthetic potential of colour (Hillenbrand, 2012: 4). A general suspicion of colour as artifice tended to repress discussion of its attributes as positive, a position that western critics also often defended. There were, however, a few significant colour films released in the 1950s that should be noted, for example New Year's Sacrifice/Zhu Fu (Hu Sang, 1956) and Women's Basketball Player No. 5/Nǚlán Wǔ Hào (Xie Jin, 1957). Xie Jin went on to direct Two Stage Sisters/Wŭtái Jiěmèi (1964), a social melodrama made in colour that followed the lives of two female Shaoxing opera performers during 1935-50, years of tumultuous political and social upheaval in Chinese history (Marchetti, 1997: 59-80). The film was not widely released until after the Cultural Revolution because its diverse influences, including Hollywood cinema, were seen to complicate its otherwise revolutionary sympathies.

A broader acceptance of colour cinema occurred around the time of the Cultural Revolution, particularly during the late period of 1969 to 1976 when the ideological imperatives of Socialist Realism were conducive to the introduction of greater chromatic vibrancy (Hillenband, 2012, and Pang, 2012). Jiang Qing, Chairman Mao's wife, supervised cultural production during the Cultural Revolution when a number of staged model operas were filmed in colour for propaganda purposes. Recent research has shown that Soviet-modelled dye-transfer technology installed at Shanghai's film laboratory was most probably used to print the revolutionary films in large numbers (Dootson, 2018).

In a fascinating case of subsequent technology transfer Technicolor's dye-transfer printing plant was moved from London to Beijing in 1978. Chinese technicians visited the London plant in 1973 and Bernard Happé, a senior technician at the laboratory, subsequently went to China to train staff there in dye-transfer printing techniques (Dootson, 2018). The exportation of technical infrastructure by no means meant that the norms established for Technicolor films in Britain were necessarily absorbed by

Chinese filmmakers, and China aimed to be technologically self-sufficient once the necessary expertise had been transferred. Yet one of Jiang Qing's favourite films was apparently *The Red Shoes* (Powell and Pressburger, 1948). She watched this repeatedly, presumably attracted to its message of the ballet dancer dying for the greater purpose of art, a sentiment that chimed well with Cultural Revolution propaganda (Zhu, 2018). The use of colour to heighten emotional intensity, in combination with strategic low-key lighting had indeed been a feature of several other key British films, particularly melodramas such as *Blanche Fury* (Marc Allégret, 1948), so we should be wary of constructing colour as necessarily nationalist or exclusively inward-looking.

In the 1980s several distinctive Chinese colour films were however released including Yellow Earth/Huáng từ dì (Chén Kǎigē, 1984) which drew inspiration from colours associated with regional folk art to contrast with the dominant yellows indicated by the title. This approach rejected Socialist Realist codes 'by critiquing them through traditional aesthetic codes', once again indicating the significance of ideological imperatives during moments of chromatic change (Berry and Farquhar, 1994: 95). Another interesting case is Jú Dòu (Zhang Yimou, 1990), a film set in a dyeing works and which also actively uses colour, particularly reds, to heighten melodramatic impact and emotion. Its chromatic references resemble Chinese painting traditions, particularly portraiture and rich, expressive colour. Lau details how Jú Dòu is designed to relate colours to emotions, investing them with a strong sensual appeal that is accentuated by side- and back-lighting. The fabrics that feature so prominently in the film are shot to bring out their vibrant hues but also to provide contrasting darker shades as tragic themes become obtrusive towards the drama's conclusion. The colour red, for example, is subject to different meanings as it fills the screen entirely on several occasions: seen as bright and shiny but later acquiring more sinister 'or even monstrous' connotations when tinged with black (Lau, 1994: 142). Contrary to most references, it is unlikely that Jú Dòu was processed using the Technicolor dye transfer equipment that had been transferred from London to Beijing. It is important to note that the production, filmed at the Xi'an Film Studio, had attracted Japanese finance and was processed by the 'Imagica' laboratory in Japan (Dootson and Zhu, 2018).

In evaluating the impact of colour on Chinese films it is important to consider how indigenous discourses contributed to their not always positive domestic reception. Zhang Yimou's other films including *Red Sorghum/Hong gaoliang* (1988) and *Raise the Red Lantern/Da hong denglong gao* (1991), for example, can be seen to operate as chromatically vibrant explorations of *xu* (display, excessive visuality or force of surfaces) as opposed to *shi* (fullness or concreteness). Consequently, Zhang's films received a controversial reception in China among critics who associated them with 'a lack of depth and an empty display' (Chow, 2001: 393). This position associated colour with surface values that were seen to be directed towards foreign audiences and critics, as emphasized by the foregrounding of colour in film titles. On the other hand, the turn to expressive colour proved to be a sustainable route to global circulation that arguably enriched cinematic output and a culture of transnational co-production in subsequent decades.

In the rest of this article I want to focus particularly on Japan as an instructive case study in the transnational flow of colour cinema in the early 1950s. Japan is a particularly interesting example since there was no Technicolor subsidiary there, and the development of colour was open to many different influences. Since Nöel Burch claimed: 'It is beyond doubt that Japan's singular history, informed by a unique combination of forces and circumstances, has produced a cinema which is *in essence* unlike that of any other nation' (1979: 11), it has been acknowledged that such binary conceptions of how national cinemas evolve do not allow for the full range of diverse influences that are co-present in any given decade (Vitali and Willemen, 2006). The path to colour in Japan was typified by indigenous experimentation, foreign influence and considerable caution. Desser has even gone so far as to argue that 'Japanese cinema was little disposed to color. Even throughout the late 1960s, when color became the standard in worldwide film-making and black-and-white the exception, the latter maintained a palpable presence in Japan' (1994: 307).

Various colour processes were experimented with in Japan, including Multicolor, a US-invented two-colour subtractive process. This was used by Dai Nihon Tennenshoku Eiga Seisakujo (Greater Japan Natural Color Productions) in the 1930s for *Tsukigata Hanpeita* (Shiba Seika, 1937) and for *Senninbari/The Thousand-Stitch*

Belt (Saegusa Genjiro, 1937), a film that was five reels long on first release, making it the first Japanese sound colour film of featurette length. In the 1950s there was considerable experimentation with Konicolor, a three-strip process using its own stock and requiring a special camera. This approach was similar to that of Technicolor, but the processing was different, involving a coated emulsion to develop each colour. The process was devised by the Konishiruku Shashin Kogyo laboratory. Testing occurred in 1942–44 and in 1955 a feature film, Midori haruka-ni/Far off of Green (Inoue Umetsugu), was released. In the years 1953–59 as many as 59 films, including test and short films, were produced in Konicolor, and it was reported that 'several million feet of show prints of foreign films were also produced by Konicolor' (Okajima, 2003: 35). Despite these developments Konicolor was not used extensively, and the increasing availability of monopack systems ensured that it was a marginal, but distinctive, chapter in Japan's history of colour filmmaking. In 2016 the Cinema Ritrovato Film Festival in Bologna screened three restored Konicolor films as part of its Japanese programme co-curated by Alexander Jacoby and Johan Nordström.

Since the mid-1930s the Fuji Photo Film Company was the major supplier of film stock but it was relatively slow to supply colour stocks. Fujicolor was first exhibited in 1946 for the title scene of *Juichi-nin no jogakuesi/Eleven Girl Students* (Oda Motoyoshi) and it was used for short films, newsreels and a number of sponsored and topical films in the years 1946–50 (Okajima, 2003: 33). Also shot in Fujicolor, *Karumen kokyoni kaeru/Carmen Comes Home* (Kinoshita Keisuke, 1951) was the first Japanese Fujicolor feature film (**Figures 1** and **2**). This film uses colour to exaggerate the impact of a dancer's return from Tokyo to her rural home, the vividness of her costume symbolizing the shock of her transformation which is culturally associated with sexuality and city living. A black-and-white version of the film was also shot because its production company Shochiku was not confident that it could deliver sufficient colour prints to cinemas. Consequently, only eleven colour prints were released. Yet it took time before colour was adopted more systematically and Fujicolor did not become the dominant colour stock used in Japan until 1970, after which it expanded into the world market.



Figure 1: The shock of the new: Takamine Hideko as Lily Carmen in *Karumen kokyoni kaeru/Carmen Comes Home* (Kinoshita Keisuke, 1951).



Figure 2: Vibrant colour and costume in *Karumen kokyoni kaeru/Carmen Comes Home* (Kinoshita Keisuke, 1951).

In terms of other monopack systems, Ozu Yasujirō favored the look of Agfacolor prints which he used for *Equinox Flower/Higanbana* (1958). Agfacolor was comparatively muted in its palette, such as greens with a grey accent and appearing less vibrant in comparison with Technicolor that was known for its ability to reproduce strong reds. The tints of Fujicolor were cyan/blue-ish and as stocks became faster their ability to record natural light or night scenes improved. Eastmancolor was nevertheless a major player in Japan, particularly consolidating its

position in the years from 1958 to 1961. This caused concern among independent Japanese producers that the USA was monopolizing the market and forcing them to use Eastmancolor (Brunel, 1956: 85). In 1958 Eastmancolor was the stock used for 110 of the country's 159 domestic colour films; in 1961 it was used for 194 of 251 domestic colour films (Sharp, 2013: 112).

Eastman Kodak's activities were indeed significant in ensuring that Eastmancolor was a dominant stock in Japan in the 1950s and 1960s. Kodak's products had been sold in Japan as early as 1889 and 'by the 1930s, it had established a thriving operation and developed long-term relationships with the major Japanese wholesalers... and was successfully using their expensive distribution system throughout Japan' (Devereaux, Lawrence and Watkins, 2006: 148). But after the Second World War tariffs restricted Kodak's market share of photographic supplies. To maintain commercial viability the Division for Kodak Products was established in 1960 in partnership with Japanese distributor Nagase to exclusively handle Kodak's photographic products in Japan. This proved to be an astute business move, and Kodak also sold technology to Japanese companies including Fuji and Konica in order to reduce competition from indigenous commercial interests.

This spirit of pragmatic commercial co-operation can be related to developments in the 1950s when, following the success of *Rashomon* on the film festival circuit, Japanese producers aimed to maximize exports (Balio, 2010: 121). A bonus import system meant that most countries could send Japan their films if they showed Japanese films in return. In 1952 Nagata Masaichi, head of Daiei Studios, sent Japanese technicians, including cinematographer Midorikawa Michio, to the USA to investigate Eastmancolor and to purchase equipment. They were interested in 'mastering the techniques of color' and it was reported that the technicians added to this 'centuries of accumulated wisdom in the psychology and philosophy of color' (Knight, 1959). Midorikawa went to Rochester and met Dr Emery Hughes, purchased Mitchell cameras and projectors and then went to Universal Studios in Hollywood where he observed *The Mississippi Gambler* (Rudolph Maté, 1953; Technicolor consultant William Fritzsche) being filmed. As Daisuke Miyao notes: 'In particular Midorikawa was impressed by the bright lighting for color films, which would

consistently need two or three times as much light as black-and-white films' (Miyao, 2013: 277).

The Mississippi Gambler was a highly appropriate film to serve as a lesson in colour cinematography and design. Rudolph Maté had already directed several Technicolor films in various genres, including When Worlds Collide (science fiction, 1951), The Prince Who Was a Thief (historical drama, 1951) and Branded (western, 1950). His experience as a cinematographer for black-and-white films including The Lady from Shanghai (Orson Welles, 1947) would have been instructive in the transition to colour, especially concerning the use of lighting within colour compositions. While the lavish costumes and settings of *The Mississippi Gambler* provided ample opportunities to showcase colour, the film was also a lesson in shooting with lower light levels for some scenes and also in using light to capture the rich textures of the costumes. Technicolor had recently developed low-level unfiltered incandescent lighting techniques to work well with the process (*Technicolor News and Views*, 1952). These innovations were facilitated by the expertise of William Fritzsche, Technicolor consultant for the production. By the early 1950s Natalie Kalmus, director of the Technicolor Advisory Service since 1929, was working with a team of consultants on Technicolor films and William Fritzsche's name had started to appear on credits since 1944. After *The Mississippi Gambler* he went on to act as primary consultant on Douglas Sirk's celebrated Technicolor melodramas Magnificent Obsession (1954), All that Heaven Allows (1955) and Written on the Wind (1955). These in turn have been seen as chromatically expressive comparators in relation to a number of distinctive Japanese colour melodramas including The Blue Sky Maiden/The Cheerful Girl/ Ao-Aora Musume (Masumura Yasuzō, 1957) and The Shape of Night/Yoru no henrin (Nakamura Noburu, 1964), as foregrounded in the British Film Institute's press release for a 2017 season of screenings featuring 'Female Stars of the Golden Age of Japanese Cinema' (Jacoby, 2017).

Set in the mid-19th century, *The Mississippi Gambler*'s narrative revolves around Mark Fallon (Tyrone Power), an honest riverboat gambler who pursues in vain the affections of Angelique Dureau (Piper Laurie), a woman he meets when travelling to New Orleans. The film's period setting in the American South associated it

visually with *Gone with the Wind* (Victor Fleming, 1939), a 'milestone in color feature production' (Higgins, 2007: 204). The costumes in *The Mississippi Gambler* are particularly notable for their display of different colours, fabrics and silken textures illuminated by lighting. One dress is referred to by Angelique as 'the latest from Paris'. Maté frequently films characters in conversation from behind one of them in over-the-shoulder mid-shots so that the full colour detail of accessories such at hats adorned with flowers can be seen (**Figure 3**). In addition to the sumptuousness of the women's clothes, Mark's costumes are of note, including an embroidered silk waistcoat glimpsed underneath a blue jacket with silk lapels. On another occasion, he wears a white shirt and the pattern of its delicately embossed fabric is accentuated through the gentle play of light on its surface (**Figures 4** and **5**). It is not surprising that observing the production of this film impressed Universal's Japanese visitors, particularly in view of the importance of filming the coloured fabrics that were a major feature of period films featuring traditional dress.

Although *The Mississippi Gambler* was shot and processed by Technicolor, at the time they would have heard discussion about the impact of monopack stock on the company. It soon became common for films to be shot on monopack stocks such as Eastmancolor but processed by Technicolor so that the dye-transfer process remained in currency after shooting films with Technicolor cameras had more or less ceased.



Figure 3: Showing off Angelique's hat from behind (Tyrone Power and Piper Laurie) in *Mississippi Gambler* (Rudolph Maté, 1953).



Figure 4: Mark's (Tyrone Power) waistcoat in Mississippi Gambler (Rudolph Maté, 1953).



Figure 5: Mark's (Tyrone Power) white shirt in *Mississippi Gambler* (Rudolph Maté, 1953).

This necessitated Technicolor having to state different credits: 'Color by Technicolor' referred to films made entirely using the process and 'Print by Technicolor' meant that the film had been filmed on another stock but processed by Technicolor (*Technicolor News and Views*, 1953). There was clearly an interest among Japanese filmmakers and technicians in finding out about the latest colour developments in the USA, as well as in official circles. The Japanese government supported the Japan Motion Picture Production Council and its subsidiary The Society for the Scientific Research of Color Motion Pictures. Ryu Keiichiro, a lighting engineer, was charged with researching

lighting equipment for colour cinematography. His three-year study involved various methods of measuring light intensity, colour temperature, reflectance and filters. He was particularly interested in developing lightweight, high-quality fresnel spotlights for studio work (Lightman: 1970: 561).

On his return to Japan Midorikawa Michio advised on shooting *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953) in Eastmancolor (**Figure 6**), the first major Japanese colour film to be released outside Japan and widely acclaimed for its colour. As such *Gate of Hell* is a breakthrough film, attracting universal praise from foreign critics, winning major awards at Cannes in 1954 and at the Academy Awards. The film is a historical drama set in 12th century Japan, based on the documented struggles between two rival clans during the Heiji Rebellion. It begins by showing a scroll painting of the conflict which then vividly transitions to the inciting incident of the film's drama (**Figure 7**). To distract the rebels who are closing in on the imperial court in Kyoto, Lady Kesa (Kyo Machiko), a lady-in-waiting to the empress, is used as a decoy (**Figure 8**). She impersonates the empress leaving Kyoto, and during her flight is under the protection of a warrior, Morito (Hasegawa Kazuo). Following this incident Morito becomes obsessed with Kesa, wanting to marry her even though she is already married to Lord Wataru (Yamagata Isao). Although the film begins with a vividly depicted action sequence of fighting warriors and Kesa's escape, the rest of



Figure 6: Jigokumon/Gate of Hell (Kinugasa Teinosuke, 1953).



Figure 7: Scroll painting in opening of Jigokumon/Gate of Hell (Kinugasa Teinosuke, 1953).



Figure 8: Kesa (Kyo Machiko) as decoy in Jigokumon/Gate of Hell (Kinugasa Teinosuke, 1953).

the film shifts to a different register, depicting the sinister deepening of Morito's obsession and its fatal consequences. Morito refuses to give up his quest, telling Kesa he will kill her aunt and Wataru. She appears to collude with his plan to murder her husband but sacrifices herself by changing her sleeping area on the fateful night so that she is mistakenly stabbed by Morito. At the end of the film a devastated Wataru does not kill Morito in revenge, instead leaving him to lead a life of penance by renouncing 'the world' and his status as a warrior.

As David Desser notes, Japan's interest in colour in the 1950s was not prompted by a desire for greater realism, a discourse that often featured in pro-colour arguments voiced in the West, but to enhance films for export (Desser, 1994: 307-08). Contemporary reviewers immediately saw that Gate of Hell's colour was distinctive, for example Arthur Knight in the Saturday Review described it as 'not only the most handsome picture yet shown on any screen anywhere, but color plays an important emotional role as well. Fiery-red oranges dominate the opening scenes of chaos in the imperial palace, icy blue bathes the scene of the assassination – and when a soft yellow light breaks into it it suggests both the approaching tragedy and Kesa's purity...Its delicacy, its subtlety provide an almost startling contrast to our Hollywoodconditioned concepts of color in films' (1959). Other reviewers drew attention to particular features of its colour design. The Observer's C. A. Lejeune noted its 'sense of texture, the changes brought about by the use of gauze materials and translucent screens, the sudden glow or dimming of a lamp' (1954). Dilys Powell also noted the quality of texture, particularly for clothes (1954), while another reviewer observed that: 'Almost any shot could be taken out of the film and allowed to stand by itself, a perfectly satisfying composition containing all the delicate colour harmonies of a Japanese print' (The Scotsman, 1954).

While critics admired the colour in superlative descriptive terms, there was additional observation based on specific knowledge of its Japanese intermedial connections, some of which explain the approach to colour and are obviously important. The acting style, for example, contributed to the prioritization of a colour design that had a sense of depth, subtlety and affect. A contemporary Japanese critic noted that the success of *Gate of Hell* owes much to the *Noh* drama and *Kabuki* stage in the treatment of themes:

The play, unlike in the West, is an art, and as art it demands a great simplification and restraint with emphasis on what lies beneath the surface. In order to create an impression of likeness, there should be a tinge of the "unlike", the subtle as opposed to the obvious; the hint as opposed to the statement. In order to represent anger, the actor should retain some gentleness in his moods, else he will portray not anger but violence...Squandering of emotion,

exaggerated humor, in fact all that is trite and obvious is avoided, and this ritual and concealed calm even at the height of emotional crisis, which is contrary to the Western stage, seems to create a new emotional gratification to the foreign audience. (Sakanishi Shio, 1955: 219).

The same critic however noted a negative aspect to this exhibition of exoticism, ritual and the 'trappings and symbols of old Japan'. Other Japanese critics shared this view, arguing that if Japanese films were to conquer overseas markets they would have to 'present new Japan and modern life' (Sakanishi Shio, 1955: 219).

The tendency to highlight indigenous influences in the film's chromatic design persisted with the 2013 release of the Criterion collection's transfer of a new digital master created from the 2011 2K restoration of Gate of Hell undertaken by the National Museum of Modern Art in Tokyo and Kadokawa Shoten Co., Ltd., in cooperation with NHK. Stephen Prince (2013) notes the significance of the scroll painting and graphic arts traditions. He argues that the film is 'a kind of painting in motion, composed of vibrant gold, green, red, and royal blue hues'. Daisuke Miyao also notes how in Gate of Hell 'bright colors intensify the pictorialism from the very beginning of the film: a colorful twelfth-century scroll painting depicting the 1160 Heiji revolt is rolled out by an anonymous hand. In the following thirty minutes or so, the story in this scroll painting is dramatized with more colorful costumes, props, and sets. Traditional Japanese beauty is thus replaced by a cinematic form, and because of the scroll paintings, bright colors especially in the sets appear to be a realistic depiction of historical incidents' (2013: 277). The film's costumes shown in high-key lighting are certainly remarkable, especially in the scenes of the horse race which highlight the ceremonial costumes: purple for Morito and red for Wataru (Figures 9 and 10). Even in the early scenes colour appears to almost jump out of the screen, particularly for Kesa's costumes. Indeed, Morito believes she is the empress because of her gorgeous red, green, gold, white and yellow silken attire that contrasts with his blue warrior's suit that has thick, shiny bands across the chest which glint in the light. The bands appear as constricting apparel, the costume underscoring his emotional repression as he becomes infatuated with the woman he has rescued. Kesa, by contrast, appears to glow with rarity and finesse even after her masquerade



Figure 9: Morito's (Hasegawa Kazuo) purple costume in *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953).



Figure 10: Wataru's (Yamagata Isao) red costume in *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953).

is exposed. The theme of forbidden attraction is symbolized by her costume: when they encounter each other after the escape, Kesa's red and orange costume is covered by a gauze, translucent fabric that when removed reveals the chromatic density of the vibrant hues underneath.

Daisuke Miyao notes that the arrival of colour film in Japan signaled a retreat from the 'aesthetics of shadow' that had dominated production in black-and-white films (2013: 281). Yet when *Gate of Hell* shifts gear to the slower-paced, cumulative

stalking of Kesa by Morito, and when the locales are interiors seen in the half-light of dusk, the film's achievement with colour and lower key lighting can be appreciated. Here the lessons learned from Rudolph Maté and the lighting ingenuity of Ryu Keiichiro reaped sophisticated aesthetic rewards. Ryu Keiichiro was employed as the lighting expert, staying at the Daiei studios in Kyoto for the duration of the shooting period. The film used Eastman 5248, a stock that was relatively slow and therefore needing more light than black-and-white film. As Hanson and Kisner explained: 'In lighting a set which is to be photographed on Eastman Color Negative Film, Type 5248, the basic lighting contrast should be fairly soft and the illumination should be distributed evenly. Extremely flat lighting, such as provided by extended frontlight sources alone, is undesirable, however, since the results are very uninteresting and lacking in character. Some modeling light can be employed effectively but with lower lighting ratios than those ordinarily used for black-and-white photography' (1953: 672). Gate of Hell certainly makes extremely effective use of modeling light, shadow and tone. Recalling The Mississippi Gambler, it is evident that Gate of Hell's chromatic design was not confined to the local influences that critics were so keen to emphasize. As we have seen, Technicolor's precision in filming costumes, textures, formal occasions and landscape was also instructive. In the 1950s this was being further explored in aesthetic directions that departed from simply harnessing colour to the conventional demands of classical cinema. These included drawing on earlier traditions of colour as applied in cinema and other media, such as using coloured illumination for expressive effect and emotional embellishment which were particularly notable in Douglas Sirk's melodramas, on which William Fritzsche worked as color consultant. As Scott Higgins notes, these techniques can be described as 'chromo-drama' in which colour reaches 'beyond the story world in a direct sensory and emotional appeal, like music in opera' (2013: 173).

The film is then more than historical drama. While vivid color is used for the horse race, contrasting purple and red to denote the competitive rivalry between Morito and Wataru, in subsequent sequences color is used even more expressively, and to evoke the mood of dissonance/the threat posed by Morito to disturb the equilibrium of Kesa and Wataru's life together. The pervasive mood of impending tragedy in *Gate*

of Hell is created in good part by colour effects and play with textures and spatial depth. In this respect, the film lends itself very much to a textual, analytical approach that is inspired by Giuliana Bruno's work on 'haptic materiality' (2014). As has already been indicated, the film's fine and varied costumes, for example, constitute material expressions of the characters' psyches, of their histories and changes in circumstance across the narrative. Bruno refers to 'connective fabrics', or how clothes become affective metaphors that are profoundly related to mood and psychology. This idea accentuates how textures, folds, pleats and seams animate clothes as they appear mobile, as visible traces of their wearer's body while moving through the architectural spaces they inhabit. As Bruno puts it: 'Home of the fold, fashion resides within the reversible continuity that, rather than separating, provides a breathing membrane – a skin – to the world. Sensorially speaking, clothes come alive in (e) motion. They are physically moved as we are, activated by our personas. Livened by kinesthetics and our spirits, clothes are the envelopes of our histories, the material residue of a corporeal passage...From folds of the soul to pleats of matter, emotions are mediated and designed in an elastic architexture' (Bruno 2014: 28).

The colours of *Gate of Hell* are often lit in lower-key to register shadow, particularly in the second half when interiors feature very prominently with expressive use of shadow, colour, fabrics and gauzes to communicate the mood of impending tragedy. The different areas of the house are delineated by translucent drapes that float gently as the characters move through the spaces. These are also used as means of underscoring emotional resonances as when Kesa is informed that a messenger from Lord Kiyomori has come to see her. In this scene, the left-hand frame of the image has a translucent drape in front of her husband while the right-hand shows Kesa normally: the screening effect almost prefigures subsequent events and is a graphic indication at this point of Wataru's ignorance of Morito's plans (**Figure 11**). The complex folds of material that feature prominently in so many scenes accentuate the pervasive mood of intrigue and the acceleration of emotional tension (**Figure 12**). Morito tricks Kesa into meeting him by forcing her aunt to send a message saying that she is ill. The scene at her aunt's house has very low-key lighting but Kesa's light pink silk costume, trimmed with green, is visually striking. When Morito pushes

her against the wall the pink contrasts with his blue silk robe, visually accentuating the physical difference between them as she shrinks from his advance. With facial expressions being minimal, this complex interweaving and contrast of fabrics carries the emotional weight associated with traditions of melodramatic *mise-en-scéne*. On the fateful night, Morito waits outside the house in the half-light, making his move when the candle's flame inside has dwindled. The full moon's brightness provides another light source, allowing us to see Morito's actions but pitifully recalling an



Figure 11: Gauze fabrics symbolically divide the frame: Wataru (Yamagata Isao) and Kesa (Kyo Machiko) in *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953).



Figure 12: Gauze fabric: Kesa (Kyo Machiko) looks down on her sleeping husband in *Jigokumon/Gate of Hell* (Kinugasa Teinosuke, 1953).

earlier scene when Kesa and Wataru walked in the moonlight, optimistically declaring that 'tomorrow will be a fine day'. As the evening draws in, Wataru's gentle disposition and innocence of the plan is underscored by his white robe, the room bathed in yellow gauze fabrics as he slumbers in the fading light. This is indeed 'chromo-drama' that accumulates an affective emotional register towards the climactic event when the audience has knowledge that Wataru does not. In addition, the film's tense atmosphere is reinforced by the music of composer Akutagawa Yasushi, to further heighten the emotional suspense so typical of the melodramatic genre. When Morito creeps stealthily outside the house in the half-light a gong sounds occasionally as we hear the natural sound of crickets. As he enters the house a steady drum beat begins which is accompanied by foreboding-sounding music. As Morito gets closer to the figure in repose he thinks is Wataru the deliberate, ominous soundtrack builds up to convey a sense of inevitable tragedy. The music stops suddenly as he strikes and the camera reveals his expression of horror when he discovers he has stabbed Kesa. The combination of aural and visual intensity in this scene can be compared with Powell and Pressburger's experiments with the 'composed film' in Black Narcissus (1947) for heightening emotional suspense in similar moments of melodramatic climax towards the end of the film (Street, 2012: 182).

Like other Eastmancolor films *Gate of Hell* was subject to fading. It was not until the 1984 that a duplicate negative was made by Daiei from a black-and-white separation master positive made some time after the original release. In 1989 a print was made on Fuji LP acetate base from this negative by the National Film Center (Okajima, 2003: 35). Once again audiences could appreciate the film and understand the accolades that had followed its initial release, notably by Carl Dreyer who saw the film as an inspiration for colour as a means of abstraction: 'The colours in *Gate of Hell* have undoubtedly been chosen to a well-prepared plan. The film tells us a great deal about warm and cold colours, about the use of profound simplification. It should encourage Western directors to use colour more deliberately and with greater boldness and imagination' (1956: 128). He might also have added that attention to 'warm' and 'cold' colours, the interaction of colour with low-key lighting and assertive

colour design were being experimented with transnationally, not just in *Gate of Hell*. The film was indeed a prime example of colour's potential as 'chromo-drama' and of an aesthetic approach that occasionally was adopted in American and European films by 'colour-auteurs' such as Douglas Sirk, Rudolph Maté, and Powell and Pressburger. Contemporary critics were invariably cautious about colour and what we now appreciate as complex chromatic designs were seldom commentated upon. *Gate of Hell*'s reception as a breakthrough film in colour terms says much about the period's shifting taste cultures which the international film festival circuit was conducive in developing.

The cases considered in this article have demonstrated the variety of approaches to colour following the introduction of technologies that led to its eventual ubiquity across global film production. At first hesitant, the film industries of India, China and Japan delayed their uptake of colour systems for reasons that are complex but to some extent similar. While attention has often been paid to how different national cinemas used colour it is clear that conventions also can be seen as circulating more transnationally. The extent to which Technicolor served as a technical and aesthetic model is indicated by the visits of key Chinese and Japanese technicians to Hollywood that proved to be significant encounters of technology transfer. While the rapid expansion of India's turn to colour in the 1960s was propelled by Eastmancolor, in China and Japan learning from Hollywood was particularly important in demonstrating how colour could be effectively used with different lighting strategies. As we have seen from Gate of Hell, these were appropriated and extended to produce a film that was noted by the rest of the world for its chromatic qualities. The imperative to export Gate of Hell as a prestigious example of Japanese cinema propelled the film into a context of international circulation that appreciated its aesthetic design. As an 'exotic' product that showcased colour through a historical and melodramatic canvas, it was both familiar and exotic. In China, this approach distinguished the Fifth Generation's colour films that opened-up chromatic experimentation across borders. As well as moving across the screen, these moving images demonstrate how films travelled both within and across national borders. Conceptualising global colour as an expansive, fluid phenomenon that has been largely formed by transnational exchange constitutes an important step towards bringing colour more centrally into the frame of transnational studies as well as informing our understanding of colour's relevance to the development of national cinemas.

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