

Topic no. 62**Equipment technology**

The development of motion picture complexity has been driven by a continuing technological evolution, ignited and manipulated by human initiative and inventiveness, which has afforded filmmakers the opportunity to practice a more complex craft to tell more complex stories. In concert with societal attitudes and proximity, this evolution has driven the development of distinct styles, movements, and methods that would have been impossible without increasingly advanced apparatus. However, while this technological progression has been linear, it has not necessarily coincided with a similar evolution of quality; the skill of a filmmaker should not be judged by the technological complexity of the production, but by the ability of the filmmaker to wield the technology of the time and of his or her choosing to effectively and clearly convey a narrative, evoke an emotion, or make an impression. Although the linear technological evolution of filmmaking has empowered filmmakers by offering a more diverse catalogue of tools and techniques, it is the filmmaker's ability to effectively and discerningly utilize this technology within a temporal and societal context that truly drives cinematic quality, of which there has been no clear linear progression.

As film history has progressed, so too has the sophistication of filmmaking technology, from cameras, to sound recording, to editing. Technological advancements in these areas expand the creative potential of the filmmaker. However, just because technology is more advanced does not mean that it is necessarily superior in each given application. Rather, advanced technology is advantageous in that it broadens the toolset available to the filmmaker from whom he or she can discern which equipment and techniques are best suited to a given production. French film theorist Louis Delluc would call these filmmaking techniques and methods *cinematic formal elements* or those elements unique to film as an art form, such as editing and camera movement (Jaramillo). As the evolution of film has progressed, the catalogue of cinematic formal elements has grown, enabling filmmakers to, at their discretion, make more complex films. Even restricted to the confines of what Tom Gunning calls "cinema of attractions," the dominant paradigm before 1908 (73), this is evident.

Gunning worries that adopting an evolutionary view of cinema will categorize pre-WWI film and cinema of attractions, as he puts it, “as [a] primitive [...] early stage in which later potentials are sketched out but imperfectly realized”. However, Gunning’s definition of cinema of attractions frees it from this imperfect characterization:

By its reference to the curiosity-arousing devices of the fairground, the term denoted early cinema’s fascination with novelty and its foregrounding of the new act of display. Viewed from this perspective, early cinema did not simply seek to neutrally record previously existing acts or events. Rather, even the seemingly stylistically neutral film consisting of a single shot without camera tricks involved a cinematic gesture of presenting for view, of displaying.

On this view, the early films of cinema’s pioneers would not have been improved by the advanced technology of later generations, for their displays did not call for it. Further they cannot be seen as solely preparatory, for, like later narrative films, they presented a subject for view in a uniquely cinematic way. The early films of Edison and Dickson were simple, short glimpses of “well-known sports figures, excerpts from noted vaudeville acts, or performances by dancers or acrobats” (Thompson & Bordwell 7). While it is true that primitive technology did limit these small-scale productions, which, according to Thompson and Bordwell, “lasted only twenty seconds or so – the longest run of film that the Kinetoscope could hold”, advanced technology would not necessarily have improved them, for their simplistic nature did not call for it. Regardless, filmmaking technology evolved with the Lumiere Brothers’ Cinématographe which freed filmmakers from the confines of the studio and allowed for on location shooting (Thompson & Bordwell 8-9). This, however, did not lead to *better* films, but only augmented the possibilities for future films such as *Workers Leaving the Factory* (Lumiere 1895) and *Arrival of a Train* (Lumiere 1896), the production of which would have been impossible within a studio. With this advancement, the global toolset of filmmakers grew; from Edison and Dickson, filmmakers got the option to shoot in a light controlled studio and from the Lumiere brothers the ability to shoot on location. Neither of these options is universally better, but only particularly more suited to a given production and would, in themselves, evolve over time.

Single shot display films eventually gave way to films such as George Melies' *Trip to the Moon*(1902), composed of several single shot scenes, and later films like Cecil B. DeMille's *The Cheat*(1915), which employed analytical editing, using multiple shots from varied distances in the same scene to show detail and emotion (Thompson & Bordwell). The continuation of this technological editing evolution is most evident in the Constructivist-influenced, state-sponsored Soviet montage movement of the 1920s. According to Thompson and Bordwell, Montage films "have a greater number of shots than does any other type of filmmaking of their era [...and] frequently broke individual actions down into two or more shots" (117). However, the more complex editing techniques were not, in themselves, what drove the quality of montage films, but instead the "more specific strategies of editing, involving temporal, spatial, and graphic tensions" (Thompson & Bordwell 117). Thompson and Bordwell write that Montage filmmaker Dziga Vertov, for instance, "emphasized that the filmmaker should calculate the differences between shots – light versus dark, slow motion versus fast motion, and so on.

These differences, or 'intervals,' would be the basis of the film's effect on the audience". The influence of Marxist dialecticism led Sergei Eisenstein, another Montage filmmaker, to theorize that shots should clash with one another to create a new idea in the mind of the viewer (Thompson & Bordwell 116). This practice is employed multiple times in Eisenstein's film *October* (1928), such as in the juxtaposition of Kerensky with a shot of Napoleon (Thompson & Bordwell 120). With Vertov and Eisenstein as exemplars, it is clear that the Montage filmmakers achieved success not solely because of the technological evolution, but because they purposefully utilized the cinematic formal elements, in this case editing, born from that evolution to create a distinct style. Their inventiveness catered the technology to their goals and resulted in quality.

While Soviet Montage filmmakers focused on editing, they recognized the importance of a striking composition within each individual shot (Thompson & Bordwell 121). So too did the French Impressionists and German expressionists who used other of the cinematic formal elements, such as camera work and *mise-en-scene*, respectively, to externalize characters' inner states (Thompson & Bordwell). For French Impressionists, such as Louis Delluc, filmmaking was about *photogénie*, "that quality that distinguishes a film shot from the original object

photographed” (Thompson & Bordwell 77). According to Thompson and Bordwell, *photogénie* “is created by the properties of the camera: framing isolates objects from their environment, black-and-white film stock transforms their appearance, special optical effects further change them, and so on” (77). This emphasis led the Impressionists to develop innovative camera techniques to externalize characters’ subjectivity. They manipulated the components of the presented technology, in this case the camera, to purposefully elicit a desired effect. Thompson and Bordwell detail Impressionist uses of the camera’s optical devices:

Superimpositions may convey a character’s thoughts or memories. A *filter* placed over the lens may function to suggest subjectivity. [...] Throwing the lens out of focus could also convey subjectivity, whether we see the characters or through their eyes. [...] Impressionist films also feature camera movements that convey subjectivity and enhance *photogénie*. (78-80)

The innovative use of these uniquely cinematic tools, not the tools themselves, enabled greater narrative clarity and character relatability. This reflects a clear evolutionary step, driven by human faculty, in the ability of the camera to tell a story. While the Impressionists used camerawork to achieve this effect, the German Expressionists utilized *mise-en-scene*, what Thompson and Bordwell define as “all the elements placed in front of the camera to be photographed: the settings and props, lighting, costumes and makeup, and figure behavior” (733). The goal of Expressionist film was to fuse these elements into a singular and distorted composition expressing the inner state of the subject, most famously seen in *The Cabinet of Dr. Caligari* (Wiene 1920). Technologically, lighting is of the most interest in this practice. Thompson and Bordwell write, “For the most part, Expressionist films used simple lighting from the front and sides, illuminating the scene flatly and evenly to stress the links between the figures and the *décor*” (94). Expressionism then exemplifies that technological simplicity aimed at a certain goal is more effective than complexity. When they did use more complex lighting, it was purposefully to create shadows augmenting the overall distortion of the frame (Thompson & Bordwell 94). Once again, however, a filmmaker’s ability to appropriately and discerningly employ tools and techniques, such as lighting, not the arbitrary use of them, correlates with quality. This becomes clear in the evolution of technologies such as sound and color.

The advent of synchronized sound, first seen in *The Jazz Singer* (Crosland 1927), in the late twenties and early thirties was met with apprehension from “some critics and directors [who] feared that extensive dialogue scenes in adapted plays would eliminate the flexible camera movements and editing of the silent era” (Thompson & Bordwell 177). The adoption of sound was a major step forward in the technological evolution of film, but in order for it to be gainfully applied, the practice in itself had to go through a self-contained evolution. Sound in its early stages did not necessarily equate to better films; for instance, according to Thompson and Bordwell, “The microphones initially were insensitive, and hence studios often insisted that actors take diction lessons and speak slowly and distinctly. Many early talkies move at a slow pace and the performance seem stilted to modern ears” (182). Improvements in microphones, multiple-track sound recording, and syncing methods gradually enabled filmmakers to employ the once clumsy tool effectively (Thompson & Bordwell 201). Thompson & Bordwell note that “most filmmakers soon realized [...] that sound, used imaginatively, offered a valuable new stylistic resource” (177). The combination of improved sync-sound with picture opened up new avenues of storytelling not previously possible. Fritz Lange’s *M* (1931), for instance, takes advantage of the new possibility of audible dialogue. Importantly, though, Lange doesn’t rely solely on dialogue to move the story forward, but retains the strong visual storytelling methods of the silent era, reserving dialogue to relate information that can’t be explained visually.

Additionally, *M* is also an early example of sound as a motif in film; the murderer at the center of the story whistles a haunting tune that is used at crucial plot points to drive the narrative forward. However, *M*’s use of sound in itself is not what led to the film’s quality, but rather the filmmaker’s ability to discerningly and skillfully use it. Additionally, the use of sound alone is not enough to declare that it is better than films of the silent era. For comparison, the narrative of *The Cheat* was clearly and convincingly conveyed visually and its story was not muddled by the absence of synchronized sound. The makers of both films managed to successfully tell their story by using the technology at hand. However, while *The Cheat* would not necessarily have benefited from sound, *M*, as it is, would have been a difficult if not impossible story to tell without it. This highlights the function of the technological evolution in allowing, but not mandating, filmmakers to do what was not possible with more primitive technology.

Color in film went through a self-contained evolution much like sound. Many films of the silent era, for instance, used processes such as tinting and toning to give an overall color to the frame (Thompson & Bordwell 34). Thompson and Bordwell comment on the process that “color could provide information about the narrative situation and hence make the story clearer to the spectator” (34), much like the use of *photogénie* and *mise-en-scène* by the Impressionists and Expressionists. Other films, such as *The Great Train Robbery*, employed stenciling to hand color portions of the frame after photography. Color began its mainstream ascent when Technicolor introduced their three-strip coloring process in the 1930s (Thompson & Bordwell 203).

However, not every filmmaker immediately began producing color films, and those that did, did so with reason. While this was greatly due to the fact that shooting in color increased budgets by as much as thirty percent, Thompson and Bordwell reflect, “Today we regard color as a realistic element in films, but in the 1930s and 1940s, it was often associated with fantasy and spectacle. It could be used for exotic adventures like *The Garden of Allah* (1936), swashbucklers like *The Adventures of Robin Hood* (1939), or musicals like *Meet Me in St. Louis* (1944)” (203). However, despite this new technology, a film did not have to use color in order to be considered of quality. Orson Welles’ 1941 *Citizen Kane*, for instance, was shot in black and white, despite the advent of color film in the previous decade. While it is possible this decision was made for budgetary reasons, the use of black and white dramatically accentuated the shadowy, mysterious tone of the film. In this case, the decision not to use a tool born from the technological evolution actually enhanced the end result. However, other technologies were meticulously chosen and skillfully implemented to produce the complex film. Thompson and Bordwell write:

Stylistically, *Kane* was flamboyant, drawing extensively on RKO’s resources. For some scenes, Welles used quiet, lengthy takes. Other passages, notably the newsreel and several montage sequences, used quick cutting and abrupt changes in sound volume. To emphasize the vast spaces of some of the sets, cinematographer Gregg Toland worked at achieving deep focus shots, placing some elements close to the camera, others at a distance. (209)

Despite that *Citizen Kane* did not utilize Technicolor, it is clear that the film is still very much a child of the technological evolution. The rhythmic use of editing and sound, for instance, is reminiscent of the Soviet Montage movement. Even the tenets of this movement, specifically

Eisenstein's dialectical montage, evolved with technology such as synchronized sound. In a scene from *Citizen Kane*, for instance, a non-diagetic scream is heard after Kane strikes his wife. This clashes with the diagetic sound to create a new idea in the mind of the viewer. It can also be seen as a subjective tool, similar to those of French Impressionism and German Expressionism. In the light of this convergence of styles and technical tools, *Citizen Kane* is a prime example of the possibilities enabled by the technological evolution. However, it is most important to remember that human inventiveness is responsible for the realization of these technologies in the successful manner seen in *Citizen Kane*.

The evolution of film technology remains unpunctuated. New technologies are readily invented, tested, and perfected. In recent years, the rise of digital cinema equipment and techniques has begun encroaching on the arena once dominated solely by photographic film (Thompson & Bordwell 713). As was true in previous evolutionary iterations, however, this technology only serves as another option for filmmakers to choose and not a precondition of modern quality. This is reflected by enthusiasm from some directors, such as George Lucas and Robert Rodriguez, about digital technology, and apprehension from others. Thompson and Bordwell write, "Many cinematographers, directors, designers, and other professionals were upset at the prospect of the death of photographic film, as were many movie fans, but the rise of digital cinema seemed inevitable" (713). This trend and the attitudes surrounding it harmonize with the patterns that have characterized cinema history. However, fans of cinema need not fret, for neither adoption nor disregard of this new technology can bring an end to cinematic quality. The power to do so lies solely in the hands of the filmmaker, the quality of whose projects will ultimately depend upon his or her ability to effectively wield the cinematic formal elements, whatever they may be in the coming years, to clearly convey a story, emotion, impression, or idea.