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THE BIONIC EYE: ZOOM ESTHETICS
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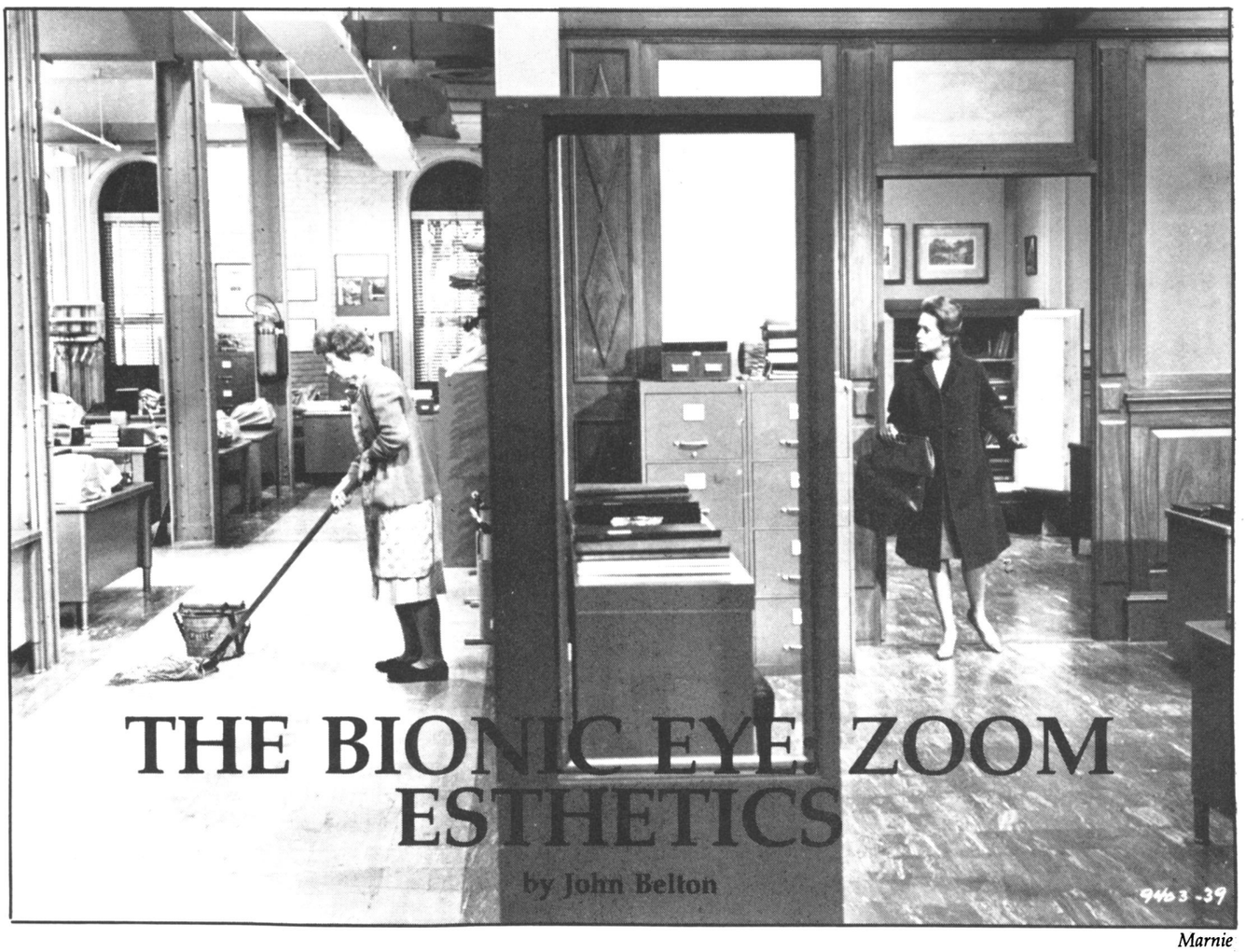

Marnie

The following article was originally submitted by John Belton to Film Comment, *which accepted it for publication; but what appeared as "The Bionic Eye" in the September-October 1980 issue of* Film Comment *was not exactly the article John Belton had written. Or, more specifically, what appeared was not the originally submitted article. Indeed, it was now co-authored, and not only were newly written parts added onto it, but, also, some portions were cut, and, graver yet, the article now misconstrued some of Belton's thoughts on the esthetics of the zoom. Needless to say,* Film Comment *never consulted John Belton about the addition of a co-author and the changes that were made in the manuscript, nor did he ever see what was going to press.*

After "The Bionic Eye" appeared, John Belton sent his original article to Cineaste, *with an explanation of what had happened to it. We decided to publish it because a wide range of issues is involved, from a magazine's commitment to an author's work to the state of the art of film criticism today.*

The primary matter, of course, is the inviolability of an author's work. No editor or publication has the right to savage an author's writing, to change or rewrite it, cut or add to it, without that author's express permission, and, after the fact, his/her approval. The only rationalization for this kind of action would be that it would improve the argument or the theory, in spite of having changed style, statement, and authorship. In a world in which authorial integrity still exists, this rationalization is suspect.

The secondary issue here is one that lends itself to a particularly problematic accusation, and that is that what happened to John Belton's article represents a lack of willingness on Film Comment*'s part to take film theory seriously. The article that appears below began, in* Film Comment, *with the line, "Zoom is a four-letter word." In spite of the fact that the sentence, by itself, means nothing, John Belton feels that it indicates the article was "dressed up" because* Film Comment *found it too academic to print as it was submitted. The author, however, is always only one half of the equation, in our eyes; the audience is the other. In a case like this, it is not only the author who has been maligned, but also the readership.*

Herein lies the crux of the matter: what of scholarship and of intellectual pursuit in film theory and film studies? Can it be that the impoverished state of film criticism in the United States is not due to lack of scholars, critics, historians, or a serious public, but to exactly the kind of thinking that dares to allow the savaging of "The Bionic Eye" for fear the audience too fickle to read and think through a theoretical contribution to film studies? We at Cineaste *don't have the answers, but we do have a hunch—and, as a service to our readers, and to the community of filmmakers, film historians, film critics, and film theorists, we are pleased to present the following article.*

—The Editors

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If every tracking shot makes a moral statement, probing the physicality of man's relationship to the space around him, then every zoom makes an epistemological statement, contemplating man's relationship not with the world itself but with his idea or consciousness of it. The track and the zoom reflect different, conflicting esthetics. In a tracking shot, the camera moves boldly through space, producing a two-dimensional image through a three-dimensional filming process which endows that image with an illusion of depth (via parallax and changes in perspective). A zoom lens produces the illusion of movement *optically* through continuous changes in the focal length of the lens, rather than through the actual movement of the camera, creating an image which progressively alters the original space being photographed and which subverts the illusion of depth.

Though the zoom, like the track, preserves the sense of space as an unbroken, temporal continuum, it also, unlike the track, abstracts that space by flattening or elongating it. In effect, the zoom produces an ellipsis of space by both traversing and not traversing it.

Opponents of the zoom criticize its distortion of space. James Wong Howe, who as early as 1931 in *Transatlantic* was experimenting with wide-angle lenses (25mm and 35mm) to obtain greater depth of field, faults the zoom's flattening of space (*AC* 56, No. 1, p. 116). The zoom lens, he argues, "produces just a flat frame coming toward you. In a zoom shot the perspective is static—the camera doesn't pass anything and you have no sense of true movement. It is just a set composition being blown up larger by degrees." (*AC* 44, No. 7, p. 416).

The difference between the spatial esthetics of the zoom and the track is remarkably crystallized in Alfred Hitchcock's montaged synthesis of a simultaneous track and zoom in the belltower stairway sequence of *Vertigo* (1958). Here a zoom-in negates both the movement of the track-out and the three-dimensional space it creates. The image size of the stairway, seen overhead from Scottie's point of view, remains constant, while the space within the shot vertiginously expands and contracts. A similar quality of physical attraction and psychological revulsion occurs near the end of *Marnie* (1964) when its heroine tries, hesitates, and then fails to take the money from Rutland's safe. The physical qualities of the track and the non-physical qualities of the zoom visualize Marnie's paralytic ambivalence toward money and what it represents to her. In both cases, Hitchcock's combination of tracks and zooms underscores the oppositional nature of their depiction of space and movement.

In the context of traditional notions of cinematic space (*i.e.*, Bazin), the advent of the zoom lens and its widespread acceptance by the film industry in the late Sixties and Seventies[1] marks a significant change in film esthetics. Though the zoom lens has not supplanted other lenses nor replaced the pan or tracking shot, its coexistence with them is symptomatic of the way in which the conception of space predominant in the Thirties and Forties has been redefined in the Sixties and Seventies. These changes can best be understood by viewing the zoom in terms of its relation to camera movement and to other lenses.

Unlike the pan or the tracking shot, the zoom possesses limited directionality: it can only "move" in and out. Its movement, in a sense, is entirely predetermined by the content of the composition (*i.e.*, it can only move from foreground to background subjects and vice versa) and the range of the zoom (*i.e.*, unlike a track, a zoom cannot go on indefinitely). Thus, the psychology of the zoom differs from that of the track. Its movement is prescribed, and viewers unconsciously sense this. The track, crane, or dolly shot has an ability to move in a variety of ways. Each moment in a moving camera shot reflects a decision-making process: one direction is chosen from a number of possible directions. This, perhaps, explains Preminger's fascination with the moving camera. The process of a tracking shot, even if its destination is predetermined, presents the viewer with an illusion of choice and, consequently, with a sense of free, unrestricted movement. The most interesting zooms, by this reasoning, are those which are combined with pans, cranes, or tracks, in that the combination of pre- and post-determined movements creates a powerful dramatic tension.

Strangely enough, most writing on the use of the zoom views it as a substitute for, rather than a complement to, camera movement. Initial advertisements for the 1932 Bell & Howell zoom lens emphasize its use where normal camera movement is impossible (*AC* 12, No. 10, p. 31; *IP*, January 1932). Writing in 1957 on "The Use and Abuse of the Zoom Lens" for *American Cinematographer*, Joseph V. Mascelli approached the zoom as a substitute for a dolly shot and discussed ways in which the cameraman can use the zoom to fake the dolly's movement through space.[2] Even as recently as 1970, Paul Joannides, in an article on "The Aesthetics of the Zoom Lens" in *Sight and Sound*, notes that "the most frequent use of the zoom lens is as a substitute for forward or backward camera movement." (*S&S* 40, No. 1, p. 41).

The zoom is symptomatic of the evolution of the language of the cinema since the New Wave. Spatially distorting and inherently self-conscious, the zoom reflects the disintegration of cinematic codes developed before the Second World War.

Much of the disrepute surrounding the zoom derives from its use as pseudo-camera movement. The notion of a zoom trying to pass for a track raises questions about its integrity—both moral and spatial—and its intentionality, which unnecessarily confuse its esthetics. As Stuart Kaminsky, replying to Joannides, observes, a zoom is not a substitute for a track, but is *a different kind of track.* (*FN* 12, Oct. 1972, pp. 20-21). Citing the opening shots of *The Wild Child* (1969), Kaminsky argues that Truffaut's zooms integrate the boy into the surrounding woods, whereas tracks would have made the audience aware of the space separating the boy from his natural environment. The zoom becomes a kind of track which does what a true track cannot. Though the track-like zoom varies in its significance in accordance with specific contexts of its usage, it is rarely mistaken for a track because of the difference in the perspective of the two kinds of shots. In a zoom, perspective (that is, the relationship among foreground, middleground, and background) remains con-

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stant. In a track, perspective alters as space is crossed. The different kinds of perspective, as Arthur Graham observes in *American Cinematographer*, produce different psychological reactions in the viewer, who feels distanced from or outside of the action shown through a zoom and feels involved with or inside of an action shot with a moving camera. (*AC* 44, No. 1, p. 29).

This quality of distance is present in reverse-tracking zooms as disparate as those in Nichols's/Wexler's *Who's Afraid of Virginia Woolf* (1966)—there is a zoom as Sandy Dennis, about to throw up, rushes down a hallway toward the camera—or Rossellini's "Cosimo de Medici" sequence of *The Age of Medici* (1973)—he zooms as characters walk toward the camera through the streets of Florence. Rossellini's use of the zoom deserves particular mention, especially since it has generated the best critical discussions on the esthetics of the zoom. Andrew Sarris notes that Rossellini began using the zoom in 1957 with *India*, and uses it "to establish a moral relationship between one character and another" without drawing attention to the intervening scenery." In a *Film Culture* piece entitled "Rediscovering Rossellini," Sarris explains that

> the zoom not only supplements the devices by which Rossellini establishes a unified and circular vision of the world; it enables him to endow his . . . work with a double vision of history as a remote and immediate experience. It is as if a painter could establish a dynamic relationship between his painting and one of its internal details. (In *Viva Italia)* Garibaldi's men fight on a hill. Long shots equals *then*. Zoom shot equals *now*. The two shots in a tandem are no longer limited to an imitation of an event. What we are watching is our own aesthetic and ideological distance from the event. We are also watching the capacity of man to act as if he were watching his acts from a great distance away in time (history's) through space (cinema's). (*FCU* 32, Spring 1964, pp. 62-63).

For Sarris, the abstraction of the zoom enables Rossellini to deal with ideas and concepts which the physical sensuality of the tracking shot would overly concretize.

What would Bazin have said about Rossellini's zooms? Since they tend to flatten or stretch space, they would appear to violate the spatial integrity crucial to Bazin's realist esthetics. But, as Fred Camper points out in *The Chicago Reader*, Rossellini's zooms fulfill the prophecy of Bazin's Old Testament esthetics with a New Testament. Rossellini's zooms reveal

> that every part of the shot, and indeed every shot, is only a part of a much larger whole. No image can acquire a fixed value or overpowerful meaning, because every image may soon be transformed into another related image via the smooth, continuous zoom. . . . Its (the lens's) multiple perspectives, its ability to change from close-up to long shot and back again, express the continual interdependence between individual and environment, between part and whole, throughout history. . . . Civilization undergoing vast changes is thus seen through a lens which itself is continually changing the image. (Nov. 3, 1978.)

The temporal continuity of the zoom thus mediates its spatial discontinuity—its ellipsis of space. In fact, Rossellini's use of the zoom corresponds to his use of temporal ellipses, discussed by Bazin in relation to *Paisa* (1947), and reviewed by Brian Henderson in terms of *La prise du pouvoir par Louis XIV* (1966). The opening of *The Age of the Medici* provides a good example. At the funeral of Cosimo's father, Rossellini slowly zooms out from the face of the corpse, pans, tracks to a new composition, and zooms in on Cosimo's face. The camera, in effect, becomes a consciousness roving over the action; the zoom reflects an intelligence which structures the event without violating the essential integrity of the space within the scene. Rossellini's zooms preserve the wholeness of an event, yet, at the same time, are separate from that event, becoming a consciousness viewing that event. Bazin's "In Defense of Rossellini" essay says of neorealism that it is "an attitude of the mind: it is always reality as it is visible through an artist, as refracted by his consciousness as a whole and not by his reason alone or his emotions or his beliefs—and reassembled from its distinguishable elements." (*WC* II, p. 98). Though the zoom fails to reproduce normal space, it indexically preserves that space through a temporal (rather than spatial) dimension which refracts and reassembles it. Thus, Bazin, who repeatedly embraced technological innovation, would have welcomed the zoom, adding it to the arsenal of cinematic technique which enabled the filmmaker to write in film.

Much as the "historical" Bazin would have celebrated the zoom, the "ontological" Bazin would have condemned it (cf. Henderson's "The Structure of Bazin's Thought," *FQ* 25, No. 4). The foundation of Bazinian esthetics lies on the objective nature of the lens. For Bazin, the lens, as "objectif," produces an image of an object ontologically linked to that object. The objective nature of the lens, in turn, affects the psychology of the image: because of the impersonal, automatic way in which it is produced, a photographic image achieves a credibility which other picture-making processes (*e.g.*, painting, sculpture) lack. (*WC* I, pp. 13-14). Photographs don't lie—or do they?

Lenses are classified as either wide-angle, normal, or telephoto. Normal lenses are defined as approximating the vision of the human eye. But, as Stan Brakhage argues in *Metaphors of Vision*, all lenses are abnormal (*i.e.*, non-objective). They bend, separate, then reassemble light. Even normal lenses are only relativistically objective: they are ground to reproduce images consistent with the way in which a specific culture perceives space (cf. Brakhage in Sitney's *The Avant-Garde Film*). As perceptions of space change, so do lenses. During the first fifty years, the normal lens for photographic motion pictures changed from 75mm to 65mm (Edison, Griffith) to 50mm (the Twenties through the Forties), to 35mm. Barry Salt, in "Film Style and Technology in the Thirties," maintains that, according to recent experimentation, "focal lengths between 35mm and 40mm give most viewers a feeling of correct perspective."

Philip Marlowe, in George Montgomery's *Lady in the Lake* (1946), sees through a 50mm lens. Limited by his long-take format to one lens, Alfred Hitchcock chose a 35mm lens for creating the illusion of normal space in the cramped set of *Rope* (1948). In the Fifties, the use of the widescreen (1.85:1) format forced cinematographers to use wide angle lenses. The wide screen demanded a wider angle of view than that provided by the old 50mm

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The Age of the Medici

lens. Similarly, CinemaScope, Panavision, Ultra-Panavision (which had an angle of view of 138°), and D-150 (which picked up 150° of space in front of the camera) moved the definition of normal into the wide-angle lens range. (*AC* 40, No. 5).

Admittedly, the changes in the depiction of space on the screen owe as much to changes in lighting styles, aperture settings (which were increased in the Fifties to increase angle of view), film stocks, and set design as to lenses, but changes in lenses do serve as barometers that reflect changes in the way space is visualized. Though the transformation of the normal lens from telephoto to the wide-angle confirms Bazin's view of film esthetics as an evolutionary process whereby space becomes progressively deeper, these same transformations call into question Bazin's assertion of the ontological nature of the photographic image. His "objectif" is, in fact, a "subjectif."

If the normal lens can range from 75mm to 35mm in the space of fifty years, then the definition of "normal" clearly poses a number of problems. In the first place, the normal lens cannot be defined in terms of the human eye. No fixed focal length lens can possibly approximate human vision. The eye, through complex saccadic movements, continuously focuses and refocuses on objects at different distances. Normal lenses can't do this; they have a fixed depth of field. The vari-focal nature of the zoom lens, however, gives it a resemblance, in terms of its operations, to the human eye, which other lenses cannot duplicate. It maintains focus over a variety of depths. But the zoom lens is not really normal. It is a bionic, not a human, eye.

Though the zoom lens is unlike other lenses, it shares with them both objective and subjective qualities. Used as a vari-focal lens with a variety of fixed focal lengths, the zoom has all the objective properties of a fixed focal length lens. Used as a zoom, the lens, as it moves from one fixed focal length to another, is highly subjective, distorting space as it changes its angle of view from, say, 40° (40mm) to 18°(120mm).

In terms of the evolution of the depiction of space on the screen, deep focus and the staging of depth of the Forties gives way to CinemaScope and the staging in width of the Fifties. Due to the limited depth of field of CinemaScope and Panavision lenses, space in 'scope films tends to be somewhat shallower than in non-'scope films. At the same time, the anamorphic lens, through its compression and decompression of depth, tends to distort space laterally. Space is not only stretched, but also (due to the nature of the lens) poorly resolved at the extreme right- and left-hand edges of the frame. 'Scope gave the lens a peripheral vision which earlier lenses

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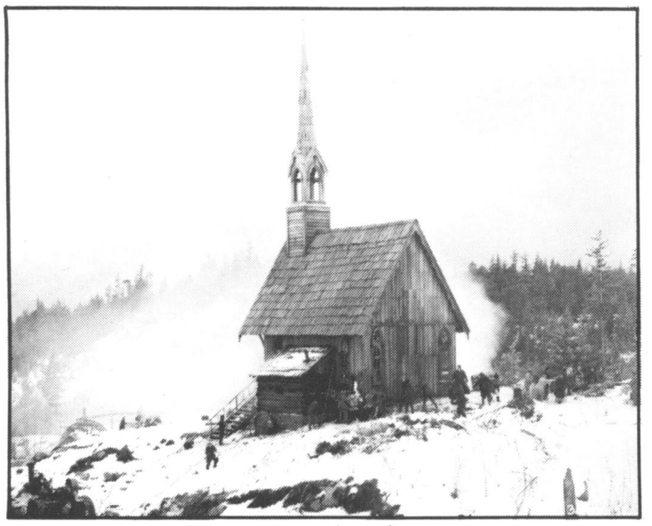

McCabe and Mrs. Miller (photo courtesy of Cinemabilia)

lacked; however, that added vision, rather than making the lens more objective in terms of its representation of space, resulted in its further distortion.

The redefinition of space begun by CinemaScope was continued and modified by the zoom lens. But before dealing with the exact nature of this spatial redefinition, I'd like to survey the history of the development of the zoom lens. Zooms have been spotted as early as 1929 *(Four Feathers)*, in shots probably employing a two-element lens. Early zoom lenses had extremely small apertures (*f*/11 or *f*/8) and, though they required a great deal of high key light and the negative required longer development than normal, they possessed good depth of field. Steve Handzo notes a two-element zoom-in on an explorer's face frozen in ice in Capra's *Dirigible* (1931). Here, as elsewhere, the zoom functions as an emphatic reaction shot. In 1932, Bell & Howell introduced the Cooke Varo lens, a three-element lens with a slightly larger aperture (*f*/8 to *f*/3.5) and a greater range. The lenses were moved in relation to one another mechanically by a series of cams, operated by a crank. Though the focal range of the lens was fixed at one hundred and fifty feet to infinity, auxiliary lenses could be attached in order to focus at closer distances (from fifty to two feet). Varo zooms can be seen in the "Gay Paree" number and the stag hunt sequence in *Love Me Tonight* (1932), in a zoom-in on a passenger deck in Tay Garnett's *One Way Passage* (1932) and in his *Prestige* (1932), and in a zoom-in on a clock that has been struck by a bullet in Capra's *American Madness* (1932). There is even a perpendicular, overhead zoom in *Thunder Below* (1932): as a woman plunges from a cliff to the rocks below, a zoom-in imitates her point of view. Paramount, the distributor of the film, call this perpendicular zoom a first, noting that all earlier zooms were horizontal. *(IP*, July 1932, p. 28). The use of the zoom to simulate point of view is not unusual. Leon Shamroy uses zooms subjectively in La Cava's *Private Worlds* (1935) when a patient in a mental asylum goes berserk. Lewis Milestone's *Edge of Darkness* (1943) also employs zooms in its battle sequences.

The use of zoom lenses on optical printers in 1931 introduces a variety of zoom effects into Thirties' montage sequences, especially those directed by Slavko Vorkapich. In creating an optical zoom, an optical printer rephotographs the original negative, producing a zoom effect which can only be distinguished from a true zoom by the increased graininess of the image. Walsh uses a variety of optical zooms: there's one at the end of *Colorado Territory* (1949), and another, combined with a pan, in *Silver River* (1948). There's an optical zoom-in of a waterfall in *The Big Sky* (1952) to cover missing footage, and Gregg Ford points out a number of optical zooms in Fuller films, including *Forty Guns* (1957), which undoubtedly prompted Godard's use of them in *Les Carabiniers* (1963). *The Crimson Kimono* (1959) has two zooms-in on the face of Detective Joe Kojaku, a prejudiced Nisei cop—one as he hears a killer's confession explaining that her jealousy was all in her mind, and another, moments later, as he himself says the same thing to his partner, realizing his own jealousy. More recently, there is an optical zoom at the end of Polonsky's *Tell Them Willie Boy Is Here* (1969).

The rise of the use of the zoom can be linked to the influx of TV directors into Hollywood. Robert Altman, Blake Edwards, John Frankenheimer, Andrew McLaglen, Robert Mulligan, and Sydney Pollack—to name a few—brought the zoom with them from New York to Hollywood.

In 1946, Dr. Frank G. Back, called the "father of the zoom lens" by the SMPTE, introduced the Zoomar lens for 16mm cameras. Unlike the Varo, the Zoomar lens had no cams to contend with. It was entirely optical, employing four lens elements. The movable lens elements were "mounted in a common barrel." Manual "movement of the barrel to any position in the housing" produces a change in image size. *(SMPTE* 46, No. 6, pp. 467-8). A dramatic improvement on the Varo lens, which was, due to normal wear, often thrown out of focus, and which, due to the presence of "breathers" necessary to allow for internal air displacement when the cams moved, permitted dust to enter the lens, the Zoomar lens maintained sharp focus over a 3:1 range. The big breakthrough made by Back concerned the lens's aperture or iris diaphragm. In earlier lenses, the iris diaphragm had to be changed each time there was a change in focal length, thus requiring a complex mechanical linkage between the cams operating the focal length and the aperture. By placing the iris diaphragm *behind* all the movable elements of the lens, Dr. Back eliminated the need for coordinating the changes in focal length with the aperture setting.[3] His aperture could be set for the shot and remain constant.

The new lens was adapted for use in television. According to Erik Barnouw and Andrew Sarris, it was employed in the summer of 1947 on a CBS telecast of a baseball game between the Brooklyn Dodgers and the Cincinnati Reds. Ideal for live coverage of sports and news events because they could be filmed with a zoom lens without interruption for changing to other lenses,

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the zoom became associated with live television and continues to be used today in sports films *(e.g.,* the rodeo sequences of *Electric Horseman), cinéma-vérité (Don't Look Back),* and simulated TV interviews in features (Kaminsky notes the effectiveness of the zoom in pseudo-interviews in *Night of the Living Dead).* It remains a staple of television features like *Marcus Welby, M.D.* and *Kojak.* TV cinematographer Walter Strenge even boasts of shooting an entire two-hour episode of *Owen Marshall, Counsellor-at-Law* with a 25mm/250mm Angenieux zoom lens.

It was not until Angenieux's introduction of the 10:1 zoom in the early Sixties (especially the 25mm/250mm lens) that Hollywood began to notice it. Entranced by the crab dolly, Chapman crane, CinemaScope, Panavision, VistaVision, Todd-AO and Dimension-150, the industry was flooded with a variety of tracking devices and lenses with improved fields of view. The zoom, in the Fifties, was more of a box office liability than a draw because it reminded audiences of television (baseball, news, and commercials). The rise of the use of the zoom can be linked to the influx of TV directors into Hollywood. Robert Altman, Blake Edwards, John Frankenheimer, Andrew McLaglen, Robert Mulligan, and Sydney Pollack—to name only a few—brought the zoom with them from New York to Hollywood. Soon, even James Wong Howe, in *Outrage* (1964) reconciled himself to the zoom. Edwards uses the zoom in a mirror shot in *Experiment in Terror* (1962), as the criminal watches the heroine's sister come home from school—and his fascination with the zoom continues through *"10"* which uses the lens in its point of view shots. Frankenheimer employs the zoom in interiors in *The Bird Man of Alcatraz* (1962) to focus on birds and to move into a close-up of a canary egg, and in exterior action sequences in *Grand Prix* (1966).

Altman uses the zoom to assert his own narrative voice, frequently relying on it for transitions. Altman's zooms function like jazz improvisations superimposed on a fixed melody: whether motivated or not, they signal his presence as a narrator. . . .

Altman and Mulligan are perhaps the most brilliant practitioners of the zoom to come from television. As Robin Wood has observed, "for Altman, the zoom is at once his means of guiding the audience's consciousness and of asserting his own presence in the film; but he has also grasped its potential for dissolving space and undermining our sense of physical reality." *(Movie,* No. 21, p. 9). Altman uses the zoom to assert his own narrative voice, frequently relying on it for transitions. Altman's zooms function like jazz improvisations superimposed on a fixed melody: whether motivated or not, they signal his presence as a narrator (thus they accompany the Leonard Cohen ballad which comments on *McCabe and Mrs. Miller*). With the exception of the most blatant zoom in *McCabe,* which singles out the hired assassins in the wintry landscape of Presbyterian Church on the morning they set out after McCabe, the film's zooms have a transitional function: zooms-in eliminate space and, with it, time, while zooms-out reestablish both. The use of zooms in interiors (the zoom in Westerns is largely an exterior phenomenon) creates a very flat, dimensionless space which enhances the enclosed, claustrophobic nature of the film.

Mulligan uses the zoom consistently in *Summer of '42* (1971) and *The Other* (1972) to establish distance. The narrator's distance from his own experience *(i.e.,* his memory) is established in the opening zooms of *Summer of '42*—an optical zoom-in on a shot of a flower which dissolves into a zoom-out from a shot of the sun rising over the sea. Hermie's distanced, idealized conception of Dorothy is conveyed through point of view zooms-in on her, coupled with reaction shots of him. Later, as the distance between them dissolves, Mulligan eschews the zoom in favor of sensual tracking shots.

The Other begins with a slow combination crane and zoom which moves through a green wood, and which eventually singles out the figure of a small boy who is kneeling—and seemingly praying—in a brightly-lit clearing. The camera slowly zooms-in on the boy, collapsing the space between him and the camera, as if to announce the subjectivity of the narrative which follows. *The Other* ends with a tracking shot from the burnt ruins of a barn to a second story window of an adjacent farmhouse from behind which Niles, the film's central character, looks out. As in the first shot, Mulligan again zooms in—this time into a closer shot of the boy's face. The boy blinks, the frame freezes, and the film ends. The zoom both takes us into the character and separates us from him. It establishes a sense of distance.

The failure of the zoom to catch on in the Thirties and Forties and its success in the Sixties and Seventies is directly related to its self-referential properties and to its treatment of space. Largely a lens used in exterior shooting, the zoom had little to offer the "interior" genres which dominated the Thirties and Forties, such as the musical, the gangster film, the horror film, the screwball comedy, and the melodrama. At the same time, its self-consciousness as a stylistic device and its distortion of space violate the styles of the period (see Noel Burch on

McCabe and Mrs. Miller (photo courtesy of Cinemabilia)

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The Wild Child (photo courtesy of Cinemabilia)

the "zero point of cinematic style" in *Theory of Film Practice*, p. 15, and Bazin on the self-effacement of camera style in the face of scenario in his "In Defense of Mixed Cinema," *WC* I, p. 74.).

Though Vincent Canby, in his 1970 reviews of *Getting Straight* and *The Strawberry Statement*, attacks the overuse of the zoom, the lens is clearly here to stay and had, by the Seventies, become a norm of spatial representation. Arthur Penn shot *Bonnie and Clyde* (1967) using lenses as disparate as 9.8mm and 400mm (the ice cream parlor sequence). In an era in which spatial distortion has become the norm, the zoom serves as a metaphor for the disintegration of space through time. The New American Cinema experiments with discontinuous zooms in Snow's *Wavelength*, with zoomless zooms in Gehr's *Serene Velocity*, with self-reflexive zooms in Warhol's *Chelsea Girls* and Brakhage's "Door" films, and with transformational zooms in Camper's *Welcome to Come*, exploring the non-narrative, formal qualities of the lens.

Wavelength contains perhaps the best known zoom in avant-garde cinema. Snow describes the film as "a continuous zoom which takes forty-five minutes to go from its widest field to its smallest and final field" across an eighty foot loft. Breaking up his "continuous" zoom through changes in aperture setting, filters, red leader, negative image, and, finally, a dissolve, Snow both deconstructs the space of the loft and calls attention to the elliptical properties of his lens. Annette Michelson, in an observation which brilliantly characterizes the essential nature of the zoom, refers to Snow's use of the zoom as a metaphor for the "nature of consciousness." (See Sitney's *Avant-Garde Film*, p. 172).

The grand master of the zoom, however, is Claude Chabrol, who employs an assortment of emotionally turbulent yet paralytic zooms in films like *La Femme infidele* (1968), *Que la bête meure* (1969), and *Le Boucher* (1969). In *La Femme infidele*, Chabrol endows the zoom with emotional depth by playing it off against tracking shots. At the end of the film, Charles, who has murdered his wife Helene's lover, is arrested by the police. Helene, rediscovering her love for her husband, burns a photograph of her lover (which is also a vital piece of evidence linking her husband to the crime) and joins Charles in the garden. The final shot of the film, a point of view tracking shot of Helene and his son, as Charles is led off by the police, expresses the nature of his relationship with them. The track physically separates Charles from his family in the deep background, yet the zoom-in which accompanies this track-out reunites him emotionally with his family. By simultaneously tracking back and zooming in, the camera visualizes the emotional complexity of an *amour fou* which drove a man to murder in order to regain the love of his wife.

Que la bête meure, as Mike Prokosch argues in *The Boston Review of the Arts*, moves relentlessly toward a dissolution of self in the landscape, a process accomplished largely by Chabrol's use of long shot and zooms. At the end of the film,

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> the hero sets out to sea in a small sailboat, with the Brahms psalm which began the film resuming after a rude interruption and thus bringing the tragedy full circle. A shot of the empty sky with only a mast and a hoisting sail within it is followed by a high-angle shot of the boat, which zooms out and leaves the boat a small spot surrounded by the lightstruck sea. After a shot of his lover Helene finishing his farewell note, ... Chabrol cuts to a new shot of a greener stormy sea. No boat is to be seen, only whitecaps: the camera pans slowly left and picks up a rocky headland, then right and down and zooms into the waves boiling up over the rocks. All individual tragedy has been taken up in the ceaseless movement of the natural world: and here, in a perfectly flat shot filled with a wave surface in violent motion, the film ends. (Feb. 1, 1971, p. 9).

The collapse of space, rather than draining away feeling, reveals its concealment beneath a mask-like surface.

The use of the zoom as a mask for emotions informs the final series of discontinuous zooms in *Le Boucher*. After Popaul's suicide, Mme. Helene parks her car at night alongside a river and stares blankly across it. The camera first tracks, then zooms back. Chabrol cuts to a longer shot, continuing his zoom, then cuts again to an extremely long shot which, as it zooms back, loses her figure within the dark pastoral setting. The zoom merges her grief with an oblivious natural landscape; the cuts, destroying the zoom's temporal coordinates, not only echo the disjunctive nature of her feelings, but also freeze them forever outside of a time which has lost its therapeutic power.

The zoom is symptomatic of the evolution of the language of the cinema since the New Wave. Spatially distorting and inherently self-conscious, the zoom reflects the disintegration of cinematic codes developed before the Second World War. Now regularly used in combination with pans and tracks to extend their movements a few feet, the zoom has coopted these codes from within. Space is no longer defined in terms of perspective cues and parallax, but in terms of changing image size and time. Its measurement of space in terms of time gives it an Einsteinian (as opposed to Eisensteinian) identity. The zoom reflects a way of seeing the world not as it appears to the human eye, but, perhaps, as it really is.

NOTES
AC: American Cinematographer
FCU: Film Culture
FN: Filmmakers Newsletter
FQ: Film Quarterly
IP: International Photography
SMPTE: The Journal of the Society of Motion Picture and Television Engineers
WC: What Is Cinema?

[1]*American Cinematographer* devotes almost no space to the zoom until 1962. After that, articles and interviews continuously refer to it.
[2]Mascelli says that an illusion of camera movement can be created by placing objects between the subject and the camera so that, as those objects enter or leave the frame, an illusion of depth is suggested. Framing devices (arches, doorways, windows) are useful for the same effect: a zoom through them suggests real movement. Shooting the subject from an angle, rather than head-on, increases the illusion of three-dimensional space. Moreover, he observes that a cinematographer can fake a tracking shot by slowly and evenly zooming from telephoto position to wide-angle while characters walk toward the camera. *(AC 38, No. 10).*
[3]If the distance between the exit pupil and the focal plane is kept constant, there is no need to change the *f*-value during a zoom.

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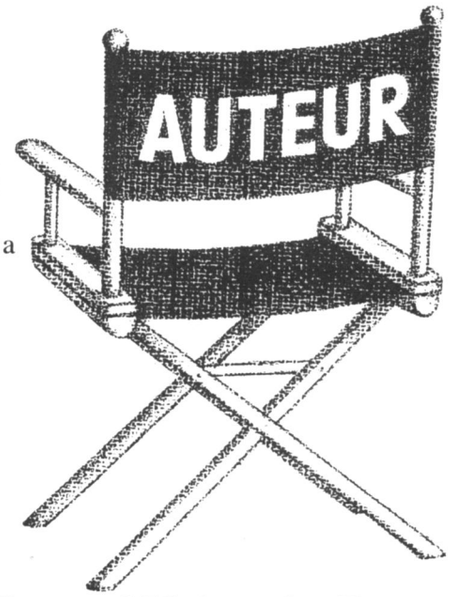

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