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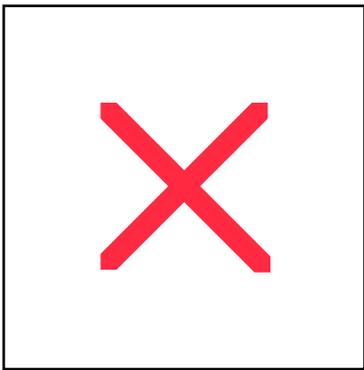
The Viewer's Share: Models of Mind in Explaining Film

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We watch films with our eyes and ears, but we experience films with our minds and bodies. Films do things to us, but we also do things with them. A film pulls a surprise; we jump. It sets up scenes; we follow them. It plants hints; we remember them. It prompts us to feel emotions; we feel them. If we want to know more—the how, the secrets of the craft—it would seem logical to ask the filmmakers. What enables them to get us to respond so precisely?

Unfortunately for us, they usually can't tell us. Throughout history, filmmakers have worked with seat-of-the-pants psychology. By trial and error they have learned how to shape our minds and feelings, but usually they aren't interested in explaining why they succeed. They leave that task to film scholars, psychologists, and others.

What follows is a survey of some major ways in which people thinking about cinema have floated psychological

explanations for filmmakers' creative choices. Sometimes filmmakers reflected on their own craft; more often the task of employing psychology to illuminate the viewer's experience fell to journalists, critics, and academics. But most of them did not conduct careful historical or empirical research. This doesn't make their ideas worthless, but it should incline us to see them as working informally. Sometimes they connect ideas about films' effects on viewer to wider theories of mind; sometimes they don't. When Film Studies entered universities in the 1960s, writers became more conscious of how specific schools of psychological research accorded with the filmic phenomena they wanted to study. Explicit or implicit, vague or precise, models of mind were recruited to explain the power of cinema.

The tableau meets folk psychology Nearly every form of cinema we have today appeared during the medium's first dozen years or so.1 Even though the films were very short, ranging from a few seconds to ten minutes, we find documentaries, as filmmakers presented everyday activities or visited exotic locales for picture-postcard views or captured fires, storms, and other unusual events. Other films told fictional stories, often as staged skits or in scenes drawn from plays. There were animated films as well, usually based on pixillation, the technique of moving objects or people around and filming each position as a single frame. Among the most famous of the early filmmakers was Georges Méliès, who exploited cinema's capacities for optical illusions.

Cinema as a medium is itself an illusion. Although the mechanics still aren't well understood, movies play upon faults in our visual system. A series of static images, flicked past our eyes rapidly with intervals of darkness in between, can provoke us to see a stable scene displaying movement.

Without any training in psychology, Méliès understood that if he controlled what people saw from one film frame to another, he could create fantasy effects. So he paused the camera, rearranged his actors, and then restarted the camera. On screen, the actors seemed magically to disappear, reappear, or turn into demons or monsters.

In the period 1908–1917, as film became a popular medium, film producers and exhibitors settled on longer formats. Although many short films would be made throughout history, programs began to center on a "feature" film (that is, a movie that could be "featured" in advertising), and as the years went by that feature tended to run an hour or more. For fiction films, the new length called for more complex stories, with plots that relied on the conventions of popular fiction and drama.

Since the films were silent, filmmakers found ways to tell their stories visually. One result was what came to be called the "tableau" style. Here the camera is set fairly far back from the action, and the performers play out the drama in prolonged shots. There is very little cutting, except to join scenes. The approach is called the "tableau" style because stage performances of the time often were arranged to look like pictures. (*Tableau* in French meaning "painting," but also a self-consciously pictorial layout of actors on a stage.) And many shots from the period do look like carefully composed paintings or theatrical productions.

Both the new feature film and the tableau style relied on what has come to be known as "folk psychology" (Plantinga 2011). Filmic storytelling usually relies on our everyday assumptions about why people act as they do, how they will respond to others, and how they come to decisions. If one

scene shows us a millionaire gambling in a casino, and the next scene shows us the man as now a shabby beggar, we'll assume that his gambling ruined his life. In fact any number of incidents might have caused him to lose his fortune, but in simply moving from one scene to another the film invokes a simple notion of cause and effect. (A clever storyteller might lead us to make this inference and then correct it.) Throughout film history, movies exploit our tendency to make snap judgments and jump to conclusions on the slightest of hints.

Somewhat like folk psychology is our intuitive sense of how to emphasize things for pickup. We stress words in our sentences and count on our listener to pay special attention to them. Similarly, if we're shown a picture, what will we notice? We're likely to notice people's faces and gestures because in real life these convey important information. We'll also probably look at the center of the frame and areas of bright tones. If we're watching a moving picture, we'll be alert for any motion—of people, of animals, even trees in the wind. You've probably had the experience of watching a home video and noticing that something in the background of the shot is distracting you from paying attention to the main subject. (This is one of the reasons that professional cinematographers throw backgrounds out of focus.)

Tableau directors didn't perform experiments on eye-scanning, but they understood intuitively what viewers would fasten on. Using common-sense assumptions about pictorial emphasis, they sought to guide the viewer's eye by means of composition and staging. One actor might come forward while others stayed still or turned away. An actor might briefly occupy the center before yielding it to another one. And because the camera carves out a playing space very

different from that of a theatre stage, one that is wedge-shaped rather than rectangular, depth played a major role in tableau films. Sets stretched back very far, and an actor or a part of the set could block off things in the rear. This worked to steer our attention toward something more important at that moment.

In all, the tableau style exploited common-sense visual psychology in rich ways. Masterpieces of the style like Louis Feuillade's _Fantômas_ (1913) and Victor Sjöström's _Ingeborg Holm_ (1913) utilize complex choreography that guides our attention precisely from moment to moment (Bordwell 1997).

The rise of Hollywood continuity The period 1908–1917 hosted an alternative to the staging-based tableau approach. American filmmakers developed a style that emphasized cutting. An establishing shot somewhat like a tableau framing would be broken down into closer views taken from different camera positions. Of particular importance were close-ups. The tableau style had reserved close-ups for newspaper articles, messages, and other things that were too small to be grasped in the overall shot. But the American directors often built entire scenes out of close-ups of faces or props, even neglecting to supply long shots. In addition, directors quickly understood that they could build up tension by closer to the actors as the action developed.

Facial close-ups were much remarked on at the time (Balázs 2010), and not every critic appreciated them. To an eye trained in the tableau style, they probably looked heavy-handed. But the exploitation of close-ups was another application of folk psychology. As practical psychologists, filmmakers and actors had no knowledge of research into the

power of facial expressions, but they intuitively realized that viewers across cultures could read piercing emotion into a lifted eyebrow, a wink, or a grim smile. The close-up was also central to the growth of the star system. Charlie Chaplin, as universal in his appeal as any actor in history, made his mark not only through his dancer-like body but through an encyclopedic array of nuanced facial expressions.

American directors exploited editing in another way. Under the influence of director D. W. Griffith, they developed their plots so that the viewer was constantly whisked from one line of action to another. While the young man is strolling in the woods, the young woman is dressing to go out. This technique, called crosscutting, would keep the viewer riveted by constantly refreshing the screen. In addition, as in the example above, it could lead the viewer to make a common-sense leap: If the boy and the girl are shown in alternation, they will probably meet at some point, and this inference creates expectations that keep us interested. Crosscutting can control pacing as well. In a suspenseful scene, the shots of alternating bits of action could be trimmed to be shorter and shorter. Griffth proved very skilful at this in his last-minute rescue situations.

Analytical editing (breaking the overall space into closer views) and crosscutting proved central to the American style. There were further refinements, such as principles of spatial continuity, sometimes called the 180-degree system. According to this system, when filmmakers break up the space, they should confine all camera positions to one side of an imaginary vector dividing up the scene—the "center line" or "axis of action." This would govern movement, eyeline directions, and other factors. Since the scene was no longer played out fully in a tableau, the 180-degree system had the

task of keeping the audience oriented as to where the characters are in the overall space (Bordwell & Thompson 2010: 236–246).

The American, editing-driven style conquered the world. Its victory owed as much to commercial factors—U.S. films began to be heavily imported to Europe—as to the great appeal of American stars and storytelling methods. By 1920, all major filmmaking countries were working with some version of continuity cutting. The rise of the Hollywood style would have profound effects on virtually all later efforts to understand film viewing from a psychological standpoint.

A world made for us Because early films used cinema as a photographic medium, some questions arose that had already been posed about still photography. Journalists and critics asked whether cinema was a new art form or simply a manner of recording. Yes, film could bring exotic sights to audiences who couldn't visit distant places; it could chronicle daily events; the storytelling films could record great performers, as if on a stage. But could cinema be an art form in its own right?

This was not a simple question. Even if cinema was only recording the surface of things, some writers argued that by doing so it had artistic value. It could reveal the textures and movements of the world around us in a sort of pure state.2 Other writers took a stronger stance and argued that cinema was a creative art, not simply recording reality but transforming it. During the 1910s, Hugo Münsterberg championed the emerging Hollywood style on psychological grounds.

Münsterberg, a German émigré, held a chair in experimental psychology at Harvard. At first he disdained the movies as unfit for a professor, but after he saw one in 1914 he became fascinated with both the industry and the art. His book, _The Photoplay: A Psychological Study_ (1916) celebrates close-ups, rapidly changing scenes, and special-effects tricks. He spends some time speculating on the causes of the impression of movement on the screen. Some people thought that it was a matter of one brief impression replaced by another, but Münsterberg suggested that there was a broader mental process involved. "The movement...is superadded, by the action of the mind" (Münsterberg 1970, p. 29).

Münsterberg's central argument was that film has the capacity to imitate mental processes. Thanks to the new editing and framing techniques, the flow of images on the screen mimicked the way our minds work. Consider attention. Although the film is silent, the director can draw on many resources of the theatre, like selective lighting, and of painting, like composition, in order to steer us to what's important. The tableau directors had smoothly directed attention within the overall shot. When we pay attention in real life, however, we concentrate sharply on something; it's as if everything else falls away. That riveting quality is mimicked when a filmmaker cuts in to a close-up, which forces us to see only that detail. The film has built into its very texture the highly focused quality of attention. "The close-up has objictified in our world of perception our mental act of attention and by it has furnished art with a means which far transcends the power of any theatre stage" (Münsterberg 1970, p. 30)—and, presumably, any long-take tableau film scene.

Münsterberg extended his argument by claiming that other

mental activities are modeled by the film. In the theatre, a character may speak about a scene we've already witnessed, so we have to make an effort to recall it. But in a film, a quick flashback can remind us of the scene. Or a character may conjure up, in words, a fantasy; the film can materialize it. Actors on the stage project emotions, but film has the possibility of triggering them in the audience directly, through not only performance but also images of nature or the built environment. And crosscutting imitates the way our mind may oscillate between two or more events in different places. Memory, imagination, emotional arousal, and our craving for "omnipresence" are made tangible on the cinema screen. In film, "the objective world is molded by the interests of the mind" (p. 46).

Earlier writers had seen a parallel between cinema and mental activity. The philosopher Henri Bergson had famously spoken of the "cinematographical mechanism of thought" (Bergson 1911, p. 306). Writing in 1907, he compared our sensory impressions to snapshots of reality that our mind strings together like frames on a ribbon of film. It was cinema as a machine that provided the analogy to the flow of consciousness. Münsterberg, writing while Griffith and others were developing editing-driven technique, concentrated on style, and he argues in the other direction. Our mind isn't like a film; film has been engineered to engage our mind. It does so by mimicking our common activities of noticing things, remembering the past, investing emotion, and so on.

Scholars debate the extent to which Münsterberg owed debts to one or another school of academic psychology. He has been considered a Gestaltist because of his recognition of certain holistic perceptual effects, especially the illusion of

motion. But he also owes a debt to earlier traditions in German research.3 In any event, *The Photoplay* was not widely known in either America or Europe, and Münsterberg's fervent pro-Germanic views did not make him popular during or after World War I. It took about sixty years for him to reemerge as an important thinker about cinema.

Montage and Materialism Münsterberg appealed to psychological mimicry to explain how the new American films of his day achieved their unique power. That power was evident in the wide distribution of American films throughout the world. Filmmakers in other countries picked up the editing-based system fairly quickly. At the same time, however, some filmmakers wanted to try other styles. In Germany, there were efforts to bring into cinema principles of visual design from Expressionist painting, and in France some filmmakers tried to develop new methods of camerawork and subjective storytelling. These, like the tableau style and the American style, worked with principles of intuitive psychology. Thus the distorted settings of *The Cabinet of Dr. Caligari* (1920) were motivated as the way a madman might imagine the world. Later in the 1920s, however, two other film movements explicitly appealed to current schools of psychology.

After the 1917 revolutions in Russia, a new generation of filmmakers emerged. Very young—some were still in their teens—they rejected the tableau style vociferously and promoted what they called "American montage." *Montage* was a Russian word borrowed from the French. It denotes film editing, but it can also be used to describe machine assembly, as when one mounts a motor on a chassis. The mechanical connotations of the term appealed to the young

rebels because it suggested that filmmaking could be put on a systematic basis, like engineering. American-style editing seemed to promise a way to control the film from moment to moment with great exactitude.

Borrowing from Hollywood, Soviet directors pushed editing possibilities further. Lev Kuleshov conducted informal experiments in which he cut together different combinations of shots. He showed a woman on a street looking off and waving. Cut to a man on a street looking off and waving. Even without a shot showing both of them, the viewer understands that they're seeing and reacting to each other. Likewise, Kuleshov would cut together bits from different films in order to make a coherent scene. An expressionless man looks; cut to something else—a meal, a voluptuous woman, a dead child—and then back to the man. Kuleshov realized that we tend to read hunger, lust, or sadness into the man's neutral expression. In other words, you didn't need an establishing shot to get the audience to understand the scene. The viewer will naturally infer the meaning from small bits. This constructive editing, as opposed to analytical editing, suggested that the filmmaker could convey ideas simply by the juxtaposition of shots (Kuleshov 1974, pp. 52–55).

Another Soviet director, V. I. Pudovkin, suggested in a somewhat Münsterbergian mode, that our natural flow of attention could be mimicked by editing. You're standing on the street and see a woman calling to a passerby from a window. You will look between the woman and the pedestrian, back and forth. A filmmaker can capture these shifting perceptions by separate shots of each person. Echoing Münsterberg's idea of "omnipresence," Pudovkin suggested that we should think of the camera as an invisible

but ghostlike observer, capable of occupying any point in space at any point in time (Pudovkin 1970, pp. 68–73).

These directors gave us memorable films supporting their theories: Kuleshov's *By the Law* (1926) and Pudovkin's *Mother* (1926) and *The End of St. Petersburg* (1927). Indeed, sometimes the films went beyond the theorist in daring ways; some sequences push the American method toward bold discontinuities. But the directors' arguments about how montage-based films work relied on intuitive psychology, not scientific findings. One Soviet director, however, put forth a line of thinking that drew on an important strand of psychological research.

Sergei Eisenstein made the most famous films of the Soviet Montage movement: *Strike* (1925), *The Battleship Potemkin* (1926), and *October* (1928). In these and in his theoretical writings, Eisenstein explored a great variety of editing possibilities. Never a systematic thinker, Eisenstein nonetheless clung to a basic idea: He wanted his films to have maximum impact on the viewer. He wanted to arouse the senses, the mind, and the emotion of every spectator. In fact, while Kuleshov and Pudovkin took cinema's basic material to be strips of film, Eisenstein declared that the basic material "derives from the audience" (Eisenstein 1988, p. 34). Every movie plays upon the spectator's physiological activity.

Eisenstein was a strict materialist. He thought that mental and emotional states are higher levels of "nervous activity." There is no ghost in the machine; mind and feelings can be reduced to brain and body. Following the dominant psychological schools in Russia at the time, Eisenstein saw responses in terms of reflexes. A work of art arouses us

because it triggers certain learned or innate responses. Echoing later research into mirror neurons, Eisenstein claims that viewers involuntarily repeat movements they see, but in a weakened form. This sort of expressive contagion is central, he believed, to theatre and cinema. For example, acting on the stage or screen involves producing movements that the audience *feels* as well as sees. He calls it "a direct animal audience reaction" (1988, p. 81).

More complex responses depend on chains of associations built up over time. Pavlov's dogs learned to expect food when they heard a bell announcing it. How do we know they expected it? They salivated, supplying a direct physiological response. This is where editing comes in. If we think of each shot as a bundle of stimuli, we can orchestrate them through repetition and variation so that viewers can be "conditioned" to take their experience to a higher level. For example, in an early scene of *October*, workers protesting the provisional government march with banners. Shot compositions associate the banners with the workers' cause. But when one speaker rails against the uprising, calling it premature, rows of banners held by unseen workers rise up to blot him out. Thanks to repetition of the banner motif, we understand that the workers have silenced him.

What, then, is the role of editing? Eisenstein proposed that we think of each shot as a bundle of stimuli. Cutting shots together can build up associations that will shape our perceptions, thoughts, and feelings. At its simplest level, editing can arouse motor responses. Eisenstein used rhythmic editing for a sawing sequence of *Old and New* (1929) and was delighted to see peasants rocking from side to side as they watched it (1988, p. 192). But editing can provoke higher-level thought too. The most famous example

is the "Degradation of the Gods" sequence in *October*. Here Eisenstein cuts together statues of different deities from different cultures, in order to cast doubt on all of them. The sequence extends Kuleshov's point that our minds will create a connection between any two shots, but instead of summoning a sense of space, we build up an *idea* that isn't present in any one of the images. Making an intellectual point is important to a cinema that emphasized propaganda, as the Soviet films did. But Eisenstein didn't think that intellectual editing should smother all emotion. The Gods sequence, abstract as it is, evokes some sardonic humor. Thanks to editing, Christian icons start to look as peculiar as the deformed gods from other cultures.4

Fantasy and Freud Eisenstein turned to academic psychology to explain how the filmmaker could seize and move audiences. He was also interested in Freudian psychoanalysis, but the Bolshevik government's disapproval of this school of thought made him keep his ideas about it in the drawer. In other countires, filmmakers and writers engaged with psychoanalysis more openly. Since the 1920s, psychoanalysis has probably been the most frequently invoked school of psychology throughout the arts.

Several aspects of psychoanalysis seemed to tally with cinema. Filmmakers had long been interested in evoking the twilight life of the mind, providing their characters with dreams, fantasies, and hallucinations. Films as different as the Douglas Fairbanks comedy *Reaching for the Moon* (1917) and the brooding German psychodrama *Nerven* (1919) gave us delusional protagonists with flamboyant fantasy lives. Freud attached great importance to dreams as revealing unconscious desires, and many writers noticed an affinity between dreaming and sitting in a darkened movie theatre in

a state of lowered wakefulness. Thematically, many films seemed to feature characters straight out of the Oedipal drama: tyrannical fathers who have to be overcome by sons, or daughters in conflict with their mothers for the love of the father.

One film achieved fame by trying to dramatize Freudian doctrine for a mass audience. *Secrets of a Soul* (1926) was produced by the mammoth German company Ufa. Freud withheld his support, doubting that the concepts of psychoanalysis could be dramatized, but prominent members of his circle served as technical consultants. The plot shows a husband who dreams of murdering his wife. By recounting his memories and fantasies to a psychoanalyst, he achieves a catharsis. He returns to his wife, cured, and soon she gives birth to a child. The dreams and flashbacks made sophisticated use of Expressionist imagery, but the oversimplifications of the story led to hostile relations among many Freudians.

Rather than simply illustrate Freudian theory, another filmmaking strain sought to put it into action. In France the Surrealist painters and writers had believed that their art would be enhanced by liberating their deepest impulses, no matter how anti-social. Rather soon there appeared Surrealist films built out of imagery that was by turns shocking, nonsensical, and strangely beautiful. The most famous of these was *An Andalusian Dog* (*Un chien andalou*, 1929), a collaboration of the painter Salvador Dalí and the young director Luis Buñuel. From the start, the film is casually horrific: A man stropping a razor uses it to slice open the eye of an unresisting woman. (The effect is accomplished through shrewd constructive editing à la Kuleshov.) After that, events proceed with the logic of a

dream, portraying a young man with, evidently, fantasies of homosexuality and impotence. Rather than diagnose him as a case study in the manner of *Secrets of a Soul*, *An Andalusian Dog* revels illogical imagery rising up from the depths of the unconscious: dead donkeys stretched across pianos, a chopped-off hand lying in the street and poked by the stick of a mannishly-dressed woman. The film's authors made no secret of the film's aggressive intent: Buñuel called it "a passionate cry to murder."

Eisenstein was interested in an associationist model of mind, but that was because he believed he could channel the filmic associations to a clear-cut end: a political point, an emotional upsurge. By contrast, *An Andalusian Dog* celebrates the poetic possibilities of free association, with no final grounding in a coherent idea or unmixed emotion. The world of dreams, daydreams, and sexual fantasy yielded a film that seemed open to many interpretations but remained impossible to pin down. In later years, Dalí's and Buñuel's film, along with some other Surrealist works, would steer critics to find the same subversive associations lurking within more commercial Hollywood movies.

Film Gestalts By the end of the 1920s, the battle for film as an autonomous art form had been won. Very few people would have argued that the cinema was simply a mute form of stage drama. Critics were well aware that the techniques of the medium—closer framing, cutting, unusual viewing angles, camera movement—set it apart from theatre. But one critic and theorist, Rudolf Arnheim, went a step further and maintained that artistic cinema gained its power not from recording reality but from *failing* to record reality.

In *Film als kunst*, published in 1932, and its English

translation *Film* (1933) Arnheim made a predominantly aesthetic argument. All art media differed from the reality that they portray. A statue is made of marble, not flesh; a painting is flat, not deep; a room on stage lacks a fourth wall. Film was and still is a flat projection. It was then silent as well. Arnheim argued that these deficiencies in realism actually worked to artistic advantage. By being a flat projection, the film image could use its frame to create spatial relations that don't exist in our three-dimensional world. By being silent, it was forced to tell its stories visually. And sooner or later the camera ran out of film, so the medium could not capture the world's continuous duration. But this deficiency obligest the filmmaker to create her or his own time scheme by assembling shots into a pattern that cannot exist in reality.

Accordingly, Arnheim argued, documentary films that simply record the world can be valuable for many purposes, but they cannot count as art. With ruthless logic, he concluded that the closer that film came to rendering reality by adding sound, color, and stereoscopic images, the further it got from art. In his most famous formulation he wrote:

Art only begins where mechanical reproduction leaves off, where the conditions of reproduction serve in some way to mold the object. And the spectator shows himself to be lacking in proper aesthetic understanding when he is satisfied to see the picture as purely objective—to be content with recognizing that this is the picture of an engine, that of a couple of lovers, and this again of a waiter in a temper. He must now be prepared to turn his attention to the form and to be able to judge how the engine, the lovers, the waiter, are depicted (Arnheim 1933, p. 60).

As many critics of modern painting argued, sensitive appreciation of film demanded that viewers be aware of how formal manipulation altered the subject matter.

Arnheim's book constituted a synthesis of ideas about film as art and a summary defense of the silent cinema as a pure medium of expression. It's unlikely that many readers of its time would have detected any allegiance to a particular school of psychology. Yet when Arnheim rewrote his book in 1957 as *Film As Art*, he included a prefatory note in which he stated that the book had been written under the aegis of the Gestalt tradition. Arnheim had studied with the Gestalt pioneers Max Wertheimer and Wolfgang Kohler, and he had been impressed with their idea that human perception sought out patterns.

Arrange three dots at angles to one another, and you'll see a triangle. Your mind contributes an order that isn't given in the data. Such insights led Arnheim, in a way different from Münsterberg's, to posit an affinity between the mind and the film. "Even the most elementary processes of vision do not produce mechanical recordings of the outer world but organize the sensory raw material creatively according to principles of simplicity, regularity, and balance" (Arnheim 1957, p. 3). When an artistic film shapes the raw photographic material into a coherent image, it is imitating our ordinary perception. We see not a hodgepodge of corners, surfaces, textures, and patterns of light, but rather a stable array of figure and ground, enclosed spaces and enclosing ones.

In the years between the first edition and the 1957 edition of *Film as Art*, Arnheim had written one of the pioneering applications of psychology to the visual arts. *Art and Visual*

Perception (1954) revealed that the history of drawing and painting followed the principles of Gestalt psychology. After writing that, it seems, Arnheim saw his early strictures on cinema in a more psychologically tinted light. Some of his earlier examples now take on new significance. For example, Charlie Chaplin on a boat railing, filmed from the rear, appears to be heaving with seasickness. But when he turns around, we realize that his shoulders were wriggling because he was fighting a fish on a line. The 1957 Arnheim could argue that we applied one conceptual Gestalt to the early part of the shot and then had to correct it when the image was reconfigured.

If something like this construal is right, then art not only calls on stable and symmetrical Gestalts; it also plays with them, asking us to complete them or to find another pattern that replaces an earlier one. Nonetheless, even the 1957 edition of _Film as Art_ did not invoke the experimental tradition of the Gestalt school to the degree that _Art and Visual Perception_ had. Arnheim's revamped discussion signaled only a somewhat diffuse adherence to psychological science. His main purpose, from first to last, was to justify cinema as a modern visual art.

Freud (again) and Filmology Avant-garde movements like Expressionism and Surrealism waned with the coming of sound cinema in the late 1920s. Now that Hollywood's editing-driven style had become universal, sound recording was fitted to the demands of it. Dialogue replaced written intertitles, the music was now firmly attached to the visuals (instead of being played live in the theatre), and sound effects were added to enhance the sense of a concrete and continuous space and time. As we'd expect, the standard artistic handling of sound was guided by common-sense

psychology. Voices in long shot, filmmakers believed, should seem a little quieter than voices in close-up (but in both cases they would be unnaturally clear); music should not draw attention away from the story; and certain spaces demand plausible auditory textures, so big sets ought to have a noticeable reverberation.

Film theorists tended to accept the dominance of Hollywood conventions, and when they discussed psychological effects of the reigning style, they appealed by and large to intuitive principles. For example, the title of Andre Malraux's 1940 article "Sketch for a Psychology of the Moving Pictures" is misleading. The piece is principally about the artistic possibilities of the sound film, which, contra Arnheim, he considers a more mature form than the silent picture. The psychological dimension comes chiefly in Malraux's contention that the mass-reproduced and mass-distributed nature of film makes it ripe for myth, in which stars become like gods and goddesses (Malraux 1958).

A more original note was struck by André Bazin. In his ambitious exploration of the art of sound cinema, he raised once again the matter of attention. Directors in the tableau tradition became skilled at guiding the viewer to notice the most important area of the frame. Defenders of editing countered that changing the shot scale and concentrating on one bit of action at a time was a more secure and engaging method of shaping the viewer's attention. Bazin noticed, however, that many directors of the late 1930s and early 1940s were minimizing editing and creating shots that packed many areas of dramatic significance into the frame.

He maintained that in some scenes, directors Orson Welles and William Wyler, forced the viewer to choose between

competing items of interest. Confronted with a dense deep-focus shot in *Citizen Kane* (1941) or *The Little Foxes* (1941), the viewer is forced, in a sense, to edit it himself. For Bazin, this artistic choice gave the viewer the sort of freedom of choice that was part of ordinary perception, and became a step forward in the development of film language (Bazin 1967, pp. 33–36). Just as important, the idea of less-fettered attention fitted with Bazin's idea that, in opposition to theorists like Arnheim, cinema was inherently an art of realism, since it depended ultimately on photographic recording.

Although one can connect Bazin with strains in contemporary French philosophy, notably phenomenology, he continued for the most part to rely on intuitive conceptions of the spectator's activity. For example, he suggested that in the continuity style, analytical editing operated in a manner similar to opera glasses at a play. The viewer is provided a full view and then a bit of action is extracted for closer examination (Bazin 1967, p. 32). Münsterberg had made the same comparison thirty years before (Münsterberg 1970, p. 39).

The 1940s also saw psychoanalytic theories of cinema return to the fore. Freudian psychoanalysis had been picked up by elite culture in the 1920s and 1930s, but in the 1940s it became common currency in the popular arts as well. A great many Hollywood films made explicit or implicit references to the unconscious, repressed desires, disguised wish-fulfillment, Oedipal relations, and other tenets of classic Freudianism. The young hero of *Kings Row* (1942) goes to Vienna to study the workings of the mind and returns to his small town to find it a hotbed of neurosis. Protagonists often find themselves in madhouses (as in *The Snake Pit*, 1948) or

haunted by disturbing dreams (as in *Spellbound*, 1945). The plots are often driven by a mystery, so that the doctor plays detective in uncovering repressed childhood memories or forbidden impulses.

With filmmakers presenting (and simplifying) Freudian theory, it isn't surprising to find film critics using the same approach to interpret films. A group of anthropologists at Columbia University, led by Gregory Bateson and Margaret Mead, began analyzing German propaganda films for their revelations of unconscious Oedipal conflicts (Bateson 1953). Social psychologists Martha Wolfenstein and Nathan Leites turned their view toward current American films of the late 1940s and found repeated psychodynamic patterns that reflect hidden anxieties. For instance, the common plot pattern of an innocent hero who must clear himself of guilt serves to deny that he harbors less-than-innocent impulses. The conflict is attributed to outsiders who misjudge the hero. Like most of the writers in this vein, Wolfenstein and Leites were doing film criticism by interpreting the Freudian dynamics they found in the films, but also positing that these patterns harmonized with broader cultural anxieties (Wolfenstein and Leites 1970).

Throughout the history of film theory and criticism, movies have been compared to dreams, but the critics of the 1940s pursued this metaphor more avidly than earlier writers. Barbara Deming suggested that American films revealed a dream-portrait of their public at the period.

It is not as mirrors reflect us but, rather, as our dreams do, that movies most truly reveal the times…. Through them we can read with a peculiar accuracy the fears and confusions that assail us…. The heroes and heroines who are most

popular at any particular period are precisely those who, with a certain added style, with a certain distinction, act out the predicament in which we all find ourselves (Deming 1969, p. 1).

For Wolfenstein and Leites, films were closer to daydreams than nighttime ones: less fraught but no less revealing of repressed fears and desires. Freud had seen a connection between the fantasies of daydreaming and literary creativity, and Wolfenestein and Leites extended the analogy to films, which promote "the common day-dreams of a culture" (p. 13). Like Deming, however, Wolfenstein and Leites believed that the deciphering of the dream-content in psychoanalytic terms went beyond the film itself to suggest forces at work within the audience.

More playful and ingenious in pursuing the dream analogy was Parker Tyler, an essayist much influenced by Surrealism. In dazzling prose-poetry, Tyler argued that Hollywood films whipped together a phantasmagoria of infantile fixations and adult regression. He found analogies for copulation everywhere, and discovered hidden homosexuality in *Double Indemnity* (1944) and castration anxiety in *Arsenic and Old Lace* (1944). Unlike the more rigorous academics, Tyler saw criticism as a playground, as he confessed later:

The only indubitable reading of a given movie, therefore, was its value as a charade, a fluid guessing game where all meanings made an open quantity, where the only 'winning answer' was not *the* right one but *any* amusingly relevant and suggestive one: an answer which led to interesting speculations about mankind's perennial, profuse and typically serio-comic ability to deceive itself (Tyler 1967, p. 11).

The free-association method that Freud had asked his patients to pursue now showed up as a way to appreciate the tangled appeals of a Hollywood movie. The writer becomes both patient and analyst: the moviegoer's bits of memory trigger a session in which the critic opens the door to never-ending fantasy. And Tyler was not as worried as the academics about the state of the American psyche. He seemed to suggest that all popular art plays with subliminal appeals, and these are more diverting than dangerous.

Very different from Tyler's open-form Freudian criticism was a research program taking shape in France at the same time. There a team of academics began to conduct experiments on filmic perception and comprehension. Known as the "Filmology" (*Filmologie*) group, they blended social psychology, psychophysics, and film aesthetics into a program that would lead, they hoped, to a science of cinema. They gained the support of the French higher education establishment, created an Institute and a course of study, and launched a journal.5

As a movement, Filmology was rather eclectic. Some members embraced psychoanalytic inquiry, while others envisioned a large-scale sociology of cinema, plotting attendance figures and audience demographics. There were also forays into Gestalt psychology and the psychology of perception. Some Filmologists undertook physiological measures, while others ran tests on how children grasped film stories. Still others tested subjects' memory for film plots and specific shots.

All of these diverse efforts aren't easily subsumable to a single research program, but one of the threads running through them had already lived a long life: cinema as

furnishing an impression of reality. Perceptual research suggested that viewers spontaneously recognized places and things displayed on the screen, while investigation of children's comprehension suggested that film techniques like dissolves were learned more gradually. Filmologists also came to some conclusions about narrative. At the conceptual level, a good deal of evidence converged around the notion that film scenes were quickly understood and as quickly forgotten; people had a hard time recalling particular moments accurately and often "remembered" things that they had not seen. Two researchers concluded: "During the running of a film, the viewer does not remain passive, but selects from what he sees and hears that which is necessary to his comprehension; at the same time, he carries our a hierarchization of story elements" (cited in Lowry 1985, p. 150).

Filmology's center of gravity shifted from France to Italy in the early 1960s, but as Lowry plausibly suggests, its influence lingered in Paris through the writings of Roland Barthes and Christian Metz (Lowry 1985, p. 163–170). These founders of film semiology saw in the diffuse but enlightening research of the Institute the basis for a more systematic "science of cinema"—of indeed all cultural phenomena. In addition, some Filmological projects anticipated the empirical bent and the models of mind that emerged in cognitive film studies.

New waves, new theories The growth of the Hollywood continuity style, the emergence of avant-garde movements of the silent era, and developments in the sound cinema had all shaped the ways that critics and theorists thought about the artistic and psychological possibilities of cinema. Something similar happened in the late 1950s and the 1960s. Some of

the cinematic forms and styles that emerged at this period offered the biggest challenge to mainstream cinematic storytelling since Surrealism. A string of films, made mostly by young people, forced observers to rethink their basic assumptions about how the medium worked. The "young cinemas" and "new waves" made waves of their own.

Although important films in this mode were made in Asia, America, and Eastern Europe, the most influential at the time were French films such as *Hiroshima mon amour* (1959), *The 400 Blows* (1959), *Last Year at Marienbad* (1961), and practically all of the works of Jean-Luc Godard, from *Breathless* (1960) to *Weekend* (1967). At the same time, even more daring experimental movements came to the fore in experimental cinema, from such Americans as Stan Brakhage and Harry Smith to Europeans such as Kurt Kren and Peter Kubelka.

One effect of this upheaval was to relativize the ideas of craft on which mainstream cinema rested. Moviegoers were suddenly reminded that Hollywood's methods of staging, shooting, and editing, along with its conceptions of plotting, were not the only ones possible. The American system of continuity editing and tight plotting now appeared as only one tradition, and perhaps a fairly stifling one at that.

To take just one example: A husband who's run off with the family babysitter finds a dead man in her apartment. Instead of reacting in horror, he calmly strolls by the corpse. When an investigator arrives and starts to question them, the woman whacks him from behind and the couple flees. But their escape isn't rendered with either the smoothness of classic continuity editing or the rising tension of crosscutting (alternating, say, the couple's flight with the approach of the

police). Instead, the fugitives escape in a series of shots jumbled out of order. They're in a car, then back in the apartment, then driving down a road, then fleeing to the rooftop, while on the soundtrack we hear a fragmentary conversation between them.

This sequence, from Godard's _Pierrot le fou_ (1965), triggers many effects, but one is to call attention to the normal way of rendering the action. The husband's casual acceptance of a corpse on the bed violates our expectation about story causality, and we expect the couple's flight to be rendered in 1-2-3 order. Viewing the sequence, one can't help thinking that the Hollywood methods of characterization and cutting are only one option among others, and those are in some ways more intriguing.

The rise of "new cinemas" coincided with intellectual movements centered in France that sought to understand how cultural systems represented meaning. Influenced by developments in linguistics, various researchers argued for a science of semiology, the rigorous study of social processes as sign systems. The basic idea was that meanings circulated through a society not only through verbal language but also through images and other media. Fashion, for instance, is a sign system. By dressing in blue jeans, a businessman tells people something different than if he wears a suit. The jeans function as a signifier, an item that expressed a meaning (a signified). Jeans "say" that the wearer is hip, casual, informal, unpretentious, and perhaps more like a working person than an executive. Likewise, cars, furniture, and even interpersonal activities like gestures and facial expressions function as signifiers pointing to signifieds (Barthes 1977).

Signs are governed by codes. Take traffic signals. They

consist of three signs: red for "stop," green for "go," and amber for "proceed with caution." These three signs exhaust the possibilities; together, the code carves up your possible behavior at an intersection. Moreover, these three signifier/signified pairings exhaust the system; you wouldn't know what to do if you encountered lights that were purple, blue, and pure white. The code of traffic signals consists of particular items picking out definite meanings, and the meanings are defined differentially. If the green light has burned out, you can still proceed after seeing the red and the amber signals. The green light is not so much green as not-red and not-amber. The whole ensemble hangs together as a system, a very simple code.

Most sign systems we encounter are far more complex than traffic signals, but the semiologists believed that they could be analyzed according to the same principles of code, signifier, and signified. From a semiological standpoint, the *Pierrot le fou* sequence is pointing out that filmic storytelling is also a matter of signs. Hollywood has created codes of character behavior, linear ordering, and smooth shot-matching. Godard has arranged his scene in a way that violates the codes—and perhaps creates a new code of his own.

How does the spectator fit into this line of reasoning? At the least, viewers are sign-readers. We know the relevant codes and usually can move efficiently from signifer to signified. If you're a native speaker of English, you can decode the sentences people say to you. Similarly, we have learned the codes of mainstream cinema and can understand procedures like analytical editing and filmic punctuation (dissolves, fades, wipes, and the like).

Film semiology, in its earliest phase, was asking the question: *What enables films to be understood?* Working with intuitive psychology, filmmakers had typically not asked that question, but a new generation of film scholars, many trained in European linguistics, did. The most outstanding of these thinkers was Christian Metz. Metz owed a considerable debt to both filmology and phenomenological trends of the 1940s, but he pushed into the terrain of semiology by asking: To what extent is cinema coded?

In his early work, Metz posited that cinema was not coded in the manner of verbal language. Language, like many codes, is quite arbitrary and is governed by social convention. The word *dog* has little in common with *chien* or *hund*, but English, French, and German speakers are denoting the same concept when they use these very different signs. By contrast, an image of a dog resembles a dog. It denotes dogginess, we might say, directly. This is the famous "impression of reality" yielded by cinema, and it seems based on natural perception, as the Filmologists had suggested, rather than social codes.

Moreover, a word can be broken down into phonemes, and these constitute a system in their own right. In spoken English, the difference between *sit* and *zit* is provided by a contrast between the voiceless sibilant /s/ and the voiced sibilant /z/. There are a surprisingly small number of phonemes in any language, and they're typically organized in contrast classes. Out of them you can build any word in the language. But it makes no sense to ask how we might divide an image into its constituent "phonemes." You might divide the dog shot one way, I might divide it another, and both of us would be hard pressed to explain the principles behind our choice. And while we can take one phoneme out of *dog*

and replace it with an *l* to get *log*, we couldn't assemble an image of a log out of two bits of our dog shot and a third bit imported from elsewhere (Metz 1974, pp. 61–67).

Still, verbal language, pervasive as it is, isn't the only code, and Metz came to the conclusion that cinema was coded to some degree, most obviously at the level of narrative denotation. He argued that the conventions of storytelling cinema could be mapped into an intelligible array of alternatives—a "paradigm" of choices. You might, for instance, film a scene in a single shot. That shot might signify various things. If it was a brief shot of a road sign or letter, it might stand alone as a separate episode in the plot. In *Young Mr. Lincoln* (1939), after one scene ends, we see an invitation to a ball in close-up; dissolve to the party. The single shot of the invitation is a brief episode in the plot. Other types of single-shot sequences include the sort of long-take sequence we might find in a tableau film (Metz 1974, pp. 119–133).

Metz laid out a menu of options, suggesting that different editing choices would signify different arrangements of time and space. An ordinarily edited scene, for instance, shows us a series of actions chronologically, while crosscutting presents actions taking place simultaneously in different locales. To this extent, film makes us of the sort of binary contrasts at work in phonology. As viewers we've internalized filmic codes, so that on the basis of the signs emitted by the film, we can grasp the momentum of the story action. We understand that cuts in a normal scene render succession, while cuts in another sort of sequence present simultaneity. It's our acquaintance with the code that makes the *Pierrot le fou* sequence seem so strange (Metz 1974, p. 217).

Semiologists, then, sought to bring to light the codes of traditional filmmaking and to analyze how more unusual films might work in relation to those codes. As Metz's thinking developed, he reconsidered the question of the image's impression of reality and suggested that there might be some degree of coding there too. But more consequential was his role in a broader rethinking of how film engages its spectator. In the semiological framework, the viewer is a knowledgeable, even masterful, decoder, moving skillfully from signifier to signified.

Some French thinkers considered this too optimistic a view. If society is a vast array of signs, why stop at the border of our skin? To others, we are signs; they try to read our words, gestures, and glances. More broadly, the social roles we play and identify with—student, citizen, basketball fan, admirer of romantic comedies—can be considered signifiers as well. Perhaps we ourselves are no more than sign systems.

Freud once more The semiological question *How are movies understood?* was partly a response to movies that were difficult to grasp, at least compared to the Hollywood product. The new cinemas of the 1950s and 1960s indirectly raised another question as well.

Hollywood films, all agreed, aimed to provide pleasure. But films from the new waves and experimental traditions seemed designed not to be enjoyed. Many were dense and difficult, like Antonioni's *L'Avventura* (1960) and Straub and Huillet's *Chronicle of Anna Magdalena Bach* (1968). Even more troublesome cases came from the avant-garde, which seemed to challenge the limits of boredom. Michael Snow's *Wavelength* (1967) was a series of zooms across a mostly abandoned loft. Andy Warhol provided an eight-hour series

of shots of the Empire State Building (*Empire*, 1964). What, then, made films pleasurable or unpleasurable? This question raised issues of the spectator, and offered a certain challenge to semiology.

For a variety of reasons, some of them political, academics saw in a new version of psychoanalysis a better way to understand how humans used, or were used by, sign systems. In particular, the failures of political rebellion during May of 1968 may have led many to question why people could not seem to break free of their most entrenched habits of mind. Did people employ codes, or were they the slave of codes? And if people were in bondage to codes, why did they seem to enjoy it?

Metz, with his knack for formulating a question pointedly, asked: Why do people go to the cinema when no one forces them? The question reveals a shift from an objective semiology of codes "out there" to an inquiry into psychodynamics. Writers began to propose that spectators interacted with sign systems in a less rational away than semiology had assumed. Instead of simply "reading" a film's flow of signs by applying the proper codes, the spectator was now thought of as more deeply invested in the film. Cinema, Metz suggested, had an allure that kept people engaged with movies in a very fundamental way.

So one central question became: *What is cinematic pleasure?* Many theorists, Metz included, thought that the answer was to be found in psychoanalysis. But this psychoanalysis was of a very different stripe than the version that had inspired the social-psychological inquiries of the American writers of the 1940s.

Jacques Lacan, an unorthodox psychoanalyst much influenced by Surrealism, became a charismatic figure through his effort to read semiology through Freudian spectacles. Lacan adhered to many of the theoretical concepts of Freudian doctrine, like the Oedipal conflict, repression, infantile sexuality, and the like. But he incorporated semiology by suggesting that an individual human being was basically shaped by a symbolic realm that surrounded him or her. That realm wasn't simply the real environment but rather, in the semiological sense, a vast set of sign systems.

Lacan went further, arguing that you aren't simply conditioned by those sign systems. Your very sense of self, your assumption that you are a conscious agent able to act and make decisions, is constituted through and through by the semiological ecosystem. Codes don't just imprint us; they make us. This authoritative set of sign systems Lacan called the Symbolic order. He associated it with the role that the father plays in Freud's Oedipus complex: the source of power and the rule of order. The tissue of signs that constitutes each of us reflects "The Law of the Father."

But I don't *feel* myself to be just the product of all the sign systems that defined me since I was born (or even before). I'm more than my birth certificate, or my role as son or husband or professor. Where do I get this sense of an essential me, something more than all my actions and roles? I can look in the mirror and see that I'm at the very least a unified body. By recognizing myself as this thing outside me, I draw on what Lacan considers the fundamental process of identification: grasping myself as an Other.

Lacan believed that our sense of individuality is an illusion,

constructed "from the outside" by the Symbolic order. My sense of myself exists in the realm of what Lacan called the "Imaginary"—the world of images and perceptions that reassure me that I am me, that I recognize myself in and through others, and that I am the boss of me.

The cinema can be considered one vehicle for this imaginary sense of fullness and self-direction. We watch films as we watch the world around us; but although it appears to be reality, the film is a world made for us. This has been a constant in film theory since Münsterbeg. For the Lacanians, however, the artifice of cinema works to maintain the illusion that we are coherent subjects of experience. Seeing the Other, in life or on the screen, reassures us of our own stability as a subject.

No wonder that Metz called his primary essay on the psychodynamics of cinema "The Imaginary Signifier." When we see a film, he claims, each of us may identify with the characters in the narrative, but more basically each identify with his or her self. The machinery makes us the camera, seeing what it sees, as if its gaze were our own. Cinematic illusion provides the famous "illusion of reality" not by what it shows but by the way it shows it, which mimics our usual act of perception. But it mimics it to a higher degree, because the camera can go anywhere in space or time. As Pudovkin had suggested, we become an idealized eye, not a real one. The movie viewer is a purely perceiving subject. This confirms us in our own sense of identity: I see and hear, therefore I am. Metz answers the question of pleasure this way: When you watch a film, you are enjoying yourself—literally, your *self*. But that self is freed from the normal conditions of time and space (Metz 1982, p. 48).

Metz traced out many other aspects of cinema that corresponded to Freudian and Lacanian concepts. Picking up on earlier theorists, he mounted a cross-comparison between film, reality, dream, and daydream (Metz 1982, pp. 104–147). He suggested as well that voyeurism and fetishism are "perverse" practices encouraged by filmic technique and so rendered socially acceptable by the cinema.

Other theorists tried to show that filmic pleasure had a gender bias. Laura Mulvey (1975) suggested that mainstream cinema oscillated between a narrative impulse that moves the action forward and an impulse toward spectacle that freezes the plot so that we can enjoy simply taking in an audio-visual display. An example today would be the common complaint that action pictures have very banal stories that are periodically interrupted by chases and explosions.

Mulvey argued that in Hollywood cinema of the classic era, the stories tend to make the male an active protagonist. The hero makes things happen. By contrast, the woman tends to be a passive recipient, standing by or acted upon—sometimes rather brutally. She might be involved in the plot as an object of investigation, or as the bad woman who needs to be punished. All this happens at the level of narrative. But at the level of spectacle, the woman performs a very important function. If cinema depends on a pleasure in looking, voyeurism—the pleasure in looking at others who cannot look back—is reserved for the woman. She becomes a spectacle in herself: singing or dancing, or simply being observed as a thing of beauty. The narrative halts to dwell on her. Through the codes of narrative and point-of-view editing, the idea of masculine control is reasserted as a pleasurable experience of looking.

This system of presentation relies on the threat that Freud claimed that woman poses. Lacking a penis, she is an ever-present proof of the threat of castration, so she must be contained and subjected to male authority. But today, Mulvey adds, the Hollywood studio film is not the only way movies can be made. Other filmmaking practices can challenge it, and the most radical way of doing so is by questioning or refusing the way it generates the pleasure of looking, and especially looking at women. While Mulvey and many other writers used these concepts to dissect classic Hollywood works, her own films, such as *Riddles of the Sphinx* (1977), and other avant-garde works by feminist filmmakers sought to offer an alternative to the psychological dynamic at work in the mainstream tradition.

The psychoanalytic perspective that emerged in 1960s and 1970s film theory took other forms. There were many interpretations of particular films as playing out Freudian/Lacanian patterns. There were also attempts to show how conventional techniques, such as shot/reverse-shot cutting, could be explained as part of a larger dynamic of Symbolic and Imaginary relationships (Oudart 1978; Dayan 1974).

In sum, writers accepted semiology's insistence on the coded nature of culture and merged that framework with Lacan's psychoanalytic account of unconscious processes. For many, the sign systems revealed by semiology turn out to function not only socially but mentally. Regardless of the content of the stories that movies tell, most films maintain viewers as passive subjects. Pleasurable as it is, the theorists claimed, moviegoing as we know it is politically and psychologically regressive.

The naturalistic turn By the 1970s, the study of film was becoming established as an academic discipline in colleges and universities around the world. Film Studies fostered a variety of methods, including auteur criticism, research into early cinema, and theorizing about cinema's nature and functions. Film academics worried less about responding to current cinema and tended to concentrate on exchanging views with other academics.

University-based scholars sacrificed the range of an Eisenstein or Bazin for greater specialization and depth. As a result, ideas could develop more dialectically. Bazin did not know about Münsterbeg and did not respond directly to Arnheim, but via book publishing, professional journals, and conferences, academic writers could become aware of their predecessors and communicate directly with their contemporaries. A more coherent dialogue ensued.

More specifically, some film scholars began to build research programs that called into question tenets of the semiological-psychoanalytic tradition. One such program has come to be called Cultural Studies. Borrowing many premises from semiology, this effort develops a sort of sociology of mass culture, but without resorting to the quantitative methods of traditional American sociology. Proponents of Cultural Studies have tended to consider spectators in relation to social relations of power, but without telling a Lacanian story about subject-maintenance. Some writers assume that viewers are rational agents, "strategizing for pleasure." They know that they are being wooed as purchasers, they're able to consume entertainment ironically, and they may vociferously announce their tastes (for instance, as fans). If the semiological-psychoanalytic model focused most closely on the film-spectator relation, Cultural Studies focused more on

the film-audience one.

Other writers confronted the 1970s psychoanalytic model more directly. The most salient alternative has come to be known as cognitivism because of its earliest formulations. It might more accurately be called naturalistic inquiry into the spectator's activities. The "cognitive" label suggests that the new frame of reference draws on the research of cognitive science, which emerged in the 1980s. (See Gardner 1987.) I use the "naturalistic" label to signal the effort to draw on evidence and research frameworks developed in domains of social science: psychology, but also linguistics, anthropology, and neuroscience. Naturalistic inquiry includes as well an experimental component.

In part this research program grew out of perceived problems with the semiological-psychoanalytic model. For one thing, semiologists' model of language could be criticized as short-sighted. It was based largely in phonology (that is, the study of word sounds) and lexical semantics (the study of word meanings). There was no account of other dimensions of language, such as syntax (the rules for creating sentences) and pragmatics (the more informal rules of language use that leave their traces in discourse). Since a revolution in linguistics had recently been created by Noam Chomsky's arguments about syntax and universal rules of grammar, semiology seems to have ignored what professional linguists were now considering central.

In a similar way, psychoanalysis had long been a target of criticism (Macmillan 1997; Cioffi 1998). Studies couldn't show that psychoanalysis achieved cures beyond chance levels. The growing authority of brain science and a better understanding of genetics and organic chemistry had

reduced the therapeutic terrain that psychoanalytic theory could cover. More specifically, Lacanian theory was one of the most controversial theories even within the Freudian community (Macey 1988). Lacan left the international association of psychoanalysts and set up his own school. As a therapy, his system could not be shown objectively—that is, at a level beyond anecdote—to have helped suffering people. As a theory, it was very difficult to appraise. Lacan delivered his ideas in lecture format, where he tended toward the cryptic and oracular. His followers were hard pressed to explain his theories clearly. Lacanianism had a bigger following among professors of literature, art, and film than in the psychoanalytic profession, and skeptics suggested that it was because his theories let humanists interpret artworks in ingenious ways. A theory that yields intriguing interpretations is not necessarily true.

Once the merger of semiology and psychoanalysis moved to its most general claims, it seemed to put a dead end to further research. Once you have said that we are constituted as passive viewers by every image that displays perspective, it's hard to see how any films with recognizable imagery can escape this criticism (Baudry 1985). Once you have said that the very illusion of movement on the screen constitutes a denial of one frame by another, in the manner of Freudian repression, you seem to have condemned all movies that move (Kuntzel 1977). Once you have said, as Metz did, that the very nature of cinema is to create an illusion of an all-perceiving subject, there's little to be added about various types of films. Film scholars wanted to analyze and interpret particular films, genres, periods, and trends. The condemnation of cinema as an all-encompassing ideological machine left little space for new discoveries.

Although the semiological-psychoanalytic paradigm retains some followers, many of its adherents drifted toward other projects. This was probably partly due to shifting interests and partly due to some critiques. (See Carroll 1988 and Bordwell and Carroll 1996.) In any case, during the mid-1980s two writers started to suggest an alternative along naturalistic lines, and they did it from opposite poles of generality.

In his 1985 essay "The Power of Movies," Noël Carroll proposed a naturalistic account of popular cinema. He suggested that the ability of mass-consumed films to engage audiences depended on skills that were easily acquired. Film images typically look like the world because they are keyed to our perceptual systems; children swiftly learn to recognize pictures. Movies are easy to follow on a moment-by-moment basis because they are designed that way; they have an "uncluttered clarity" different from the messiness of action in everyday life. Thanks to techniques like variable framing, the film director has more control over attention than a stage director does. And since most popular films are narratives, they draw on our ability to understand that each phase of the action crystallizes a question. (Will the shark devour these bathers?) All of these resources—recognizable imagery, coherent design, film techniques, and question-based creation of narrative expectations—work together to assure that audiences understand the film (Carroll 1996).

This process of understanding is, Carroll pointed out, predominantly perceptual and cognitive. Since popular cinema has found success in many times and places, "the power of movies must be connected to some fairly generic features of human organisms to account for their power across class, cultural, and educational boundaries. The

structures of perception and cognition are primary examples of fairly generic features of humans" (p. 92). Carroll doesn't insist that the factors he isolates are the only relevant ones, just that they should be a part of any explanation of films' ability to reach widely different audiences.

Carroll's account remains agnostic as to particular theories of mental life. The best explanations that science devises for the workings of perception and cognition work will presumably be compatible with our capacities to recognize objects in moving pictures, concentrate our attention when guided by framing, and tacitly pose questions about the unfolding action. In the same year of 1985, I proposed a more doctrinally specific, but still naturalistic, account of cinematic comprehension.

Narration in the Fiction Film grew out of my effort to understand why storytelling films were designed the way they were. An exercise in reverse engineering, the book sought to grasp how narration—the flow of story information as manifested in images and sounds—solicited certain viewing activities. The book was much influenced by a current paradigm of perceptual and cognitive activity that I called constructivist. Our eyes, on this account, yield us incomplete and degraded data; yet we manage to grasp a coherent, consistent world. Our visual systems must select, arrange, and extrapolate from the information we get. At the level of cognition, we do much the same thing. In a story, the whole of everything relevant isn't directly declared, so we must fill in a great deal through presupposition (Sherlock Holmes presumably has lungs) and through inference (when he broods alone and utters cryptic clues, he's probably solving the mystery).

The central idea of the book is that directors, screenwriters, and others on the filmmaking team design the film to solicit these sorts of mental activities. Sometimes our perceptual and cognitive filling-in proceeds automatically, but in other cases—such as flashback plots, or mystery-based ones—we have to become aware of these processes. What we see and hear in *Rear Window* challenges the protagonist's observations, so we must reconcile two versions of events. *Narration in the Fiction Film* argued that different cinematic traditions, ranging from Carroll's mass-market movies to more esoteric ones, have guided viewers sense-making activities in different ways. The narrational conventions I pick out have a historical dimension as well (Bordwell 1985).

Rejecting the then-reigning psychoanalytic program, Carroll and I proposed, at different levels of generality, that a naturalistic account of human perception and cognition was a more fruitful way to answer some key questions about cinematic art. Since then, other researchers have taken up this line of inquiry. Many of them have revisited some of the persisting puzzles about how films solicit mental activities.

Take the classic matter of attention. It was treated as a bit of folk psychology by most filmmakers: find ways to guide the audience's eye. Now, the modern technology of eye-tracking allows researchers to study patterns of visual attention in non-invasive ways. The experiments of Tim Smith and his colleagues have shown that filmmakers are indeed skilled practical psychologists, able to use dialogue, composition, staging, lighting, cutting, and other resources to steer our attention quite minutely within the frame (Smith et al. 2012). Smith has confirmed the intuitions of the tableau filmmakers by studying a sustained shot from *There Will Be Blood* (2007) (Smith 2011). Experimental subjects do shift their

gaze in response to facial expressions and gestures, always seeking out areas of maximal information about the action. Classic theorists were right to emphasize attention as a basic aspect of film viewing, and empirical work can nuance our understanding of the process.

Or take the long-standing issue of how editing constructs space. Julian Hochberg and Virginia Brooks have argued, from what I'd consider a constructivist stance, that spectators build up a sense of a scene's space not through detailed mapping of each shot but rather from more general, and loosely identifiable landmarks (Hochberg and Brooks 1996). Through other experiments, Stephen Schwan and Markus Huff have shown that viewers develop a "situation model" of the depicted flow of events, and the 180-degree system creates simplified, if sometimes crude, spatial mapping (Schwan and Huff 2009). Dan Levin has investigated how mismatched editing goes completely undetected because of both perceptual factors (more salient items distract us from continuity errors) and higher-level ones, like ascribing goals and intentions to the actors we see (Levin 2010).

The study of narrative comprehension hasn't been neglected either. Murray Smith has suggested a cognitive framework for understanding character (Smith 1995). In later work of mine I've tried to provide a general model for how spectators respond to narrative film (Bordwell 2008, pp. 11–133). Central to these arguments is the assumption that the spectator draws on real-world knowledge and awareness of narrative conventions in order to go beyond the information given directly in the film.

That films arouse emotion is plain enough, and the

naturalistic turn has made contributions in this domain as well. The Lacanian program tended to collapse all matters of emotion into "pleasure vs. unpleasure," but Noël Carroll, Ed Tan, Carl Plantinga, Gregory Smith, and other theorists have proposed that we can understand emotion by starting from issues of perception, often considered initially as affect, and cognition, often involving judgment and prototypical emotional scenarios. The study of emotion has been a growing area within cognitive science more generally (Griffiths 1997; Power and Dagleish 1997; Prinz 2004).

Large-scale theorizing has not been absent either. Joseph Anderson's trailblazing _Reality of Illusion_ (1998) offered a comprehensive account of cinematic perception and comprehension from the standpoint of J. J. Gibson's ecological psychology. Anderson's book yielded strong evidence for Carroll's hypothesis that filmic perception demands very little specialized code-reading, only those automatic skills of ordinary perception filtered through millennia of evolution (Anderson 1996). Torben Grodal provided a comparably broad view, but one based more on neuroscience (Grodal 1997 and Grodal 2009). This neuroscientific path has become an important component of the naturalistic trend (Hasson 2008).

As this sketchy survey indicates, the naturalistic vein of inquiry plays host to many sorts of questions and methods for answering them, from reverse-engineering on the basis of filmic construction to more reductionist efforts to measure brain activity. What we have is less a single research program than a growing research _tradition_—one that tries to respect filmmakers' craft and the intuitive psychology that underlies it, the design features of actual films, and the various ways in which spectators actively understand them. The book you

hold in your hands is another indication of the florescence of this research tradition.

Academics praise interdisciplinarity, of the cooperation of the humanities and the sciences. Too often, though, that cooperation involves only interpretations. Humanists join with social scientists in producing readings but not *explanations*. The engagement of film studies with empirical psychology and cognitive science over the last three decades has come closer to providing the sort of "consilience" that Edward O. Wilson proposed: unified explanations that bring art, humanistic inquiry, and scientific inquiry together (Wilson 1998). Film researchers invoke naturalistic models and findings from psychology in order to understand more fully how cinema works, and works with our minds.

Notes

1 : For background information on the filmmaking trends discussed throughout this chapter, see Thompson & Bordwell (2000).

2 : In France, this property came to be known as *photogénie*. For discussions, see Abel 1988, pp. 107–115.

3 : Very helpful discussions of Münsterberg's intellectual debts are to be found in Allan Langdale, "S(t)imulation of Mind: The Film Theory of Hugo Münsterberg," in Münsterberg (2002), pp 1–45; and Nyyssonen (1998).

4 : For a general introduction to Eisenstein's theories, see chapters three through five of Bordwell (1993).

5 : My account of this movement owes a good deal to Lowry's excellent study (Lowry 1985).

6 : See Carroll 1990; Tan 1996; Smith and Plantinga 1999; Plantinga 2009; G. M. Smith 2007.

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