the films of TIM BURTON

Animating Live Action in Contemporary Hollywood

ALISON McMAHAN

The Films of Tim Burton

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To Warren

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Acknowledgments

I was a bit surprised in the spring of 2001 when my editor and publisher, David Barker at Continuum, who was about to publish my critical analysis of the work of the first woman filmmaker, *Alice Guy Blaché, Lost Visionary of the Cinema* (Continuum, 2002), suggested that I write a book on Tim Burton. David had heard me give a paper on special effects and thought I would be just the person for the job. I was a fan of Burton's work, but I didn't know if fandom would be enough to carry me through several years of intensive writing and research. I also wondered if it wasn't premature to write an overview of a career that is surely just reaching its midpoint.

At the time, I was teaching cinema and media studies at the University of Amsterdam, and it just so happened that several local theaters were jointly presenting a Festival of Fantasy Films, which included a retrospective of Tim Burton's feature films. It was a great opportunity to see all of his films on a big screen again. It did not take me long to decide that not only could I spend several years of my life on Burton's work, it would be fun. Furthermore, it wouldn't have the challenges that I had on my first project, which was about a silent filmmaker. It would be fairly easy to establish a complete filmography. It was easy to find almost all of his films. I would be able to study them in my own home instead of traveling to archives. Burton was born in Southern California, like me, around the same time. None of this was true of Guy Blaché's films: most of them were lost, those that existed were in archives all over the world, to which I had to travel, and though I spoke French, I found her culture of origin rather remote from mine. With Burton I looked forward to an easier experience, something more fun because it was more accessible.

At the same time, analyzing Burton's films was fraught with its own special difficulty. Since he is still alive and working, new data were coming up every day. Not that much has been written about him; with a few exceptions, most of what has been written is pure public relations. Wading through all that press, most of it not even very imaginative spin, became tiresome very quickly.

As anyone who picked up this book is already aware, Burton is a very special filmmaker. Though he works in Hollywood, his films often fall outside the contemporary Hollywood paradigm. His films are rife with tension-filled contrasts: he started out as an animator and, in a certain sense, still thinks like one, but almost all of his work as a director has been in live action. He is fond of old-fashioned special effects techniques and eschews CGI, but his films have their share of digital as well as traditional effects. He has a huge respect for actors, but what most people remember about him is his stunning sense of visual design. He is recognized around the world as a film auteur, but he is firmly entrenched in the Hollywood studio system. His career has lasted long enough that he has had to weather several marked changes in how movies are made and how the industry works, but he manages to keep expressing his own particular vision in his films, often with the same handful of people working on his production crew.

As I describe in detail in the introduction, writing about his films has led me to question the traditional academic divide between live action cinema and animation. Burton is fond of certain genres of film, such as fairy tales, horror, and fantasy (though he has also made action films, biopics, and documentaries), and often combines all of those genres in each film he makes. After closely studying his films for over a year, I finally realized that, when it came to Burton and others like him (some of whom are discussed toward the end of the book), I needed to come up with a new genre term, as the old ones have metamorphosed, recombined, and grown into something that the old names can no longer adequately describe. (I explain this new genre theory in the introduction.)

My research has especially benefited from previous work carried out by Janet K. Halfyard, Ken Hanke, Helmut Merschmann, Jim Smith and J. Clive Matthews, Mark Salisbury, Frank Thompson, and Paul A. Woods (book titles are listed in the bibliography), as well as many academic and

journalistic authors too numerous to mention here, but most of whom are listed in the bibliography or in the chapter notes.

Parts of this book were given as papers at the following conferences: "The Day Hollywood Went Digital: *Jurassic Park* and the Transition from Stop-Motion and Animatronics to CGI in Hollywood," Society for Cinema and Media Studies Conference, Minneapolis, March 2003; "Will the Real Animation Please Stand Up: The Transition from Stop-Motion and Animatronics to CGI in Hollywood Films," 14th Annual Society for Animation Studies Conference, Glendale, California, September 2002; "The Animation Paradigm," 7th International Congress of Domitor, Montreal, May 2002; and "Machine (the Computer) + Cinema = Machinima," Society for Cinema Studies Conference, Denver, March 2002. I benefited greatly from the stimulating environment provided at these conferences.

I would like to thank Warren Buckland for inviting me to test out various chapters in his classes at Chapman University: "Special Effects and the College of Pataphysics," in April 2004; "The Increasing Use of Animation and SFX in Contemporary Hollywood," in March 2003; "*Batman*: Myth, Marketing, and Merchandising," in March 2002, and "What a Film Composer Does: Danny Elfman," in December 2004. His feedback as well as his students' greatly contributed to several chapters in the book.

I wrote Chapter 3 while I was a Mellon postdoctoral fellow at Vassar College. Much of the material in Chapters 3 and 5 was presented to the students in my Film 183 course, "Fantasy and Horror," in the fall of 2002: Anine Booth, Sophia Clark, Joshua Ferguson, Thomas Gemelli, Robert Gestone, Michael Gillen, Ashlinn Killeen, Frederick Lash, Ryan Linn, Monica Menendez, Seth Mittelman, Dimitri Otvertchenko, George Peterson, Alice Sackey, and Nicolle Walsh. Our lively discussions greatly helped me clarify my thinking about 3-D animation and special effects and their role in contemporary cinema. I am especially grateful to Ethan Bien for arranging a William Castle retrospective at Vassar. My teaching assistant, Violeta de los Reyes, helped me find numerous articles on Burton.

A project like this is impossible without the help of friends. John Leary provided me with back issues of *Cinèfantastique* and other Burton-related tie-ins. There were the coffee sessions discussing animation in

general, and digital animation in particular, with Professor Tom Ellman at Vassar College. I also benefited greatly from the technical expertise of my friend Rain Breaw.

I also spent some interesting hours online with the subscribers to the Elfman Zone website http://www.bluntinstrument.org.uk/elfman/. I am especially grateful to Ian Davis for sending me some interviews with Danny Elfman. I am also grateful to Richard Porton for his help on various issues and to Paul Gulino for advice and encouragement.

I spent many pleasurable hours with my daughter, Ruth, watching and rewatching Burton's films, as well as the films of Mario Bava and Hammer Horror.

There aren't enough words to thank my husband, Warren Buckland, whose support, both critical and personal, was instrumental in the completion of this book. He helped me find stills and did a lot of proofreading, and we had many interesting conversations comparing Burton with Steven Spielberg, as Warren is currently writing a book on Spielberg.

As it happened, the period during which I was contracted to write this book coincided with a period of great upheaval in my life, including two moves, marriage, and several changes in employment. I am extremely fortunate to have David Barker as a publisher at Continuum, and I am very grateful to him for his patience and understanding. Thanks, David, for assigning me this project to begin with and for your infinite patience as I struggled to finish this book with all of that going on.

Author's Note

This book is a study of the work of Tim Burton and how his films fit into contemporary Hollywood filmmaking. To illustrate the points I am making, I have reproduced a few images from especially significant moments in his oeuvre. Each image is a single frame taken from a full-length motion picture and is used here for education purposes pursuant to the fair use doctrine.

My book is not endorsed by or affiliated with any of the performers, directors, producers, or screenwriters who created these movies or by the studios that produced and directed them, and the single-frame images are used here for purposes of criticism and commentary only.

Readers who are interested in seeing these motion pictures are encouraged to buy or rent copies of the movies from authorized sources.

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Introduction

Pataphysics will examine the laws governing exceptions, and will explain the universe supplementary to this one: or, less ambitiously, will describe a universe which can be—and perhaps should be—envisaged in place of the traditional one, since the laws that are supposed to have been discovered in the traditional universe are also correlations of exceptions, albeit more frequent ones, but in any case accidental data which, reduced to the status of unexceptional exceptions, possess no longer even the virtue of originality.

—Alfred Jarry Taylor, *Exploits and Opinions of Dr. Faustroll, Pataphysician*[1]

The New Pataphysics

Film critics such as Neil Gabler have complained that the Hollywood cinema of the last twenty years has lost its meaning. Gabler, the author of *Life the Movie: How Entertainment Conquered Reality*,[2] also wrote an op-ed piece in the *New York Times* in the summer of 2002 outlining his position.[3] He coined the term *likeamovie*, claiming that Hollywood no longer works to actually entertain us, to really engage us, but instead delivers facsimiles of real entertainment, films we can follow only because we still remember what real entertainment looks like. According to Gabler, this is not entertainment, but the "illusion of entertainment":

> In most entertainment, the audience responds emotionally, psychologically, intellectually, even physically. There is a level of engagement, and we usually judge entertainment on the basis of how much engagement it elicits. At its simplest, as in so many teenage movies, the illusion of entertainment eschews other forms of engagement for purely physical effects. At its more complex, engagement is replaced by another mechanism entirely. Instead of character development in movies or full-bodied jokes in situation comedies viewers get a set of signals, a kind of code, that advises them how to respond without having to expend the effort, however minimal, that real entertainment demands. You see and hear the signal and you respond as if you were

> getting the real thing. Or, put another way, you are given the form and you provide the content.
>
> . . . [I]n effect, these entertainments exist largely as a system of reminders of what we once experienced when we watched real entertainment—movies and television shows that engaged us and made us feel.[4]

What kinds of movies is Gabler referring to? The only example he gives in his article is the Adam Sandler vehicle *Mr. Deeds* (2002), a film with little in the way of special effects but in many ways a poor remake of its original. Gabler argues vehemently that the films he is critiquing are not simply bad formulaic entertainment, which strives to engage using overly predictable means and usually fails. The films Gabler is really attacking involve "a different way of processing what we see." These "illusions of entertainment" get predictable responses, not by actually eliciting an emotional response, but "by cuing the audience in how they are supposed to react." And the audience does react, because "virtually all Americans have internalized the code . . . and are hardwired to respond."

Similar critiques have been leveled against such films as *The Matrix* trilogy (1999–2003) and comic book films like *Hulk* (2003) and *Van Helsing* (2004). For example, on *The Matrix*,

> . . . the Wachowskis [brothers Andy and Larry] have synthesized a savvy visual vocabulary (thanks especially to Bill Pope's inspired techno-cinematography), a wild hodgepodge of classical references (from the biblical to Lewis Carroll) and a situation that calls for a lot of explaining.
>
> The most salient things any prospective viewer need know is that Keanu Reeves makes a strikingly chic Prada model of an action hero, that the martial arts dynamics are phenomenal (thanks to Peter Pan–type wires for flying and inventive slow-motion tricks), and that anyone bored with the notably pretentious plotting can keep busy toting up this film's debts to other futuristic science fiction.[5]

On *The Hulk:*

> [Screenwriters John Turman, Michael France, and James Schamus] lose sight of the basic requirements of visual clarity, narrative momentum and emotional impact, without which this kind of thing quickly lapses into cultishness or mythomaniacal pretension. Like the raging Hulk himself, a computer-generated Gumby on steroids. . . .[6]

And on *Van Helsing:*

> [T]he brawling ghouls, vampires and werewolves wreaking havoc in Dracula's castle under a full moon—to say nothing of the semi-romantic mumbo

> jumbo passing between Anna and Van Helsing in midfight—are part of a clattering, hectic spectacle that, by the end, has almost completely run out of ideas and inspiration. Which is no great surprise because, despite the rococo obsessiveness of its special effects and its voracious sampling of past horror movies, "Van Helsing" is mostly content to offer warmed-over allusions and secondhand thrills.[7]

Is Gabler correct in arguing that these "warmed-over allusions and secondhand thrills" are indications, not of Hollywood's creative bankruptcy, but of film narration changing, beginning to create meaning in a new way, at least different from the system of classical Hollywood narration that we are accustomed to? The argument of this book is that the answer to this question is yes: yes, filmic narration is changing, though not in a direction without filmic precedent. This does not mean, as Gabler and the reviewers quoted above suppose, that these films mean less—which is not to say that they are better films. I will label this new system of meanings the "pataphysical" way, after the "College for Pataphysicists," originally formed in France in 1948.[8]

My argument in this book is not that current films have "lost" their meaning but that they have come to mean differently, to mean in new ways. In other words, it may be that the movies Neil Gabler is watching appear to be "likeamovies" because a new approach is required to read them, an approach that he is unwilling to take. He is unwilling to let go of the security of classical Hollywood narrative logic and its continuity system of meaning and, furthermore, unwilling to have his old gods satirized.

Pataphysical films have several common characteristics, including some or all of the following. Pataphysical films

1. Make fun of established systems of knowledge, especially academic and scientific
2. Follow an alternative narrative logic
3. Use special effects in a "gee whiz," that is, a blatant, visible way (as compared to "invisible" effects that simulate live action, but without real harm to the actors)
4. Feature thin plots and thinly drawn characters, because the narrative relies more on intertextual, nondiegetic references to be understood

Once we are aware of these characteristics, it becomes clear that pataphysical films are not a recent phenomenon. To the contrary, pataphysi-

cal films have been around since the beginning of cinematic history. For example, consider *Le voyage dans la lune* (*A Trip to the Moon*), produced, directed and starred in by Georges Méliès in 1902. *A Trip to the Moon* aims to show the illogicality of logical thinking. Méliès' goal was, as Richard Abel has described, "to invert the hierarchical values of modern French society and hold them up to ridicule in a riot of the carnivalesque."[9] The film makes fun of the scientists by depicting them at first as medieval magicians, as well as generally inept. It shows them discovering that the "face" on the moon belongs to an actual "man," and the moon is also populated with little green men. Méliès himself plays the chief scientist.[10]

The film follows the narrative logic of animation, which focuses on transformation rather than plot development. Even the forces of motion obey laws other than those of physics. For example, a rocket is shot to the moon from a circus cannon, a man flies back to Earth while being towed by a rocket, stars turn into women, a man survives being dunked into a vat of nitrous oxide, umbrellas on the moon turn into mushrooms and grow immensely huge, and a Selenite (a native inhabitant of the moon) disappears in a cloud of dust after being hit.

A Trip to the Moon is a "trick film," a genre of early film predominant around 1896 to 1902, whose narrative was subservient to the special effects, or tricks. It still enchants by its use of special effects, which it uses in both a visible and an invisible way. The flyaway staging would have been "invisible" to contemporary audiences, as it was a convention that was so accepted that it would be read as realistic, but the montage of the rocket returning and the matte shots of the approach to the moon brought audible gasps and made the film enduringly popular in Europe and the United States for years, to the extent it was widely pirated by other companies like the Edison Manufacturing Co., and the Lubin Manufacturing Co.

Compare this film with *The Core* (Jon Amiel, 2003), in which Aaron Eckhart and Hilary Swank lead a team of scientists on a journey to the center of a stilled Earth to nudge the planet's core back into a rotating movement with a couple of nuclear bombs. Each of the team's adventures is highlighted by a series of special effects, and the most memorable moments come from the satire that is Stanley Tucci's rendering of a lead scientist. In terms of its satire of the scientific academy and the use

of special effects almost as a plot device, *The Core* and *A Trip to the Moon* have much in common.

Antecedents: The Incoherents and the Surrealists

In the early cinema, trick films and animation films were closely related. We can see this relationship if we compare *A Trip to the Moon* with Emile Cohl's *Fantasmagorie,* an animated film (white lines drawn on a black background) made in 1908 for Gaumont. The thin plot revolves around a stick-figure clown and a bourgeois gentleman who suffer one calamity after another, each calamity a pretext to display a series of special effects, usually illogical metamorphoses. To name just a few, the gentleman's hat and umbrella turn into a movie theater interior; the clown emerges out of the ballooning head of a woman sitting in front of the gentleman and engulfs him; later, an elephant, whose tusks are cradling the clown, changes into a house; the clown then plunges out of a window and loses his head, which Cohl's hand reattaches with a paste brush.[11] *Fantasmagorie* engages us not by a cast of "rounded" characters having a series of experiences that ends with them learning some moral lesson, but by indulging in a series of whimsical transformations that amuse and poke fun at turn-of-the-twentieth-century class pretensions.

Cohl was a member of the Incoherents, a movement he actively participated in from 1882 until its dissolution in 1891. It was founded by Jules Lévy, with the motto "Brothers, we must laugh," which summarized their defiant assault on the decorum of the salons and the Academy.[12] The goal was to exhibit drawings and paintings that caricatured the salon paintings that represented the establishment thinking about art of the day. The Incoherents' exhibits of 1881 and 1884 were so successful that participants were able to donate the large sums earned from entrance fees to charity.[13] As Donald Crafton has noted, Cohl's later filmmaking was heavily influenced by the ideas of the Incoherents:

> [The Incoherents'] common ancestor was [Charles] Baudelaire, but at least three separate movements were discernible: the Symbolism proper of [Stéphane] Mallarmé, [Arthur] Rimbaud's *poésie fantastique,* and [Paul] Verlaine's Decadents. The Incoherents absorbed the general aesthetic program of linguistic renewal proposed in varying formulas by these divergent groups but reacted strongly against their seriousness, introversion, and morbidity.[14]

The Incoherents were nihilists who placed great value on spontaneous artistic expression, who refused to adhere to rules or conventions or to

impose any rational structure or order to their art. Cohl's best known work, *Le peintre néoimpressionniste* (Gaumont, 1910), is a film influenced by the Incoherent movement that predicts the pataphysical films of the future in various ways: it shows an artist duping a bourgeois art collector by getting him to buy "blank" canvases, but the film viewer sees that each canvas has an animated scene inserted over it through the use of special effects. Typical scenes include "a cardinal eating lobster in tomato sauce beside the Red Sea" for a red canvas and "Negroes making shoe polish in a tunnel at night," using black leader. In other words, at least two discourses are operating in the film simultaneously, one diegetic (in the story) and one nondiegetic. Both discourses in Cohl's films are humorous and often require repeat viewing in order for a typical audience member to grasp all of the details. Like other Incoherents, Cohl was attracted to the grotesque, distorted images that the Surrealists would later claim had originated in the unconscious, such as hybrids of humans and animals as we saw in *Fantasmagorie*.[15]

Many of the qualities that constitute pataphysical films are characteristic of surrealist films as well. André Breton initiated the Surrealist movement in 1924 with the stated goal of altering the course of the unconscious of society. Qualities of surrealism included an obsession with Sigmund Freud and the unconscious; like the Dadaists before them, the Surrealists cherished the random phrase and the image recorded as if by accident. They took as their notion of beauty the juxtaposition of incongruous elements, in order to attack the familiar and provoke an irruption of otherness. Rosalind Krauss summed up Breton's position:

> In Breton's account, then, the world of real objects has nothing to do with an art of mimesis; the objects are in no sense models for the sculptor's work. The world is instead a great reserve against which to trace the workings of the unconscious, the litmus paper that makes it possible to read the corrosiveness of desire.[16]

Many Surrealists, such as Marcel Duchamp, joined the College for Pataphysics later, so in some ways the surrealist movement can be seen as a predecessor to the pataphysical movement. What the pataphysical approach adds to the satire and the desire to make the subconscious manifest in art of these earlier movements is the use of intertextual references and, often, humor. This is why I have chosen the term *pataphysical* as a name for what I see as a new flowering of a certain approach to film-

making: because humor, even if it is sly and dry, is always an aspect of these films.

Tim Burton, a Pataphysical Director

The goal of this book is to make a case for a genre of contemporary films I have labeled "pataphysical," using the work of Tim Burton as a case study. Burton is one of the most influential of the pataphysical film directors, as many other directors come to pataphysics by imitating his style. The fact that Burton's most pataphysical films tend to do well at the box office has facilitated the production of pataphysical films generally.

I will begin my analysis of Burton's work in Chapter 1, which presents an analysis of Burton's 2-D animation, from *Family Dog* to the Shockwave animation films based on his book of poems for children, *The Melancholy Death of Oyster Boy & Other Stories*. In the case study of the Shockwave animations, I will analyze how Burton became the poster boy for machinima filmmakers (2-D animators who use game engines and first-person shooter conventions as the basis for their machinima films). Throughout the book, but especially in this chapter, I place these films in the context of the historical antecedents—including the work of Georges Méliès, early animators (Emile Cohl, J. Stuart Blackton, and Windsor McCay), the avant-garde, and 1960s television—Burton has mentioned as inspiration.

Chapter 2 focuses on the antiestablishment message of most of Burton's films. His melancholy heroes, such as Edward Scissorhands, Ichabod Crane, and Batman (usually read as stand-ins for the director himself); his trickster characters, such as Pee-wee, Beetlejuice, Edward Bloom (from *Big Fish*), and Willy Wonka (from *Charlie and the Chocolate Factory),* and his interpretations of everyman characters, such as Leo (from *Planet of the Apes)* and Byron Williams from *(Mars Attacks!),* always emphasize the character's antagonistic relationship with an oppressive establishment. Even his happy characters, such as Ed Wood and Jack Skellington, learn hard lessons. This chapter will focus on his key lead characters and examine their roles as critics of the social order. This built-in critique also has an effect on the film's structure (Burton's films are often accused of having weak plots). Particular attention is paid to

his fairy-tale films *Edward Scissorhands*, *Sleepy Hollow*, and *Big Fish*. The chapter also examines the narration of Burton's TV fairy tales, *Frankenweenie, Pee-wee's Big Adventure,* and *Beetlejuice*. As a pataphysical filmmaker, Burton follows an alternative narrative logic, one closely based on the logic of animation.

Chapter 3 looks at Burton's use of special effects, examining his 3-D animation. Burton is renowned for his stop-motion work in films like *Vincent*, *The Nightmare Before Christmas*, *Beetlejuice*, and (as producer) *James and the Giant Peach*. He had originally planned to use a great deal of stop-motion animation for his sci-fi satire *Mars Attacks!*, but he was persuaded by Warner Bros. to switch from stop-motion to computer-generated imagery (CGI)—and shave $20 million from the budget. Burton, who had started his career in animation and first made his mark with the stop-motion short *Vincent*, fought the change, until Industrial Light and Magic (ILM) showed him what had been done on *Jurassic Park* and *Jumanji*. Burton's decision-making process basically replicated Steven Spielberg's on *Jurassic Park* just six years before. These two high-profile cases are indicative of a change taking place throughout the industry, where much work traditionally done with stop-motion and animatronics is now carried out with computer-generated graphics. Some critics have even labeled the change "the end of animation history" and pointed out that both practitioners and scholars need to come up with a new definition of what animation is, a positive definition that isn't based on calling animation "not live-action cinema" but puts animation and live action into a new relation to each other. Later in this introduction I will put the relationship of animation and live-action film today into perspective by looking back at the relationship between the two at the very beginnings of film's history.

Chapter 4 focuses on Burton's rendition of *Batman*, which broke all box office records, a runaway success that set a new standard for blockbusters and led to the rebirth of comic book franchise films. The success of the film mystified even its creator. In this chapter, I present a case study of the *Batman* films, demonstrating how high-concept (myth-based) blockbuster films need to be considered in the light of horizontal integration and ancillary markets (especially since 1989) and the role played by total merchandising. Not much room is left in this process for an individual artist, and Burton was removed from the *Superman* production after having worked on it for a year. Yet the pattern set by Burton

with *Batman* started a trend that is still noticeable in comic book films like *Spiderman*, *Daredevil,* and *Hulk*.

Chapter 5 looks at Burton's two recent remakes, *Planet of the Apes* and *Charlie and the Chocolate Factory* (not yet released at the time of this writing), and analyzes how Burton's approach changes when he is dealing with preexisting material.

Chapter 6 takes a careful look at Burton's soundscapes and Danny Elfman's scores for Burton films. Music and memorable soundscapes are an integral part of every Tim Burton film, especially since *Batman*'s dense soundscape and rich score.

Chapter 7 applies the pataphysical analysis briefly to other directors, especially those influenced by Burton. A working list of pataphysical directors includes some people who have collaborated with Burton such as Henry Selick, Nick Park of the Aardman Studios in Britain, and the brothers Quay, as well as other directors who have come to pataphysics on their own, such as Joe Dante, Richard Donner, Barry Sonnenfeld, Luc Bresson, Jean-Pierre Jeunet and Marc Caro, Stephen Sommers, and Roland Emmerich. (The chapter looks at the work of Sonnenfeld, Sommers, and Emmerich.) Taken together, the pataphysical films of these directors earmark the ways in which the horror, fantasy, and sci-fi film genres are changing.

Before I proceed to the analysis outlined above, I need to clarify the historical relationship between animation and special effects.

Relationship between Animation and Trick Films

Film history is characterized by certain grand narratives. For example, it has long been held that it took the earliest filmmakers almost twenty years to establish the basic principles of filmic narration; that silent movies came first, and synchronized sound movies came belatedly after; and that live-action cinema is the umbrella paradigm from which all other mediums, such as animation, are derived. I have reexamined the first of these grand narratives in my book *Alice Guy Blaché, Lost Visionary of the Cinema*,[17] where I argue that early filmmakers grasped the principles of filmic narration well before 1906, and that synchronized sound was the goal of filmmakers from the beginning and was achieved in various formats from 1902 on.

Now let us look at the idea that animation is derived from live-action cinema. Is cinema really a medium separate from animation? Does live-action cinema even deserve to be called a separate medium in the twenty-first century? I no longer think so. Cinema exists only as a manifestation of something else, something bigger and culturally more all-encompassing. We could call this other all-encompassing thing animation. Live-action cinema and animation have an inverse relationship to the one that is usually supposed. Animation is actually the medium that we are all studying. Cinema is just one part of it. Consider the earliest moving picture machines. Most of them projected images, whether it was the Praxinoscope projecting Émile Reynaud's drawings or the cinematograph projecting the images of Louis and Auguste Lumière that gave an illusion of life by being shown rapidly one after the other.

These machines were only one product of the industrial drive to mechanization of the nineteenth and early twentieth centuries. The drive to mechanization was the drive to measure, quantify, and ultimately automate every aspect of life. Moving pictures were born out of a science called motion studies, with the immediate goal of understanding human and animal locomotion in order to devise exercises to perfect the effort of soldiers and to solve the mysteries of flight. The by-products of this investigation were live-action cinema and animation, both born out of the same drive to capture, store, and replay motion at will.

One of the most influential of the motion studies pioneers was Eadweard Muybridge (born in Great Britain but active in the United States), a still photographer who was commissioned by Leland Stanford, the president of the Central Pacific Railroad, to photograph a horse at full trot to demonstrate, once and for all, whether all four hooves left the ground at once at any point. Muybridge worked on this problem for years. Finally, in 1877, Muybridge managed to line up twelve cameras that could take exposures in $1/1{,}000$ of a second, triggered when the horse broke the cords set across the track. These pictures showed definitively that the horse's hooves did leave the ground in midtrot. Muybridge continued these experiments and photographed many sequences of animals and humans in motion. Muybridge's galloping horse sequences were published in magazines in the form of strips that could be cut out and fit into zoetropes so that home viewers could enjoy the gallop for themselves.

Another motion studies pioneer, Étienne-Jules Marey, began by adapting the photographic rifle that the astronomer Pierre-Jules Janssen had developed to photograph the passage of Venus across the sun, and he was galvanized by the publication of Muybridge's photographs of Leland Stanford's racehorse. In 1883 he was awarded money to erect a building on his Station Physiologique, his center for the study of locomotion. The money also enabled him to hire an associate, Georges Demeny.

At first, Marey used single large fixed plates on which a series of images would be imprinted; however, the overlap of these images made it difficult to decipher the motions he wished to study. By 1888 he had developed the *chronophotographe sur bande mobile,* a motion picture camera that could register up to twenty images a second on paper. Because the roll of paper was not perforated, it wasn't possible to make the images equidistant, thus making it unreliable in the capture and projection of true motion picture images. Until 1892 Marey studied his images of locomotion by cutting them out and then attaching them equidistantly inside a zoetrope, as Muybridge had done. Zoetropes were originally designed to hold hand-drawn or -painted strips, rotate them, and make them appear to move when viewed through a slit: in other words, animation.[18] Live-action cinema and animation were both born out of the same drive to capture, store, and replay motion at will.

Émile Reynaud

As early as 1877, before cinema was invented, before Thomas Edison's kinetoscope of 1895 or the Lumières' film camera in 1896, Émile Reynaud was making and projecting animated bands for his Praxinoscope. From 1892 to 1900 he rear-projected more elaborate bands, which he now called "*pantomimes lumineuses*," onto a screen by means of a complicated mirror-and-lens system. The images were hand-painted on long strips of transparent celluloid and fitted into a leather band with perforations next to each frame. His apparatus in many ways prefigured that of cinematic projection, though all of the images were hand-drawn and hand-colored by Reynaud himself.

French film historians chose to give the Lumière brothers credit as the fathers of film because they used a single strip of celluloid, which could be mass-produced (the definition of film was based on the Lu-

mière output: it consisted of live action, shot on celluloid, and projected using 35 mm perforated film). This definition was adopted by the Anglo film historians.

But from the perspective of the era of digitization, the era we are in today, it appears that they were wrong, and Reynaud should be given credit as the first animator, first filmmaker, and first film exhibitor, as Reynaud's process and methods were more clearly predictive of today's digital cinema than the Lumière system.

After Reynaud there was not much in the way of animation on film, until Emile Cohl. Cohl was a respected graphic artist and caricaturist who went to work for the film production company Gaumont in Paris in 1908 as a scenarist (the original term for screenwriter). Instead of filming lightning sketches (films of graphic artists drawing humorous images at top speed) or doing trick films with animated objects, as pioneer American animator J. Stuart Blackton had done, Cohl made a film based on 700 individual line drawings using India ink on white paper, which were then photographed, for two frames each, and had the lab print the film in negative, so that he ended up with a white-on-black chalk-line effect. This first effort was *Fantasmagorie* (1908), described above. Crafton has documented Cohl's acknowledged debt of inspiration to Reynaud and to Marey.[19] That *Fantasmagorie*'s hallucinatory images had such an impact, however, was probably due to their seeming spontaneity and to the unusual fluidity of the transformations—perhaps not unlike the gracefully multiplying white lines of Marey's "chronophotographs."

Narration and Animation

It is precisely this fluidity of transformations, typical of animated narration, that carries over to pataphysical films. I will examine this in more detail in Chapter 1, but here is an overview. According to E. G. Lutz, animated narrative is characterized by the following:[20] Animation aims for a laugh for every foot of film. Characters are well defined and in constant movement; the plot is an orderly establishment of parts that lead up to some main point, a succession of distressing mishaps, growing in violence, a cumulative chain of actions, increasing in force and resultant misfortune. The preferred ending has pantomimic action only (no

dialogue in titles or voice). Certain concepts, such as humans moving like machines, are always good for a laugh. Certain movements, such as any rotary movement, are used often, because the human mind is fascinated by any rotary movement; so, for example, a victim of a blow must always reel around like a top before he falls, even though this isn't possible in real life. All of this constant motion requires that there be moments of rest, a rhythmic slowing up or pause (such as a character disappearing for a moment behind the house or down the hill). These same characteristics can be found in today's pataphysical films, which add the language of animation to special effects and digital cinema.

Combining Animation and Trick/Special Effects Films

After *Fantasmagorie*, Cohl made a series of films that combined animation and live action, often with trick effects, such as *Songe du garcon du café* (1910) and *Clair de lune espagnol* (1909). Donald Crafton has dubbed these "Incoherent" films because they were so clearly inspired by the Incoherent movement Cohl had belonged to earlier, such as *Le peintre néoimpressionniste* described above. Cohl was not the only one to make "Incoherent" films. Pathé Frères also made *Une excursion incoherente* (1910), in which a couple going to the country on an outing are menaced by demons (shown as shadows), spectral dancers, and a horrifying, sexualized shadow nightmare. What all of these films have in common is that they combine tricks (today we would call them special effects) with animation.

Types of tricks popular in trick films included stop-motion, which created an abrupt series of appearances, disappearances, or substitutions; reverse motion (a flipped dinner table righted itself); multiple exposures (three identical singing heads), coupled with a matte device masking off an area of the camera lens; invisible editing, or cuts that make things disappear on exact framing (also called stop substitution); theatrical devices, such as trapdoors and hydraulics, used to lift objects and people; and enlarging things by bringing them close to the camera in sequential shots.[21] Many in-camera effects today resort to the same techniques.

The earliest animated films used a slight narrative as a pretext to display a series of special effects, just as Méliès' trick films did a few years later. If we look at stop-motion films, such as the films of Ray