

DROIDMAKER

George Lucas and the Digital Revolution

Michael Rubin

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[act one]

one

The Mythology of George

[Before 1967]

George Cukor [once said], “I’m not a filmmaker. A filmmaker is like a toy-maker, and I’m a director.”

Well, I am a filmmaker. I’m very much akin to a toymaker. If I wasn’t a filmmaker, I’d probably be a toy-maker. I like to make things move, and I like to make them myself. Just give me the tools and I’ll make the toys. I can sit forever doodling on my movie. I don’t think that much about whether it’s going to be a great movie or a terrible movie, or whether it’s going to be a piece of art or a piece of shit.

—GEORGE LUCAS, 1974

PERHAPS the most widely held and enduring myth about George Lucas is that he is a technocrat. It’s almost impossible to look at his science fiction movies—like *THX 1138* or *Star Wars*—or the achievements of Industrial Light & Magic, the special effects company he created, and not imagine the man an *übergeek*.

But ask Lucas and he’ll say, “I’m not a technological guy at all; I don’t like gadgets.”

He writes his movies longhand on a yellow pad with a no. 2 pencil. He doesn’t play videogames for fun. He doesn’t even surf the Internet. Lucas enjoys a kind of Victorian pre-industrial lifestyle, a gentleman filmmaker on a private, finely crafted retreat he calls Skywalker Ranch.

“I’m just somebody who wants to make movies. You don’t need to be technological to understand how to use technology.”

It is ironic, then, that Lucas holds a central role in the invention and dissemination of digital media. Before he assembled the team that would become the Lucasfilm Computer Division, there had been only disparate research about computers in their application to entertainment. But his passion, capital and, most importantly, his creative priorities coalesced these scientists and set them on a parallel path—like a laser synchronizing electrons into a single wavelength of high-power light.

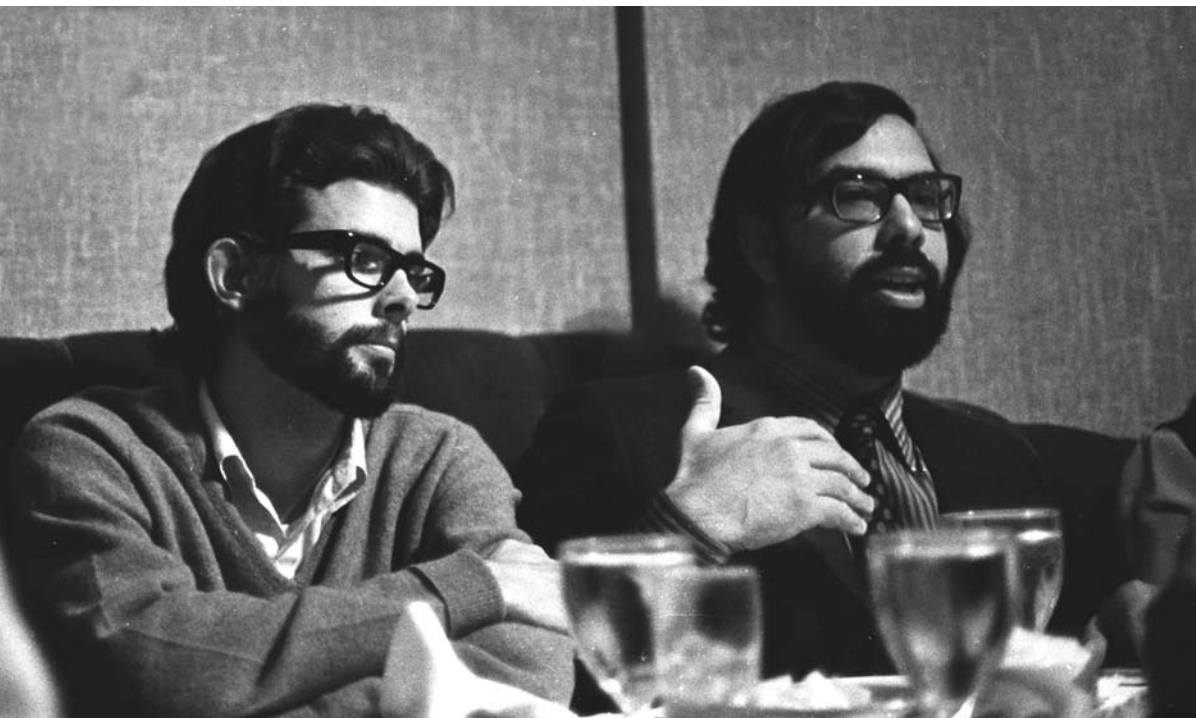
Something mysterious took place at his Computer Division—a series of interactions that somehow connected the archaic to the modern. In light of all they accomplished, it’s difficult to imagine the work having been done by only a few dozen people in a modest building in San Rafael, California.

Lucas’ research into computers was in part connected to his overarching concerns with creative autonomy. His career was ever running headlong into the issue, and so he embarked on a path to wrestle control from those who always seemed to keep it out of his reach—the studio system, executives, the filmmaking process itself. Money would eventually give him what he needed: quality, control, and independence.

His most important influence came from a dynamic relationship with one of history’s great filmmakers—a true technocrat and a ferociously independent spirit—Francis Ford Coppola. The story of Lucas cannot be told without the intertwined story of Coppola. They worked together and inspired each other.

The ebb and flow of their enduring friendship has often been distorted as acrimonious. Coppola was sometimes described as Lucas’ “mentor/tormentor.” They are competitive, but no more than any pair of close brothers: Coppola, the older, charismatic sibling, a larger-than-life *bon vivant*—with all the passion, catastrophe, and sensuality that that implies, overshadowing Lucas, the younger, quieter, conservative one.

George Lucas and Francis
Coppola, 1970.



“We respect each other, but at the same time we are totally different personalities,” said Lucas. “He says he’s too crazy and I’m not crazy enough. Francis spends every day jumping off a cliff and hoping he’s going to land OK. My main interest is security.”

Coppola was already a success in the years before Lucas began his career. By 1970, as he was actively assembling a film company in San Francisco, Coppola was busy announcing to the press that he someday wanted to build a “futuristic plant that would place filmmaking squarely in the technological era,” possibly north of San Francisco in Marin County.

“The reason for all this stuff,” Coppola said, “is to turn control of the technical side of filmmaking over to one man rather than a team of technicians. What we’re attempting is to give a filmmaker the same sort of control over his creation that a painter has.” When Coppola stood on stages to make those proclamations, Lucas—his lieutenant, his best friend—was close by.

Coppola catalyzed Lucas’ rebellious attitudes and creative impulses. Lucas was the gifted protégé. But they also inspired one another.

“We can bounce ideas off each other because we’re totally different,” Lucas said in 1980. “I’m more graphics-filmmaking-editing oriented; and he’s more writing and acting oriented. So we complement each other, and we trust each other. The fact that he’s always doing crazy things influences me, and the fact that I’m always sort of building a foundation, plodding along, influences him. But the goals we have in mind are the same. We want to make movies and be free from the yoke of the studios.”

“Francis and I were both very interested in the possibilities of the art form of cinema,” said Lucas recently, “and out of that came a mutual interest in ‘How do we do this? How do we break down the old system and make it easier for us to actually make movies?’”

Lucas, because of his extraordinary financial success, was able to do what Coppola could not. Beyond freeing himself from the studio system (something Coppola never fully accomplished), Lucas redefined filmmaking. By fostering the invention of new media tools, he changed the very essence of what it meant to transform imagination to the screen.

“It’s like the period in the late 15th century when new painting technology, oil painting, was beginning to replace frescoes,” said Lucas in 2004. “Painting frescoes was like making a movie. It took a huge group of people: experts in making plaster, in building scaffolding, in mixing colors, in applying the colors to plaster...you had to get the colored plaster to the wall quickly, and apply it in small regions before it dried.

“And then along came oil painting. The artist could mix up colors that looked the same wet or dry. The oil paintings were portable. They could be made by a much smaller group of people, or even by an individual. And most

importantly, the medium gave an artist great creative flexibility—he could change his mind, work the painting, repaint areas over and over, and get a kind of malleability he simply didn't have with frescoes.”



Francis Coppola and George Lucas, circa 1982.

Lucas moved filmmaking from its fresco age to its oil painting age—adding new degrees of creative flexibility previously unimaginable.

“All art is technology,” said Lucas. “It’s a very human endeavor. There’s a certain amount of advanced intellect to master technology, whether it’s scribbling on a wall or playing music. But at the same time, art is primarily the communication of emotions rather than intellect. So it’s using your intellect to transfer emotions.”

The introduction of digital technology to the creation of media was an advancement that would ripple through the years, far beyond the film industry, taking it somewhere that no one, not even Lucas, imagined.

To write the story of the Lucasfilm Computer Division, it becomes necessary to have a basic understanding of the company Lucasfilm. And since Lucasfilm is a privately-held corporation owned entirely by George Lucas, the various projects and divisions of the business—particularly in its earliest years—are largely a function of the interests of its founder, Lucas. And yet this story is not the biography of George Lucas. That mountain has been scaled with varying degrees of success over the past few decades. Both George the individual and Lucasfilm the company eschew any interrogation that borders on the

biographical. They don't consider anything written particularly accurate, and now in his sixties, George is in no mood to start setting the record straight.

Let's start with a few known facts. George Lucas was a kid in the '50s, raised in Modesto, a middle-class agricultural town in California's central valley.

"I was as normal as you can get," he once said. "I wanted a car and hated school. I was a poor student. I lived for summer vacations and got into trouble a lot for shooting out windows with my BB gun."

As soon as George could drive, which in Modesto meant age sixteen, he convinced his father to get him a car: a little yellow Fiat Bianchina that was more cute than sporty.

As he drifted through his high school years, George spent countless hours with his best friend, both fixing up their cars. Greasy, side-by-side, they'd mess with the engines, tweak their timing belts, and then go racing around town.

He might never have discovered film if it hadn't been for a car accident at the end of his senior year. In a twist of fate that has become the core of a Lucas myth over the decades, Lucas' seat belt inexplicably snapped and he was thrown from the car before it was mangled against a tree. Unconscious but still alive, he was badly crushed. After a long recovery, and justifiably nervous about getting behind the wheel again with his old reckless abandon, he decided to give up speed. Instead of racing cars, he started photographing them.

"I really wanted to go to art school," said Lucas, "but my father wouldn't stand for that." Soon Lucas' racing buddy introduced him to the idea of cinematography and to film school.

After graduating from high school (just barely), Lucas applied to and was rejected from both the University of Southern California (USC) and the University of California, Los Angeles (UCLA). Undaunted, he drove down to L.A. to visit racetracks and to look for a job. Through a mechanic at the track he met Haskell Wexler, not only a racing fan but also an accomplished cameraman in Hollywood. Although Wexler's early films were relatively unknown, at age forty he was on the precipice of a career explosion.¹ So there he was, engaged with this kid at the racetrack—both of them standing in the pit, both of them talking about movies.

Recalled Wexler, "I met him and I naturally liked anybody who was excited about what I did."



Teenage Lucas and his Fiat Bianchina.

¹ **Haskell Wexler** (b. 1926). Cinematographer: *Who's Afraid of Virginia Woolf?* (1966), *In the Heat of the Night* (1967), *The Thomas Crown Affair* (1968), *Medium Cool* (1969), *One Flew Over the Cuckoo's Nest* (1975), *Coming Home* (1978), *Matewan* (1987), *The Secret of Roan Inish* (1994), *Silver City* (2004).

Lucas still wanted to get into USC, and Wexler was happy to put in a good word for him. “I sensed a guy who had a burning desire to explore unique visual graphics, filmic things.” The fact that they both truly and deeply loved cars was their unspoken bond.

Wexler gave his friend a place to hang out and watch film being shot at his commercial film house, Dove Films. He tried to find Lucas a position on a “real” movie, but it was impossible. And the more impossible the industry made itself to young George, the more he wanted in. At one point Wexler almost got Lucas a production assistant position on a movie, only to have the Hollywood unions block him. It was incredibly frustrating.

Ultimately, George decided to go home and attend junior college. He began to study. He began to read voraciously. He refocused his lurking interests in comics, graphics, art, and painting into photography. As he was finishing school in Modesto, Lucas reapplied to USC’s film department and this time was accepted.

But Lucas wasn’t quick to forget how he had been treated in Hollywood.

“I just turned my back on Hollywood,” he said. “I’m not interested in that anyway; I’ll just go to film school and learn about film.” For all the myriad reasons someone goes to film school, it was clear to George that for him, none included the prospect of going on to Hollywood to make movies.

In that era, the film industry was a closed fortress, run by the same old cigar-chomping moguls who had started it. In 1964, as Lucas entered USC, 91-year-old Adolph Zukor was still on the board of Paramount, 84-year-old Sam Goldwyn was still lingering at MGM, 72-year-old Jack Warner ran Warner Bros., and sprightly 62-year-old Darryl Zanuck was at the helm of 20th Century Fox.

As it had been for a half-century, movies were a producer’s medium. Directors, like writers, actors, editors and cameramen, were all hired guns and largely interchangeable. Producers were the only ones to see a film through from story concept to theatrical debut. Their crew was all selected from rosters of qualified insiders—lists controlled by the iron grip of the unions.

And getting into the unions was nearly impossible. You had to be someone’s son, or have an uncle who was a gaffer² or a cousin who edited. The “official” position was that you were granted admission only if you could perform some task that no one else in the union could do. Or if everyone in the union was busy and additional help was needed. The net result, of course, was that it was a closed world.

And even if you got in, there were long years of apprenticeship. Editors, for instance, had to start as “apprentice editors”—watching, getting coffee, running errands. In 1964 you needed to complete four *years* of apprenticing before you were eligible to become an “assistant editor.” Assistants had a

² The lead electrician on a film, a member of the union of lighting professionals.

serious (though uncreative) role central to the massive organizational effort involved cutting and taping a half-million feet of celluloid into a 10,000-foot finished project. According to the Editor's Guild guidelines, after being an apprentice you had to be an assistant for four *more* years before you would be allowed to edit. And it was even harder to become a director.

There were perhaps a hundred schools in the U.S. with moviemaking as part of the curriculum. The top three were leagues beyond the rest, with full-scale programs offering bachelor's and master's degrees: New York University (NYU) in Manhattan,³ and the largest and oldest, cross-town rivals USC and UCLA in Los Angeles.⁴

At that time, film school was blue-collar and pre-professional; a film student was the ultimate nerd. USC's film students were relegated to an old stable on the fringe of campus. UCLA's department was housed in Quonset huts left over from World War II. "All my friends thought I was crazy," recalled

³ Where directors Martin Scorsese and Brian de Palma were film students.

⁴ There was also a small program down the coast at Cal State Long Beach, attended by Steven Spielberg.

USC film students in an editing lab, 1965.



Lucas. “I lost a lot of face, because for hot-rodders, going into film was really a goofy idea.”

With machines droning on all around, and equipment fixed with a wrench, some oil, a new bulb, and sometimes a solid kick, it was the kind of place where Lucas was extremely comfortable. It was somewhat analogous to his old fix-it shop experience—guys working on their cars in different stalls, helping out with each other’s problems, borrowing a screwdriver from your buddy across the way—yet there were both academic and creative aspects that would be completely liberating to a born-again student and somewhat frustrated artist.

“When I went in, I just kinda ambled in. ‘Well, let’s see what’s behind this door.’ But I didn’t know what in the world I was going to do with my life and where I was going, and then I stumbled into this film school and there I was, and it was like the most incredible thing I had ever witnessed in my life.”

George’s first course was in animation. Stringing a series of still frames culled from *Life* magazine, he delivered his first film project, a one-minute black-and-white *Look at LIFE*. Many pictures flashed by in a fraction of a second, or paused and panned for dramatic effect.

“It wasn’t *movies* so much as film that moved. I was more fascinated with the medium...that real childish intrigue of ‘Gosh, look at this thing...it moves.’ It became a sort of obsession. I was fascinated with the mechanics of it, coming out of cars and what have you; I was fascinated with the fact that you could take real life and put it onto an image and make it move and you could manipulate it. Play with it.”

What made that film particularly compelling was that he added a sound track, a flowing collage of popular music and spoken word, a seed germinated by art films Lucas had enjoyed during community college.⁵ USC animation projects were almost always silent. To take the time to develop an audio track, let alone a stylistic and complex audio track, was ambitious. It won him his first student film festival prize. And seventeen other awards.

“I realized I had found myself. I loved working with film, and I was pretty good at it. So I took the bit and ran with it.”

His second film, *Freiheit* (“freedom” in German) was a three-minute experiment in pictures and sound. The film depicted the suspense of one man’s failed attempt to escape from East Germany. Again, like *Look at LIFE*, the film distinguished itself with a unique visual style and distinct voice collage.

“The great thing about film school,” remembered Lucas, “is that it exposed me to a lot of film, and I was enthralled. That’s when I got excited about film, and I just went crazy.”⁶

⁵ In particular, a film called *21-87* (1963), directed by Arthur Lipsett, and produced by the National Film Board of Canada.

⁶ Italian director Bernardo Bertolucci once said, “The only school for the cinema is to go to the cinema, and not to waste time studying theory in film school.”

Next came the three-minute *Herbie*, a surreal, sensual love poem to chrome and cars, put together with classmate Paul Golding. Set to a scratchy soundtrack of “Basin Street Blues” played by the Miles Davis Quintet, Lucas and Golding named the film for Herbie Hancock, the jazz prodigy who joined the Quintet on that album, the man they mistakenly believed was behind the piano.⁷

Lucas’ final undergraduate project was an ambitious five-minute color spectacle: *1:42:08*. Channeling his passion for speed and racing into cinema, he took a dozen students (his crew) to a racetrack north of Los Angeles and shot an intense film short about a yellow sports car—not unlike his little Bianchina—making laps around a course.⁸ It should be noted that students were not supposed to be making films in color. They also weren’t supposed to leave the campus to shoot their projects. Lucas continually thwarted rules to execute his particular visions, perhaps revealing the lingering rebelliousness of his high school days, or maybe just the anti-authoritarian sentiment of ’60s students in general.

“Everyone did it,” recalled Lucas in his own defense.

Throughout film school, Lucas kept in touch with Haskell Wexler. Wexler continued trying to help the young guy, hustling to get him any job on a major Hollywood film, only to see Lucas rejected time and again by the union regulations, which were designed to keep people out. Both the incessant stonewalling by the union and the generous spirit of Haskell Wexler stayed with Lucas for years to come.

At USC, Lucas’ interests evolved from animation to cinematography and finally to editing. Directing perhaps assuaged his ego, but he was always clear to point out he didn’t like the activity very much. “I was introduced to film editing—the whole concept of editing—and I think ultimately that film editing was where my real talent was.”

An upright Moviola—the essential machine used for editing—looked like a crazy contraption and made as much noise as a small outboard motor. At the most mechanical level, Lucas would have had a natural aptitude for the odd device: it had a pair of foot pedals on the floor for controlling the motion of the film; it also had a hand brake and a kind of clutch. Some models sported a tachometer. Watching a little screen, an editor was virtually “driving” the film. As for the creative aspect of editing, Lucas’ talent was a happy discovery.

Working with film equipment was not unlike fixing an old Fiat engine. All the parts were well lubricated and finely tooled, with smooth-turning wheels and sprocketed gears—a tactile joy.

⁷ The album, *Seven Steps to Heaven*, had a few tracks recorded by an interim band just prior to Hancock’s joining and completing the album. The piano on “Basin Street Blues” was actually performed by English jazz pianist Victor Feldman.

⁸ These yellow hot rods would show up as a reoccurring element in Lucas’ films—from *American Graffiti* to *The Phantom Menace*.

The Moviola

Editing has always been a mysterious part of the filmmaking process. The general public can easily understand cameras and lights and actors, and even directing. But how the film goes from the camera to a big screen is a relative mystery. Editing was the missing link.

Once film was developed and printed, the negative was copied onto long rolls of tiny positive prints that could then be measured, moved around, and watched on all kinds of mechanical devices. In 1924 a young entrepreneur, Iwan Serrurier, had the idea to modify his unsuccessful personal film projector, called the Moviola, into a tool for the emerging film business. He removed the lens, turned the projector upside down, and built a small viewer of finely blasted glass. By the late '20s, everyone was using an “upright” Moviola; it looked like a pair of upended movie projectors, film reels locked together with a motor and gears that could be shifted from forward to reverse, and a viewer in the middle.



From an early Moviola trade advertisement.

To love editing was to embrace the Moviola. George Lucas savored it. He would sit for hours running long lengths of 16mm film through his hands, marking locations with a white china marker, strapping the film into a cutting block, and solidly chopping the bits with the hinged drop of a razor blade.

The editor’s job—deciding how the film is paced or how the audience should be feeling—is frequently described as “making” the movie. Knowing where to make cuts is not an absolute science, and it can’t really be taught. But if you do it often and see the results of different choices, you get a feeling for it. Like shifting gears in a manual transmission car. Who hasn’t learned to drive a stick without those comical fits and starts, jerks and stalls? But somehow a driver develops a feel for easing from one gear to the next. And then you’re driving. And then you’re editing.

“I was an editing freak,” recalled Lucas.



USC Film School, 1966. Left: a Moviola and trim bin. Right: students synchronizing picture and sound tracks.

Perhaps the most important thing Lucas found in film school was a gang, a group of guys who were into making movies. Lucas was good at it; the others sensed it. It made him popular. What a wonderful feeling it must have been after years of being the outsider.

He found soulmates among his fellow USC film students, in particular John Milius,⁹ Matthew Robbins,¹⁰ and Walter Murch, who became his closest friends. Milius, a burly and outgoing fellow, introduced Lucas to the samurai films of Akira Kurosawa. Robbins and Murch arrived together from Johns Hopkins University in Baltimore and, in contrast to Lucas, were both worldly and cosmopolitan. They were different from the other students, especially Murch; he was already well versed in cinema and a virtuoso at all the department's equipment.

Walter Murch grew up mesmerized by sounds. “Maybe I heard things differently because my ears stuck out, or maybe because my ears stuck out people thought I would hear things differently, so I obliged them. It’s hard to say.”

In the early '50s, ten-year-old Murch persuaded his father to buy a tape recorder (“Think of all the money we’ll save if we can record music from the radio instead of buying records!”) and started experimenting with tape editing. Soon he was recording unusual sounds and building acoustic creations the way other kids built model planes. Later, at Johns Hopkins University, he made his first short films—silent films.

“I discovered then that editing images had emotionally the same impact for me as editing sound.” At USC, he saw how both of those elements—sound and picture—could work together.

⁹ **John Milius** (b. 1944). Writer: *Dirty Harry* (1971), *Magnum Force* (1973), *Apocalypse Now* (1979), *Conan the Barbarian* (1982), *Clear and Present Danger* (1994). Director: *Dillinger* (1973), *Red Dawn* (1984).

¹⁰ **Matthew Robbins** (b. 1944). Writer: *Sugarland Express* (1974), *MacArthur* (1977), *Mimic* (1997). Director: *Corvette Summer* (1978), *Dragonslayer* (1981), *The Legend of Billie Jean* (1985), *batteries not included (1987).

He was also still vibrating from his recent time abroad, in Italy and Paris, studying languages and art history, but soaking up something entirely different. It was 1963 and the French “New Wave” in cinema was thriving.

In the late '50s, a group of film critics for the French magazine *Cahiers du Cinema* were given a chance to become directors and put their ideas about filmmaking to the test. The *Cahiers* critics didn't like formulaic studio films; they championed a handful of American directors like Alfred Hitchcock and Howard Hawks, whom they labeled the authors, or auteurs, of their films.

The French critics-turned-directors, in particular Jean-Luc Godard and Francois Truffaut, took advantage of the newest filmmaking technology of the day: lightweight documentary cameras that could be handheld; faster film to capture images in low light; and smaller and more portable sound recorders. Together these technological changes allowed them to escape studio sound stages and shoot on location, where they could play, experiment, and improvise. In short: artistic freedom, personal cinema.

The New Wave was less a cohesive movement than a term the press used to describe the sudden appearance of stylistically innovative films by, in many cases, first-time directors. After sweeping in from Japan, Sweden and Italy, the wave hit France at the end of the '50s.¹¹ Truffaut screened his first film, *The 400 Blows*, at the Cannes Film Festival in 1959. It was an instant hit and opened a floodgate of new interest in filmmaking. That year twenty-three other French directors made their first feature films; by 1961 the number had increased to more than a hundred.

Coming from a small town, Lucas was no doubt captivated by Walter Murch's stories of cruising around Europe and North Africa on his Ducati motorcycle—a road trip he took with Matthew Robbins. Murch's feelings about editing and sound coalesced with Lucas' own attraction to the innovative juxtapositions he found in art films and the New Wave.

Through his undergraduate years, Lucas formed long-term bonds with his classmates; in addition to Murch, Milius and Robbins, his clique grew to include Howard Kazanjian, Hal Barwood, Bob Dalva, Willard Huyck, Caleb Deschanel, and others. They saw themselves as a filmmaking fraternity, hauling their cameras around campus, breaking rules, and worshipping at the altar of Orson Welles.

But back on earth, they had a different hero. Film students usually graduated and went on to work in news or education, or maybe make corporate and government films. At best they made documentaries. But there was one kid everyone knew about who had graduated from UCLA and somehow got

¹¹ Akira Kurosawa made *Rashomon* in 1950 and *The Hidden Fortress* in 1958; Ingmar Bergman delivered *The Seventh Seal* in 1957; Federico Fellini made *La Strada* in 1954 and *La Dolce Vita* in 1960.

a job with Warner Bros., making movies. When he directed his first feature film, *You're a Big Boy Now*, in 1966, it sent shock waves through the nation's film schools. Lucas and his group couldn't help but idolize twenty-six-year-old Francis Coppola, the only student ever to breach the impregnable walls of old Hollywood.

Said Lucas, "Every film student on the planet knew about Francis." He gave every one of them hope.

After graduating in 1966, and exempted from military service, Lucas was unsure of his next move, and took a series of jobs around L.A. One was as an assistant grip for the U.S. Information Agency (USIA), which was cranking out propaganda films as the country was heading into war.¹² Other USC students were doing odd jobs in the agency. Bob Dalva,¹³ a classmate of Lucas', was assisting on a documentary about President Lyndon Johnson; it was being edited by Verna Fields. Fields was a true insider in Hollywood; she was very cool, and one of the few women in the business. She needed additional help for her Johnson documentary, and Bob Dalva recommended Lucas.

In the old days of Hollywood there were virtually no women directors or producers, and no women behind cameras. But there were women in editing. Editing—assembling the pictures together—was seen as similar to sewing. There was also an aspect to film editing that was like being a librarian, also perceived as a woman's job. In the factories that were old Hollywood studios, women sat at benches in what looked like sweatshops, editing silent movies.

When sound arrived in the '30s, that changed. Sound was somehow more technical, more electronic and, as one supposes the thinking went, required men. Soon there were few if any women working on movies at all. Editors and cameramen, directors and producers, all brought their sons on board; jobs were passed down like family heirlooms.

But by the 1960s, the pendulum began swinging back again. A number of ambitious women braved their way into the studio system. Many established male Hollywood editors took women as their assistants. (Bernardo Bertolucci's longtime editor Gabriella Cristiani once suggested that the older editors simply enjoyed working alongside young women.¹⁴) When the old guard later rejected working on the youth films of the '70s, their skilled assistants were ready to move into the main chair. These women began work on an impressive array of American New Wave cinema, which became known as New Hollywood.

In 1954 Verna Fields' husband, a Hollywood editor, died suddenly and she was left a single mom. Fields set up a room in her large San Fernando Valley house where she could juggle child care with editing. By 1965, with her

¹² Grips generally work for gaffers (electricians) on the set, moving and adjusting equipment, setting up props, and so forth.

¹³ **Robert Dalva** (b. 1942). Editor: *The Black Stallion* (1979), *Latino* (1985), *Jumanji* (1995), *October Sky* (1999), *Jurassic Park III* (2001). Director: *The Black Stallion Returns* (1983).

¹⁴ **Bernardo Bertolucci** (b. 1940). Director: *The Conformist* (1970), *Last Tango in Paris* (1972), *1900* (1976), *The Last Emperor* (1987), *The Sheltering Sky* (1989), *Stealing Beauty* (1996).

interest in political issues, she began editing projects for a few government agencies in the Eisenhower administration, including the USIA. While maintaining her projects with the government, she accepted a one-year position teaching film at USC.

“I had this footage of unmarked airports for a USIA film, *Journey to the Pacific*, so I hired all these kids from USC to find out where these airports were.”

Fields was famous among the kids for being everyone’s short Jewish aunt, a round face behind owlsh glasses, inspecting the celluloid and lecturing them on threading the machine or trusting their instincts as to where to make a cut. They worked with her in her home and called her “mother cutter.” They particularly loved her endless stories of editing and her “Verna-isms”—wisdom from the trenches, like “If you can’t solve it, dissolve it.”

Fields hired Lucas in January 1967, just as he was starting the USC graduate program in film.

The faculty at USC had been sufficiently impressed with Lucas’ undergraduate films to give him a position teaching a lighting seminar for Navy film students. He taught the course at night and worked for Verna Fields at the USIA all day. She also hired a “professional” assistant (a union apprentice), Marcia Griffin, to help manage the quantities of footage and coordinate it with the film libraries in Hollywood. Marcia was buoyant and affable, a nice contrast to Lucas’ rather quiet personality.

George and Marcia often worked side-by-side in Fields’ home-based editing suite. They soon started dating. Even though they shared a passion for film, and for editing in particular, they had profoundly different ideologies. Marcia was committed to working her way up the union seniority ladder and into “the system”; George had little interest in the system.

For Lucas’ next film project, he started with a short script by Matthew Robbins and Walter Murch about a man escaping from an underground realm and finally emerging from a manhole cover. It was called “Breakout.”

Lucas refined the idea; he called the film *THX 1138: 3EB*. (He spoke of *THX* as “Thex”) The story was surreal, cryptic, composed almost entirely of a man running through twisting corridors, escaping the robotic police of the dystopic future. Although USC film students didn’t have access to color film, the Navy guys in the night course did. Lucas used the class he taught to execute his project. It took twelve weeks to shoot and edit.

“It’s a very simple idea, and it was done that way because it was a lighting class,” said Lucas. “I couldn’t shoot a film; I had to shoot something very simplistic that I could put together and that would be interesting.”

The photography was striking: documentary meets surveillance camera. Lucas cut the film at Verna Fields' house when he wasn't otherwise working on her Lyndon Johnson documentary. He included an unending array of visual effects. But even more impressive was the sound, a genuinely innovative acoustic tapestry. Lucas created a futuristic environment, layered from air traffic controllers' chatter and garbled public address system announcements. Lucas thrived as he assembled the components of the fifteen-minute film.

While post-producing *THX*, he made two more films for his graduate school courses. The first, *anyone lived in a pretty (how) town*, was a six-minute visual poem—Lucas and Paul Golding's interpretation of the e. e. cummings poem of the same name. Non-narrative and somewhat obscure, it had a style Lucas was very attracted to.

Finally, Lucas led his friends in making an ambitious documentary about a popular local disc jockey, Bob Hudson, called *The Emperor*. They shot for five weeks. While George directed, Paul Golding edited and handled the sound.

In the months before youth culture exploded—hippies, Woodstock, *Easy Rider*—Columbia Pictures executives decided they wanted to attract more young people to their films. They created a special project: they'd select four film school students—two each from UCLA and USC—to generate four cheap, hip, promotional documentaries for one of their movies, *Mackenna's Gold*, directed by J. Lee Thompson.¹⁵ Students across L.A. vied for a spot. After one of his winning classmates declined the offer, Lucas accepted, and he joined the three other winners to collect the “prize”: a shared station wagon, camera and lights, no supervision, and a small budget. Each student was expected to make a ten-minute 16mm film while tagging along with the cast and crew on desert locations in Utah and Arizona.

The other students produced relatively typical documentaries, choosing a subject and doing interviews; Lucas, however, took the radical approach of ignoring the film production entirely, focusing instead on the desert itself. His “documentary” was visual poetry: long shots, landscapes, abstract silhouettes of power lines, lizards. He called the short film *6.18.67*, for the date he finished shooting.

“With documentary films, I got used to shooting a ton of material and making a movie out of it in the editing room,” said Lucas. “It wouldn't be challenging for me to conceptualize something and then have to follow through on it. I'd be bored to death.”

On his return from the summer in Arizona, Lucas learned that USC had submitted both his and Walter Murch's names for the Samuel Warner Memorial Scholarship offered by Warner Bros. One student would be selected to work at the studio in the department of his choice for six months.

¹⁵ Thompson was best known for *Cape Fear* (1961) but went on to do a few *Planet of the Apes* sequels.

¹⁶The “Looney Tunes” name was a dig at Disney’s early cartoons, known as “Silly Symphonies.”

Lucas became enamored with the idea of hanging out in the famous Looney Tunes (Chuck Jones) animation department, looking at original cels of Bugs Bunny.¹⁶

Recalled Murch, “As we were going in for our final interview, we realized, naturally, that one of us was going to get it...and the other one wasn’t. So we made a pact that whoever did get it would turn around and help the other if something good came along.” They shook.

Lucas won.

two

Road Trip

[1967–1970]

People are hampered by money. It does not free them. It does not encourage them to go on and try new things. It makes them more conservative.

—FRANCIS COPPOLA

FILM SCHOOL STUDENTS never got work as movie directors, but with luck they occasionally got a chance to write something. It was as close to a back door to Hollywood as there was for the academic crowd.

Francis Coppola's scripts from school had been impressive. Warners took notice of him after he won a prestigious screenwriting award,¹ and soon they brought him into the studio to do some book adaptations and rewrites. In short order he was offered a three-year contract, and he dropped out of the master's program at UCLA. Francis was a strong writer, a vibrant character, and a charismatic film geek.

Writing was bringing in good money for Coppola, a steady income in *the business*, but what he really wanted to do was direct. He even had an idea for a movie he wanted to make, having kicked it around since he was a kid.² He saved all he could with hopes of making his own movie, but by the time he'd accumulated \$20,000 he realized with frustration that he'd never have enough to finance a film alone.

“So I decided I was going to risk it all on the stock market and either have enough to make a film, or have nothing. I lost it, every penny of it. In one stock.”³

Still working for Warners, Coppola was given an important and challenging project: to develop a screenplay about WWII general George S. Patton. But after six months of research and hard work, the studio told him they were unhappy with the result, and they decided to let his contract expire at the end of its term.

¹ The Samuel Goldwyn Award, won for his script *Pilma Pilma* (chosen over his unfinished work, *The Old Grey Station Wagon*). Coppola's friend Carroll Ballard was the runner-up.

² He used to stick microphones around his house and listen to the voices, and he thought he could use the interesting concept in a script.

³ Scopitone. The original video jukebox. Invented in France. Popular in Europe in the early '60s; dead by the end of the '60s.

All around Coppola, there were significant political shifts in the Hollywood power structure. Adolph Zukor had recently ceded control of Paramount to conglomerate Gulf+Western Industries. Warner Brothers' \$1.6 million film *Bonnie and Clyde* was shaking up the old guard at the studio and across Hollywood.⁴ It was violent (remarkably bloody gun battles). It was long (over two hours). It was completely non-formulaic. It didn't even have any box office "stars" in it.

Studio head Jack Warner didn't get it and felt out of touch with the new audiences.⁵ A few weeks after screening *Bonnie and Clyde*, he announced the sale of his stake in Warner Brothers to a tiny company in New York, Seven Arts Productions.⁶ It was the end of the mogul days of Hollywood.

After the buyout, anything being shot was finished and everything else was put on hold. The new regime from Seven Arts began by greenlighting two films: Sam Peckinpah's *The Wild Bunch* and a film version of the 1947 hit Broadway musical, *Finian's Rainbow*.

Coppola, still deep in debt and about to be out of work, spent \$1,000 to option a popular British novel *You're a Big Boy Now*, which he hoped to develop with his old boss Roger Corman.⁷

While everything was in transition, Francis saw an opportunity for some rare time away and left for Europe with his wife Eleanor, where he worked on a lingering final Warners project. He also penned a screenplay for *You're A Big Boy Now*. When the new Warners executives realized he had written it while still technically on contract for them, they insisted they owned the movie; if it was going to be made, it would be made at their studio. Coppola, at age twenty-six, was able to negotiate a deal as both screenwriter *and* director. The impenetrable gates opened and the studio greenlighted Coppola's coming-of-age farce with an \$800,000 budget.

When the film was done, aside from winning heroic stature from film students nationwide, Francis managed to get UCLA to accept the movie as his master's thesis, and they awarded him a degree. He happily returned to his old project about eavesdropping, which was beginning to crystallize after director Irvin Kershner handed him an article on surveillance and bugging; he started calling it *The Conversation*.

The new regime at Warners had locked in Fred Astaire to star in their musical *Finian's Rainbow*, but they still needed a director. Even though Coppola's contract had been terminated, and *You're A Big Boy Now* was just a modest success, Warners asked him to helm the \$3.5 million project.

The film was both challenging and disillusioning for Coppola. On the one hand he was thrilled to be directing a major motion picture for a Hollywood studio. On the other hand, it was a *job*. There was little collegiate...

...continued in Ch. 2 of DROIDMAKER. Get it online at Amazon.com or ask for it at your local bookseller.

⁴ Released 1967. Directed by Arthur Penn; produced by (and starring) Warren Beatty.

⁵ They drew little comfort that it cost far less than the big budget \$15 million *Camelot* they were doing concurrently.

⁶ The studio was for a time renamed Warner-Seven Arts, sometimes referred to as "W-7."

⁷ *To option*: to pay a writer a relatively small fee for the exclusive right to turn a book or script into a movie. The alternative to having a script optioned was to sell it outright, usually for a much larger amount of money.

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THE QUOTATION BIBLIOGRAPHY is online at www.droidmaker.com/biblio.html. The web page is searchable, and contains attributions as well as hyperlinks to web sources, only some of which are included below in the book.

This story was largely gathered from oral histories (predominantly telephone interviews) all of which are listed below. Not listed here are countless follow up emails with most of the subjects. On the following pages are the other bibliographic materials, grouped by topic. The topics overlap slightly, but seem to be a useful and concise way to introduce material to other investigators.

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