

Louis Lumière: The Father of French Cinema

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Abstract

This paper surveys the life of Louis Lumière. It covers his early years as a teenager working at his family's business where he developed new manufacturing techniques that helped their business to succeed. It describes technical aspects of the Lumière-designed moving picture camera that offered many groundbreaking improvements over Edison's kinetoscope. The business environment of the early moving picture business is illustrated, together with an account of Lumière's eventual withdrawal from film production to focus on the manufacture of film and equipment and on photographic research.

The birthplace of cinema is thought to be located in a small town in southern France. In 1895 on a platform in the railway station at La Ciotat, Louis Lumière put a small wooden camera onto a tripod and recorded a film clip of a train pulling into the station. That train and the passengers who were filmed leaving it soon captivated audiences worldwide by mesmerizing them with moving pictures.

Louis Lumière was born in 1864 (Katz 743), and he was just 31 years old when he began making his historic films. Along with his brother Auguste, he had been running a company in Lyon that made photographic materials. The name of their company was the Société Lumière (Katz 743). The factory is no longer used and many of the original buildings no longer exist, but back in 1895, it was where many of the first Lumière films were processed.

The Société Lumière was a successful company that employed nearly three hundred workers. The company made millions of photographic plates each year for use in still photography. The production of photographic equipment had been a profitable business and the Lumières had expanded their facilities and bought a mansion in Lyon, which eventually became the head office of the family business.

Louis' father Antoine, who had started the business, was both free-spirited and unconventional.

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When younger, he had tried unsuccessfully to make a living as an artist. However, it was soon clear that photography was in greater demand, so he gave up painting and quickly became a successful portrait photographer. After Antoine had achieved some initial success he decided to expand his small business. In 1879 he borrowed money and set up a factory to make photographic plates (Mast & Kavin 21). But Antoine was more of an artist than a businessman and the company soon approached bankruptcy. Luckily, his sons Louis and Auguste were well educated. Both of them excelled in science and had been sent to technical school. They took over the business and it turned out that Antoine's sons were industrious enough to save it from their creditors.

Louis Lumière had a good mind for science, but although he had done well at school he suffered from recurring headaches and he had had to leave. Louis was only 16 when he started work at his father's company. At the time, the manufacturing methods the company was using were unreliable and expensive. In 1881, after only a year at the company, Louis had created a cost-effective and dependable way of making very high quality photographic plates (Katz 743), known then as the "Étiquette Bleue" process. By 1883 business was flourishing (Katz 743), and the company was turning a large profit. Louis, joined by his brother, continued to industrialize their business, and they soon found themselves running the largest photographic factory in Europe. By 1894, the Lumière factory was producing around 15,000,000 photographic plates a year. Somewhat like Edison in the United States, Lumière and his brother had become successful inventors and businessmen.

Also in 1894, Thomas Edison had invented a device called the kinetoscope, (Earley 4) and it had been brought to Europe and put on display. Louis' father Antoine had seen the kinetoscope, and had brought a piece of film back from Paris to show to his sons. The Lumières quickly realized that they had the expertise, the money, and the production facilities needed to expand into this latest fashion in photography. However, they recognized that there were several problems with Edison's kinetoscope. First, it could not *project* movement—it was a peep show, which could be viewed by only one person at a time (Belton 7-8)(Bordwell & Thompson 453). Second, due to its weight and bulk it could only be used in a studio. It was so massive that it could hardly be moved (Bordwell & Thompson 210), and actors were required to perform in a limited area in front of it (Mast & Kavin 26-28). Finally, Edison's kinetoscope ran its film at 48 frames per second, using a great deal of film while at the same time creating a lot of noise. Louis Lumière set out to overcome all of these problems.

Louis designed a completely new kind of camera that was able to take moving pictures in a radically different way, integrating the ideas of other inventors into his design as well as adding several of his own (Earley 4). Lumière put their engineers to work building it, and on February 13, 1895 their invention was patented in France. Just over a month later, on March 22nd, the Lumières projected their first film, entitled *La Sortie des Usines Lumières (Workers Leaving a Factory)*(Katz 743). Even though there were several private screenings in early 1895, the camera itself was a closely guarded secret, and nothing about it was revealed publicly until the end of the

year. In contrast to Edison, who had neglected to patent his kinetoscope outside of the United States, the Lumière brothers were also quick to patent their camera in other countries—they applied for an English patent on April 18th, 1895.

While still working to improve an early prototype of his camera, Lumière began work on a selection of films that could be used for the eventual public launch of their new invention. The main filming location was their summer house in La Ciotat, about 300 kilometers from Lyon. The house was located near some vineyards, and the Lumières' father, Antoine, usually occupied it. The movies of their family made there by Louis and his brother are considered to be the first home movies. Each film lasted a minute, which was the amount of film that their camera could hold. A few months later in June, a collection of eight of their films caused a sensation when they were shown at a photographer's convention in Lyon.

The motion picture camera that Louis designed solved the problem of how to convert the continuous movement of a turning handle into a rapid stop-start movement, which would take the film frame by frame through a gate where it would be exposed (Monaco 73). Some of his ideas for this intermittent movement of film were based on designs used in sewing machines, which alternate the intermittent movement of fabric with short pauses, during which stitches are made. In fact, Edison and his fellow engineers had abandoned the development of a design that would create this type of intermittent movement. Louis' design allowed for smooth and accurate movement of film through the gate (Mast & Kavin 21) (Monaco 200). After some months during which Louis' design was modified and perfected, the Lumière legacy was about to begin. Although Louis' innovative design was remarkable, he always remained modest about it, and often credited his brother for his help (Mast & Kavin 21).

A production model of the Lumière camera, which had been dubbed the *cinématographe*, was being constructed by Jules Carpentier in Paris. Carpentier was in business manufacturing precision instruments and electrical and optical machines, and the Lumières had hired him to produce their cameras. The Lumières continued to make a number of last minute modifications, and early versions of the camera were sent back and forth between Lyon and Paris for painstaking final refinements. The design was finalized by the end of 1895 and the Lumières asked Carpentier to make an initial run of 200 *cinématographes*. Carpentier continued to work with Lumière, eventually producing over 700 *cinématographes*.

The *cinématographe* was small and quite simple to operate. A wooden magazine fed film in, and an operator turned a handle on the back to run the camera. In order to give the moving picture viewer the same perspective as the human eye, they used a lens with a similar one-inch focal length. Because their film was perforated, it could easily be loaded into the camera in just a few seconds.

Due to these technical innovations, the Lumière camera allowed cinematographers to leave the studio and explore the real world (Stephenson & Phelps 54). The *cinématographe* was relatively unobtrusive, only a little larger than a still camera (Bordwell & Thompson 201). This portability would allow virtually anything in the world to become the subject of a film. Lumière's

sense of how a moving picture camera should photograph the world was undoubtedly tied to his experience in the business of photography. Many of Lumière's early films show that he used their camera to capture reality in a way that was comparable to how a still photographer would approach a subject (Mast & Kawin 26). These early films are effectively short documentaries, showing everyday occurrences, differing from still photography only by the addition of movement. They probably didn't realize it, but they had also shown that a movie camera could create a faithful record of an event. Eventually, the realistic tradition in cinema that began with Lumière's actualités developed into a branch of filmmaking that would include documentaries, travelogues, newsreels, and eventually cinéma-vérité (Gianetti 185) (Katz 743) (Mast & Kawin 24-26) (Monaco 236). Such films are often made with simple equipment and they intentionally avoid artificial, artistic effects. On the other hand, one of Lumière's contemporaries, Georges Méliès, is considered to have originated the expressionistic tradition.

But besides being a remarkable camera, the cinématographe had two other important capabilities. First, an operator could run unexposed film through back to back with negative film to make a new copy of a film that had already been made (Mast & Kawin 21). Films could therefore be easily and quickly duplicated. Second, by attaching an arc light to the camera and changing the lens, the cinématographe could be converted into a projector (Belton 7-8) (Bordwell & Thompson 201, 453) (Mast & Kawin 21). The cinématographe was unique in that it combined production, duplication, and projection all in one small box.

With their cinématographe perfected, the Lumières were now ready to introduce their invention to the world. The first public showing of a film to a paying audience took place on December 28th, 1895, at the Grand Café in Paris. Here is the program of films shown on that day:

- *La Sortie de Usines Lumière* (1894)
- *La Voltige* (1895)
- *La Pêche aux Poissons Rouges* (1895)
- *La Débarquement du Congrès de Photographie à Lyon* (1895)
- *Les Forgerons* (1895)
- *L'Arroseur Arrose* (1895)
- *Repas de Bebe* (1895)
- *Place des Cordeliers à Lyon* (1895)
- *La Mer* (1895)

Although most of the program consisted of films that recorded real life events (Bordwell & Thompson 201), one of the films on that first program, *L'Arroseur Arrose*, is considered to be both the first example of cinema farce and film fiction (Bordwell & Thompson 454) (Cook & Bernink 94) (Mast & Kawin 26). At any rate, the public reaction was sensational and there were soon dozens of showings a day to satisfy the demand.

However, Louis and Auguste didn't attend the first public screenings of their films. They had ambitious plans and had begun converting their factory to produce all the supplies necessary to make moving pictures. In the first four months of 1896, the Lumières opened theaters to show

their films, which came to be known as “cinemas”. Besides their native France, they opened theaters in London, Brussels, and other cities.

Although Louis produced the first films himself, his goal as a businessman was to turn filmmaking over to a group of trained camera operators (Katz 743). The Lumières began recruiting and training camera operators. A single operator could film, process, and project films, and the Lumières were soon ready to expand their business by sending these operators abroad both to exhibit films and to record newsworthy events to expand the company catalog.

They hoped to send their cinématographes around the world before any international opposition to moving pictures could develop. Their cinématographe weighed only about five kilograms, and it could easily be carried most anywhere (Stephenson & Phelps 54). In contrast, the kinoscope, their main competition, was so large and heavy that it could hardly be moved.

The Lumière company had already had a worldwide network of agents selling their photographic products for a number of years. These agents were now instructed to find locations that could be used for exhibition, and to contact locals who could organize and finance moving picture shows. They sent films and operators first to London and then to Russia. Their operator in Russia, who arrived in May of 1896, was sent specifically to make the first film of a royal occasion, in this case the coronation of Czar Nicholas II. It was destined to become, in effect, the first newsreel. When Nicholas saw the films that had been made of the ceremony, he immediately saw the potential of film for both history and propaganda, and commissioned two filmmakers to record the great state occasions of imperial Russia.

At first, the Lumières decided not to sell their equipment, but to contract with local agents for its operation and use. A local agent might get a franchise, but would then have to use operators trained and sent out by the Lumières. As well as trained operators, each franchise received two cinématographes. Each of these posts could show films sent out from the Lumière headquarters in Lyon, along with any material produced locally. The business arrangement was that local concessionaires would pay the operators' expenses and also give them a portion of the ticket fees. The Lumières' share was fifty percent of the box office, and they reserved one percent of that for the operators.

The best known of the Lumière trainers was Alexander Promio, who also traveled as an operator himself. Promio was largely responsible for training the initial group of Lumière operators to be sent overseas. In the spring of 1896, the first group of Promio's trainees set sail and began to circle the world. These operators were young, often only 17 or 18 years old. They were mostly recruited from the Lumières' own photographic works in Lyon. Promio and his operators immediately set to work filming in major cities of Europe and around the world. In only a few year years they had accumulated close to 1000 titles, much of it news footage (Katz 743).

A typical recruit was Felix Mesguich. When he was hired in January of 1896, he knew nothing about photography or electricity. But by the following June, he was bound for New York with a cinématographe. Mesguich's New York exhibition of his Lumière films actually took place several weeks after Edison's first public screening, but the Lumière films were of much better

quality (Cook & Bernink 3). In fact, they were admired to a such a degree that they unnerved the American competition. So in 1897, the Lumières' American competitors began to flex their political muscle. William McKinley, who was on the verge of being inaugurated President, had a brother who had invested in a film company. One of McKinley's campaign slogans had been "America for the Americans", and once he was in office the U.S. government soon put pressure on the Lumière operators. When filming in Central Park in New York, Mesguich was stopped by police and told he was required to have a permit to do his filming. A short time later, the U.S. Customs Department discovered a "problem" in the import documents, and the authorities started seizing any of the Lumière cinématographes they could find. Most of the Lumière operators went back to France, but Mesguich headed for the Canadian border, where he filmed Niagara Falls from the Canadian side.

But wherever the new operators went to film, the same common themes seemed to attract their cameras. At the Lumière headquarters in Lyon, the managers liked the films they received, but the first film critics now began to complain about the similarity of content in many of the Lumière films. Still, there was a certain amount of creativity. In response to critics and to keep up with the competition, there were a number of dramatizations of well-known stories. And to cite an example of a technical innovation, Alexander Promio is often credited with creating the first tracking shot, in which the camera does not remain fixed but instead moves past that which it is filming.

Due to increasing competition from other filmmakers and other film companies, the Lumière business strategy began to evolve. Louis and Auguste now sold cameras outright to any of their concessionaires, which made their trained operators unnecessary. Operators who wanted to keep filming had to do it without any support from France.

Although Louis Lumière had directed many of his first films, he was first of all a technician and businessmen who was interested in the science of images and photography (Mast & Kawin 22)(Stephenson & Phelps 31). His goal was neither to become a filmmaker nor to turn moving pictures into an entertainment industry. Of the entire Lumière film catalog, Louis personally directed only about 50 films, though he had in many ways overseen the production of many more. At the Paris Exposition of 1900, Louis put up a screen 24 meters high and 30 meters wide (Katz 743), onto which he projected images from 70mm film. It seems that Louis saw that as a technological feat rather than a way to further the development of motion picture entertainment.

Also, filmmaking had quickly attracted artists and performers such as Georges Méliès (Earley 6)(Mast & Kawin 29). Being inventors and businessmen rather than creative artists, Louis and his brother may have at times felt awkward about the content of their films. The fact that they had from the beginning trained a corps of camera operators to produce the bulk of their output shows that they never intended to pursue filmmaking themselves. One of the most significant effects of their withdrawal from hands-on film production was that it allowed the creativity of other filmmakers to blossom. In the United States, Edison was trying to monopolize and control all aspects of the filmmaking business (Cook & Bernink 54). The graceful withdrawal

of Louis and his brother let everyone do what they did best—whether it was the manufacturing and production of cinématographes and the supplies needed to use them, or the actual production of films that would most likely entertain the largest audiences.

So after the Paris Exposition of 1900, Lumière effectively gave up film production to concentrate on the manufacturing business and the invention of new photographic processes (Katz 743). Louis had an ongoing passion for perfecting images of reality, and he was in fact a scientist—an inventor (Stephenson & Phelps 31). Although it was certainly the most sensational, his development of the cinématographe was just one of many projects that Louis worked on throughout his life. In less than five years, Louis Lumière had become one the dominant forces in moving pictures (Mast & Kawin 104), and had brought filmmaking to five continents (Mast & Kawin 22). His decision to move his company to the background of actual filmmaking enabled a new generation of artists to emerge.

One of Louis' later projects was to perfect the first practical color photography process for still photography called "autochrome", which was used only experimentally in moving pictures. Then, in 1901 he built a special theater and demonstrated something he called "photorama", in which projectors surrounded an audience with images. And when he was in his 70s, some 40 years after his breakthrough with the cinématographe, Louis fascinated audiences with a demonstration of three-dimensional films (Katz 743), which were viewed through special glasses. But nothing again ever matched the effect of the first moving pictures that he had made at the end of the 19th century. Louis Lumières died in 1948, at 84 years of age.

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