The Lumiere Brothers: Crash Course Film History #3

Crash Course: Film History
https://youtube.com/watch?v=aFkSjdaqbyE
https://nerdfighteria.info/v/aFkSjdaqbyE

Hi.

I'm the internet's Craig. This is Crash Course Film History.

Based on what you've probably heard, or read, or… what I told you last time, you're probably under the impression that the development of modern film technology is all thanks to famous inventor Thomas Edison, and his less-than-famous employee, William Dickson. You're wrong. I can't believe how wrong you are.

Together, these guys developed two of the first commercially-viable film technologies: the kinetograph – basically a camera – and the kinetoscope – a single-viewer exhibition device that you use to watch kinetograph films. But guess what? As was often the case with Edison, a lot of the credit that's given to him also belongs to a great many other people. 0:35...not me.

While Edison and Dickson were setting out to make moving pictures in New Jersey, lots of other inventors were tinkering with film technology across the world. In Lyon, France, a pair of brothers saw the kinetograph and kinetoscope – and said, 0:46"We can do better than that!" And they did. Within two years, they invented a lightweight, all-in-one motion picture device that made movies and exhibited them.

They figured out a way to use the camera mechanism to play back the developed roll of film, projecting bright light through it to show images. Films could be projected on an entire wall or screen, letting audiences of people experience films, together... It'll never work.

By sheer coincidence – or maybe fate – their surname means "light." Say hello to the Lumière Brothers and the first projected films. 1:12[Intro Music Plays] Auguste and Louis Lumière were born in the 1860s in eastern France. In 1870, their father moved the family to Lyon and opened a small factory that made photographic plates. The family business, like all my businesses, teetered on the edge of bankruptcy, until the brothers took over.

They devised machines to help automate the plant, and invented a new and improved photo plate. By the time they started experimenting with film technology, the Lumière Brothers had lots of experience in business, engineering, manufacturing, and photography. They were intrigued by Edison's motion picture devices, but quickly saw the flaws: the camera was hard to move, and only one person could watch a film at a time.

So they went back to the basics, and made a better camera. Remember the intermittent stop-and-go mechanism – how motion picture cameras need to stop the film long enough to expose one frame to light, before moving the roll to the next frame? Well, the Lumière Brothers developed a device around the stop-and-go mechanisms used in sewing machines.

They weren't the only ones tinkering with this engineering problem, though. Inventors were working independently all over Europe and the United States, putting the pieces together that will one day become cinema. By 1897, the German optician-turned-film pioneer Oskar Messter perfected his design for the stop-and-go mechanism, called the Maltese Cross – named after the medal with the same shape.

It's also called the Geneva Drive, because it was first invented in Geneva, Switzerland for use in mechanical watches. Messter's device has really stood the test of time: we still use a version of it in most projectors today. But, back to the Lumières and their motion picture camera.

Transition PUNCH! Their whole contraption was a compact, portable box. It was light enough for one person to carry. The camera was operated by a hand crank, so it didn't rely on an electric power source. It used the same 35 millimeter film as Edison's kinetograph, but it could also develop the film that it shot – no more sending film off to a lab and waiting for the mail. 2:54... I hate waiting for the mail.

But, that's not all, once the film had been developed, the Lumière device could be reconfigured into a projection machine. So many things in one. It's so... aw it's just good.

They could run the developed film back through the intermittent stop-and-go mechanism, and, with a bright light source, the images would project onto a wall or a screen. This device could do it all. You could carry it with you out into the world, capture footage, develop the film, and then project it, any time, anywhere, any way you wanted.

Don't do it vertical though... commenters hate that. Compared to the kinetograph and kinetoscope, it was kind of like the technological leap from an old school flip phone to a smartphone. The Lumière Brothers wanted to call their invention the "cinématographe," which means 3:29"writing with movement." Like Edison, the Lumière Brothers were savvy businessmen, and secured international patents on all their technology.

Doing Edison one better, they saw a lot of potential in having large, public film screenings. Before the public unveiling of their cinématographe, they held a series of private parties where they projected films for groups of distinguished guests, stoking interest and excitement. And then in Paris, on December 28th, 1895, at the Salon Indien in the basement of the Grand Café, Auguste and Louis Lumière screened a series of ten short films and changed the world forever.

Now, I should mention that this wasn't technically the first public screening of a motion picture. That honor, as far as we know, goes to Woodville Latham, an American chemist and kinetoscope owner, who projected a film of a boxing match in New York in May, 1895. What set the Lumière Brothers apart was that they played up the intrigue of their device and gained publicity, plus their superior image quality and the sheer number of films they presented.

This is the movie business, after all, and hype almost always wins. So the credit for first successful public screening typically goes to Auguste and Louis Lumière. Sorry, Latham.

Better luck next time. Maybe go back to chemistry. Among the films the Lumière Brothers screened that night was "The Train Arrives at La Ciotat Station." In the film, a train – you guessed it – arrives at a station.

Kinda spoiled it with the title. In a single, uninterrupted shot, it comes toward the camera, stops, and the passengers disembark. Legend has it that when the first audience saw this movie projected on the wall, it was so unfamiliar and realistic that they ran screaming from the theater, fearing for their lives.

In recent years, historians have thrown cold water on this story for a couple reasons. First, seeing images projected onto walls wouldn't have been a new experience for a lot of Parisians. Some version of the magic lantern projection device had been used for education and entertainment since the 17th century, employing a light source and a lens to project images or paintings from glass plates up onto a wall.

Not to mention, most of the Lumière audience would probably have been aware of kinetoscope films. So chances are no one actually thought a train was about to drive through the wall and run them all down. More likely, the audience might have shrieked in delight at

the size and clarity of the images projected, and at the sheer magic of seeing these pictures come to life.

Remember, film presents us with the illusion of reality. And like any good magic trick or optical illusion, part of the thrill is knowing that what you're seeing isn't real, but not being able to tell how the magician pulled it off. The story of the screaming audience in the Grand Café also reveals the power film has to create a communal experience.

While the technical wizardry of their cinématographe was groundbreaking, the unique group psychology of movie-going may have been the Lumières' greatest contribution to film history. When you're in an audience watching a film, you're having a specific, personal experience, but you're also part of a pop-up community. 5:48... and sometimes that community has a has a bunch of kids who won't be quiet and you're trying to watch Batman vs. Superman!

Think back to the last hysterical comedy you saw in a movie theater, and then tried to watch again by yourself at home. It's not the same, is it? Film is this unique artistic medium that can take on different meanings depending when, where, and with whom you're watching it.

Now, the Lumière Brothers' films all shared a few characteristics. They were silent, black-and-white, and uninterrupted shots that lasted less than a minute – much like the films out of Edison's Black Maria. But rather than capturing stage performers and skits, the Lumière films were mini-documentaries, known as "actualités." They focused on slices of everyday life: two babies fighting over lunch, a group of workers leaving a factory at the end of the day, and, of course, trains arriving at stations.

These films were financially successful right out of the gate. The Lumière Brothers' first screening brought in 35 francs, at 1 franc per person. And within a month, they were making 7,000 francs per week. that's... *counting* 7,000 people!

Meanwhile, other inventors were making cinématographe-like devices with cool names like the Bioskop and the Theatrograph. Some were directly inspired by the Lumière Brothers, while others were independent. Thomas Edison saw the financial success the Lumière Brothers were having and wanted a very big piece of that action – abandoning the kinetoscope to jump into theatrical projection.

Edison and other inventors also began experimenting with longer films. BORING! But there was a big problem: these longer film strips kept tearing inside the projector.

Enter Woodville Latham. Remember him? The guy who really held the first public projection of a movie?

He held the patent for the Latham Loop, a different way to feed film into a projector, which involved a pair of small, loose loops of film – one above and one below the projector's lens – held in place with extra sprockets. This helped protect the film from vibrations and tension, which could lead to damage. In 1895, another pair of early film pioneers, C.

Francis Jenkins and Thomas Armat, used the Latham Loop in a projector of their own design and called it the Vitascope. Edison saw this device, bought it outright, and released it as the "Edison Vitascope," giving the original inventors almost no credit… 'cause that's how Thomas Edison rolled. Throughout all this experimentation, most people thought of films as a fad that would burn brightly for a few years, and then disappear – like arsenic as medicine, séances, or Victorian "tear catchers." Even the Lumière Brothers got out of the movie business in 1905, because they didn't see a future for film.

Good idea! And it's true, 50-second Vaudeville performances and actualités will only entertain audiences for so long. But film was growing into something bigger – a method of mass communication that was starting to make itself indispensable.

As time went on, filmmakers would take cinématographes to far-flung places, capturing movies of the Amazon Basin, the pyramids at Giza, and the ruins of Ancient Rome. Suddenly, you could walk into a theater in Peoria, Illinois and see Sherpas climbing the Himalayas. ... Without drugs!

In some ways, these kinds of films knit the world closer together, showing people sights they'd never experience in real life. You can even compare film history to the early days of YouTube. Sure, we started with Jawed at the zoo, and cat videos, and kids on dental anesthesia.

But that was just scratching the surface of a medium that has let us create so many weird, wonderful, and important things, and has changed the way we see ourselves and the world around us. Today, we introduced you to the Lumière Brothers and their cinématographe, the all-in-one camera, film developing lab, and projector. We learned about the first big public film screenings, and how people were beginning to have collective movie-going experiences, as well as very personal ones.

We discussed actualités, the snapshots of everyday life, and how some filmmakers were beginning to push the envelope, exploring the world and making longer movies. And next time, we'll talk about the very first films to tell stories, using editing and special effects to manipulate reality in exciting new ways. Crash Course Film History is produced in association with PBS Digital Studios.

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