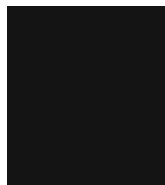


# Preface

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The applause has died out. The audience has left the theater.

It is the year 1930 and inventor Lee de Forest is all washed up. The inventions that should have defined him do not add to his income, and they have not brought him fame. The man who invented the radio tube and radio itself, the scientist who developed the first successful talking picture technology has seemingly lost everything. He is now in court daily, and he is estranged from his third wife, his daughters, and the scientific community. He has spent the previous decade developing a theory for the technology of synchronized sound-on-film into patents, practice, and public notice, only to lose it all. He is alone. He is penniless. These are the worst of times for Lee de Forest.

Lee de Forest could “hear” but he could not “see.” In the 1920s, he had found a way to add sound to the then silent motion picture. His technology was solid, the one that Hollywood would eventually adopt, but he made a big mistake. He made films and invited audiences to see them. These films clearly demonstrated that while the cinema could be made to speak, the “talkies” as created by de Forest showed that he had no understanding of the visual content, or the art that had already defined the successful cinema. Nevertheless, he made hundreds of films and created an unsuccessful business based on his flawed vision of filmmaking. The audience reaction was unenthusiastic, a collective, “so what.”

If the life of Lee de Forest can be compared to a three-act screenplay, the sound film may have been his final act. First he tried, succeeded and then failed to make a go at a wireless telegraph business. In the second act, he invented the three-element vacuum tube, and applied it to the development of radio broadcasting and sound amplification. In the final act he tried the film business. The Yale Ph.D., who invented some of the most important technologies of the twentieth century, now believes that he has just wasted an entire decade on a system to bring sound to the movies, only to have it virtually disappear into a haze of legal briefs and betrayal.

Lee de Forest was prominent in those important years when the mass media was actively being imagined by him and others. It was a time when the cinema evolved from recording simple outdoor scenes and stage performances into a mature media, and radio developed from the experimental to the popular. It was during de Forest's time, the first three decades of the twentieth century, when the silent film and radio found their technology, their language, and their audiences. The de Forest influence on radio was significant: as early as 1907 he told of his plan for sending music into homes using a wireless telephone he had invented. After he created the "voice" for the wireless, he turned to the movies, believing they also needed a voice. What followed was a period in which he both created and learned about the evolving relationship between science, art, business, and audience.

More than just the story of how sound came to the movies, *Lee de Forest: King of Radio, Television, and Film* is a broad and sweeping perspective on the inventing process and the life of inventor-scientist Lee de Forest. Beginning with his fascination as a student with the "speaking flame" and its application in physics and electricity, de Forest not only invents technology for the entertainment media but he also creates its content and consumers. But this is not the story of how a lone inventor has an "aha" moment, creates a technology, and reaps both monetary reward and everlasting fame. What becomes evident in this story is how the invention process really happens, how each new device builds on those previous to it, and how patents are developed, granted, and then challenged in a number of increasingly higher courts, where they are upheld or overturned as invalid by judges who may or may not fully understand the technology upon which they are ruling.

Mostly you will know Lee de Forest as the tortured lone inventor. But in his quest for a sound-on-film system he actually made a friend for the first time in the person of fellow Yale alumni Theodore Case. They collaborated. They worked together. They invented. In the beginning there was mutual respect. Even though de Forest was the alpha, the senior scientist, he and Case had a unique relationship, much of it documented in hundreds of letters exchanged between the two leading to their final legal showdown. Previous de Forest biographical writings have missed the real story of de Forest and Case. Some have ignored it altogether, while other authors have lined up on one side or the other. Some believed that de Forest simply stole the inventions of Case and attempted to profit from them. Others have written that Case was merely a de Forest employee who took his boss's invention and sold it to Fox Pictures under the name of Movietone. The truth about the de Forest-Case relationship is a complex one. Neither inventor could have succeeded alone. De Forest had the original theory

and the early patents, but he needed Case's components to make his system, he called Phonofilm, work well enough to gain serious audience attention. The de Forest–Case relationship culminates at the end of the 1920s in a place familiar to all inventors – the courthouse. In the end, neither de Forest nor Case will be considered victorious, both having been swallowed up by the big business of the movies, both clearly overshadowed by the frenetic rush to the talkies.

There is no question that Lee de Forest was an important scientist. In his story you will meet inventors with whom he collaborated, learned from, took from, agreed and disagreed with, confided in and impressed with his technical tenacity, yet at the same time angered with his aggressive audacity. In his first three inventing decades, 1900–1930, he was actively melding and expanding electricity, physics, chemistry, optics, and basic mechanics. Working without computer and intricate fabrication machinery, the scientists and inventors of de Forest's time must have fascinated the public with their magical construction of inventions. For him these included wireless, the vacuum tube, the amplifier, broadcast radio, and a sound-on-film process. And significantly, all of the twentieth century inventions of de Forest and his contemporaries will be shown to have their scientific roots in the latter half of the nineteenth century.

Controversy surrounds Lee de Forest. Many called him dishonest and unethical, and tried to prove through the legal system and in the court of public opinion that he really didn't deserve credit for some of his inventions. It was claimed that he stole the ideas of others and exaggerated his inventing prowess. Like Richard Nixon in the 1970s, de Forest too had an "enemies list," those he believed had wronged him in some way. As an inventor some of his success derived from his manic habit of working hard and continuously on many projects at once, reaching emotional highs to achieve invention and falling into depression upon failure. Adding to the inventor's story is the fact that during his development of Phonofilm, from its concept on a scrap of paper in 1918, to its first public showing in 1923, to its demise in 1930, he began his second family. In this decade, he sired two daughters, yet lost a son and a wife only to marry again, all the while writing countless poems, corresponding with hundreds of people, seeking publicity for his films, starting and losing several companies, spending time in court depositions and hearings, and traveling internationally. This is a rich and interesting story, placing him within the larger history of science and invention.

He is a man whose life will seem a perpetual drama. Between 1900 and 1930 he both succeeded and failed, won and lost, yet was ever active in promoting his ideas about the new electronic mass media. But now in 1930 Lee de Forest at age 57 is pretty much finished with his contributions. He will spend the final decades of his life telling and retelling his story and defending his legacy.

He will not go quietly.

Lee de Forest

King of Radio, Television, and Film

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