

# **The Co-production of Society and Radio Technology as a Tool for Propaganda**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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## **I. INTRODUCTION**

The invention of radio was one of the greatest developments of the 20th century. Information could now be communicated in any direction, to any number of listeners, without the limitations of physical transmission lines. This technology quickly changed the way societies conducted commerce, waged war, and exchanged ideas. As a tool for news, radio could capture the personality and emotion of human speech that the written word could not. Additionally, spreading information through electromagnetic waves, rather than the internet or printing press, is much more difficult for a third-party to disrupt. For these reasons, radio has been used as an effective tool for nations to spread domestic and international propaganda.

During the Second World War, radio broadcasts were used extensively to try to demoralize opposing soldiers and citizens. Disruption of these broadcasts was difficult but not impossible, and the Cold War saw significant developments in radio jamming and anti-jamming technology. While the usefulness of radio has diminished due to the advent of the internet, authoritarian countries, such as China and North Korea, have tight control over access to the web. Because of this, radio remains the best option for outside parties to communicate information to citizens living under the regimes. Even American citizens are not immune to foreign propaganda over the airwaves. Several news stations, owned by a Russian state-sponsored media company, broadcast in American cities and were partially responsible for the Russian interference in the 2016 election. From a century ago to today, the development of radio technology has enabled the influencing of entire societies. However, in the context of technological and social co-production, the ideologies of these societies have also driven the development of this technology. To understand the co-evolution of radio technology and society, a historical analysis must be conducted.

## II. THE SECOND WORLD WAR

The first notable examples of radio propaganda occurred during the second World War. The Nazi regime recognized the power of radio in a domestic setting and its ability to spread information. Nazi propagandist Joseph Goebbels even claimed that radio was the “Eighth Great Power” (Goebbels, 1938). In order for all Germans to have access to state-run media broadcasts, Nazi engineers designed a cost effective radio set known as the *Volksempfänger*: ‘the People’s Radio’. Millions of these cheap radios were subsidized and distributed by the government, providing an effective mechanism to disseminate the state ideology to the people. By 1941, more than half of the country owned a radio. While this was intended to enable the spread of Nazi propaganda, more citizens than ever before had the ability to listen to music and instantly access the news. This established a culture of radio, with families ritualistically tuning in to evening broadcasts, which persisted following the war (Wiesner-hanks, ch. 9, 2013).

However, this also allowed British agents to broadcast en masse to the German people, spreading misinformation and dissent. During the war, one British newscast, known as Gustave Siegfried One (GS1), posed as a domestic dissident station in Germany. This station artfully intertwined real news with fabricated stories, and included “pornographic” jabs at the regime. The German people were so conditioned by the puritanical reverence towards authority that GS1 grew an audience through shock and awe. The station was especially popular among Axis soldiers, who were even able to tune in from their U-boats in the Atlantic and as far away as North Africa. Because of this, the Allies managed to spread misinformation to Nazi soldiers preceeding D-Day, which enabled the invasion of Europe (Wortman, 2017).

This is a striking example of the co-production of technology and society. The development and design of radio technology was fueled by the Nazi ideology as a tool to spread

their message. In a matter of years, radio had become an integral part of German material culture. This initially strengthened the Nazi regime, but paradoxically became a weakness. Because most Germans had access to the airwaves, the Allies were able to use radio technology to spread misinformation and dissent, which eventually aided in defeating the Axis powers. If this series of events had taken place fifty years earlier, the timeline may have been much slower. The interplay between society and radio technology led to a feedback loop of societal change, where the Nazi party was able to quickly rise to power and disseminate their message, but was also swiftly undermined by this very technology. In this way, the co-production of radio and society seemed to act as a historical accelerator, rapidly enabling a society to come to power and then be dismantled.

### **III. THE COLD WAR**

After the fall of the Third Reich, two new nations came to the forefront of global power: the United States and the Soviet Union. While the two never came into direct conflict with each other, their struggle for power took the form of espionage and propaganda, which radio technology played a major part in. The United States government viewed the authoritarian, communist ideology of the Soviets as the antithesis of American values. Consequently, much effort was put toward introducing American ideas to Soviet citizens. During the second World War, the Voice of America (VoA) was founded as a radio-based government media organization. The VoA's initial purpose (like the aforementioned GS1) was to broadcast American propaganda to German citizens. In 1947, the VoA sought a different target and began transmitting Russian-language newscasts into the Soviet Union. These broadcasts presented inaccessible news programs, western music, and segments designed to promote American values (The Editors of Encyclopaedia Britannica, "Voice of America.", 2019).

However, in 1949, the Soviets retaliated and began to jam the American transmissions. In a rudimentary fashion, radio broadcasts can be jammed by transmitting a stronger signal over the same frequency as the target. To combat Soviet jamming, American operators of the VoA, as well as Radio Free Europe (a similar American organization), began increasing their transmission power. This led to a radio “power race,” with each side attempting to develop more powerful transmission technology. The Soviets developed elaborate jamming systems which targeted incoming ground-based and atmospheric waves. While these measures led to substantial developments in radio technology, their effectiveness was questionable. Soviet citizens could fashion makeshift anti-jamming antennas which helped receive VoA transmissions. For the Soviets, jamming was a financial burden. The American spent less money on the transmissions and broadcasts than the Soviets did on jamming them. Additionally, the high levels of noise caused by jamming affected domestic Soviet transmissions, including television and satellite signals (Bohr, 1959).

During the Cold War, American engineers developed high-power, highly-directional antennas employing frequency diversity techniques. These technological edges helped broadcasts cut through the Soviet jamming. Ultimately, the effectiveness of VoA and Radio Free Europe was verified following the collapse of the Soviet Union. Interviews with dissidents articulated that these broadcasts were instrumental in transmitting information and helping their causes. According to one American official, all defectors he encountered claimed that the VoA helped them choose to defect. The VoA also had a major impact in non-Soviet countries, such as Italy and France, where there were growing far-left movements. The radio broadcasts helped the countries Americanize, dissuading the advancement of communist organizations (Kohler, 1951).

The propagandic struggle over radio was a critical element of the Cold War. The United States sought to effect social change while the Soviet Union worked to prevent it. Consequently, the ideological battle of these two societies created massive developments in radio technology and usage. As a tool to influence others, Cold War radio technology had stronger offensive capabilities than defensive, and in the end, the United States was able to prevail. In the context of co-production, the Cold War saw these societies impart massive advancements on radio technology, and in turn, that technology influenced social change.

#### **IV. MODERN CHINA**

Since the advent of the Internet, general radio usage has decreased throughout the world, especially in the west. This is understandable, as the internet is far more effective at delivering information. However, due to the centralized infrastructure needed to provide internet access, it is also more easily controlled. In authoritarian countries, such as China, there is a bottleneck on information accessible through the web. In North Korea, only high ranking government officials have access to the global internet. As a result, radio technology still remains an important tool for Chinese and North Korean citizens to receive outside information.

Similarly to the Soviet Union, China was a target for Voice of America, as well as America's Radio Free Asia, during the later stages of the Cold War. However, China's authoritarian determination effected substantial improvements upon radio jamming technology, which was deployed in the 90s. However, many of these improvements in technology were due to the private industry in the west. In 2002, French defense corporation Thales Group sold high-power transmitters to the People's Republic, which were then used for the purpose of radio jamming. And in 2007, a subsidiary of Thales Group built a satellite for the Chinese government which was launched to provide geostationary shortwave jamming. Thales Group received heavy

criticism for these business endeavors but claims that none of their products were sold with the intention of jamming (World Telecom Companies (Operators) Directory. Vol. 1).

Because of the extent of Chinese jamming efforts, since 2011, the VoA has scaled back their Mandarin newscasts and transmissions to mainland China (Socolovsky, 2011). However, a privately organized radio network known as the Sound of Hope has found success in broadcasting to the People's Republic. Run by dissidents in exile, the Sound of Hope bypasses Chinese jamming by using a network of transmitters in nearby countries (Tedlipien, 2011). These transmitters periodically hand-off the signal to each other, essentially playing a game of cat-and-mouse with the jammers. Listeners can tune in by building directionalized receivers and switching to the currently transmitting station (Tucker, 2019).

This battle to enact and prevent social change has yet to be concluded. While there exists very little unbiased data on Chinese radio usage, the number of radio listeners is estimated to be relatively high in rural areas, where internet access is unaffordable. Considering the Chinese government runs eighty shortwave stations, it is reasonable to assume the population of radio listeners is non-trivial. At this time, the Sound of Hope has yet to incite revolutionary change, but at the least, the service provides a broad audience with outside news.

An interesting facet to this technological struggle is the role played by private industry. In previous examples, the push to expand upon radio technology has been entirely state-driven. However, in order to operate a jamming system, China has depended heavily upon technology designed by Thales Group. And in turn, the current effort to disseminate information to the Chinese people has been led by the Sound of Hope, a privately run organization. This example demonstrates that nations are not the only actors when it comes to the co-production of radio technology and society. A society driven by a capitalist system will push the development of

radio technology to meet profit driven goals—independent of any government. And by using this technology, private organizations are entirely capable of advancing social change.

## **V. MODERN AMERICA**

While American society has often been the deliverer of radio propaganda, in recent years, the United States has been the target. The station Radio Sputnik, administered by a Russian state-owned media company, operates in several cities in America, broadcasting propagandic and misleading news programs in English. These broadcasts are subtly crafted to promote Russian interests, sow dissent, and even manipulate elections. During the 2016 presidential election, there was a massive Russian state-sponsored campaign to discredit Democratic candidate Hillary Clinton and promote Republican candidate Donald Trump. While much of this campaign was conducted over the internet, Radio Sputnik played a major role in assisting this effort through the airwaves. During the election, Radio Sputnik frequently promoted false news, often misquoting public officials, promoting conspiracy theories related to Hillary Clinton, and in general, favoring Donald Trump.

Although Radio Sputnik is legally forbidden from owning a station outright, American radio operators are free to transmit the newscasts. And for some, it is lucrative. A station in Washington D.C. is receiving more than \$2 million over a three year period to broadcast Radio Sputnik. Following the 2016 election, these radio operators were forced to register as foreign agents, officially disclosing to the American people the source of their radio programs and income (Macfarquhar, 2010). In response, the Russian government officially declared Voice of America and other American-sponsored media outlets to be foreign agents—a move which American officials highly criticized (Neuman, 2017).

This introduces an ethical conundrum related to the co-production of radio technology and society: when is it ethical to broadcast to an outside group of people? When is it ethical for a state to intercede? At what point does factual information become propaganda? For years, the United States has used the Voice of America to internationally effect social change. The mission statement of the VoA has been to disseminate factual news where it cannot be otherwise received. However, the VoA has been accused of selectively crafting programs to assist the state department of its goals. For example, in 2007, the Persian VoA aired an interview with the leader of Jundallah, a Sunni militant group in Iran. The VoA introduced the leader as the head of a “popular resistance movement,” despite the organization comprising only a few hundred members and being declared a terrorist organization internationally (Black, 2009). As a result, this interview received much criticism from Iranian-Americans. Around the same time, it was revealed by a CBS report that American officials had been encouraging Jundallah to destabilize the Iranian government (“Iran Jundallah Leader Claims US Military Support”, 2010). This is strikingly similar to how Radio Sputnik attempted to destabilize the American government during the 2016 election.

There is an apparent hypocrisy to this situation. The United States criticizes Russia for using radio to spread propaganda in America, yet the VoA serves a similar role abroad. Russia was condemned for labeling the VoA as a foreign agent, but the United States took similar action against Radio Sputnik. This hypocritical attitude demonstrates the ability of radio technology to influence societies. The technology is so powerful that nations are not willing to forgo its usage in order to stay consistent with their critiques.

Interestingly enough, the United States banned the Voice of America from broadcasting directly to the American people until 2013. This was intended to prevent the government from

spreading propaganda to its own citizens. However, the law was repealed in order to provide transparency and reach expat communities in America (Gripas, 2013). There is an ethical implication to this now repealed legislation: that people receiving propaganda from a foreign government is better than from their own. Considering that the law is no longer in effect, and Radio Sputnik has been discouraged from broadcasting, it seems this ethical implication has been reversed in the eyes of the American government. The Voice of America has yet to become a mainstream source of news in the United States. If it does, the co-evolution of radio technology and society suggests that social upheaval could follow.

## **VI. CONCLUSION**

As has been demonstrated, radio technology has had a massive impact on social order. It is arguable that this interplay between radio and society is historically inevitable. Due to the physical nature of electromagnetic waves, radio is an extremely powerful tool to spread information. The written word demands materials and physical transportation, and the internet requires computation and software protocols. Radio, just by the natural laws of the universe, is axiomatically simple. Information can be transmitted instantly, over a wide area, using relatively fundamental electronics. The format of that information is important as well. Humans are easily influenced by personality and emotion, both of which are better characterized through audio than text. In this way, radio is a much more persuasive medium for information.

Therefore, it seems to be a historical inevitability that radio would become a critical player in shaping society. Nation states (as well as private actors) who sought domestic and international influence were bound to recognize the utility of radio and further its development. And in turn, these nations and others were inescapably influenced by the technology. The only way societies could resist social change was by developing effective jamming technology. By the

nature of physics, the technology to thwart radio communication happens to be the same radio technology. Thus, any advancements towards preventing radio-based societal change progressed the technology as a whole.

Due to the physics of shortwave technology and its ability to carry persuasive media, the relationship between radio and society is a categorical example of technological determinism. The ideologies of civilizations have driven technological development, which has then invoked great influence on societies. There is a strong feedback loop between forces advancing technology to impart societal influence, and those advancing technology to prevent it. In summary, the co-production of radio technology and society is not only a reciprocal relationship, but a historical inevitability.

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