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MS2

Thesis Intro - work in progress..

VERY ROUGH DRAFT!

Radio broadcasting to a listening audience began when the station KDKA

transmitted a signal over the airwaves of Pittsburgh, Pennsylvania in November of

1920.[1] On the eve of this centennial anniversary, I intend to evaluate the current state of

radio in its active formats with a focus on how the medium is being used to serve

listeners and communities via independent and unlicensed broadcasting. Community

stations and illegal broadcasters still make active use of the AM/FM dial, along with

shortwave frequencies, even as the internet looms as a viable option to stream content

to a global listening audience. I plan to explore the activity and motivations of

contemporary terrestrial transmissions from all sides of the frequency band and

compare with the opportunities for broadcasting afforded by online streaming. I intend to

build an exploratory interface that will visualize this research and launch a user into a

graphical and auditory environment built around the radio medium(s) of interest.

In our current technological moment, the term 'radio' can mean a lot of different

things. There is the standard AM/FM dial that many people are accustomed to from their

car dashboard, home stereo tuner, or alarm clock. Deeper down the analog radio rabbit

hole, there are dedicated listeners (or "DXers," in the common parlance) who are

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[1] "A Science Odyssey: People and Discoveries: KDKA Begins to Broadcast," *Pbs.Org*, 2019,
http://www.pbs.org/wgbh/aso/databank/entries/dt20ra.html.

investigating and logging activity on shortwave frequencies. Then there are amateur radio enthusiasts ("hams") who are listening in, corresponding in two directions, or scanning (for safety alerts or other local information) on the citizen band (CB).

Digital and internet technology has opened the doors for new methods and mediums of radio. Beyond new digital audio broadcasting (DAB) and high definition (HD) protocols that are struggling for adoption across the globe in an attempt to rejuvenate and eventually replace analog radio (Anderson, 2013, 178)[2], there are countless streaming services available online for individuals and organizations to reach a global listening audience with an online radio station using a service such as Shoutcast or TuneIn. Algorithms are the new DJs on music streaming services such as Spotify and Pandora, which double as music on-demand services that allow users to build playlists that can be shared and proliferate interest across social networks. Youtube allows 24/7 live-streaming that converts active viewer and subscription counts into direct revenue to be split by the company and the individual behind the host account. Independent web-only radio stations such as The Lot Radio based in Brooklyn and NTS in the UK convert physical broadcast studios into internet destinations that are building strong virtual communities from across the globe. Podcasting has spawned its own culture and massive subscribed audience, with over half a million active podcasts and 50 billion all-time episodes downloaded on Apple Podcasts alone[3]. With so many

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[2] Anderson, J. N. (2013). Radio's digital dilemma: Broadcasting in the twenty-first century. London, UK: Routledge.
[3] Melissa Locker, "Apple's Podcasts Just Topped 50 Billion All-Time Downloads and Streams," *Fast Company* (Fast Company, April 25, 2018), https://www.fastcompany.com/40563318/apples-podcasts-just-topped-50-billion-all-time-downloads-and-streams.

low-cost opportunities to transmit audio online, why are broadcasters and listeners alike still turning to terrestrial signals transmitted over the airwaves?

The stations available on AM/FM are dominated, for the most part, by corporate conglomerates broadcasting music, news, and talk with the hope to generate revenue via advertising -- but portions of the frequency band are dedicated to community interests and 'low power' stations. Some geographic locations serve as a hotbed of unlicensed broadcasters sitting on unused frequencies or disrupting licensed stations. These are known as "pirate" broadcasters and their stations are a piece of the larger civic movement of "free radio."

I first came into contact with the concept of pirate radio as ten year-old watching Christian Slater advising listeners to "eat your cereal with a fork and do your homework in the dark" in the Hollywood feature film, *Pump Up the Volume* (1990).[4] The film based its premise on the growing scene of pirate broadcasters active in the 1980s by representing teenager Mark Hunter (Slater) as an awkward student by day and angsty DJ by night who commanded the attention of his entire Paradise Hills, Arizona town with each illicit broadcast. The film is an anti-authoritarian romp that captured the pre-internet era of pirate broadcasting--- but its soundtrack featuring Leonard Cohen and The Descendents (and many others) had a more profound effect on me as a seventh grader than its message of protest and free speech, which has had a more lasting impression.

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[4] Allan Moyle, "Pump Up the Volume," *IMDb*, August 22, 1990, https://www.imdb.com/title/tt0100436/.

The other personal encounter that I have had with pirate radio is a total mystery. In Montclair, New Jersey, where I attended high school, there is a radio station broadcasting on 91.9FM over an approximate radius of two blocks (near Valley Road and Bellevue Avenue) that plays "I'll Make Love To You" by Boyz II Men on a 24 hour loop[5]. The station has been broadcasting continuously without explanation for over 15 years. When this station exactly started -- and by whom and for what reason -- remains completely unknown.

I want to know what is motivating pirate broadcasters in 2019 to set up terrestrial stations and utilize the FM/AM and shortwave (SW) frequencies, particularly when options for streaming content abound online. Alongside a written document that outlines the timeline of the free radio movement, the rise of low power FM stations, and shortwave listening culture, I want to build a graphical interface that offers the user an exploration into all radio activity as it currently exists 'on the ground' (or 'in the air') and contrast that with the growing presence of online streams. What unlicensed AM/FM/SW broadcast activity can be documented and represented through data? How do these stations fit in alongside, or collide with, low power FM stations that were born out of the free radio movement? What categories of listenership or communities are being served by these broadcast formats? How do these compare against the growth in stations on

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[5] "I'll Make Love to You." *Ipfs.Io*, 2013.
https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/I'll_Make_Love_to_
You.html.

radio's internet equivalent services, such as Shoutcast or TuneIn? How do other

formats, such as call-to-listen or AudioNow, act as a bridge between programs

broadcast over the air and in a digital space? Where is the line drawn between 24/7

streams on Youtube, which the New York Times is already referring to as the new

bastion for pirate radio stations?[6] These are the types questions that I am hoping to

investigate.

In the middle of the afternoon on a Sunday in March of 2019, I sat down with

radio enthusiast and journalist David Goren to take a sampling of the FM frequencies

from his home in Flatbush, Brooklyn. Our goal was to take note of the broadcasts that

were appearing on frequencies where they didn't legally belong. After scanning the dial,

we found 25 unlicensed broadcasts occurring on various frequencies across the FM

band. David remarked that it was slightly fewer than he had anticipated and that

recently he had been finding up to at least ten more stations regularly operating in the

area surrounding his home.

As the creator of the [Brooklyn Pirate Radio Sound Map](https://map.pirateradiomap.com/)[7], David has been actively

logging pirate activity in Brooklyn for the past five years. In that period of time, he has

identified 57 distinct pirate radio operators who can be heard in the neighborhoods of

Borough Park, Flatbush, Crown Heights, East New York, and in the surrounding areas. I

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[6] Jonah Engel Bromwich, "Pirate Radio Stations Explode on YouTube," *The New York Times*, May 3, 2018, https://www.nytimes.com/2018/05/03/arts/music/youtube-streaming-radio.html.

[7] "Brooklyn Pirate Radio Map," *Pirateradiomap.Com*, 2014, https://map.pirateradiomap.com/.

asked David why he believes that pirate broadcasters are still taking to the frequency

band when online options are so prevalent. He responded that many of these

broadcasters have a streaming online presence in addition to appearing in the FM band,

but also that "It's cultural…the communities that have used pirate radio since the

mid-90's here in NYC (and Boston and Miami have similar scenes) have strong

connections to radio from 'back home.' Haitians in particular depended on radio during

the Duvalier regime to get independent news, and they also have a strong oral culture.

Most of the Kreyol stations air a lot of news, and during a crisis in Haiti the stations here

will get on the phone with sources back home." This proved to be true in our random

Sunday afternoon scan for pirate broadcasters. At least half of the stations we logged

were Haitian in language and focus.

David also believes that the drive to continue sending transmissions from a

bootleg studio set-up in an apartment building or bodega basement to the radio band

are also economic in nature. "Many in the Haitian community are poor and elderly and

not everyone can afford to get on the internet. From my observations, the Haitians are

the most active. Of the 30 plus stations I hear from my house in Flatbush, a third

broadcast in Kreyol. There's also the factor that being an owner of one of these stations

establishes them as an important figure in the community."[8]

In our scan of the airwaves, we found that the majority of the broadcasts "sound

nothing like the caricatures put forth by popular culture, such as the disaffected teen

raging at the injustices of the world from his basement in *Pump Up the Volume*"

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[8] Goren, David. Interview by Jed Crocker. Flatbush, Brooklyn. March 24, 2019

(Anderson, 2016, 234)[9] which was a refreshing dose of the reality of the pirate scene as it really is in Brooklyn today. Instead these were the voices of immigrant-focused communities. In addition to the large proportion of Haitian/Kreyol language broadcasts, there were several stations that have been regularly operating in these frequencies that were directly addressing Jamaican/Caribbean populations and several Granadian-focused broadcasts. We also picked up at least two unlicensed orthodox Jewish broadcasts likely transmitting from nearby Midwood.

This diversity of language and voices is the reality of the current landscape of pirate broadcasting in New York City. As of 2016, the associated press reported that "the New York State Broadcasters Association estimates that 100 pirates operate in the New York City area alone, carrying programs in languages from Hebrew to Gaelic to Spanish" (Finley, 2016).[10] Scholar Larissa Mann notes that "in much of New York, immigrant populations, low incomes, and low Internet connectivity overlap significantly in particular, which increases radio's potential usefulness ... local broadcasts can strengthen existing identities, facilitating multifaceted interconnections between members of diasporic communities concentrated in a particular locale. Those interconnections serve important social functions" (Mann, 2019, 392)[11]

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[9] Anderson, John Nathan, "Illicit Transmissions: Engaging with the Study and Preservation of Pirate Radio", October 27, 2016, 233-249

[10] BEN FINLEY, "In Internet Age, Pirate Radio Arises as Surprising Challenge," *AP NEWS* (Associated Press, April 27, 2016), https://apnews.com/4c775aacfa9244c2895316a50c827245.

[11] Mann, Larissa, "Booming at the Margins: Ethnic Radio, Intimacy, and Nonlinear Innovation in Media", 2019, International Journal of Communication

The government agency responsible for controlling the airwaves and distributing licenses to new broadcasters is the Federal Communications Commission, or FCC. There are two main arguments that the FCC references in terms of pirate broadcasts: "Unlicensed broadcasters can pose a hazard to the community by interfering with public safety frequencies. In addition, pirate stations compete unfairly with licensed broadcasters for advertising dollars. Such pirate operators pose a significant challenge to track and shut down, but the Enforcement Bureau's Field offices work around the clock, using the latest technology, to accomplish this mission."[12]

What's missing / next steps / filling in:

- History / summary of unlicensed broadcasting in the US and world
- Four types of unlicensed broadcasts (clandestine, pirate, microradio, pirate)
- Rise of low power FM stations

- Struggles for radio convergence in digital age
- How to start a pirate airwave-based radio station
- How to start a digital online-based radio station

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[12] "Federal Communications Commission," *Federal Communications Commission*, 2019, https://www.fcc.gov/reports-research/maps/fcc-enforcement-actions-against-pirate-radio-location/.

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