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RESONANCE, REVERBERATION, AND RHYTHMS: CONCEPTUALIZING VIBRATORY POWER IN DIGITAL MEDIA

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Abstract

This panel explores the theories, concepts, and methodologies appropriate to the exploration of what Jasen (2016) terms the “vibratory power” of transduction where sound and other digitally mediated forms of reverberation conjure affective and corporeal bonds of resonance and solidarity. The first three papers engage in a critical interrogation of sound as epistemology and ontologies in digital networked media, with a focus on streaming internet radio. More specifically, these papers examine diverse uses and experiences of streaming ‘radio’ and its deployments for community-building, emotional sustenance, and an online reconstitution of place. In their explorations, these papers consider which methodologies are appropriate and useful to examine the affordances of streaming radio, enabling in turn analysis of informing ideas of ‘community’, intimacy, territorialization/deterritorialization, and questions of what comprises ‘radioness’ itself. Is radio still radio if it is online? What happens to the

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"community" that is conjured into being by terrestrial broadcast radio when the "station" is internet only? What does thinking from place mean when the tangibility of place is physically transcended and thus broken up and reconstituted as elements of locality, of community? The fourth and final power transposes the "perspective of frequency, force and affective tone" in transduction (Jasen, 2016, p. 13) to the wider field of social media practices during the early stages of COVID. In this paper, the obsessive-compulsive ritual of "doomscrolling" becomes the practice through which rhythms of resonance and reverberation become imprinted upon the flows of everyday life through the transductive modulations of digital networked media. (250 words without in text citation and reference)

Jasen, P. (2016). *Low End Theory: Bass, Bodies, and the Materiality of Sonic Experience*. Bloomsbury.

PAPER 1: SITTING ACROSS THE DIGITAL DIVIDE: COMMUNITY-BUILDING CAPACITIES OF LIVESTREAMED PANDEMIC RADIO

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This paper mines the ways in which livestreamed broadcasts of the *NoiseFilter* show, produced by New Orleans community radio station WHIV FM but also streamed via Facebook Live, have from the pandemic's beginnings in 2020 enabled localized articulations of anxiety, fear and distrust in real time whilst also providing empathy and comfort. This exploration situates my analysis of *NoiseFilter* in relation to its radio specificities: in particular legacy characteristics of radio such as liveness and centrality of voice which facilitate community-building. I suggest that reflecting on my own listening to and interactions with *NoiseFilter* online in autumn 2020 enabled me to make 'visible, the social positionalities, motivations, and formative assumptions' (Khan, 2022, p. 5) shaping these interactions as a form of community-building.

Through twice weekly 'broadcasts', the *NoiseFilter* radio show, produced and presented by two New Orleans medical doctors, provided rigorously researched pandemic updates, incorporating news on emerging variants and vaccination developments, from a localized perspective foregrounding New Orleanian and Louisianian experiences negotiating COVID.¹ This paper draws on Dr Déry and Dr Griggs' practitioner (medical and broadcaster) perspectives on *NoiseFilter*'s production practices, gathered in semi-structured interviews. This analysis incorporates readings of archived show content and real-time responses on FB Live to explore these as community-building strategies in *NoiseFilter* between September and December 2020 and to determine and amplify the value/s of the ongoing online relationship between regular *NoiseFilter* listeners with each other and with the show. This paper thus explores how *NoiseFilter* has served as an emotionally and politically resonant counterpoint to top-down, 'official' information provision and normative discourses downplaying the pandemic's reach.

Radio's power lies in its persistent capacity for intimate address in real time, a residue of broadcasting as a live medium which enabled immediate intimacy with the listener (Scannell, 1991). A scheduled live radio show regularly replicates but also updates itself, creating a newer version over the familiar expressive patterns of the show from

¹ While broadcasting live weekly on WHIV FM, the *NoiseFilter* show is now part of a suite of audio health podcasts and broadcasts: https://www.noisefiltershow.com/?fbclid=IwAR3gTo4ThaCBOk_zo8tyiS99KkqIPihNx5OTxst2leigA9xEH8P6Zlc4FJA, accessed 28 February 2022. See also WHIV FM's homepage incorporating links to the schedule and mission statement: <https://whivfm.org/>, accessed 28 February 2022.

the day or week before. Unlike the preserved complete text of the podcast, a live broadcast is ephemeral. Radio's intimacy can be mobilized, drawing listeners together to share a sense of community. *NoiseFilter's* community radio origins crucially inform the show's alternative messaging and radical articulations. As an entrenched form of alternative media, community radio (in its myriad particularities) historically embodies radical expressive and representative capacities 'that express an alternative vision to hegemonic policies, priorities and perspectives' (Downing 2001, p. v). The widespread use of streaming technologies by community stations and standalone shows has meant localized on-air community articulations are now often freely accessible globally via sites such as radio.garden. Reliable streaming technologies facilitate remote reach for otherwise under-resourced community stations, extending audiences and creating new listeners, providing a further space for community radio's project of 'diversifying voices and cultural practices, facilitating forums for civil society participation and connecting local organizations' (Anderson & Rodriguez 2019, p. 51). Additionally, and globally, the importance of broadcast radio for information provision and community-building became much more acute from the start of the COVID-19 crisis. The importance of *local* community broadcasting acquired a stark new significance given that cities, regions and states have been experiencing the pandemic and managing protocols and responses in very different ways. Consequently, local radio became the first source for many for updates on everything from elder shopping hours to testing and vaccination centres.

In examining *NoiseFilter* as streamed radio content on the contested and compromised Facebook platform, I draw on an 'affordances perspective' (Shaw, 2017) to consider and frame the specificities shaping production, use and dissemination, in recognition that 'technologies are not ideologically neutral in their design, in what types of interaction they allow or disallow' (Shaw 2017, p. 597). Building on this I suggest that Facebook's extractive and exploitative tendencies were countered by its user accessibility in streaming *NoiseFilter* (a decision also made by multiple radio stations and standalone shows produced by otherwise marginalized communities: see Moylan, 2022.) In its focus on livestreamed radio via Facebook Live, this paper seeks to further explore these repurposed affordances of an otherwise compromised platform. While a user-led hierarchy persists at platform interface levels, community radio stations and shows are achieving greater reach than before. Exemplifying its catchphrase at the start of each show, *NoiseFilter* regularly reaches listeners 'sitting across the digital divide' from places as diverse as Japan, the UK as well as elsewhere in North America.

Analysing *NoiseFilter* as livestreamed radio in crisis times, I consider the show as comprised of collective production processes (Harvey, 2001) reinforced by the active agency of its listening community to create community-specific content, deploying Raymond Williams' concept to explore how these elements are woven together as a *structure of feeling* which reproduces these community-building processes, in turn enabling community expressions of solidarity. Through exploring these layers of articulation, I suggest that the *NoiseFilter* broadcasts (re-)produce a 'structure of feeling' emerging from localised concerns (New Orleanian responses to COVID distancing, masking protocols, music festival closures) and coalescing in shared political concern at

the unfolding events of autumn 2020. I draw on Williams' idea of a set of 'meanings and values as they are actively lived and felt' (Williams, 1977, p. 132) to explain how elements of a radio show can coalesce into an emotionally resonant, familiar repertoire, which is then reinforced with each livestreamed episode. In turn this grassroots form of community-building enacts what Harvey describes as 'the processes that produce, sustain and dissolve the contingent patterns of solidarity' that comprise and continually reproduce what we understand as 'community' (Harvey 2001, p. 192). Finally, I want to suggest that, in addition to providing comfort alongside a sense of community, these streamed 'broadcasts' could ultimately comprise an alternative archive, mapping emotional responses and localized workarounds alongside the medical and scientific updates provided by Dr Déry and Dr Griggs.

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PAPER 2: SOUND, AURALITY, AND THE EMPLACEMENTS OF INTERNET RADIO

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Using the theoretical perspective of materialist medium theory (and its attendant conceptualization of sound and aurality) as well as the methodology of autoethnographic exploration of the actor-network assemblage of internet radio, this paper explores the emplacements of internet radio in three senses: 1) understanding the territorialization of reach of radio in the transition from terrestrial broadcast to internet streaming; 2) understanding the *topos* of community that digital radio creates and conjures in the stream; and, finally, 3) understanding the place of internet radio-theoretically and methodologically-in critical internet studies.

Much of the power of broadcast radio inheres in its intimate ties of signal and reception to geographical territory that are constituted by the materialities of the broadcast radio assemblage. The boundaries of the sonically mediated *socius* of the community are very much drawn by the range of the signal. The consideration of the territorializations of internet radio when it is transmogrified from the geographically delimited reach of a broadcast signal of terrestrial radio into a “placeless” stream of data requires understanding how the *topos* of community is disarticulated from geolocation and conjured spatially and temporally through the internet. Accordingly, I conceptualize what streaming as a mode of circulating radio programming and content socio-technically affords in terms of bonds of sociality that have historically made radio such a powerful and supple medium (Douglas, 2004). I argue that such power always-already resides in the sonic place of aurality as it is entered into and engaged by the producer and the listener no matter where and no matter when in the flows of everyday life that this place is engaged.

One of the aporia of critical internet studies when it comes to radio has been a tendency to push considerations of the character of internet radio *as sound* to the side in favour of the analysis of its structural elements in terms of code, network, and interactivity, and how these elements have reconfigured radio as part of a transition from a broadcast mode of cultural production to what can be termed a “social media mode of production (Herman, 2014; Bonino, 2018; Bonini, et al., 2020) Although these dimensions of internet radio are essential to understanding its emplacement, it ignores its phenomenological temporality of “listening” which indubitably marks its ontological status as “radio” as a distinctive media form and practice. With the exception of Bottomley’s (2020) excellent but US-centric history of radio-internet convergence, broad questions regarding how the radio-internet convergence have been displaced, on the one hand, by a focus on platforms and the datafication of musical production circulation and taste (Prey, 2020; Hesmondhalgh. et al., 2020) and, on the other, a focus on the unique characteristic of podcasts and podcasts (as distinct set of production practices and sonic artifacts (Morris, 2021; Morris and Hoyt, 2021; Spinelli and Dann, 2019). My

work returns to some more basic questions about the relationship of the re-articulation of producer and listener in the socius of sound that has animated the work scholars such as Lacey (2013, 2018b), and Bonini (2018) while filling key gaps in their analysis.

Bonino and Lacey have argued that the socio-technical affordances of the technologies of radio-interest convergence have created new hybrid actors in the space of digital radio, namely, the listener as producer. Although it is open an empirical question as to the extent to which consumers of internet radio actually avail themselves of such affordances on a quotidian basis, the shift in the relations of power in production and circulation of radio content is undeniable. Here, however, we can map out the itinerary of a different hybrid actor in the internet radio assemblage, the *producer as listener*. By following the producer as listener, I argue, it is possible to hear in a more fulsome manner the sound of the sonic socius of internet radio *in time* as it passes through successive stages of technological transduction along the path the radio program takes from creation to consumption.

My exploration of the logics of the emplacement(s) of internet radio is grounded in my experience as the host and creator of a weekly alternative music radio program. The show is produced and distributed through a concatenated assemblage of digital apps and platforms. It simultaneously takes the form of a terrestrial radio broadcast as well as streamed through the station's website. In addition, the show is uploaded, archived, and circulated globally on the Mixcloud platform. As such, the show constitutes a fruitful case study for exploring the emplacements of digitally-based radio as it embodies several different key features of the radio-internet convergence.

The method I employ here is a mixed methodology drawn from actor-network theory (Latour, 2005), materialist auto-ethnography (Khan, 2022) and Lefebvre's rhythmanalysis (Lefebvre, 2013; Vallee, 2016). Latour famously argued that assemblages of everyday life are to be "reassembled" or mapped by "following the actors"—human and non-human—as the move through different articulations in a discrete network. In the case of the assemblage of internet radio that is manifested in my Low End Theory radio program, I follow the sonic reverberations of its aural space as it moves across platforms, practices, and affordances. Each step of intermediation puts *into place* a particular instantiation of the sonic *topos* of the program. Accordingly, I will map the rhythms by which it punctuates the sonic field of everyday life through its patterning of aural flow sounding (out) the resonance of the sociality and connectivity between producer and listener in communion and convergence.

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PAPER 3: RESONANCE AND REFLECTION IN THE SPACES OF THE WALMART WORLD RADIO NETWORK

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Streaming platforms

Music-streaming services have provided the soundtracks of many of our lives for the past several years, and while many of us isolated at home during the COVID-19 pandemic, we became more conscious of our intimate relationships with these platforms. Music streaming platforms like Spotify, Pandora, and Bandcamp have been sites of important scholarly inquiry in recent years: inquiry, for instance, into the democratizing possibilities of the platforms and their economic affordances for lesser-known musicians (Hesmondhalgh, et al., 2019); platforms' competitive strategies (Hracs & Webster, 2021); user strategies for discovering new music on streaming services (Datta, et al., 2017); ways in which platform users are "seen" and algorithmically individuated (Prey, 2018); and more.

Scholarly research to this point has overlooked one streaming service that many North American users frequently experience, whether they are of it or not: the Walmart World Radio Network (WWRN). By running its own music service, Walmart is unique among U.S. retailers. Walmart first produced and disseminated its own radio service to its stores in the early 1990s, but the service stopped in 2009 (Lytle, 2019). In 2016 Walmart relaunched its radio service with an in-house search for DJs that invited store employees to audition. The DJs hired through this process were given live shows that they programmed. On WWRN shows one hears music, entertainment news (including, for instance, an WWRN event featuring R&B artist Jason DeRulo), and banter between, for instance, DJ Bo and "Producer Josh" combined with information for store associates, shout-outs from associates like "Eddie from Store 1001," and announcements targeting consumers.

The spaces and places of the Walmart World Radio Network

Early in the COVID-19 pandemic, the indoor space beyond my home where I perhaps spent the most time was my Walmart Neighborhood Market (Tulsa, Store 5093). The store felt safe, with a mask mandate and high compliance. The sound of my Walmart Neighborhood Market is the sound of the Walmart World Radio Network, which is piped into every Walmart store in the United States. My pandemic soundtrack was often comprised of artists like Mumford and Sons, Khalid, Squeeze, Lizzo, Avicii, the Ramones, and more following me down the produce aisle, through the dairy section, and to the pharmacy window. If I wanted to continue listening to the WWRN at home, I can stream it live or listen to the podcast.

As a source of "functional" music with bright tones meant to motivate associates to keep working and customers to keep shopping (Meyersohn, 2019), Walmart Radio is certainly an instrument of capitalist social control. For many employees, it's part of a system that put(s) them – largely BIPOC and lower-class Whites (much like their customer base) – at risk during the pandemic. But it is more. It is place-based radio, providing a shared listening experience that has the markers of commercial music radio to millions of Walmart denizens across the U.S. at the same time. For me, during the peak of the pandemic, it was the sound of my only home away from home.

Autoethnography

Salman Khan (2022) argues that during COVID-19 lockdowns (and at other times), autoethnography provides "a valid gateway to the social world," because we as researchers are embedded in culture: a culture that is also within us. He notes that it is possible and important for autoethnographers to both maintain analytical positions in relation to the objects of their research while also fully feeling and recording their emotions.

In the early pandemic world of lockdown and distancing, it would have been difficult to research others' experiences of the Walmart World Radio Network, the ways in which this alternative streaming platform helped define the spaces, places, and moments of life in public and even at home. I was keenly aware of how it was shaping my experiences, however, and it prompted me – someone who has often used ethnomethodology in my research – to consider autoethnography as a way to explore the platform. I began taking notes while shopping, which were mainly observations about playlists and the emotions they evoked. I also streamed the service at home, where the sounds acted differently upon me. This is unsurprising, given that the target audience is Walmart workers and shoppers in a public retail setting, but the WWRN does promote its service as one that people can and perhaps should stream at home. Around Christmas-time, it provided me with a convenient holiday playlist to play in the background as I did various tasks at home.

Genre, streaming, and radio

Although the Walmart music streaming service is called a "radio" network, in terms of the music that's played there's not much "radio-ness" to it. Commercial radio stations follow rigorous formats: Adult Contemporary, Top 40, Classic Hits, New Country, and so on. The WWRN doesn't adhere to a format. In a 30-minute time slot one can might hear songs from a range of artists, from 80s pop act Milli Vanilli to country artist Thomas Rhett to turn-of-the-century era alternative rock band Eve 6 to 90s sort-of hip hop act The Quad City DJs, for instance.

Like Spotify playlists created by friends and influencers and shared with others, and also mirroring algorithmic music recommendations on sites like YouTube, playlists on the WWRN are not defined by genre – that is, as a particular class or kind of text

(Chandler 2020) – but rather by feeling. The move away from genre in practices of music-listening and playlist-production, which is largely based in the affordances (of access, of the practices of recommendation systems) of user-driven platforms like Spotify, probably doesn't signal the end of genre in popular music. It does, however, create emotionally-structured soundscapes and colonize spaces (by infiltrating the home or the car with the soundtrack of Walmart, or with more subtle commercial practices of other streaming services) that warrant investigation on many levels, including the level of the self in society.

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PAPER 4: REVERBERATION AND SOLIDARITY THROUGH SOCIAL MEDIA: REVISING COMMUNICATION THEORY TO ACCOMMODATE MICRO ACTS OF DIGITAL SHARING

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Thinking about the reverberation qualities of interaction brings new sensibilities and senses to the foreground in analyzing how meaning emerges, whether at the level of individuals or more largely at the level of sociotechnical systems and cultural formations. This can be explored at moments of connection between humans and humans or between humans and machines, or to help make sense of situations at scale – those moments when one has the feeling of being a part of something bigger than oneself.

I had a lot of time to think about this at the outset of the 2020 pandemic. In some ways, there was a perfect storm of mediating factors that created intimacy, openness, and sensations of community at perceived global scales, even as the actuality of experiences were isolated, disparate, and unique. People described a widespread feeling that the entire planet was having a shared experience of this tragic crisis together. This moment passed quickly as different experiences and realities became apparent. Even so, this intimate sensation of shared understanding stands out as a moment, one that can be explored as a confluence of factors that illustrate the reverberation and resonant qualities of flows of affect and information.

A focus on reverberation and resonance in communication theory shifts from a textual or discursive based methodology to one inspired by physics—it pays attention to how patterns emerge across largescale networks, or how viral information spreads, in some of the same ways we might study the micro-coordination involved in murmuration of flocks of birds, the synchronized flashing of tens of thousands fireflies, or other swarming patterns.

In March 2020, waves of information reverberated through the web, generating harmonic resonances that were perhaps noticeable because people were spending so much continuous time online. Described through resonance and reverberation, “culturing” becomes less about individuals --or individuals interacting, or structures that impose on interacting individuals in relations-- and more about the energies that shape patterns through resonant qualities of ‘excitable’ information.

Take the phrase “flatten the curve.” How did people attune to this phrase? It certainly went viral quickly and almost everyone to whom you mention this phrase

will remember seeing it or hearing it during early 2020. It was used in both public service announcements by such notable entities as the WHO, and also in humorous digital snippets passed around through social media. The affective sensations accompanying this phrase shifted rapidly and continuously, not only because it was morphing as it moved through different contexts but also because it was attuned differently. When I write it now, in 2022, it has little resonance. I am experientially distant from this phrase. In March 2020, it was a fist in the gut, a daily reminder of the nearness of death; the potential of crisis realizing itself in real time.

This phrase is an example of how resonance can emerge from a particular type of reverberation. “Flatten the Curve” bounced around the internet like a sound wave, in essence reflecting off multiple surfaces and generating echoes. When waves reverberate at particular resonant frequencies, they create patterns. This is beautifully demonstrated through cymatics, where sand spread on a metal plate will create distinctive patterns based on the frequency of sound waves introduced nearby.

The physics of reverberation, resonance, and harmonics apply to how all living systems function, as vibrational properties are fundamental to objects living or not. Soundwaves are being used to rebuild human bones (Ambattu, et al., 2022). Fractal patterns, for example, occur in digital contexts (e.g., network visualizations) just as readily as they do in the human circulatory system or river networks. As well as highlighting certain sensory aspects of how we come to know and be in the world, a reverberation theory of communication locates meaning differently. It focuses on what is happening in the flows between objects, the spaces between elements of situations.

Arguably, the resonant properties of continuously reverberating signals impact how we find or build ontological security in social spaces, which is more implied than directly addressed by Lefebvre’s notable work on rhythm analysis (1992). While some of the work of affective resonance is relevant (e.g., Paasonen, 2011), I am particularly interested in processes of what Rodriguez (2002) poses as “culturing”, the process of negotiating “various tensions and rhythms that come with our trying to find and hold onto meanings in a world that is inherently quantum (p. 2). It is also inspired in part by Helmreich’s (2012) discussion of “transductive ethnography—an inquiry motivated not by the visual rhetoric of individual self-reflection and self-correcting perspectivalism, but one animated by an auditorily inspired attention to the modulating relations that produce insides and outsides, subjects and objects, sensation and sense data” (p. 169).

Communication theory that pays close attention to resonance and reverberation can be used to reconfigure core thinking about how the properties, processes, and consequences of both low and high frequency information flows through what is now well understood as networked culture.

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