Waste Media Pedagogy: Soundscape Composition as Responsive Spatial Practice

by

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Abstract

Historically, the primary aim of modern recording technique has been to control the social context in which recording happens. Modern recording technique implements a way of listening that conceptually and spatially suppresses noises that indicate the social context of studio production. While this provides technical efficiency, it displaces political questions and ethical considerations, discursively rendering production practice an activity without social consequences. Rather than teaching recording as nothing more than the technical task of operating devices and “engineering” sound, it is possible for the production studio to support a listening public and become hospitable to a wider range of social concerns.

This thesis combines the fields of soundscape composition and media education to explore pedagogical opportunities encountered by focusing on "waste"—the spatial practices, material possibilities, and social meanings gathered around it. The thesis explores “disposability” and “responsibility” as ways that recording practices negate and engage the social production of Vancouver’s livability and the immateriality of the digital realm on which it depends as a global city. Researching a youth art project, this thesis reports how waste figured as a thing for organizing improvisation, and how composing with waste brought together people and places normally kept separate. It is proposed that composing with waste can focus media production as a public practice, encouraging producers in the studio to listen out to compose with those people, things, ideas, and histories that are regularly excluded, displaced, and forgotten in striving to keep intact the cohesive social space supporting Vancouver’s current formulation of a livable city.

Keywords: soundscape composition; media education; waste management; recording; e-waste; listening publics

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Table of Contents

List of Figures

Introduction

In the dust and dirt that has been allowed to sediment in the street's gutter, a small weed has taken root. A motor scooter, buzzing through like a giant insect, sends a flattened cigarette pack cartwheeling over the weed, before leaving me in a heavy slow fog of exhaust. The fishmonger's melodic cries, announcing the day's catch, are accompanied by the incessant pops of his truck's two-stroke engine—an orchestration of sounds that touch every window and balcony as they reverberate between the sandstone buildings lining the street. The smell of sewage from who-knows-which direction intensifies as the day becomes warmer. The shore turns up Styrofoam packaging, and while snorkelling I encounter a school of fish feeding next to a sunken box of tiles and a bright blue rubber boot. Heading home, the wider part of the public road hosts a dishevelled patio table still dressed with a tablecloth, a toaster oven perched on a tub of broken-up plaster, and a garbage bin regurgitating plastic bags, some of which spill out onto the thoroughfare.

These encounters with Sicily's "inadequate" waste management system make Vancouver seem, by comparison, shockingly clean, silent, fresh, and safe. There is far less suffocating automobile or sewage exhaust, if any. The tidiness of Vancouver renders everyone's movements crisp and purposeful, distinguishing us from our surroundings. After my experience in Palermo, Vancouver's spotless sidewalks make me feel like an actor walking through a carefully lit film set.

Vancouver's highly efficient waste management is a key mechanism for constructing such a scene. It ensures that very little entangles me materially. Unlike Palermo, Vancouver has back lanes that provide waste-collection trucks quick access to disposal bins. New municipal policy in the early sixties required refuse to be placed in containers to reduce pests, chance of fire, and accidental blockage of throughway (City

of Vancouver, 1972). With the introduction of fully automated collection in 2006, pickup turned into a single-worker operation; the driver uses a remote-controlled mechanical arm on the garbage truck to lift and empty specially designed containers, replacing a task that previously depended on human arms and backs, and greatly reducing time lost to injury and sick leave (City of Vancouver, 2006).

Automated pickup also further increased the speed of waste removal. Living in a garage off a back lane, I have noticed a drastic change in the sound of the pickup service. Whereas previously, I would hear the truck gently coming to a stop, the voices of several workers hollering at each other, bins dragged and lifted, their contents shaken out—in sum, a rhythm of physical bodily exertion—today, the same steps are drummed through at a relentless rate, and without hollering. The driver's cab is even blasting techno music! Fascinated by this discovery, I grab my audio recorder to record it for future study, but the operation has already moved on. This demonstrates the degree of Vancouver's efficiency: the city's waste management not only ensures that trashed items barely impinge on my everyday experience; it also minimizes my encounter with the waste removal system, itself.

Minimized but not erased; system imperfections still exist. Walking through Vancouver's back lanes, I find discarded electronics consistently kept apart from other waste. Whereas Vancouverites have learned to properly sort their waste for pickup—into paper, plastics, metals, glass, food and yard trimmings ("organics"), and non-recyclable trash headed for landfill—electronics seem to generally fall outside sure categorization. I find a clock radio sitting alone on a wall, a couple meters apart from the trash, organics, and recycling bins. The power cord is very neatly wrapped around the clock, with the plug tucked in, displaying someone's careful contemplation and attempt to categorize it. On the way to the bus everyday, I pass a television lying face down, with a microwave perched on top. A month later, the microwave is gone, the TV's rear is smashed open, and its copper innards gleaned, likely for resale to a scrap dealer. I use a small wrench I have on me to remove the speakers, thinking they might be useful for an electronics project. The TV carcass sinks into the ground all through the winter until the snow-capped remains are thawed by the rain.

Many other experiences have drawn me to engage garbage as a heterogeneous heap of possibilities regularly thrown away by our system of mass consumerism. I use it as “raw” material for my creative practice—though what draws me to it is that it is not at all raw. At this stage of exhaustion, discarded items—scratched, dented, cracked, creased, clogged, worn, and frayed—are palpably marked by their unique pasts. They indicate how things are made by displaying how they fall apart through use, thereby exhibiting a junction between design and usage. These marks also seem to resonate beyond the items themselves; the specific ways each item is worn down suggest the practices it helped sustain, the actions it coordinated, and the identities it inspired. I cannot help but wonder about the circumstances that brought each item to be discarded where I have found it. I have also become viscerally attuned to my own wasting practices and my dependence on technologies that remove what I discard. In addition to providing me with a lot of free material, working with waste has sparked my interest in understanding the making of the world through its unmaking.

Waste is a richly layered concept whose practices and discards have undoubtedly physical and social dimensions. Waste management, in fact, does more than simply act upon discarded items, that is, by landfilling, recycling, composting, incinerating, and so on. The ways that waste is managed produces civilizations as different as Palermo and Vancouver. While it has improved public health and safety, waste management also dreams to gain a certain mastery over nature—including the nature of cities—controlling what is valued by removing what is devalued, dead, contaminating, and possibly infecting the health of the city.

This thesis uses waste in the attempt to pursue a route through the public life of the city that otherwise quietly remains hidden in the background. At a broader level, it attempts to understand and challenge the relation between media production and the social production of Vancouver. Modern recording technique customarily conceives and treats the production studio as a space separate from society. The ideal modern studio is a space for controlling sound, considering sonic aesthetics against a “neutral” background, and operating machinery to output a product efficiently; and the studio does so by controlling its own social context. Following modern recording conventions, recording studios are engaged as facilities for efficient production, not public

deliberation. They are discouraged from hosting messy or time-consuming discussions considering the social meaning of sounds and their mediation. It is as though acoustically decoupling studios from the city isolates media production from issues of social concern or relations of power.

In this context, listening to noise can problematize media production. During recording, a studio and its equipment are employed to conduct sonic vibrations and signal flow so they may be inscribed. This is a process which deems certain sounds desirable "signals" and others "noises" to be controlled and minimized. While such evaluations have social consequences, they are most often only discussed as mere technical decisions or aesthetic judgments. How does the control of noise, becoming the modern studio's primary goal, silence the multiple meanings potentially resounded? How does it prevent various ways the studio could be activated as a space that is responsive to political questions and ethical considerations otherwise kept outside its soundproof walls, and absorbed within them?

I focus on production techniques to highlight the fact that recording is learned, and is therefore open to pedagogical intervention. If, as I contend, sound recording is never simply a technological task, then neither should it be taught as merely the technical task of operating devices and "engineering" sound. How might teaching and learning media production encourage us to respond in a way that brings us together publically? Beyond potentially influencing the ideas of those who watch and listen to our works, how could media production itself organize us to break open our habituated production practices and respond to people and concerns we normally do not encounter in our daily routines?

In Chapter 1, I trace a particular history of Vancouver's urban noise abatement strategies. This provides a backdrop against which to consider the facilitation of disposability which sanitizes relations to urban space. The chapter defines disposability as the technological design, practices, and disposition cultivated, through which urban social relations are habitually excluded, distanced, and forgotten. Disposability is central to producing the social space of the livable world-class city, and managing discarded

electronics hardware is key to the immateriality of the digital realm on which the global city depends.

Chapter 2 argues that such sanitization and disposability extend to digital environments. Any obligations to respond to social concerns are cast as mere obstacles to personal freedom of expression. Efficient media production "frees" producers from the "burden" of having to think and act with others, at the cost of practicing skills for collectively interpreting the world in its complexity. Production practice appears to be an activity without social consequences. I respond in the second part of the chapter by beginning to formulate a critical listening pedagogy that engages the sound recording studio as a public space and process.

To elaborate on the theoretical understanding of this pedagogy, chapter 3 follows a youth art project that created a musical composition on the theme of urban transportation. This study revealed how waste can be used to organize a spatial practice that brings together people and places normally kept separate. Contextualized against the issues raised in the first two chapters, working with waste is a critical endeavour when we use it to encounter the people, things, histories, and ideas that are regularly excluded, displaced, and forgotten in producing the social space of the livable world-class city.

This thesis works towards the question of how composing with e-waste could place together various histories and ideas to sound out alternative stories. How might media pedagogy and soundscape composition challenge the dominant narratives of Vancouver's livability and immateriality, and enrich our understandings of media and how they influence Vancouver's social production?

Chapter 1.

A History of Concern for Managing Wastes

The development of Vancouver, Canada, as a "world class city" has pivoted on a particular aestheticization of nature. Alongside its European beginnings as a resource industry town, the region's natural beauty was cultivated through the 1900s to contain the wild and the threatening into the predictable, convenient, and spiritually uplifting. Vancouver's oft-praised "natural beauty," vital to its "livable city" status (Ley, 1980), was groomed by a predominantly Protestant society, turning a perceived wilderness into pristine Nature that could then be harmoniously woven into the city's built form. Well-ordered nature has acted as a symbolic mirror through which a well-ordered civilization could be imagined and affected, countering the ills of urbanization, and attracting investment and tourism to the city. Pristine Nature did not come naturally, in other words; a lot of work went into removing the stuff that might spoil the ideal image of Nature.

For example, in the name of protecting pristine Nature, all Hemlock trees in Stanley Park, being infestation prone, were replaced with more resistant Douglas Fir by 1919, and, into the sixties, arsenic-based insecticide was routinely sprayed over the park by airplane (Kheraj, 2008). Violence was also directed toward humans who were characterized as needing moral cultivation and obstructing Progress. The historical Squamish presence in Stanley Park was displaced in a number of ways during the municipal-federal land claim struggles that dispossessed families living there. This included putting up Kwakiutl totem poles in the park, "the material culture of a wholly different people who lived a safe distance from Vancouver" (Barman, 2007, p. 27). To justify the expropriation of the Kitsilano "Indian reserve," it first had to be re-conceived as a wasteland marring the spectacular view otherwise offered to tourists crossing the Burrard Bridge of a pristine shoreline (Stanger-Ross, 2008). Representing Vancouver as having a naturally pristine order obfuscates a long history of concerted efforts to actively

shape the city by way of physical disposal and social displacement, for political and economic reasons.

Today, this cleansing of urban social space has been intensified by the digital paradigm with which Vancouver currently resonates. Vancouver is a technologically imbued global city that is somehow also, presumably, set in a gloriously untouched natural setting. This harmonization of technology and nature is only possible by way of disposability. The management of electronic waste—presently the fastest growing kind of waste (Huisman, 2012)—reflects an order striving to reconcile a contradiction. Digital technology, so central to coordinating flows of capital, appears to be ecologically "clean" in the Vancouverite experience. Yet, this image lies in stark contrast to the toxic electronic nightmare that poisons places with cheap labour like Guiyu, China, where a majority of Vancouver's "recycled" electronics are frequently shipped as part of illegal trade (Bolan, 2008; Burgess & Rosch 2008; CNW Telbec, 2006; Puckett et al., 2002a, 2002b; Pynn, 2006; Pynn, 2013). Worldwide, the United Nations Environment Programme reports that only between 10% and 40% of e-waste is legally traded and safely processed; a large informal sector handles what is estimated to be worth USD $18.8 billion (Rucevska et al., 2015, p.7). Though old computer parts contain valuable materials like gold and copper, weak infrastructure means that workers extracting such materials must manually agitate electronic components in open heated acid baths which continuously expose workers to harmful fumes, and which later are discarded in what would otherwise be the area's water supply (Puckett et al., 2002a; Ongondo, Williams, & Cherrett, 2011; Widmer et al, 2005). A "witches' brew of toxic substances" (Puckett et al., 2002a, p. 9), including lead, cadmium, mercury, arsenic, and brominated flame retardants, threaten those residing in parts of the world where e-waste accumulates, breaks down, and is set aflame to make room. If not shipped overseas, problems related to e-waste processing exist about 600 kilometres away from Vancouver, at the smelter in Trail, British Columbia, operated by Canadian mining giant Teck Resources, Ltd. In the form of poisonous dust, heavy metals coat the surrounding soils, so much so that the provincial Ministry of Environment recommends children wash there hands after playing outdoors (Lepawsky, Akese, Billah, Conolly, & McNabb, 2014). Yet, pictured on the Vancouver 2010 Olympic medals—which exclusively used gold, silver, and copper that was recovered from e-waste processed at Teck's smelter—was an image of Pristine

Nature; the medals adorning athletes were sculpted with an "undulating surface intended to represent the Canadian West Coast landscape of mountains and waves and drifting snow" ("Olympic history," 2010, p. 30), as well as an orca's eye and a raven's wing.

Separating Vancouver from its e-waste problems thus allows the city to reap the benefits provided by the digital economy, while externalizing social and environmental inconveniences, actively separating the conveniences of a device from the inconveniences of its afterlife. E-waste management not only facilitates the disposal of electronics; it also prompts the notion that electronics can and should be disposed in the name of societal progress and individual freedom. Reports such as the *Greenest City 2020 Action Plan* (City of Vancouver, 2009, 2012) and the *Vancouver Economic Action Strategy* (Vancouver Economic Commission, 2011) consistently yoke together digital technology and environmental sustainability as a matter of fact, taking for granted the region's ability to turn over devices produced to become obsolescent (Gabrys, 2011; Guiltinan, 2009; Slade, 2006). Vancouver's entrepreneurial green city status and its competitive position as an important hub in a global network depends on its ability to dispose of "old" and "inefficient" electronics. Disposability provides a kind of harmonious post-industrial experience between nature, technology, and urban activity, which remains undisrupted by any sense of the violence enacted elsewhere. While such a harmonious experience was not the result of a singular effort, we can follow various concerns and developments that, together, have produced Vancouver's "natural" order through a particular regime of waste management. Doing so begins to reveal how Vancouver's social space is organized by way of urban sanitation, supported by the strategies and technologies of disposal and an ideology of disposability.

I develop this analysis by examining Vancouver's history of noise abatement and noise control as a kind of waste management. As will be discussed, sounds were called "unnecessary noise" when they were related to activities deemed wasteful. The management of urban noise, as configured in municipal policy and action over the twentieth century, reproduced a "proper" disposition among citizens—a way of relating to others that conformed to socially expected behaviour. The management of wasteful sounds makes apparent two aspects of modern waste management. First, waste management is a question of spatially ordering society, as it both disposes material and

displaces encounters with social relations. More than simply tidying up physical space, it manages the meaning of waste, including noise, and it produces *social* space in accordance with a conceived "proper" order. It is a process that actively constructs urban space and contributes to our experience of Vancouver, although this is not obvious because waste management, oddly, constructs by way of removal. Second, sanitation—the work through which waste management orders and inscribes urban space—expresses concerns for maintaining physical health and safety, morality, productivity, convenience, and freedom, with waste figuring as a threat to these; in the urban context, these concerns intervened as discourses justifying the exclusion and silencing of certain things, people, activities—or potential social relations—from the city. Waste is socially constructed, yet it is often acted upon as though it is simply a matter of fact and thus requires no deliberation over its possible social meanings. I end the chapter by suggesting how disposability regulates Vancouver's everyday public realm.

1.1. Spatial Production of Individual Freedom

Digital media technology is hyped as starting a "revolution" in the name of personal freedom. Everyone can express themselves, choose when and where to work, learn anything, consume culture the moment it is desired, and connect instantly with friends in far away places. In short, the digitized version of the world is mythologized as having no material restrictions, no social inequalities, and no waste, with devices simply transmitting signals. Current e-waste management aids in the removal of devices which are inefficient and unwanted, but which also historically situate our urban social relations (Gabrys, 2011; LeBel, 2012; Miller & Maxwell, 2013). E-waste is in this sense the situation in which the "immateriality" of digital environments and global cities becomes possible, and in which a liberal conception of technology seems acceptable.

Such a conception promises that individual media devices distribute a kind of freedom to participate (Barney, 2010). All that is needed to ensure a democratic society, this view proposes, is for each citizen to acquire a device and the technical skills to operate it. Democracy, reduced to individual freedom, appears out of thin air on the shelf of the electronics store. Devices themselves are advanced as a set of politically neutral instruments, and technology as simply receptive to user input (Feenberg, 2010). Our

wish is their command. Entrepreneurs are rewarded for taking initiative; those who do not succeed are simply not gifted or are not trying hard enough. Or worse, they're using an old device.

An old device is an inconvenience relative to the expectations of hassle-free, instantaneous freedom perpetuated by the liberal notion that backs consumerism. To the extent that the aging device hampers these expectations, it becomes an inconvenience. But the perception that they are inconvenient does not, alone, answer why old devices disappear from our society altogether, or more specifically, why they are systematically *disappeared*. To ask a simple question, why don't we repair them? The few cases where they actually are repaired (where design allows it) are not only exceptions in post-industrial countries but are practices that go against the dominant conception of social space under digital consumerism.

E-waste management keeps us spatially separate from the materiality of electronics, and this coaxes the sense that digital technology is immaterial. Immateriality requires material disposal. E-waste management displaces contact with the relations that sustain social and environmental injustices, relations that would become apparent if we had to deal with e-waste ourselves. The symbolic ideal called "the world class city" is produced spatially; the physical disposal of electronics, *dis-posed* from Vancouver to Guiyu, for example, is the spatial manoeuver necessary for displacing visceral contact with the injustices perpetrated in becoming a global city. In this sense, the fetishization of "revolutionary new devices" is complemented by the fetishization of "inconvenient old devices."

Belief in individually controlled devices and destinies is premised on the ideal of private property. As some scholars suggest, liberal discourse champions private property because the need for deliberating and collaborating in using a plot of land is elided. The freedom to act is bestowed to a single individual, thus smoothing over discord by pre-empting encounters with differing personal desires (Blomley, 2004a; Blomley 2004b; Harvey, 2003). To do so, however, such an ideology must ignore the freedom that is taken away from others, or more to the point, that all freedoms are socially produced and bound, and legitimated by current government to resolve

contradictions (Blomley, 2004a; Krueckenberg, 2007; Purcell, 2014). Individual freedom symbolizes equality, but does not enact it in the city where space is made to be scarce through private property (Harvey, 2003). By granting private property rights, the capitalist State protects those individuals who (are able to) own space—whether of land or digital—against others' use and modification of the same space. These rights are symbolic, but are ultimately a promise by the State to protect private property by using physical force to remove trespassers (Blomley, 2004a). There is a direct link, in other words, between protecting private property and disposing who or what does not belong. Rather than individual *freedom* from interference, what is in need of attention when critically examining digital technology in a broader social context is the *power* to dispossess social relations and practices.

Henri Lefebvre's (1991) work is helpful in shifting our thinking to a critical exposition of power struggles enacted through space. For Lefebvre, power can only be exerted through real spaces, not merely symbolically, in language. Consequently, urban space is always shaped by politics. Digital technology profoundly shapes Vancouver as a global city and yet it seems to be timeless, nowhere, and immaterial. The virtual world seems to allow us to act freely, independent of real urban space and its politics. But if so, we should ask, where did the power exercised in shaping urban space go?

One way to begin answering this question is to situate the management of e-waste historically: it is the continuation of concerns to sanitize urban space, refresh the boundaries marking privacy, and instil a sense of proper behaviour and social order. It is the continuation of modern waste management, in other words. Drawing on Lefebvre (1991), we can study urban space as it is produced by waste management through the tension of three factors—space is *conceived* in the authoritative plans and technologies of waste management, space is *lived* through the symbolically cohesive image of the good and healthy city that sanitation maintains, and space is *perceived* in the routine practices that embody an ethos of disposability. The interplay between these has produced Vancouver by continually disposing things that materially interfere and by displacing attention from urban conflicts, rendering social space abstract.

In the next section, noise abatement provides particularly poignant examples for studying disposability and the social-spatial construction of Vancouver. Sounds that crossed boundaries of privacy became "noise" because they interfered with a sense of propriety. As private property is a social separation reproduced through spatial separation (Blomley, 2004a; Lefebvre, 1991), the unruly fluid movements of human sound, by physically crossing private property lines and political boundaries, rejoined domains *presumed* to be separate (Bijsterveld, 2008). Controlling noise meant sanitizing social sonic relations through a combination of municipal policies, technologies, and proper behaviour that respected the lines of private property. The difficulty in containing sound makes all the more obvious the efforts to achieve a desired noiseless social order in which individuals are free from having to listen and respond to unfamiliar sounds.

1.2. A Harmonious Public: The Production of Efficient Social Space

Vancouver's noise regulation over the twentieth century presents a history fraught with unique material and social challenges. Noise complaints indicated problematic social relations existing in Vancouver's soundscape. Because sounds are a result of movement, to complain about noise was, inherently, to complain about the specific movements of certain people and their activities, activities which then sonically trespassed the typical barriers built to define private property.

Take for example, the conflict between Max Goldberg, a plumbing fixtures supplier, and four of his neighbours. A complaint letter received by the City in 1931 spends most of its length painting Goldberg as a barbarian:

> The other day he started an unbearable racket under my window and I civilly asked him to move a little further away. Immediately he threw his hands in the air and told me to get the police as I had done before and if I were sick to go to the hospital as he owned this yard. (Granger, M., Granger, J., Rankin, G., Rankin, 1931, para. 3)

Customers never stopped "coming and going," (Granger, et al., 1931, para. 2) cries the letter, and "one could never be sure just when" (para. 2) Goldberg would stop making "his noise in the basement" (para. 5). Furthermore, the letter delegitimized Goldberg's

trade as “collecting all sorts of junk” (para. 2). Certainly, for Goldberg’s neighbours, the sounds of his activity were not those of a respectable businessman; they were noise—they were sounds that Goldberg’s neighbours believed should be excluded from their property, through the authority of local officials.

As a material problem, sound was difficult to contain acoustically; and it was not possible to separate noise from noisy people and, for example, cart it away like trash or flush it away like shit through a regional sewer. Therefore, it is important to keep in mind that, although rationalist discourse would attempt to handle noise problems by defining “noise” as an object—often described as a noxious substance—what noise legislation actually did was regulate the everyday *activities* of citizens in urban space.

Vancouver’s original noise by-law was written in 1938, a year after the Non-Partisan Association (NPA) first won majority in Council. A typical Progressive Era party comprised of businessmen employing scientific management (Gutstein, 1975; Langford, 2012; Tennant, 1980), the NPA led council over the next thirty years in seeking to harmonize Vancouver as a space for efficient economic exchange and a rationalist notion of progress. Indeed, because of the importance given by the City to efficient traffic flow, Vancouver’s noise legislation was originally conceived to address “unnecessary street noises” (City of Vancouver, 1934). Such legislation came out of a culture of efficiency striving, through the first decades of the twentieth century, to refine the *transportational* function of streets. Before the 1910s, the street was a diverse social space where children would play, families would hold social gatherings, and housewives would shop from street vendors. Subsequently, however, North American engineers conceived of roads primarily in terms of transportation, calculating appropriate street layout, dimensions, and surfacing materials (McShane, 1979) to increase the movement of humans and goods, allowing expansion to suburban areas, and facilitating the removal of waste and drainage of rainwater (MacDonald, 1982; Melosi, 2005).

Yet, although such objectives may be presented in technical terms, refining the transportational function of Vancouver streets undoubtedly engaged a particular cultural context. Local urban planning was turning from City Beautiful toward a nascent Rationalism (McDonald, 1996; Van Nus, 1984). The 1928 city master plan prescribed

that streets should act as the veins of a "clean, healthful, orderly, smooth-functioning urban organism" (Vancouver Town Planning Commission, 1928, p. 237), an organism that "must erase from the mind of the city dweller the monotony of daily tasks, the ugliness of factories, shops and tenements and the fatigue of urban noises" (p. 237). Abating "unnecessary street noises" was part of this same project; the quieting of streets worked in tandem with making them smoother, straighter, and cleaner so as to streamline the daily urban flow of people and commerce through Vancouver. A quiet city indicated smooth circulation, the imagined vital signs of "healthy urban growth."

To the NPA, noise indicated the obstruction of productive operations by wasteful activities; so abating noise served the party's primary goal of economic growth. In effect, noise legislation defined which actions, being too noisy, were likely detracting from Vancouver's productivity, and could therefore legitimately be silenced. As long as the NPA headed municipal government, this silencing was justified with reference to improving economic productivity.

Yet, such enforcement relied heavily on subjective definitions, such as article one stating, "No person shall make or cause to be made any loud and objectionable noise..."[1] without addressing how adjectives like "loud and objectionable" were to be qualified. Curiously, Vancouver made no use of objective measuring devices for enforcement, despite sound level meters being used in other cities, even before the 1938 bylaw was written. This absence of objective measurement and quantitative definitions is even more interesting because in 1976 the noise bylaw was completely revamped to include them. For example, noise was to be regulated according to its zone in the city (e.g., *quiet zone*, *activity zone*), duration (e.g. *continuous*, *non-continuous*), time of day (e.g., *daytime*, *nighttime*), and sound pressure level (e.g., *45dB*). This marked a distinct shift in ideology that paralleled a dramatic change in local government. Beginning in the seventies, abatement turned from hard-nosed economic growth toward controlling noise to improve quality of life and produce a "livable city" (Ley, 1980).

[1] City of Vancouver, by-law no. 2531, By-Law for the Abatement and Control of Noise in the City of Vancouver article 1.

Prior to the shift to quantitative legislation, the noise by-law was difficult to enforce. Scientific studies early in the 20th century had redefined noise; whereas 19th century poor, working class, and ethnic minorities were castigated as embodiments of noise—barbaric threats to the spiritual and intellectual pursuits of, for instance, philosophers, musical composers, and clergies which required mental concentration (Bijsterveld, 2008; Picker, 2003; Vaillant, 2003)—noise was reframed in the first decades of 20th century as the subjective perceptions of nuisance (Bijsterveld, 2008; Thompson, 2002). City authorities were therefore in a position of having to regulate something subjective, something requiring interpretation. However, municipal government following the Progressive Era could not overtly use its authority to favour certain interests against others, lest it appear to be corrupt. In other words, enforcing the noise by-law prior to 1976 was difficult in this specific sense: it was difficult to appease noise complaints by various individuals with different interests—and different perceptions of noise—*while* appearing to be impartial. Mitigating this dilemma was the authority of engineering, wielding the discourse of objectivity in the name of society's efficient progress.

To this end, Vancouver City Council wrote Professor H.E. Reilley of Montreal's McGill University in 1937, requesting his expert advice as a physicist and as chairman of Montreal's noise abatement committee (City of Vancouver, 1937). Professor Reilley's reply is interesting because the technical task of abatement is comprised of a numbered list of suggestions for shaping a certain public perception and attitude in regards to noise. As historian Emily Thompson (2002) has elaborated, measuring urban noise was important as *a performative act*. The expert implementation of impressive new technologies like microphones, vacuum tube amplifiers, and analyzers paraded to citizens the work being done by local officials to engineer sonic order. Indeed, when Professor Reilley responded to Vancouver Council, his letter suggested using a "noise meter" solely as a way to "arouse the public's interest" (Reilley, 1938, p. 2) in noise abatement. That is, he suggested implementing the noise meter only for its *symbolic* value as part of an anti-noise campaign, using it to perform "objectivity" and not for analyzing the urban environment or establishing decibel limits in Vancouver's by-law. In fact, without the objective reference provided by decibels, and with Vancouver's by-law comprising of vague articles, abatement would only succeed if the public were convinced to respect the *authority* of the bylaw. However, by not presenting a clear objective

standard, there was much room for competing interests to contest by-law interpretation, frequently forcing assessment of individual cases.

The sounds of industry and construction were most controversial, especially through the 1940s and 50s. The noise by-law required that such activity obtain written exemption by the mayor to legitimately occur outside proper zoning or permissible operating hours. Time and again, permission was granted only to have it rescinded when enough community opposition was officially registered.

Competing interests tried to impress upon City authorities their own interpretation of "unnecessary noise," aligning their activities with notions of Vancouver's economic growth. When in, 1940, the expansion of a bank required extensive drilling to relocate its vault, Mayor Telford gave permission for this to happen through the night, so as to not disturb the regular evening audience at the Olympia Theatre across the street. Complaint letters addressed to the mayor immediately followed. These were written by women explicitly presenting themselves as the wives of working class men, men who needed restful sleep to be able to rise early every morning and contribute productively to society (Stanton, 1940; Doyharcabal, 1940). Submitted along with twenty three signatures, they insisted that drilling the vault take place earlier, immediately after the bank closed at five o'clock, and interrupt the film screenings if need be. They argued that the financial gain of one individual, the theatre owner, should be more readily compromised than the sleep of workers whose labour more substantially benefitted the productivity of the city.

In a typical example from the mid-fifties, Coastal Steel Fabricators (1955) convinced NPA Mayor Hume it would be "necessary" (para. 2) to extend their noisy operation into the night to remain industrially competitive with companies in Eastern Canada. The Mayor's permission came a hasty two days after the request. Residents neighbouring Coastal Steel gathered 139 signatures in opposition. Anticipating the backlash, the Mayor had taken the gamble quite consciously; in a letter accompanying the permit he granted Coastal Steel, the Mayor wrote the company, "I suggest we let this run along…and see what happens" (Hume, 1955, para.1). Clearly, there was no set way to handle these problems without taking sides, and yet the Non-Partisan Association

needed to appear to be, indeed, non-partisan. As Will Langford (2012) explains, the high modernist planning employed during this period, coalescing the powers of developers, real-estate agents (many of whom were in City Council), and scientists, strove "to smooth over the contradiction of an economic system based on individual gain and a political system predicated on the common good" (p. 14). Under the dominant ideology in post-war Vancouver, economic growth apparently benefitted all, or at least provided the discursive basis for decisions to appear impartial.

In fact, City inspector reports under high modernism presented conclusions as if self-evident. The relentless whine of sawdust-blowing delivery trucks was inevitable, even if it kept a certain Mrs. Miller awake on a regular basis, the report stating: "The proper mufflers on the air intake mechanism and exhaust outlet appeared to be in proper working conditions" (MacVicar, 1956, p. 1). And the loud roars of sport car engines built and tested by enthusiasts at a local shop were, "part of a legitimate business carried on in a properly zoned area" (Akerly, 1959, p. 2), even if provoking over two years of complaints and forcing City staff to spend considerable energy researching the issue. Though the conclusions of reports frequently rested on words like "proper," "legitimate," or "necessary," the meanings of such adjectives were never elaborated; and it is likely that they were not elaborated because the economic growth stimulated by the sawdust truck or local sport car mechanic was presumed obviously desirable—their noise was a necessary by-product of progress. However, to *not* elaborate the meaning of such adjectives was, at the same time, the power to refuse further inquiry and contestation. Such use of language, as if self-evident and transparently descriptive, provided a practical way of displacing overt conflict. It technically pre-empted broader public dialogue about the social meaning of noise.

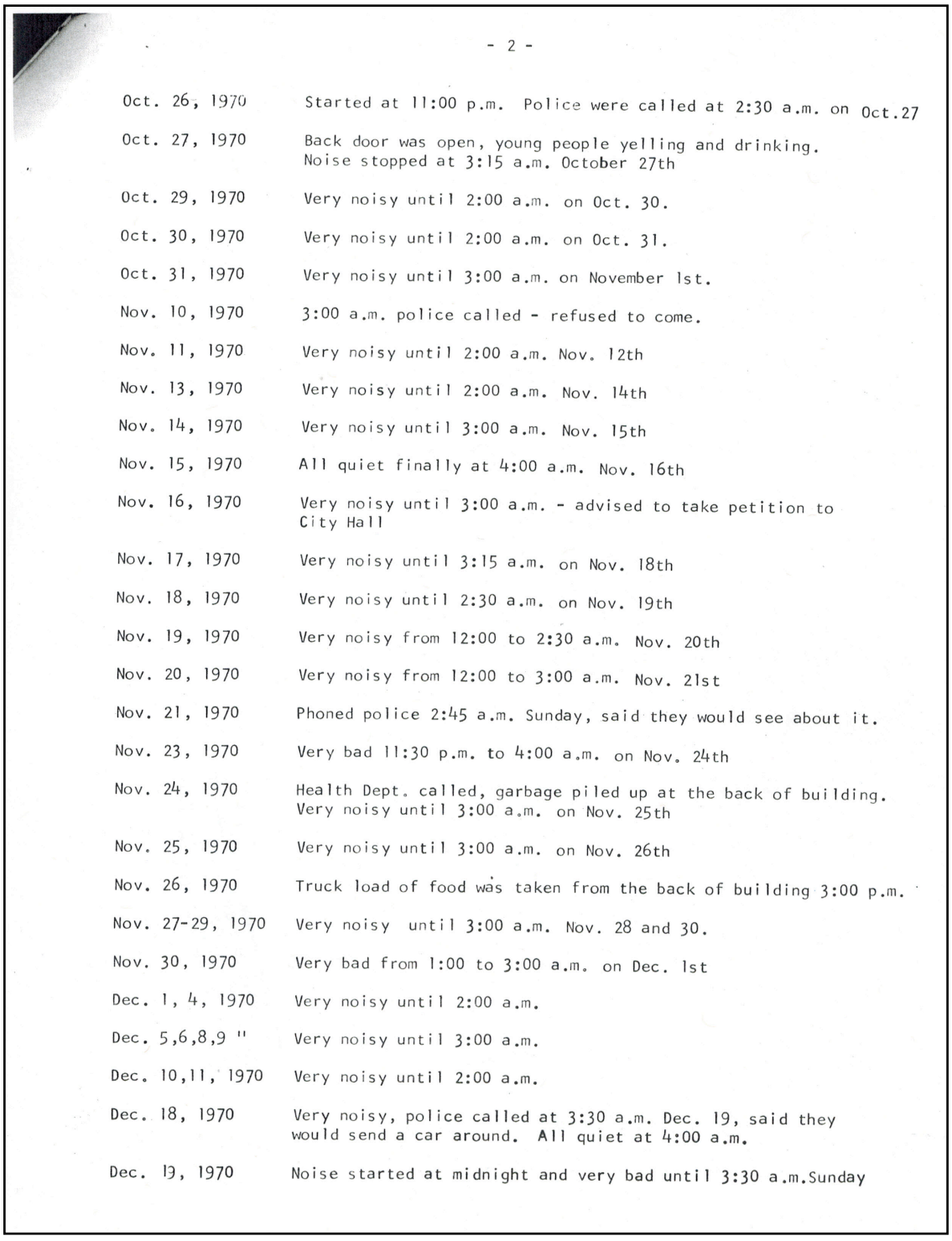
These developments beg the question: in what sense can noise converge social meaning? Noise could, for example, be understood as the sounds resulting from a clash in value systems. In fact, when people refer to sounds in a particular environment as "noise," it tells us a lot about the relations between the people involved. We can consider briefly the coordinated effort, through the late sixties, of an association of property owners, the Kitsilano Ratepayers' Association (KRA), to neutralize what it called the growing "Hippy Problem" (Moul, 1967) in Kitsilano, a neighbourhood on Vancouver's

west side. The KRA persistently fuelled local media panics with its accounts of hippie activities, pressed for police crackdowns, and lobbied City Council and Mayor Tom Campbell, who was himself president of the Kitsilano Chamber of Commerce and owner of six properties in Kitsilano (Ross, 2013). By their accounts, hippies corrupted innocent youth, posed health hazards, interfered with traffic flow, undermined property values, discouraged tourism, and generally denigrated community morals and bred anarchy; they did so, apparently, by sitting on sidewalks, jaywalking, asking for spare change, taking shortcuts through private yards, urinating in private car ports instead of using public toilets, sleeping and fornicating in public parks, trafficking illegal drugs, sheltering and feeding runaway youth, hosting community cookouts, and setting up free-schools (Ross, 2013; see also Kidd 1967a, 1967b, 1968a, 1968b; Moul 1967; Ross, n.d). The KRA thus frequently urged authorities to refuse assistance to hippies, ban their congregations in public parks, shut down their coffee shops and clothing stores, oust their self-run centres for at-risk youth—in short, as the KRA president put it, "give [the hippies] a one-way ticket back to wherever they came from" (Kidd, 1967, p. 1).

It is clear in hindsight that, for neighbourhood elites, the sounds of hippies connoted certain frightening activities and social changes—the dwindling respect youth showed toward them, the system of private property, and traditional community institutions like school and church. In one instance, the owners of an apartment modified its intercom system so it could be switched off at night, recounting with palpable disgust that hippies had been using it late at night to communicate with female tenants, and had climbed the side of the building to reach their balconies when they were not let in, "making prostitutes out of girls, who are otherwise innocent" (Ross, n.d., p. 1). As historian Daniel Ross (2013) has shown, such rhetoric, defining the "hippie problem," was a way for neighbourhood elites to make sense of, and control, the new identities converging in Kitsilano which were "based on a youthful and sometimes hedonistic exploration of alternatives to middle-class values and consumer capitalism" (2013, p. 17).

However, the Kitsilano Ratepayers' Association did not discuss such broader circumstances when communicating with the City, choosing instead to decisively truncate the social context of hippie sounds. In an ongoing issue regarding a music

venue frequented by hippies (called the Village Bistro, and later the Bistro-Golden Palace), the KRA described the emanating sounds as “loud and objectionable noise” (Moul, 1970, p. 1) in a letter to the City. This phrase was borrowed from the 1938 by-law, yet it improved on it by devising a further tactic; as reported by its constituency over several months, the KRA regularly consolidated what it called a “resume of disturbances” (Figure 1.1), diligently recording dates and times for every instance of noise coming from the venue, then forwarding such resumes to various local authorities. Though the KRA’s problem with the venue was part of a complex social reality, such terse cataloguing, stripping social context, aimed to impress that there was nothing to interpret, nothing to dispute. These noises, the resumes suggested, were without question “objectionable”; and because, in the KRA’s view, hippies could certainly not be civilized, they should be expelled from the city. Notably, such resumes were an invention of the KRA that may be seen as compensating for the City’s lack of effective enforcement. Such resumes became for the KRA a regular device for quantifying recurring noise, at a time when the City had yet to instate such methods.



- 2 -

Oct. 26, 1970	Started at 11:00 p.m. Police were called at 2:30 a.m. on Oct.27
Oct. 27, 1970	Back door was open, young people yelling and drinking. Noise stopped at 3:15 a.m. October 27th
Oct. 29, 1970	Very noisy until 2:00 a.m. on Oct. 30.
Oct. 30, 1970	Very noisy until 2:00 a.m. on Oct. 31.
Oct. 31, 1970	Very noisy until 3:00 a.m. on November 1st.
Nov. 10, 1970	3:00 a.m. police called - refused to come.
Nov. 11, 1970	Very noisy until 2:00 a.m. Nov. 12th
Nov. 13, 1970	Very noisy until 2:00 a.m. Nov. 14th
Nov. 14, 1970	Very noisy until 3:00 a.m. Nov. 15th
Nov. 15, 1970	All quiet finally at 4:00 a.m. Nov. 16th
Nov. 16, 1970	Very noisy until 3:00 a.m. - advised to take petition to City Hall
Nov. 17, 1970	Very noisy until 3:15 a.m. on Nov. 18th
Nov. 18, 1970	Very noisy until 2:30 a.m. on Nov. 19th
Nov. 19, 1970	Very noisy from 12:00 to 2:30 a.m. Nov. 20th
Nov. 20, 1970	Very noisy from 12:00 to 3:00 a.m. Nov. 21st
Nov. 21, 1970	Phoned police 2:45 a.m. Sunday, said they would see about it.
Nov. 23, 1970	Very bad 11:30 p.m. to 4:00 a.m. on Nov. 24th
Nov. 24, 1970	Health Dept. called, garbage piled up at the back of building. Very noisy until 3:00 a.m. on Nov. 25th
Nov. 25, 1970	Very noisy until 3:00 a.m. on Nov. 26th
Nov. 26, 1970	Truck load of food was taken from the back of building 3:00 p.m.
Nov. 27-29, 1970	Very noisy until 3:00 a.m. Nov. 28 and 30.
Nov. 30, 1970	Very bad from 1:00 to 3:00 a.m. on Dec. 1st
Dec. 1, 4, 1970	Very noisy until 2:00 a.m.
Dec. 5,6,8,9 "	Very noisy until 3:00 a.m.
Dec. 10,11, 1970	Very noisy until 2:00 a.m.
Dec. 18, 1970	Very noisy, police called at 3:30 a.m. Dec. 19, said they would send a car around. All quiet at 4:00 a.m.
Dec. 19, 1970	Noise started at midnight and very bad until 3:30 a.m.Sunday

Figure 1.1 The KRA's Resume of Disturbances.

Note: This is the second page of three, rigorously compiling details provided by the KRA's constituency. Moul, G. F. (1970, Dec 30). Re: 2081 West 4th Avenye, Bistro-Golden Palace [letter to City license department]. George Moul fonds (AM606). City of Vancouver Archives (Box 569-B-1, Folder 9), Vancouver, British Columbia, Canada.

Through the 1970s, the City revamped its approach to abatement, on the recommendation of a regional Noise Control Sub-Committee that had been studying control measures in other cities (City of Vancouver, 1970a, 1970b). Objective measuring devices and techniques were implemented systemically through several actions: an acoustic consulting firm was hired to produce a quantitative survey of urban noise in Vancouver and region, which was to inform the rewriting of the noise by-law; the City purchased a sound level meter and City enforcement staff were certified at BC Institute of Technology so that their measurement techniques would not be questioned in court (City of Vancouver, 1977); and maximum sound levels expressed in decibels were written into the by-law. City officials believed quantification would provide a uniform basis for enforcement across the region, ironing out discrepancies between municipalities and thus strengthening legislative authority at a system-wide level (City of Vancouver, 1971). If noise abatement previously hung its authority on adjectives, the use of numbers enhanced and broadened such authority. The certified application of measuring techniques delegated judgment to technological devices, depoliticizing the regulation of urban noise. It helped to stabilize and make concrete the power to pass judgment without interpretation of social meaning.

Quantitative description could treat noise as pure energy, detached from social reality. For example, in conducting the 1971 noise survey of Vancouver and region, which informed the revamping of the by-law, the consultants' report foregrounded the use of a new technological device—"a digital computer" (Price, 1971, p. 489). Drawing a square grid, indiscriminately over the entire region, resulting in 56,000 intersections, the computer selected 10,000 as points of observation, at which readings would be taken using a sound level meter. The computer's selection program ensured these 10,000 points of observation were "random, rather than arbitrary, in space" (Price, 1971, p. 489). Though noises actually sounded-out social relations that varied across the region, the grid geometrically predefined noise as an effect to be measured regardless of local geography, economic dynamics, or social history. Conceived as pure energy devoid of context, noise was measured and further produced as socially insignificant sound, making it easier to deal with.

In tandem with quantifying noise, the City's role was redefined so that it now protected citizens from noise nuisance for the sake of quality of life. The term noise *abatement*—a term that etymologically emphasizes the beating down and killing of a noise source—gradually fell out of use, in favour of noise *control*. Instead of aggressively trying to silence noise sources, noise control aimed to regulate the individual citizen's exposure to noise, doing so by supporting their right to prevent the sounds of others from entering their property and their ears. In this sense, the shift to noise control was predicated on spatially aligning an individual's ears with their rights in property. Early signs of this shift were expressed in the 1971 noise survey when the consultants emphasized that they had observed Vancouver's urban soundscape, "not to evaluate the detailed acoustical properties of the sources…[but] rather to describe, in statistical terms, the noise to which people who live in the communities are exposed" (Barron & Strachan, 1971, p. 3). This shift from *evaluating the sources* of noise to *describing the exposure of those affected* was ushered by the replacement of the longstanding NPA dominated council with a new majority—The Electors Action Movement, or TEAM, "a liberal reform party, which self-consciously appropriated a postindustrial identity for the city" (Ley, 1980, p. 257). Explicitly against the technocratic high modernist planning, which for example was about to put a 120-foot freeway through the heart of a historic neighbourhood, TEAM won by a landslide on a platform that put quality of life and the rekindling of the human spirit ahead of economic "growth at all cost." The shift to regulating exposure coincided with TEAM's concern to "protect those features which [it] saw as making the city a beautiful and pleasant place in which to live, work and raise a family" (Tennant, 1980, p. 15). For instance, to revitalize shopping along Granville street, TEAM spent 1.33 million to construct a tree-lined pedestrian mall blocked to noisy traffic, spanning six blocks (Lees & Demeritt, 1998). TEAM also sponsored a series of noise pollution education workshops run by a local environmentalist group (Boyce, 1974; City Clerk, 1974), and council members including the mayor even took part in one of these workshops. Whereas, noise had previously been described as unnecessary and detracting from Vancouver's economic productivity, it increasingly became an undesired nuisance detracting from the Vancouver's livability.

The 1970s therefore replaced a politically turbulent process that was difficult to enforce with the technological quantification of exposure. The latter treated noise in a

manner that was more convenient and efficient than before in the sense that it removed the need for human deliberation in each instance of a problem. Noise was redefined and solidified as, merely, pure measurable energy, socially insignificant sound, and a nuisance to privacy. Before this time, citizens irritated by noises were much more bound by their social relations, having to interact with each other more directly, struggle over the meaning of specific sounds, and come to reasonable solutions together or protest unfair conditions. Now, such deliberation over noise was itself made disposable. Over the next couple of decades, the noise by-law was amended several times to further reduce the qualitative definitions that, as reported by the city manager, confused the objective clarity of enforcement (City of Vancouver, 1989). Noise became easier to deal with as it was thus made into an object of disposal—or, "objectionable noise." Doing so has meant minimizing urban noise as a matter that draws citizens into each other's social worlds. Wherever the control of "noise" has succeeded, it has done so, not simply by silencing noisy activities, but by silencing confrontations between citizens, displacing the need to deliberate why certain sounds are noises, or what their potential meanings are. If controlling noisy activities expresses a concern for improving livability, we must ask, livable by whose standards and to the exclusion of which other ways of living?

1.3. Noise as a Resource and Unimpeded Livability

If noise became more manageable through sophisticated legislation and technological devices, the growing environmental movement that took root in Vancouver in the late sixties (Zelko, 2004) problematized waste as *pollution*. According to the movement, pollution was the social and environmental cost of consumer society, externalized by technocratic means. Counterbalancing its ills necessitated citizen-led action. Emboldened by ecological science and the alternative spiritual teachings of Eastern religions (Zelko, 2004), the environmentalist discourse of pollution redefined waste—whether trash, sewage, or noise—as a resource, and pressured authorities to manage it as such. Yet, in hindsight, it is not clear exactly what it was a resource for. Perhaps, today, environmentalism is most often considered an attempt to reduce the harms associated with pollution. In Vancouver, this is certainly the way City authorities responded to the idea of pollution through the 1990s. Environmentalists, however, were

not simply concerned with harm reduction; pollution also usefully complicated understandings of waste, allowing a reconsideration of humanity's involvement in producing the lived environment.

Take for example the Vancouver Urban Noise Task Force, a varied group of ten citizens appointed by the City in 1996 to recommend a comprehensive "long term vision" (City of Vancouver, 1995, p. 2) for dealing with urban noise. The Task Force was strongly influenced by an environmentalist ethic. In fact, it was originally named the Urban *Soundscape* Task Force (City of Vancouver, 1995; Hiscocks, et al., 1997, appendix A)—*soundscape* being a term associated with the field of acoustic ecology developed through the 1970s by the World Soundscape Project (WSP) at Simon Fraser University (SFU) (Marontate, Robertson, & Clarkson, in press); and Barry Truax, long-time contributor to the WSP and SFU professor, sat on the Task Force's Public Education subcommittee, which drafted the first twelve recommendations in the final report.

These twelve recommendations sought to raise awareness of noise as an environmental issue—as pollution—not simply a mundane nuisance. Such a pedagogical strategy was characteristic of the WSP's approach to environmentalism. The Task Force reported that the solution to noise problems was not merely—or even primarily—a matter of *abating* noise. It stated that there was no simple correlation between sound pressure level and noise complaints; complaints resulted from a more complex set of variables, having to do with both the qualities of a noise and perceived meanings, and therefore "measurements should be used only when necessary to deal with specific sources" (Hiscocks, et al., 1997, p. 54), but would not provide a longer-term solution. The report's position suggested that noise was indicative of the poor quality of relationships formed in sound. Furthermore, citizens "ought to be continually reminded that they can and must contribute" (Hiscocks, et al., 1997, p. 11) to improving such relations, instead of relying on experts. The Public Education committee's recommendations included, for example, safeguarding sonic events that may be significant to local history and publishing related information, or installing acoustic playgrounds for children to exercise their aural learning ability. As summarized by Barry Truax (1998), the final report's educational recommendations were "designed to bring

acoustic issues into greater public awareness, not just when the individual feels harassed by a specific problem" ("Strategic Models" heading, para. 3). They were aimed at "promoting and preserving the positive aspects of the acoustic environment" (para. 3) not simply eliminating noise problems. Significantly, what those "positive aspects" might actually be was a question of perspective and value, and would require further engagement with various soundscapes to understand the social meanings of specific sounds and related noise issues. The report, in other words, proposed that the City should help citizens in redefining the problem of noise; by facilitating a deeper relationship to Vancouver as a soundscape, noise would more likely be listened to as meaningful sound. Instead of being mere nuisance, noise held latent opportunity for listeners to learn about Vancouver's people, histories, or events that were unfamiliar to them. The Urban Noise Task Force thus provided a kind of avenue for those involved in environmentalist efforts; listening to noise as pollution helped to popularize social and ecological concerns, and raised further questions about society's co-production of the environment.

The Urban Noise Task Force, however, was also part of a broader municipal initiative through the 1990s intending to control quality-of-life offenses such as noise pollution so as to represent the ideal of a livable and sustainable city. Modelled after the Urban Landscape Task Force and the Task Force on Atmospheric Change (City of Vancouver, 1995), the Urban Noise Task Force fit a planning discourse that imagined a future free of pollution, crime, and urban decay. Lees & Demeritt (1998) have called this the interplay between Vancouver as Sin City and as Sim City; in the name of revitalizing parts of Vancouver, a prosperous future was *simulated* by government initiatives, certain media narratives, local business boosting, and real estate representations. This simulation gained convincing momentum by narrating the present city of *sin*—objectified as its drugs, sex shops, litter, transient men, and noisy pub crowds. Urban harmony was then sought by pragmatically clearing away neatly objectified harms. We can hear this in the City Manager's response to the final report of the Urban Noise Task Force, when it was stated that their "period of unprecedented fiscal restraint" meant the City would only be able to address those noises "which are clear and pressing health concerns" (City of Vancouver, 1997, City Manager's Comments section, para. 2). Whereas environmentalists listened to noise to reflect on the meaning of sound, and to engage

the complexity of relations between society and environment thus formed, addressing noise pollution was also part of a broader narrative in which neoliberal governance provided a city free of quality-of-life offences.

Today, this image of an efficient, safe, prosperous, and beautiful city is presented to a global audience as an important part of competing for foreign investments, coveted creative workers, entrepreneurial business, and a tourist market. As local government has shifted toward enterprise as a solution to urban problems—what has been called entrepreneurial governance (Hall, 2002; Hubbard & Hall, 1998)—economic growth is pursued through the proclamation that the environment and the economy can synergistically improve one another. To this end, in an early version of Vancouver's *Greenest City 2020* plan, emotionally-charged language was meant to inspire the necessary local support for global investment:

> Can you imagine the City of Vancouver without fossil fuels? We can. We envision a bright green future that couples economic prosperity, health, and happiness with decreasing greenhouse gas emissions. We envision less pollution and cleaner air, less machine noise and more birdsong, less pavement and more green space, fewer sick days and healthier people. We want to send a clear and compelling message to the world: prosperity and environmental stewardship can be partners, not opposing forces. We can meet the challenge of climate change in ways that will improve the quality of life for our children, and our children's children. (Boyd, n.d., p. 23)

As McCann (2013) has shown, municipal initiatives that address environmental concerns serve as part of what he calls "policy boosterism" that helps define and promote Vancouver as an exemplary green city under the leadership of a green government. He examines how climate summits and mega-events like the Olympics provide Vancouver Mayor Gregor Robertson and City staff forums for networking with other cities' architects, planners, and consultants; circulating planning knowledge; and competitively showcasing Vancouver's brand as the world's Greenest City. The commodification of Vancouver through such branding politically shores up "a general sense of local common purpose in order to naturalize the notion that certain types of development and growth are good for everyone, in one way or another, and to marginalize any group or individual that questions this myth" (McCann, 2013, p. 8). As Lees & Demeritt (1998) state, the notion of livability is vague enough that it cannot be contested—who would

argue against making Vancouver more livable? The City of Vancouver has capitalized on pollution by performing the role of provider and custodian of livability; yet, this notion of "livability" appears to be premised on *getting rid* of pollution, preventing the further infection of urban space—not engaging pollution as a complex social-environmental subject, but displacing any such confrontation. It proffers, not so much care for humans and the environment, as a bare tolerance of pollution. As it operates in an entrepreneurial city under the pressures of neoliberalism, Vancouver's "livability" is primarily about sanitizing urban life and economy, ensuring they are unimpeded by broader questions pollution raises about the social production of the urban environment—and having to actually respond to such questions.

1.4. E-waste management and the Immaterial Space of the Livable City: Defining Disposability

To understand the social concerns of modern waste management, this chapter has explored a history of Vancouver's noise in relation to the everyday construction of social boundaries. Removing noise and confrontations it provoked can be understood as sanitizing the social relations between citizens. The work of sanitation restored an imagined order with the hope of sustaining certain values related to physical health and safety, morality, productivity, convenience, and freedom. In so doing, waste management acted upon the overlapping space of bodies, technological and legislative devices, and urban space. In an important sense, waste management acted upon this space by way of exclusion—it aided citizens in getting rid of whatever, or whomever, did not to belong—that is, it helped enact private property (Blomley, 2004a). This was, at the same time, the cultivation of "proper" disposition in individuals, well-behaved so as to not interfere with the private spaces commanded by other citizens.

As this process became more automated, mundane, and habituated we can refer to disposability. The notion of an "ability" to dispose has an odd ring to it: what kind of "ability" is disposability? Disposability is a design principle, as with paper cups or diapers, designed for single-use; whereas, with a ceramic cup, one has to be careful not to break it, has to learn to fix it when it breaks, has to clean and store it after use, a paper cup is designed to obviate these "technical" problems. However, following

Strasser (2000), Hawkins (2006), and Nagle (2013), the term disposability can be expanded to understand it as a culturally shared and habitual mode of being in the world, or an ethos, in pursuit of a convenient and sanitary lifestyle. The disposable paper cup awaits the mobile individual at the coffee shop during the day's rush, and is discarded as easily as it is obtained; it is a constitutive part of this milieu. In addition to technologically solving isolated material problems, like having to clean a cup after use, disposability patterns the fabric of our consumer lives with a freedom from responsibility—a freedom from the inconveniences of responding to one's social context. Enabling individuals to iteratively distance themselves from waste with barely any thought, disposability supports "a relation of mastery that constitutes the self that discards as separate and purified" (Hawkins, 2006, p. 30). It yields society a freedom to forget the things thrown away, the act of throwing them away, as well as the relations thus constituted. What should be apparent is that the management of waste—not simply waste, but the set of decisions made to deal with it—is a powerful site informing social experience and meaning. That this is usually *not* apparent is central to the way disposability works as part of a given waste management scheme.

Considering the above in regards to e-waste management is especially intriguing because, in contrast to the "ability" to exclude, distance, and forget, electronic media are generally valued for nurturing the opposite—the "ability" to connect. They seem to afford widespread access to information, and open avenues for expression, bring us in contact with unfamiliar ideas, and foster cross-cultural encounters, thereby supporting mediated relationships that enrich our public world. Yet, we should ask what happens to the character of these relationships when the electronic machines that support them are regularly disposed with an efficiency that requires barely any thought. In many respects, providing recycling for end-of-life computers, cellular phones, or other electronics is safer and more environmentally sound than land-filling or incinerating them, but recycling does not necessarily oppose disposability.

The practice of using waste as a resource predates the 1970s, though the reasons for doing so have changed. Whereas today, recycling in Western nations couples citizenship with environmental care (Oldenziel & Weber, 2013), at the beginning of the 20th century, it was an economy marked by material scarcity that drove

civilizations to engage practices such as the reuse of glass bottles (Jørgensen, 2013); the skilled mending of clothes and feeding of kitchen waste to domestic animals (Strasser, 2000); the repurposing of solid waste to fill bogs, build beaches, or construct berths for boats (Oke, North, & Slaymaker, 1992); or the use of sewage, or “night soil” collected from cesspools, to fertilize farmlands or produce gunpowder (Davies, 2005; Gandy, 1999; Hamlin, 1980). Material scarcity was entwined with a practice that historian Susan Strasser calls "an everyday—and fundamental—regard for objects, for the labour involved in creating them and for the materials from which they were made" (Strasser, 2013, p. 517). This “stewardship of objects” (Strasser, 2000) and its practices of thrift and care were obviated with the introduction of disposable goods. 1970s environmentalism engaged the notion of pollution to call attention to post-war consumerism and its ill effects, reawaken stewardship, and to demand that governments counter with recycling initiatives and environmental legislation. In contrast to the throwaway society supported by disposability (Strasser, 2000), it strove to become responsible.

However, recycling can act to extend disposability. As Stasser (2000) suggests, though recycling was radical in the 1970s, by the 1990s it functioned as “a means to get rid of things with a clean conscience” (p. 285). As it makes business more efficient, drawing on the good will of citizens to clean, sort, and return raw materials to producers, it also in turn grants a freedom from having to think about or respond to repercussions of consumerism and the broader culture of disposability.

With regard to discarded electronics, focusing on recycling alone is not enough, as Lepawsky (2012, 2014) argues. Poorly addressed in government and business e-waste policies, if addressed at all, are the expenditure of resources during manufacturing and recycling of electronics (Gabrys, 2011; LeBel, 2012), and the manufacture of devices for durability and refurbishment (Lepawsky, 2012). Design and manufacture are arguably more decisive for addressing the environmental degradation by mismanaged waste electronics, more so than ensuring consumers recycle their unwanted electronic goods. In addition to considering the technical containment of a material problem, however, e-waste management is also inseparable from the social production of Vancouver as a global city.

If one attempts the daunting task of noting the variety of ways Vancouver's economy relies on digital technology, it is obvious that the removal of old devices is not only a physical necessity, but central to the way this society functions. A few indicators only begin to portray how digitally dependent Vancouver is. Over 74,500 people are employed in Information Communication Technology jobs in Vancouver, almost three quarters of the provincial total (Faisal et al., 2015)—a total which surpasses the forestry, mining, and oil and gas sectors combined (BC Stats, 2014). In addition to attracting foreign giants like Microsoft, Sony Imageworks, and Amazon, three technology-based companies worth over one billion dollars have developed in Vancouver (Orton, 2014)—Avigilon, a high-definition video surveillance software and hardware company; Hootsuite, providing software for brand managing over social media; and Slack, a company developing communication software for business teams. In 2018, SIGGRAPH, a week-long computer graphics and interactive technologies conference, will return to Vancouver for the third time in seven years (SIGGRAPH, 2015), having attracted over 14,000 artists, students, and developers and $39 million in direct local spending last time Vancouver hosted (Tourism Vancouver, 2014). Many educational institutions supply the digital media industry; most notably The Centre for Digital Media, which received $40 million from the provincial government (Shaw, 2011), readies skilled workers through the Master of Digital Media program and top-of-the-line facilities, developed in close partnership with a long roster of companies, including Electronic Arts, Microsoft, Disney Interactive Studios, Nokia, Autodesk, and Rainmaker Entertainment (Center for Digital Media, n.d.). To keep this society going, remaining at the cutting edge of production and maintaining global investment, how many computer monitors, keyboards, headsets, hard drives, servers, fans, and countless other electronic devices, regularly failing or replaced by upgrades, must be cleared away?

Such clearing away entails a particular kind of interdependence between global city economies and waste electronic recyclers. The research of Lepawsky, Akese, Billah, Conolly, and McNabb (2015), for example, shows that large-scale recyclers make a majority of their profit by "producing information about the destruction of information" (p. 192) that flows through global cities. Incineration and shredding make absolutely sure no sensitive information can possibly be recovered from the hard drives discarded by, for instance, law firms, banks, or hospitals. To confirm the specific destruction of their own

company's IT equipment, firms purchase certificates from recyclers, and even videos showing their "specific machines falling into the shredders and coming out as bits and pieces too small to be read by even the best data pirates" (p. 192). Beyond protecting data, recycling businesses are also the "other brand managers" (p. 192) of these firms, ensuring their IT equipment does not show up in an exposé on illegal international waste dumping. The on-going maintenance of Vancouver as a global city depends on places such as Guiyu or Trail to remove inefficient machines, and the hazards they present once discarded—both toxic and in terms of exposure of sensitive information stored. The physical clearing away of hardware substantially informs Vancouver as a society.

Just as important is the image and experience of Vancouver that physical disposal sustains—the city's famed livability, which discarded electronics would quickly spoil if they were improperly managed. As has historically been the case with urban discards (Melosi, 2005), proper e-waste management requires citizen cooperation, and in turn affects how we think about electronic technologies. For example, take-back events hosted by chain stores, whereby consumers return their unwanted electronics, divert e-waste from landfills, yet are also important as part of marketing schemes. They allow us to get rid of devices as easily as we purchase them; they make electronics seem more disposable by facilitating their actual disposal, and this keeps a smoother-running consumerism. As proclaimed by one chain, take-back events are a way to persuade customers to "clear out their drawers, basements and closets to properly dispose of used electronics just in time for the holidays!" ("Best buy," 2009, para. 1). In other words, take-back events fold electronic goods into the regular rhythm of seasonal shopping. A marketing magazine celebrates in-store e-waste disposal, stating, "Programs like this take the pain away from recycling—by providing convenient drop-off points, retailers are keeping the issue top of mind, and are *making recycling part of the normal shopping routine*" (Stoller, 2013, p. 44, emphasis added). The managed disposal of unwanted electronics makes it relatively easy for Vancouver to discard media devices that slow down its "ability to connect" and that thereby detract from its competitiveness as a global city. Slower, heavier, and bulkier devices become cumbersome in the face of expectations under neo-liberalism to work and interact quickly and portably, which is to say, for the most part, individually. The more easily media devices can be disposed of, with little thought given to the precarious labour producing them or environmental

damage inflicted (see Brophy & de Peuter, 2014; Gabrys, 2011), and without the toxicity of e-waste burdening us personally, the more our relations through technology appear to be immaterial and ahistorical (Gabrys, 2011; LeBel, 2012; Miller & Maxwell, 2013), and indeed the more technology appears to be at our disposal.

Whether recycled or land-filled, the apparent elimination of wasted electronics affects the way we think about and learn to use media technologies. Eradicating waste is a driving force continuing the myth that media technologies, from the printing press to the internet, have "changed the world *without* changing the Earth…by despoiling ecosystems and exposing workers to harm" (Miller & Maxwell, 2013, p. 124). The social contingencies which would be indicated by the fallout of technological progress are instead concealed by e-waste management; at the level of personal experience, media tools themselves appear to be outside society, sustaining the free will of private individuals. Clearly, there is a mutual constitutive bond between Vancouver's livability and the immateriality of the digital realm. Both are discourses that claim individual freedom from material requirements and social interdependence, and both are sustained by facilitating the disposability of media technologies and our relations through these tools which we use to produce society. Livability and immateriality together sanitize the experience of Vancouver's public space.

However, while the efficient disappearing of waste seems to dematerialize electronics and the social historical relations implicated, the material persistence of discards also offers latent opportunities to encounter "a mixture of flickering and mutable relations" (Gabrys, 2011, p. 151) which condition urban space in a digitally-imbued city like Vancouver. Disposability needs to be countered *not* with the discourse of recycling—within which recycling symbolizes a "better" form of waste management that makes the "problem" go away by reintegrating materials into the dominant mode of production—so much as by inspiring a responsibility to engage that mixture of flickering and mutable relations presented by wasted things, remainders and fragments that "direct us not toward the recovery of 'wholeness' but toward new possibilities for working with the 'scatter' of the world" (Gabrys, 2011, p. 151). Before assessing, in the third chapter, the possibility of inspiring such an engagement with waste, the next chapter elaborates what *responsibility* can mean when considering media technology.

Chapter 2.

Mediated Listening as Disposability and Responsibility

Through the turn of the twentieth century, the management of waste in Vancouver became a coordinated pursuit of government. As in other Western countries, such as England, France, and the United States, Vancouver's waste management addressed concerns arising from urbanization and property relations, articulating issues of morality, health, safety, convenience, and productivity. As explored in the previous chapter, highly efficient sanitation orders "lived space" (Lefebvre, 1991)—it sanitizes a citizenry's understanding and inhabitation of urban space through symbolic meanings that are attributed to it. It nurses society back to a state of imagined wholeness. As a medium, urban sanitation aims to keep intact a cohesive image of a good city. It restores specific things to their imagined proper places. Property relations are maintained at an everyday level by facilitating disposability. Waste management is therefore a procedure that actively, though inconspicuously, conceives and shapes urban space to facilitate the forgetting of social contingencies and maintain freedom from having to respond to them.

Today, these waste management dynamics are not limited to built civic spaces—they extend to the sanitization of digital media environments. Our participation within such environments via media production is modulated by disposability. Whereas chapter one briefly considered Vancouver's e-waste management as key to the city's power to dispose social and environmental consequences and maintain a sanitized urban relation to technology, in this chapter I explore how disposability is reproduced in media production practice. To aid in rupturing this paradigm, which I argue thins out our public space, this chapter responds with a listening pedagogy that uses audio recording to engage the social space formed between media producers.

Recordists are traditionally taught to record sound using techniques that are similar to urban waste management. There is a similarity between modern waste management and modern recording technique, and it is not purely coincidental. Waste management and sound recording both employ techniques of control developed in the modern era, concerned with controlling unpredictable and uncertain social encounters, gaining power over their subjects by disposing the social relations producing social space. Though it may seem that recording happens inside the studio or on computer screens, and therefore, away from society, it is no less embedded in the making of the city. Recording practice always contributes in real ways to the shape of society via the spatial relationships enacted. This means that, not only do the contents of audio recordings affect Vancouver's imagined identities; also formed through the process of recording are spatial relations between recordists and the digital audio devices used, the urban environments in which they record, and other listeners involved. Like waste management, modern recording technique disposes and displaces the social context of production to secure individual convenience, safety, and efficiency. While waste management sanitizes the social space of the built urban environment, modern recording technique does the same for the social space of the production studio, and is no less implicated in shaping our public lives.

Historically, the modern recording process has largely entailed silencing the noises that indicate the social circumstances of the recordist's artificial intervention, noises which would diminish the illusion of listening to sounds as if unmediated. Suppressing noise at every level—inside the studio, inside the machine, inside the signal—has been a way of separating each from its larger social context and recording a "clean" signal, as recording engineers commonly call it. Noise suppression has become a production convention. It applies devices and technical methods of listening in a way that detaches the recordist from the relationships they may otherwise form to the people and circumstances which they record. Sound may be reaped as commodity because the burdens of listening beyond mere content have been made disposable.

With the mass availability of digital devices, with recording becoming more common and easier to do, these principles of disposability are more widespread and in need of critical questioning. Yet audio recording pedagogy most often emphasizes

traditional engineering concerns for “clean” signal transfer, without problematizing how recording practices express particular historical conceptions of listening—which is to say, listening practices that are ideologically informed and in fact help shape social space. Infusing pedagogical practice with the ethical questions raised when confronted with waste helps us ask how media production matters beyond the imagined space of our personal computers.

To describe these spatial relations, I explore two terms: disposability and responsibility. Both terms are compound words, joining *dispose* and *respond*, respectively, to the word *ability*. In the way that I will engage them, disposability and responsibility describe “abilities” to relate to others—social relations that are empowered technologically, discursively, and through practice. These relationships can reinforce the distancing and forgetting of a specific recording’s social context; or alternatively they can demand that listeners respond to a diversity of concerns, motivating the critical potential to use media for social change. In fact, any given recording varies as a tension between these two tendencies: recording can facilitate disposability or contribute to a social space that encourages responsibility. However, while it is ambivalent in this sense, and not ultimately determined, it is also biased under capitalist logics to facilitate disposability. To the degree that recording enacts a social space that serves to easily distance us from and forget the relations that would otherwise burden us, recording is maintained as a politically silent medium and an ethically inconsequential process. That recording practice appears to be an individual exercise, a symbolic practice with no concrete social consequences, is a result of the relations of production having been made disposable. As recording both enables listeners to respond to one another’s concerns, but also serves to further sanitize public urban relations, media pedagogy should highlight the critical differences between these contrasting engagements of technology.

Therefore, in this chapter, the notions of disposability and responsibility are presented to focus on the way recording practices negate and engage the social production of urban space. By focusing on the empowerment of these two abilities, I seek to open up the social consequences of recording to critical pedagogical intervention. I first review literature that helps to clarify, philosophically and by way of radiophonic history, how certain combinations of audio technology and listening have

activated various publics and their spaces. This highlights an ethical dimension to recording practice that, as I go on to show, is normally avoided by the conventional techniques of modern recording. I therefore agree with authors who problematize the presumed equation between digital production and democratic participation. Providing historical examples, I argue that a primary objective of modern recording technique has been to disburden recordists of having to collectively interpret the social meaning of sounds. Digital recording is efficient in this sense—that it technologically obviates the need to listen and work with others. It makes collective listening disposable. I then consider a pedagogical tradition of critical listening, engaging audio recording as a creative social process, not merely a technical one. Approaching recording for more than self-expression, such a pedagogy aims to encourage media producers to respond to each other and their involvement in the social production of urban space.

2.1. Borgmann's Device Paradigm, and Focal Things and Practices

For philosopher Albert Borgmann, the distinguishing character of a technological device is that it is designed to make available a specific good or service without burdening the user. It procures a commodity, "instantaneously, ubiquitously, safely, and easily…[which requires] that the machinery of a device be unobtrusive, i.e., concealed, dependable, and foolproof" (Borgmann, 1984, p. 77). Concomitantly, this is a simplification of the user's relationship to their social world. As an example, Borgmann discusses modern central heating as the result of simplifying the traditional stove to the mere function of providing heat efficiently. In a previous era, the stove was the intersection of many practices that were in a real way inseparable from the stove itself. As firewood was collected, split, and stacked, and as meals were cooked and shared, bodies gathered around the hearth, in its heat, light, sounds, and smells. Today, at the level of everyday experience, modern indoor spaces heat and regulate their temperature by themselves. As a device, modern heating procures warmth automatically, disburdening the household of the work that once engaged people in concrete ways in preparing sustenance against an unpredictable world. However, along with such

disburdenment went the sociality involved. For Borgmann, the hearth exemplifies a "focal thing" around which people gathered, as well as its inextricable set of "focal practices" through which social meaning formed. Using the notion of disposability, we can say that the device paradigm disposes focal things, and displaces focal practices.

By way of the technological device, the commodity is born through its radical separation from the machinery and social relations procuring it. Procuring a commodity, in this definition, means getting something effortlessly—or in a "commodious way" (1984, p. 42). This happens in two related ways: through the physical concealment of the machinery, but more importantly, through the user's unfamiliarity with the machine's operations. Users are willfully unfamiliar to a degree, and this frees users to apply their capacities elsewhere. The machinery takes work off our hands, making "no demands on our skill, strength, or attention, and it is less demanding the less it makes its presence felt" (1984, p. 42). Over time, this allows us to forget any work is being done. However, as social relations become increasingly oriented through and patterned by this way of living in the world, a pattern Borgmann terms the device paradigm, this may come at the cost of reducing "the experience of the world through the manifold sensibility of the body" (Borgmann, 1984, p. 42).

What we should take from Borgmann, then, is a critique of progress defined as the increase in commodious living, free of having to struggle with others, and, more to the point, forgetting that we come together meaningfully around collective work, even if it is difficult, cumbersome, or inefficient to do so. Meaning is made through social activity, and involves struggling with others; through technological design, the device paradigm articulates struggle as merely something to be avoided. What Borgmann problematizes in discussing modern heating as a device is that it streamlines previous relationships to a social world. In this relative sense, the shift replaces one set of material relations and practices with another—those necessary to coordinate the tending of the daily fire with those of modern heating. The critical point is that, though substantially different, the new material social relations that are present are not experienced as a complex interaction between different people, materials, ideas and resulting meanings, because they are concealed by technological design and practical convention. Relating the device paradigm back to Lefebvre's (1991) work, and continuing the above example, we could

say that the spatial practice associated with modern central heating is so streamlined that there is little room, if any, to gather around and share meaning through its possible representational spaces (of poetry, theatre, music, cuisine, etc). Indeed, it certainly feels ridiculous to speak of any "practice" of adjusting a thermostat, let alone "culture" associated with it—I have yet to hear of a society that attributes meaning to the practice—whereas one can consider various historical cultures of fire tending.

In terms of communication, media devices have increasingly formed a built environment through which the sharing of ideas has been made easier. Yet, this is not without impacting the public sphere in which meaning may be deliberated. Communication technology, used in accordance with the device paradigm, is sanitized of social contingencies deemed inefficient; the device paradigm procures communication as a commodity, not a social process. Even media production studios, engaged only as a set of devices, become spaces for efficiently distancing producers from the social relations of production and attendant ethical implications. Granting highly individualized control over the recording process, by acoustically isolating the studio from the city, for instance, is a socially produced situation and has social consequences that go beyond mere control over sonic vibration. Listening is well suited, historically and theoretically, to being developed as a focal practice in response to the disposability that patterns the fabric of studio life in accordance with the device paradigm. Before turning to the question of democratic participation via communication media, the next section elaborates how different publics have been constituted by way of listening, and, as the outcomes of such publics were variable, the ethics implied in listening.

2.2. Histories of Listening Publics

Kate Lacey (2013) approaches this question in relation to the intersubjective constitution of a public through what she terms "listening out" (p. 141). Drawing on early examples of radio, she reviews the use of broadcasting to convene citizens as a listening public, "an always latent public, attentive but undetermined…ready to listen and engage… an indeterminate set of people defined only insofar as they participate in or find themselves interpellated in the discourse that addresses them" (Lacey, 2013, p. 7). In addition to the private experience of "listening in" to familiar programming content,

“listening out” theoretically frames various attempts to organize relations between citizens through radio-specific modes of address and by bringing listeners together physically in public urban space.

Lacey presents various ideological conceptions of listening-out, which help us to understand the different ways audio media and social space potentially inform each other and bring people together. In each case, broadcasts were designed to address a certain valued public by fostering a particular kind of social listening between listeners. In her examples from Britain and the United States during the 1920s and 1930s, she notes the intellectually elitist concern to counter the apparently degrading effects of mass media by training an ideal listener—one who intentionally chose to listen to the radio, and listened attentively, as opposed to accepting whatever happened to be transmitted. She notes how formal listening groups gathered at local libraries or community associations, supplemented with questions that were meant to generate discussion in response to the broadcasted news, political talk, or educational programs. Such schemes presumed that the listener at home, alone, could only ever listen passively. Stimulating discussion was understood in terms of activating a democratic space around the radio in two interrelated ways: between listener and listener, and between listener and the broadcasting medium. As Lacey shows, program topics were in fact designed to spark debate within listening groups so as to challenge participants to develop tolerance toward others whose opinions might be unlike their own; more implicitly, this taught listeners to question what was broadcast. Lacey proposes that such schemes had in mind their “own idealized image of a cultivated and engaged political body, but that idealized image contained within it a self-transformative potential…the potential for something unexpected, unpredictable” (2013, p. 148). Collective listening provided the space through which one might be confronted with how others heard the world, through media, differently.

The Nazi regime also capitalized on public listening to unify citizens. Though ostensibly collective, this instance of listening-out forcibly repressed contact with different ideas or a space for political disagreement. With the Nazi use of radio, “the entire country [was] transformed into a sounding chamber for the bombast and demagoguery of the new regime” (Lacey, 2013, p. 152). Allowing Hitler’s charismatic

voice to permeate all spaces at a moment's notice were guidelines and constructions, including "a nationwide system of public loudspeakers" (Lacey, 2013, p. 153) set on columns throughout public space; simultaneous broadcasting on all transmitters; and, to convince listeners to leave domestic radios turned on, "more of the light entertainment they craved to sugar the propaganda pill" (p. 152). The curiosity piqued by listening-out was harnessed, in this case, as a way to coax listeners to tune-in to the National Socialist agenda, to train them in the Third Reich's singular message.

Contending with broadcasting's role in serving a public sphere was its implementation as a mass marketing tool. As Susan Douglas (1999) shows, the American listening public was repeatedly constructed as a mass audience so that it could be marketed to advertisers. More than simply advertising goods on air, broadcasting's role in mass marketing involved measuring the listening patterns of the population, a tactic which developed into the "nationwide, technologically instantaneous network of audience surveillance" (Douglas, 1999, p. 124) in use today. As she explains, early measurement methods became highly refined and automated through the 1940s with the A.C. Nielsen audimeter. This device continuously recorded, at every moment of the day, the station to which each household was tuned, and when the dial was changed. Correlating this data with audience income and location on a weekly basis convincingly produced information that tracked what kind of programming attracted which demographics—information that helped Nielsen gross $26.8 million a year by 1959. By quantifying a station's ability to attract certain demographics, broadcast networks could express the value of a particular audience's attention—or, in other words, how much they could charge advertisers for "air time" to reach that audience.

Audience research helped initiate the highly personalized listening experience that emerged through the 1950s. As Douglas (1999) explains, this came on the heels of federal regulation dissuading the monopolization of the airwaves, which resulted in a plethora of small local radio stations. In seeking to differentiate themselves to the ears of targeted audiences, these stations accessed listeners individually and spoke to them personally with the help of two developments.

The transistor radio was the first crucial element; doing away with glass tube amplifiers greatly reduced the size, weight, energy usage, and cost of radios, making them more portable and durable. The radio became a device that one could take to the bedroom, the beach, or work. Youth in particular used radio to "stake out their social space by blanketing a particular area with their music, their sportscasts, their announcers" (Douglas, 1999, p. 221). Douglas argues that the transistor was more than a mere technological innovation; by the mid-sixties, with twelve million sets sold a year, the transistor unlocked radio listening *culture* from its previous engagement as a family activity in the domestic setting.

Next, to cultivate loyal listeners, stations relied on the DJ's ability "to make the audience feel personally…sought out and enfolded into a special, distinct community" (Douglas, 1999, p. 230). Douglas describes the rock n' roll DJ as a spiritual emblem for teenage rebellion against the middleclass conformity "that threatened to suck all the spirit and individuality out of a white, middle-class boy the minute he grew up" (1999, p. 241). Whether DJs were themselves black or white, they leveraged black culture as a natural wellspring of "soul." Their use of voice was most significant. By speaking informally, frequently addressing an intimate relation to their audience by evoking "*you* and *me*" (Douglas, 1999, p. 230), by using rhythmic patter, and by vocalizing mad howls, suggesting "the possibility of utterly losing it at any time" (p. 244), the DJ's voice invited youth—crucially, white adolescents—to laugh at "clueless, cookie-cutter, tightassed white folk" (p. 244) who had been "suckered in by mainstream, bourgeois mass culture" (p. 245) then headed by the television. Douglas argues that, as it threatened to blur racial boundaries and weaken white hegemony of the music industry, the DJ's role as spiritual coordinator of the listening youth public was restricted by the last half of the sixties, tamed by station management that had tightened Top 40 radio's schedule of hits, advertising jingles, and nimble patter. Youth culture would then discover FM, where DJs would navigate listeners through mellow, free-form aural trips together, starkly contrasting the highly commercialized AM band. However, by the end of the 1970s, with increasing competition, FM's anti-commercialism was co-opted as a style—stripped of its experimental play lists and political valence, so as to return a predictable listenership in exchange for ad sponsorship.

The Canadian listening public was bound by a similar pattern of commercialization, yet one that was complicated by what cultural historian Ryan Edwardson (2008) calls the broadcasting of Canadian culture "to imprint a sense of nationhood" (p. 5). Stimulating national pride to "galvanize otherwise diverse and disparate people" (Edwardson, 2008, p. 7) across the young country meant financially supporting content deemed Canadian enough for this purpose, and regulating how often it was to be transmitted. Yet, because conceptions of the listening public changed over time, Edwardson outlines three phases of "Canadianization" (2008, p. 5). The first phase, from the 1930s to the 1950s, was one in which cultural elites assumed the duty of intellectually and spiritually lifting the masses; they feared that, without government intervention to facilitate refined culture, the airwaves would remain, as in the United States, overrun with profit-driven entertainment, corroding "public—and thus national—morality…in a time of sensitive colony-to-nation transition" (Edwardson, 2008, p. 10). During the 1960s, the second phase reacted against elitist culture, seeing it as a roadblock to engaging a larger population. Seeking more passionately to "reverse the slide into the American empire" (Edwardson, 2008, p. 16) it dedicated broader middlebrow content full of Canadian identifiers to engage a wider listening public in a discourse promoting the Canadian experience as a multicultural, peace-keeping, socialist nation. Of course, what actually constituted Canadian identity was still contestable; and so, the third phase, inaugurated with Pierre Trudeau in the late sixties, removed any qualitative criteria. Culture was traded like any other commodity. Canadianization was industrialized by an efficient system of content quotas and subsidies, but Edwardson doubts this indicates "national cultural vibrancy…or even opportunities for domestic expression" (2008, p. 22): "'National good' is equated with 'public good' when in fact it often entrenches class and economic interests benefitting a minority" (p. 24). Thus, we again see the radio being used to corral the listening public, although, this time, as loyal consumers of nationhood.

2.3. Theorizing an Ethics of Listening Intersubjectively

The preceding examples of listening publics show that the social consequences of organized listening are variable—that it does not always necessarily result in a rich

public sphere. Therefore, if the idea of listening-out historically frames attempts to organize listeners, Lacey argues that it also underlies an ethics of listening. Because listening does not necessarily guarantee a rich public, a great deal rests on the commitment to listen in a particular way: when encountering disagreeable ideas or modes of expression that cause discomfort, listeners have a responsibility to not close their ears.

As a topic of study, shifting emphasis from *self-expression* toward *listening* clarifies the intersubjective constitution of a public. “We normally think about agency in the public sphere as speaking up, or as finding a voice; in other words, to be listened to, rather than to listen…what really goes unsaid is that speech requires a listener” (Lacey, 2013, p. 165). This move toward listening continuously draws what is heard against the ever-changing foci of listeners. It creates tension between content and context—the meaning of *what* is said, when listened to by many different people, is stretched or shaken up by way of a multiplicity of interpretations, formats, and venues. In offering up their silence, listeners become “capable of accommodating a plurality of potentially discordant voices” (Lacey, 2013, p. 176). Lacey writes that listening “inheres in the space *between* individuals…guaranteeing the context within which freedom of expression can operate as communication” (2013, p. 169). This is an idea of listening as an inherently relational activity and the space thus created. It actively produces the space in which listeners respond to each other and interpret together; yet this space is not pre-given. Listeners decide how to place themselves in relation to unfamiliar sounds, ideas, and different ways of telling stories, and to that extent, potentially risk having their worldview changed. Listening-out is therefore an ethical question in that it tests the willingness of listeners to come together, lend each other attention, and be changed in the process. So engaged, it is “the practice of being open to the multiplicity of texts and voices…in relation to difference and how they resonate across time and in different spaces” (Lacey, 2013, p. 198). In an era where digital technologies greatly facilitate the production and circulation of a multiplicity of voices, Lacey claims listening-out is crucial. Yet, as explored in the next section, the burden of listening-out is, by convention, made disposable by modern recording technique.

2.4. Modern Recording Technique, Digital Participation, and the Disposability of Social Context

When industry journals describe what they call the "revolutionary" democratic potential of digital audio technology, it is in terms of there being "more creative choice" (Lebolt in "What is the future of digital recording?", 2007, p. 122) at the disposal of individual audio producers. The mass marketing of digital production devices never places emphasis on meeting any obligation to listen and respond ethically to one's social world. Instead, the current flood of low-cost, easy-to-use production technologies plays on our ambitions to be independent and to find our individual voices. However, when media production is disburdened of listening-out it paradoxically limits our "participation" to being nothing more than the contribution of our individual voices, casting any ethical considerations as merely obstacles to personal freedom of expression.

With mainstream digital production, modern control displaces the burdensome relations that exist within the operations of production practice itself. Digital tools are powerful in that they obviate a particular effort previously needed under the modern recording regime. In a previous era, recording machines were focal things, requiring many different skills and hands working around them (Katz, 2010). They necessarily called on knowledge and material realities that no one person could master. My own experiences as a recording engineer and recording musician confirm this too. For example, audio tape machines effect the skills of electronic and mechanical calibration; audio tape has to be stored on a shelf and at an ideal temperature and humidity; editing it means patiently scrolling through it and splicing it by hand with a razor and adhesive; the dial positions used during a particular mixing session have to be noted on paper to recall them for further touch-up at a future time; cables have to be untangled and coiled in a specific way to avoid damage; mixing console faders need to be periodically opened and cleaned of dust—in short, hardware takes up physical room and requires special care that forces individuals to lend their skills to one another. Digitally-standardized recording defines these things—hardware and dependence on others—as excesses.

In production, there is the chance of becoming curious of the way we can engage and materially affect the social world beyond the studio. The substitution of hardware

with computer code, allowing recording to be practiced almost entirely by way of keyboard, mouse, and computer screen, is of course a miraculous feat. Mixing “in-the-box,” as this is called, liberates us of tedious tasks like recalibrating tape machines that inevitably drift; using the software version of the Ampex 350 tape machine does not include cleaning tape heads and guides, lubricating the motor and idler wheel, re-tensioning the reel movements, and adjusting the electronic alignment of the various circuits. By lowering not only the economic barrier, but the knowledge and skill required, there is a sense that recording has been “democratized.” It seems more people can participate in the public sphere. Yet, something is lost in presuming recording should be, above all, a hassle-free process. Participation has come about by liberating individuals of having to work together to apply the knowledge and skills required to, for example, operate, recalibrate, and repair machines. Yet, lowering previous barriers makes the sociality of media production disposable. How should we assess the kind of participation that has become widespread? What is the character of the public space enabled?

One way to answer this question, I suggest, is to begin with an understanding of digital technology as the acceleration of modern control granted by disposing interfering factors. The aim of modern recording technique is to control sound. Most obviously, as the authoritative guide *Modern Recording Techniques* (Huber & Rustein, 2005) explains, sources of sound inside the studio are acoustically isolated from the environment outdoors. However, while such technical manuals discuss acoustic isolation only in terms of minimizing the transmission of sonic vibrations, the effect is also to keep the *social* world outside. Controlling sound means controlling the social context in which recording happens; historically, the production studio is a space for controlling the social aspects of production. Modern recording technique implements a way of listening that conceptually and spatially separates the studio from the field, acoustic sources from acoustic reflections, signal from machinery, which is to say, content from context, or inside from outside. In the following three examples, we see the development of a disposition that sanitizes mediated listening and its intersubjective space.

Emily Thompson (2002) describes a modern soundscape emerging in the initial decades of the twentieth century with the increasing control of sound by way of applied acoustics. Innovations in sound absorbing material applied to architectural spaces

yielded sound that was “crisp and direct, efficiently stripped of all aspects unnecessary for communication” (Thompson, 2002, p. 227). This rearranged social relations to space through hearing. Whereas acoustic reverberation previously pronounced the social context in which sound moved, reverberation and context were now suppressed as noise. Everyday built spaces sounded more alike as their unique resonant qualities were acoustically absorbed. The non-reverberant spaces of this modern soundscape appeared to be neutral, letting sounds be transmitted within them, without affecting their meanings. Such spaces seemed to have no bearing on the way listening mediated social experience. Yet, this was not the case. They actually produced a consistent listening condition, repeatable in diverse social contexts. Sonically speaking, real spaces became more predictable. Today, the mixing rooms of modern recording studios idealize this consistent listening condition, using absorption to make equivalent the acoustic contexts of social situations that are in fact different from each other.

Jonathan Sterne (2003) explores a disciplined kind of listening he terms *audile technique*, first developed through medicine’s use of the stethoscope, and bureaucratic reliance on telegraph operators. Sounds were codified, that is, they indicated specific symptoms of an ailing body, or events happening across the nation. Listening was thus learned as a rational skill used for instrumental ends, and one that, practiced through hearing as an individual phenomenon, fed modern power relations. For example, describing the use of the stethoscope to yield an objective analysis of the body’s internal movements, Sterne argues this not only distanced the doctor from the patient physically, but socially, offering “a way of constructing knowledge of patients independent of patients’ knowledge of themselves or what they might say about themselves” (2003, p. 122).

In contrast to medical and telegraphic listening, the sounds reproduced through radio, telephone, and phonograph “were now supposed to be transparent, that is, *without a code*, and therefore immediately apparent to any listener who knew the technique” (Sterne, 2003, p. 225). However, early technologies were far from transparent. Sterne’s assessment shows that listeners had to essentially imagine “immediacy,” pretend there was no medium, that is, despite clearly audible distortions

like the static of radio, the truncated frequency range of telephone, or the phonograph needle's own tone. Listeners learned to ignore these as meaningless distraction:

> The sounds of the medium in effect indexed its social and material existence…Wishing away the noise of the machine then suggests wishing away the noise of society. The relations and functions that made possible the moment of sound reproduction were labeled *exterior*, outside the act itself. (Sterne, 2003, p. 259)

Audile technique mentally displaced the sounds that reminded one of the social labour involved in mediation. Ignoring them as noises during playback, listeners could ignore the fact that there was any mediation and thus reify "natural" sound—sound imagined to be uncontaminated socially or technologically. Similarly, employing audile technique today, producers delimit sound as audio signal, abstracted from society, by displacing noises—the artifacts pointing to the social contingency of recording.

Joeri Bruyninckx (2012) shows how audile technique was brought out of the studio to tame wild sound in the field. Through the first half of the 20th century, recording teams sought to capture birdsong in its natural state, for ornithological study. Replacing graphical notation, which relied on the subjective listening and note-taking ability of the ornithologist, mechanical sound recording was considered more accurate because it would apparently "reduce interpretation from the act of recording" (Bruyninckx, 2012, p. 136). However, if the mechanical recorder displaced the noise of interpretation, it also picked up too much information—sounds considered extraneous to object of study, such as weather or traffic. Scientific ideals required birdsong be studied against a background of "sonic sterility" (Bruyninckx, 2012, p. 140), but capturing the sound of the bird alone was difficult amidst the chaotic and unpredictable atmosphere found outdoors, and because wild birds easily flew away by the time the array of heavy recording equipment driven to location had been set up.

Using a parabolic reflector to acoustically focus sound on the microphone served to suppress the surrounding sonic environment. The parabolic microphone's highly directional pickup effectively, "detached the sound [i.e., birdsong] by making it resound 'without perspective' or as though it were 'coming from nowhere'" (Bruyninckx, 2012, p. 140). Accordingly, Bruyninckx explains, "parabolic sound recording seems to position the

listener *in front of* a framed auditory canvas rather than *in* it" (2012, p. 141), the disposition apt for scientific observation. Surrounded by a chaotic world outside the studio, highly directional microphones aided the "'laboratorization' of the field" (2012, p. 141). Today, directional microphone pickup is standard in all kinds of recording, not just birdsong study, allowing audile technique to be implemented outside the specialized site of the studio.

Thus "capturing" sounds was largely achieved by controlling noise through the application of acoustic absorption, disciplined individualized perception, and directional microphone pickup. Modern recording technique figured listening as an individual ability that recording engineers applied *to* the world, as if they were not part of the world; this was listening as rationalistic observation. By extension, collaboration was not supposed to open up a space of interpretation in production work itself; recordists were only to relate to each other through the protocols of professional engineering. Though relations in the recording studio have become increasingly flexible within a pop music economy and the lower cost of technologies (Kealy, 1979; Beer, 2014), flexibility is, under post-Fordism, yet another professional protocol—one through which engineers are expected to "manage emotions" (Watson & Ward, 2013, p. 2908) in the studio to elicit marketable sonic performances under tight production schedules, while still remaining oriented toward efficient production. But what does efficiency mean in this case? Production technologies, spaces, and listening are approached for the ease with which they make sound available to be inscribed as a record. But if we understand that the "sound" inscribed actually refers to sonic relations—that it is the traces of relationships the recordist had *in sound*—then it becomes clear that modern recording techniques are valued for allowing the inscription of sonic vibrations minus the social relations formed while listening to sound. They are valued for keeping recordists apart from any ethical concerns they might feel obliged to respond to while listening to their social world.

This ability—to disburden mediated listening of its social reality and thus control sonic relations—is what has been accelerated with digital technology, under the device paradigm. What producers are afforded by way of modern recording technique is not simply the "technical" ability to record more easily, in some absolute sense. The technical control of sound is proportional to disposability—being able to forget social

responsibility. Though more people, without the special technical training or expensive equipment once needed, are able to express themselves, and therefore have gained a kind of agency, this agency comes with making listening, as an intersubjective spatial practice, unnecessary—collective judgment becomes disposable. It is for this reason that we need to focus on disposability when we talk about democratically opening media production to new possibilities for participation.

Darin Barney reminds us that, in a digital age, participation equips liberal capitalism with the "best security against the possibility of politics" (2010, p. 139). The version of citizen participation that Barney has in mind here is one historically configured through social democracy, which he states, "increased participation without any significant redistribution of economic and political power" (2010, p. 141). He also traces this kind of participation through forms of art, epitomized by Nicholas Bourriaud's relational aesthetics, that, in requiring audience participation, sought to embody a critique of passive consumer culture—but whose ethos has been hijacked as part of new media culture industry. As digital media industries, through their software and devices, "appear to hard-wire participation into the very fabric of our being" (p. 142), and "in the context of a hegemonic political and economic culture that not only accommodates participation but actually embraces, thrives, and insists upon it…" (p. 143), we should pause to ask what it is we are actually participating in. Barney's suggestion is that participation, now generalized, now made easy, loses its political significance. Motivated by individual concern alone, and not requiring deliberation with those who differ from us, participation merely further advances neoliberal capitalism. In fact, participation is "compulsory" (p. 142)—not a decision requiring commitment—because it regulates current hegemonic order, "depoliticizing young people by making good citizens of them…" (p. 145). Refusing to take part such a participatory program directly threatens this hegemony. Thus Barney states, "If we are looking for something to which we might attach our aspirations for a more just society…What we might actually need is politics, not just participation" (p. 143).

In our current media environment, where contributing one's voice by way of digital tools has become ubiquitous and easy, contributions only matter critically if they are responded to. As Lacey writes, "where 'speaking up' is valued regardless of who is

listening or the nature of the listening response…the responsibility for meaning-making lies even more heavily with the listening public" (Lacey, 2013, p. 188). This responsibility—the social ability to respond to ethical concerns—cannot be commodiously procured by the device paradigm. Though it uses technology, responsibility does so to add complexity to mediated relations, not to reduce them. It supports the collective judgment of social meaning, which necessarily happens in the struggles *between* people. A responsibility of media production is practiced by way of collective listening, not merely individual expression. In an environment that makes collective listening disposable, media pedagogy can encourage such responsibility by focusing production on the intersubjective space of listening. Therefore, I now turn to consider how recording as a technology and process can engage listening as a focal practice.

2.5. Listening Praxis & Responsibility

In their discussion of production-oriented youth media education, Hoechsmann & Poyntz (2012) argue for an understanding of production as praxis. Through praxis, those involved give sustained attention to the continual feedback between thinking and doing, intentionally informing one with the other. We might also say praxis concentrates on the mutual dependence of focal things and practices; engaging studio equipment and the recording process as part of praxis, tool use and thoughtful reflection bring one another into focus. It thereby becomes possible to "locate [oneself] in larger social worlds, not simply by acquiring a set of ideas about how the media shapes our lives but in the way [one begins to] make sense of these ideas through creative expressions" (p. 104). When successful, praxis moves media production out of the realm of individual decision-making and expression, spurring a "willingness to judge with others" (p. 199). Debating production decisions and their potential meanings and consequences can yield experiences of media production's intersection with social space, and thus highlight possibilities for intervening. In media education, production becomes part of an enduring engagement with "the world of others" (Hoechsmann & Poyntz, 2012, p. 197), an engagement that "counters a kind of oblivion that can blind us to the possibility that things might be different from how they are" (p. 197). What "kind" of oblivion is it? And

how is it countered? It appears that digital technologies, low-cost and user-friendly, remove previous economic and technical obstacles so that everyone can contribute their expressions. Yet, engaging with others, in the richer sense of participating in each other's worlds, needs to do more than transmit expressions; given Borgmann's critique, and noting the meaning of *oblivion* as "forgetting," we can say that media education praxis needs to counter the oblivion facilitated by the device paradigm by enabling and encouraging response. Rather than teaching media production as a neutral engagement of technology for self-expression, media education uses praxis to respond to the wider social context of production, and to do so as an ethical decision.

This begins when producers, working in the studio, have to imagine who will receive their work. They are "faced with questions about how their representational choices will impact the meaning of their work…the way different audiences read certain aesthetic choices and use texts given their own interests, backgrounds, and needs" (Hoechsmann & Poyntz, 2012, p. 109). Knowing that audiences vary, each one bringing a unique set of concerns and experiences against which they understand a media text, producers learn to tailor their story *to* various imagined audiences by using different storytelling methods. Anchoring the interpretations of a media text are the historically rooted ways of recording, editing, exhibiting, and receiving stories—the details of which are so frequently combined in certain cases that they exert the cultural force of language. These are the media conventions that production and reception mutually draw on to make sense of images and sounds. Producers and audiences thereby come together, indeed *convene*, through the language of media. We should note, here, that this language has a social spatial dimension in that it is articulated through the studios, venues, equipment, and formats in which work is exhibited and through which people respond to one another's ideas and concerns. Production as praxis intervenes in this public dimension of media, the character of which is coordinated by the set of media conventions used.

However, when the device paradigm is not challenged, the studio is most often approached as a collection of devices for efficiently outputting media commodities to an audience who is kept outside both physically, by the studio walls, and discursively, by mystifying technology as the domain of expert engineers. In this case, the studio is not a

space for encouraging producers to negotiate meaning with others—rather than a focal practice, we convene in listening as an exercise free from having to respond to each other's concerns.

The digital paradigm has exacerbated this condition within the production process itself. The studio, as a collection of digital devices, has increasingly been flattened into a series of easy-to-use interfaces, weeding out the skills and trial-and-error that once required a team. In this context, it is difficult to think of the production studio as anything other than a space for procuring a predetermined product as quickly as possible, with as little "interference" presented by the concerns of others. By physically cleansing the studio of cumbersome hardware and by mystifying digital technology, production has become an act of individualized consumption for producers themselves. Though learning to produce media is often thought to foster agency, this is not so obviously the case when using a digital studio, as a collection of user-friendly devices that make "no demands on our skill, strength, or attention" (Borgmann, 1984, p. 42). The social relations of production are made unobtrusive by digital technology, and are thus easily displaced. Media products can be output "instantaneously, ubiquitously, safely, and easily" (Borgmann, 1984, p. 77), without producers having to listen collectively or experience the sociality of production.

As conventions tie production practice with the studio, its equipment, and recordings—as they link technique and technology—they offer a pedagogical opportunity to question media production's relation to the production of social space. Judgment is exercised in those moments when producers draw on conventions—when they select a specific place and time to record, employ certain equipment and in a specific way, and edit together selected portions of various recordings, all with the aim of developing certain themes over others. But when do these momentary judgments amount to a more sustained focal practice? As focal things, studios, equipment, and recordings are important to media education for the multiple *ways of listening* they can enable and share, and more broadly, for the intersubjective space fostered. That is, they are important for the listening publics made possible. Production technologies do not only afford the preparation and outputting of content; recordings not only trace the sound and light frequencies of an environment. They make *perceptions* more tangible, repeatable,

edit-able, show-able, and comparable. They are *tracings* situated in relation to how media producers adapt historical conventions and technologies. When producers realize that there are *various* ways to engage production technologies and conventions, they are in the position of having to decide *how* to use them. They must make not only technical decisions affecting the narrative content, but creative ones affecting the social space in which it is received. It is when the question of *how to tell a story* is explored as an ethical one, with consequences for spaces of public interpretation, that producers work within the stability of conventional forms not simply for economic reasons, but instead "to act in the world, to go out and engage with others…to see things from many sides and this to understand perspectives not yet taken" (Hoechsmann & Poyntz, 2012, p. 199). Praxis thus convenes us in production, not merely as a technical step to output content; instead, production becomes a process of organizing a space in which people are encouraged to respond to one another's ideas and concerns, and in conversation with historical and spatial dimensions of media.

To this end, Barry Truax (2001) describes audio production from a composer's point of view. Whereas recording, by modern convention, is understood as a technical process devoid of interpretation—that is, sound is engineered purely as energy, transduced from an acoustic source into electrical voltage, and back—Truax expands recording by way of a "communicational approach" (2001, p. 11) which studies the ways listeners engage the significances of particular sounds, situated in specific social contexts. Listening to sounds as an environment, or a *soundscape*, includes, "how that environment is understood by those living within it" (2001, p. 11) and, therefore, how listeners use sound to mediate their relations. Listening is important as a perceptual ability, configuring communities and actively informing social space; and yet, it is an ability always tensioned by media conventions, and the political and economic forces that use them, as we saw with examples of the radio public earlier in this chapter. Media production as composition is meant to draw attention to the fact that recording can be more than simply the execution of standardized technical convention. Recording involves making creative decisions with social implications. To the extent media producers can negotiate conventions, they have the opportunity to produce works that encourage a space of interpretation and response.

Of the methods Truax discusses, this is most acutely revealed with soundscape composition, a form that combines, to varying degrees, ecological and social research with electroacoustic music and critical public pedagogy. In soundscape composition, "it is precisely the *environmental context* that is preserved, enhanced, and exploited by the composer. The listener's past experience, associations, and patterns of soundscape perception are called upon by the composer and thereby integrated within the compositional strategy…" (Truax, 2001, p. 237). The soundscape composer decidedly plays with a tension afforded by recording, that between the referencing of environmental sounds and abstracting them. The aim is to use the familiarity of everyday sounds in such a way that unsettles normalized perception, ideally "changing the listener's awareness and attitudes toward the soundscape" (Truax, 2001, p. 237) and motivating action toward desired social or ecological change (see also Westerkamp, 2002). To do so, the composer engages technology to alter audio recordings of sonic environments—both those of the wilderness and the city—estranging them without however obliterating their function as aural references to these environments (see also Truax, 1994; 2000; 2012).

The use of environmental sound recordings as material for soundscape composition is partly explained by the form's historical origins in the ecological activism of the 1970s. Indeed, at that time, the greater Vancouver region was home to both Simon Fraser University, where soundscape composition as a form was being developed, and to budding grassroots environmentalist groups like Greenpeace and S.P.E.C. (Zelko, 2004). However, as Truax (2012) has noted, soundscape composition garners social relevance, not simply by inserting the sonic quality of an environment for aesthetic effect; through internet sites like *freesound.org*, for example, "one can easily obtain and arbitrarily manipulate environmental sounds with no contact or experience whatsoever of the original context" (p. 3). Instead, for soundscape composition, the environment is important for the way it engenders a particular listening process; and for the composer, the process of environmental listening affects the entire production process. Assessing soundscape composition's practical benefit for media education, we should note that "environment" stands-in for the world lived outside the standardized space of the modern recording studio. Though not often discussed in this way, "environment" is a guiding concept for denaturalizing production and mediated listening.

First, by stepping outside of the studio to record, there is greater chance of being confronted with unexpected relations-in-sound. Even if, as noted above, modern field recording techniques have been developed to mitigate the chaotic variables found outdoors, the recordist-composer still loses the level of control exacted in the studio, and thereby inadvertently gathers sounds that they did not plan to record. These unplanned sounds—or "noises" as termed by modern recording convention—end up contextualizing those which recordists intend to pick up with their microphones. As such, these sounds index the contingent social relations normally silenced under controlled studio settings.

Being at the mercy of such unplanned sounds, or "noises," the recordist is in a sense forced into a responsive relationship with their world. Soundscape composer Hildegard Westerkamp (2002) elaborates on this as the "extended knowledge" (p. 55) gained when the composer records their own material: "the listening *experiences* while recording *and* while going about one's life" (p. 53, emphasis in original) inform the composer's working relation to the recordings. For the soundscape composer who works with recordings that they recorded themselves, "the smells, the air, the temperature, the time of day, the atmosphere, the feel of a place, the season, the social situation and, significantly, the changes that occur when a microphone enters a space" (Westerkamp, 2002, p. 55) help them to defetishize the recording's status as, merely, an "acquired object" (p. 55) representing an "entirely fictional place" (p. 55). In other words, Westerkamp's notion of extended knowledge leverages recording technology, not as an array of devices for procuring commodious listening, but so as to engage what Borgmann called "the experience of the world through the manifold sensibility of the body" (1984, p. 42). Elsewhere, Westerkamp affirms, "we must transmit precise information and demystify processes obscured by technology" (2013, p. 149); and, "rather than fooling the listener with our use of technology, let's invite the listener into the place of our creative process and our imagination." (p. 150).

One way to do so, she suggests, is for the composer-recordist to speak while recording, to explain how they are listening or impart their extended knowledge to the imagined listeners of their composition, listeners who will not have access to the contextual details of the environment that the microphone does not pick up (see also McCartney, 2014; Westerkamp, 1994). In so doing, the composer-recordist changes

their own mode of listening as well; as Andra McCartney (2014) explains, Westerkamp's uses of recording equipment induces recordists to reflect on their own interactions with the environment they record—interactions that take place during the act of recording. This includes spontaneous interviews with people who approach to ask what the recording is for, or to offer their understanding of what they hear. Recording and listening feed back into each other, so that at each passing moment, production decisions, such as where to put the microphone, are always in response to what the composer hears, and what they hear is influenced by the production decisions made. McCartney maintains that the recordist becomes "an intensely engaged listener, connected by a phonic umbilicus to the surrounding world" (2014, p. 221), which for some can mean the gaining of a power "to explore public places through sound technology" (p. 220) that is otherwise unavailable to them, suggesting that Westerkamp developed her techniques in tandem with her experiences as a woman and immigrant to Canada. Thus, for soundscape composition, making "environmental" recordings is meant to do more than simply capture the sound of a babbling brook; as part of a media praxis, it invites composers to step outside the control of the studio, demystifying and destabilizing efficient production, and making room for interpretation and response.

Still, while the recordist loses a substantial amount of control outside the studio, there are inevitably many incidental sounds that they will not hear in the moment of recording. Secondly, then, the notion of recording the "environment" also denaturalizes production *inside* the studio, where unexpected sonic relations encountered in the field become apparent and formative when replayed. In the studio, environmental recordings can be listened to again, but under very different technological and social circumstances that support a unique kind of listening. By manipulating such recordings with studio equipment, the recordist-composer is able to enter a "'laboratory' of perception" (Truax, 2001, p. 165) and notice things they could not previously. If technology can fix sound for commodity exchange, this same objectifying power also enables "analytical listening" (Truax, 2001, p. 167), where the exact repetition of a sound and the possibility to manipulate it with audio equipment frees recordists to investigate how "structure shapes and determines the communicative impact of content" (p. 167). In doing so, they can reflect on the process of perception itself—the relation to one's environment through perception, and the way communication media shape this relation. Yet for all the control

exercised in the studio, the aim in soundscape composition is not to use recorded material for "predictable effect" (Truax, 2001, p. 249); technology affords electroacoustic composers an improvised interaction with recorded material: "one is in a sense 'used' by the sound by being open to whatever meaning it may suggest" (p. 249). Again, one puts oneself at the mercy of the unplanned.

Using technology to record "the environment" is thus meant to encourage a mode of listening that is open to external influence and that responds to the context in which it was actually recorded. Recording technology, in this case, is not used as a device, concealing the social relations of the recording process and distancing producers from its ethical implications; nor is technology used to procure a commodious sonic experience of Pristine Nature; or to merely extend composition as an abstract endeavour, creating "music whose elements are organized only in relation to each other" (Truax, 1994, p. 177). Instead, recording becomes a "focal thing" (Borgmann, 1984) used to engage the environment *as* the "'outer complexity' of the real world" (Truax, 2012a, p. 1)—the physical, social, and psychological elements that are usually kept outside musical and sound engineering concerns (Truax, 1994). The process of soundscape composition complicates mediated listening by trying to activate this link to environmental complexity and "the real-world issues of listening and place" (Truax, 2012a, p. 8), and, in so doing, can "bring the listener's existing relationship with everyday spaces into a sharper aural focus" (Truax, 2012a, p. 7). But how does this sharper *aural focus* become a *focal practice*? How can working with audio become part of the on-going production of society's real spaces?

To answer this, we must note the shift in attention from "sound" in the abstract to listening in a socio-historical context, or the "the concrete, lived experience of the ear" (Beard, 2009, p. 18). As noted earlier, the term *soundscape* is not just an objectively measurable sonic environment; it includes the perception of environment through listening. A soundscape includes the unique subjective perspectives and personal memories of each listener in an "acoustic community" (Truax, 2001), as well as the social environment collectively understood and lived by way of listening. Soundscape composition's primary material is, in this sense, listening—listening that is always intersubjective and contextualized socially.

So while soundscape composition uses various environmental sound recordings, recordings are more than just audio files. With our shift to listening, recordings—the artefacts of the process of recording—should be understood as imprinting specific acts of listening. A given recording is an artefact of a recordist's particular process of listening in a specific social space. The way it is made imparts something of the recordist's social position in that context. Where the recordist is able to place their microphone in an environment is always a social location. As artifacts, recordings are "listenings" that can be played back for others (Szendy, 2001), and so they can be used to communicate lived experience. If we note that, etymologically, to compose means to "place together," then, to compose with environmental recordings means to place together various lived experiences encountered through listening. Producing soundscape compositions, as praxis, "listens out" (Lacey, 2013) both in the field and in the studio to focus on the material relations that are composed in making environmental recordings.

Sound recording can thus be used to engage audio production as a public sphere, stepping outside streamlined recording as a highly individual task so as to deliberate with others. To the process of collective reflection, recordings offer tangible artefacts that link subjective perception with the actual physical vibrations reverberating Vancouver's social space. They offer durable focal things around which the intersubjective space of listening can be woven. A composition in this case is not simply a completed work, a self-contained audio file to be played back to an audience outside the studio. Composition takes shape over the course of an audio project's production, becoming the focal practice of placing together varying lived experiences for collective reflection and in response to a specific social question.

In many ways, digital devices make audio work easier because we do not have to work with others. Much of their appeal is that we can each be a single-person production team—but that also means digital devices disburden us of having to listen with others. That we are not required to listen collectively makes the decision to do so an ethical one, and a pedagogy to organize it all the more necessary.

2.6. Conclusion

To problematize the sanitization of the media production studio I have considered a critical listening pedagogy that uses environmental audio recording, electroacoustic compositional tools, media production conventions, and composition as the possible "focal things and practices" (Borgman, 1984) of the production studio to engage the space media producers share. What remains unclear, however, is what actually happens in this space. What challenges does an ethics of listening really face, on the ground? In an era when digital media facilitate single-person productions, how does a soundscape media pedagogy support media production as "Listening out…to the multiplicity of texts and voices" (Lacey, 2013, p. 198)? How can it encourage producers to respond to the unfamiliar sounds of others with a willingness to listen, even at the risk of having their worldview destabilized?

As suggested in this chapter, such an ethics is even more crucial in light of the way conventions of modern recording normally dispose the social context of recording, displacing political questions and ethical considerations, discursively rendering production practice an activity without social consequences. Rather than teaching recording as nothing more than the technical task of operating devices and "engineering" sound, it is possible for the production studio to support a listening public and become hospitable to a wider range of social concerns. The next chapter focuses again on waste to consider how the multiple social meanings and material possibilities encountered can be organized as part of pedagogical praxis.

Chapter 3.

Waste as Hearth: Praxis in the Production Studio

This chapter presents research I undertook as a participant in a youth art project led by Vancouver artists Robyn Jacob and George Rahi. Entitled *Speed Stunned Imaginations*, this collaborative art project took the form of a series of related workshops, held over fourteen weeks throughout spring, and ending with a free public performance event as part of BC Youth Week in early May 2015.

Robyn and George's plan was for workshop participants to consider the theme "transportation" as we worked toward composing a narrative and performing it by way of both Balinese *gamelan* music and the shadow puppetry which traditionally accompanies it. The workshops introduced participants to the technical considerations of production, such as the traditional performance techniques for playing *gamelan* instruments; but also related production as a way of thinking with others about transportation through a social lens. In addition to fostering critical thinking in regards to urban movement, the goal of the project was to convince participants that producing a work of art in collaboration with others can be a relevant and effective way to actualize their critical ideas and commentary.

One of Robyn and George's intentions, inspired in part by Ivan Illich's *Energy and Equity* (1974), was to problematize the idea that streets should above all procure rapid travel. Through a guided brainstorming session, participants began to consider what highly functionalized urban movement means socially, including how transportation routes and vehicles, everyday urban rhythms, and associated imaginaries mediate relations to others and the city. In George's words, the transportation theme would ideally allow workshop participants to explore, "how you navigate the city," so as to think critically about the speed and efficiency of contemporary urban movement, and how

“efficient” movement allows us to, “skirt around physical-social interaction” (personal communication Jan 31, 2015). Following the brainstorm, we drew a preliminary skeletal plot. Robyn and George, as well as guest workshop leaders, also exposed participants to the use of music and shadows in various cultures so as to consider different possible production designs.

Callouts for participation were made through teacher contacts at various schools with a focus on the arts, such as Britannia Secondary and Winston Churchill Secondary. Following the callout, up to fifteen youth expressed interest, though only four people in their late teens eventually took part. Robyn and George therefore called on three friends to fill out the performance ensemble.

Material resources and financial support for the project came primarily from three entities. The project was funded by the Western Front, a local artist-run centre which had previously worked with Robyn and George. The Western Front secured approximately $12,250 through the BC Arts Council’s Youth Engagement Program. The Western Front also provided support by recruiting and coordinating project participants, and publicizing the project through its network. The Purple Thistle, a grassroots youth-run centre, donated free use of its studio space, where participants work shopped ideas and initially composed the music and puppets, meeting once a week during the first six weeks of the project. After this period, the project continued to develop in two studios donated by the Roundhouse Community Centre. Here, the shadow puppetry was recorded by a freelance videographer, paid for by the Western Front (as there were not enough hands to perform both the shadow puppetry and the music live, due to low attendance, it was decided that the puppetry would be pre-recorded and projected during the final public performance), and the music composition was finalized and rehearsed over seven more dates. The Roundhouse also donated use of its main performance hall and support from technical staff for the final performance, which took place on two separate nights in early May 2015.

In studying this youth art project, I used participant observation and interviews to pursue the following objectives. First, I aimed to explore the role Robyn and George played as project leaders, attempting to coordinate or provoke the interactions of

workshop participants during the production process. Second, I wanted to reflect on how the tools and the material artifacts of production could act as focal things for a listening praxis strengthening an "ethics of listening" (Lacey, 2013). Pursuing these objectives began to reveal how the intersubjective space of the studio—a space that has historically curtailed any public sphere in exchange for modern control of production—might open its ears to the uncertain, chaotic, and strange world outside. It revealed how "waste" materials and improvisational practice, used together as focal things and practice, can reinvigorate the social space of the production studio.

While I do not deal specifically with what is normally thought of as media production (discussed in the previous chapter), this project nonetheless involved composition and storytelling, technological devices, listening, and pedagogy. Being slightly outside the field of media, it also thus invites a broadening of my critical questions. Ultimately, while my research was limited to a little over three months and only one project, I was able to provide a number of concrete examples that help nuance my questions regarding media production as praxis, its relation to urban space, and the meaningfulness of the production process itself in a city context where waste is largely made undetectable in everyday experience.

In researching this youth art project, *making-do with whatever is on hand* emerged as a theme, forming a constellation of key terms that included *improvising*, and *working with your hands*. As I will argue, the potential to improvise—to purposefully, even if flexibly, use unexpected constraints as a catalyst in organizing materials toward the creation of new social experiences—is central to both Vancouver's present entrepreneurial urbanism *and* its rich public sphere, facets that are in many ways at odds with each other. While a work of improvisation can appear to be a magical concoction wrought of daring individuality and pure virtuosity, such characterizations individualize agency and obscure how it can intentionally be organized as part of pedagogical praxis that nurtures the public space of the production process in the studio. Within such a praxis, as I go on to show, waste figures as a thing for organizing improvisation, urging a spatial practice that brings together people and places normally kept separate. Waste ruptures the controlled production studio, while providing a concrete material focus refracting different ideas and concerns.

3.1. Do-it-yourself Bicycle Culture

Robyn and George built the musical instruments with which we performed the project. They made them out of discarded bikes, and this is inseparable from their take up of music and how they teach it, as well as their creative practice more generally. In fact, through many of their previous projects, they have engaged what might be called *do-it-yourself bike culture*, designing and welding purpose-built cargo bicycles to be used in public for serving tea, projecting films, and hosting free-style rap sessions; or repurposing bicycle mechanisms as part of musical playgrounds they assembled for the Vancouver Children's Festival (see Publik Secrets, n.d.a). Such a culture shares a particular ethic in regards to urbanized movement and free distribution of technical knowledge about bikes.

As an important part of the context within which *Speed Stunned Imaginations* took place, we must therefore consider do-it-yourself culture and bike culture. For social and environmental activists, the bicycle is a symbol of resistance to the speed and streamlining of modern society geared toward consumer culture. Dave Horton (2006) recounts how since at least the 1970s environmentalist discourse has used the automobile as a stand-in for rationalist exploitation and the dehumanization of urban space—for example, tearing neighbourhoods in half with highways, or alienating drivers from their surroundings by isolating them inside their cars. In this context, the bicycle is seen as, "a vehicle able to negotiate the urban environment without leading to its degradation, suffocation or ceaseless expansion" (Horton, 2006, p. 43). The bicycle, by slowing the pace of life, keeping it to shorter distances, and running on metabolic energy, symbolizes an alternative way of moving through and experiencing the city. This is important critical work in a car-dependent society, as it can disrupt the narrative that holds mass movement by automobile as inevitable and necessary to the progress of a city (Scott, 2010). Michele Krugh (2014) shows that do-it-yourself culture comes out of the politicization of craft, which she traces through a long and varied history that ties together Frank Lloyd Wright and the Bauhaus School of the 1920s, German and Italian Fascism, the postwar American Studio Craft movement, the anti-establishment culture of the sixties, and punk and Riot Grrl actions in the 1980s and 1990s. Beginning with the late nineteenth century Arts and Crafts movement, it was hoped that craft would alleviate

modern alienation by reintegrating the artist with the craftsmen, which industrialization had segregated respectively into thinkers and doers, and thus reinvigorate work with pleasure where it had become uninspired labour producing poor quality goods. The politicization of hand-making sought to bring imagination and fabrication into closer proximity so that they both took place within the same community or individual.

As was evident in one of the interviews I conducted with Robyn and George (personal communication, April 21, 2015), such do-it-yourself bicycle culture inspired the theme and production process taken up in their youth art project. Their own crafting and cycling practices are linked as a way of "questioning what is happening in the world," as Robyn put it. For Robyn, cycling is a critical act "against driving culture" noting it is "an idealistic thing." Cycling depends on subjective personal circumstances—such as energy level, mood for negotiating the road with automobiles, or how fast she can pedal—and so it limits, from the outset, the number of tasks she can be expected to cram into her schedule, inflecting her daily travels with a specific pace: "you're not like, oh I gotta drive out to Surrey and do that thing, and then I have to rush over to pick up that thing…I just find the life style's so different that it really informs your sense of the city, how you move around." George elaborated on this, speaking of a "nuanced understanding of the space of the city" he believes cycling gives him, as a result of being able to "more readily meander and make decisions that allow for different opportunities." As compared with other modes of transportation, cycling lends itself to improvising the routes taken because, for example, a bicycle is less restricted to particular infrastructure like roads or rails and is more spatially dexterous in changing course suddenly and fitting through narrower passages. Riding a bike also stimulates sensual connection to the changing geography through which one rides, rather than isolating one's senses in the cabin of an automobile.

At the level of community, this pace and improvisatory character amounts to what George described as "a collection of people that have taken their means of transportation into their own hands, and have made that a core organizing principle as well." Though one might more readily associate cycling with feet, George referred to *taking matters into one's hands* not simply because he was suggesting the *manual* labour involved in repairing and maintaining a bicycle; the reference to working by hand

should be understood within the discourse that politicizes craft, revaluing it as self-transformative leisure and "unalienated labour, in opposition to mass production" (Krugh, 2014, p. 282). Indeed, how George understands cycling as an "organizing principle" is suggested by his comment that each "rider is an engine and they're also a passenger when they're on a bike, so they're powering their own experience" (personal communication, April 21, 2015). In a society in which more automated vehicles have radically separated the person being transported from the means of propulsion so as to procure transportation commodiously, pedaling and bicycle maintenance act as focal things through which a community congregates and propels itself.

3.2. The Virtue of Improvising in the Entrepreneurial City

Yet, the improvisatory ethos that combines autonomous creation, self-improvement, self-expression, and pleasure, exemplified by do-it-yourself (Dawkins, 2011; Jakob, 2013; Krugh, 2014) and urban cycling (Horton, 2006), has in many ways been domesticated, been given a productive role in Vancouver's neoliberal economy. Sixties counterculture narratives of "self-realization in the present" (Blinkley, 2004, 78) through which individuals "learned to release themselves into the moment…to undo the harsh repression of work discipline, remote supervision, and social protocol" (p. 72), helped the baby boomer generation "make sense of the demise of old Fordist forms" (p. 73). Even if these practices have not become commonplace, they are linked to key developments in the present economy. In fact, the city makes a concerted effort to bolster such an ethos because it attracts the aspiring "creative" workforce that in part powers Vancouver as a global city.

Cycling is not so clearly marginalized or oppositional in Vancouver, in other words. Since the late 1990s, City Councils have steadily increased support for cycling infrastructure, with, for example, a ten-year plan approved in 2010 spending $25 million to upgrade and expand routes, outfit them with sensors for monitoring usage, install bike parking and crossing signals at major roads, and running educational programs to improve safety (City of Vancouver, 2010a; 2010b). Metro Vancouver currently maintains over 1600 kilometres of bikeway (TransLink, 2011). Enshrined in the *Greenest City Action Plan*, cycling has become part of a multifaceted strategy allowing Vancouver to

compete in the global market: “As our international neighbours grow more innovative, our prosperity relies on our ability to attract and retain creative people…that energize our economy” (City of Vancouver, 2009, p. 29)—with green alternatives like cycling being the creative worker’s transportation of choice. The Plan’s update reaffirms that “the Green Transportation Plan positions Vancouver as a place where the world wants to live, work, and do business” (City of Vancouver, 2012, p. 33). For the same reason, investing in Vancouver’s “bikability” is stressed in *The Vancouver Economic Action Strategy* (Vancouver Economic Commission, 2011), written by a commission chaired by the city’s current Mayor Robertson. As Melody Hoffmann (2015) explains, institutionalizing cycling as a way to secure a creative workforce “has little to do with progressive bicycle politics such as increased mobility for all people regardless of class position” (Hoffmann, 2015, p. 142). It may in fact be a contributing factor to the very gentrifying processes that have produced a housing crisis across the city (see also, Golub, 2015). Thus, while the bicycle is an object supporting an alternative way of living in urban space, it also serves the cooptation of such an alternative.

The City of Vancouver supports do-it-yourself activities because they multiply efforts to cast this region as an “entrepreneurial city” (Hall, 2002; Hubbard & Hall, 1998). Through do-it-yourself, citizens learn to become self-taught and self-managed creative producers. Such initiative not only produces specific knowledge needed for creative production, but also propagates the virtues required of the creative risk-taking culture and flexible workforce helping to secure Vancouver as a global hub. Having co-sponsored a study, donating $15,000 to better understand and promote the local “sharing economy” (Diplock, et al., 2013; CBC News, 2013; Donaldson, 2013), the local government has become keenly sensitive to the way do-it-yourself culture efficiently circulates these knowledges and virtues by sharing tools and repurposing more and more spaces, no matter how eclectic. In Vancouver, performance venues, rehearsal studios, communally-run gardens, woodworking shops, media production suites, kitchens, digital fabrication labs, and the like, make up clusters of real spaces in which people can bounce ideas off each other in person to generate what Saskia Sassen describes as complex “kinds of knowledge, both formal and informal, that go beyond the sum of recognized knowledge actors” (Sassen, 2009, p. 59) required of advanced service-based economies. In two of Vancouver’s recent cultural plans, countless small

self-run cultural spaces were highlighted as under-supported yet highly valuable for the way they bring people together who are willing to experiment and create, volunteer mutual peer support and inspiration, and share access to tools and exhibition venues; no matter how small each individual space may be, in aggregate, they nurture a "community climate that…creates a fertile ground for inspiring innovation on a broader economic and social scale" (City of Vancouver, 2008, p. 5), and "attracting international tourism and inward investment, as well as making the city the sort of place that skilled workers in demand for the new economy want to live" (Artscape Inc., 2008, p. 17). As do-it-yourself culture happens across a highly varied array of spaces, Vancouver's *Cultural Facilities Priorities Plan* emphasized the need for local government to aid, not only big budget institutions, but especially the multitude of smaller venues most vulnerable to redevelopment and a complex license approval process, stressing that lifting these roadblocks by "harmonizing zoning, building code and licensing and permitting in respect of arts and culture" (Artscape Inc., 2008, p. 73), would unleash the ability of the plethora of small venues to do-it-themselves. To this end, the City passed, for example, the *Arts and Culture Indoor Event Pilot Program* (Johnston & Newirth, 2013), permitting crowds of up to 250 people to gather in buildings otherwise not approved for assembly occupancy, and requested input from the community to track all small venues with its *Cultural Spaces Map* (City of Vancouver, n.d.).

In short, though doing-it-yourself and cycling are historically entwined with the empowerment of critical social and environmental movements, in another sense, the City's present interest in assuming a role as enabler of this flexible, self-driven culture indicates the ambivalence of such a mode. It is the case today that learning to craft by improvising with whatever is on hand is not necessarily a critical act; the skills and sensibilities to use unexpected constraints to imagine and create new possibilities is, rather, a mode of production open to serving opposing intentions, whether politicizing or commodifying urban relations. In a study of Vancouver and Montreal, David Ley (2003) has historicized a gentrifying process that, in fact, feeds on the ability of artists to creatively repurpose undervalued objects and neighborhoods, stimulating a "surfeit of meaning" (p. 2535) that can be marketed:

> The aesthetic disposition of the artist that rejects commercialisation, values the commonplace and redemptively transforms junk to art may be,

> indeed *is*, converted into economic capital by varied actors who may include artists themselves, other residents or the development industry. (p. 2540)

As this improvisatory practice fosters flexible, risk-seeking individuals that can serve entrepreneurialism, do-it-yourself culture is amenable to being harnessed as nothing more than citizen-led economic generation advancing Vancouver's global competitiveness—indeed not only amenable to it, but forcibly pressured into being so.

3.3. Improvising a Common World

This pressure must be considered in reviewing *Speed Stunned Imaginations*. Our final performance was part of *Sonic Playground*, an event that brought together do-it-yourself sound makers described as follows:

> Hands on! Ears wide open! Re-imagine spatulas, pop cans, and other everyday objects and how they make music and sound. Sound artists, musicians and children from lower mainland schools invite visitors of all ages to experience music in new ways. (Western Front, n.d.)

The event was scheduled as part of Youth Week, a festival aiming to "encourage youth to take an *active role* in their education, recreation, and personal development" (BC Youth Week, 2013, p. 3, emphasis added). While the intentions of the event and festival are commendable, both repeatedly invoking youth agency as an ultimate goal, neither of them makes clear what this agency is for and what it makes possible. What is the meaning of the "positive contributions" and "valuable work" that Youth Week celebrates?

There may be various possible reasons for the absence of elaboration, but it leaves us with the problem of clarifying how participants in art projects undertaken as educational workshops may learn to connect, as Janna Graham (2010) puts it, "*the production of critical knowledge* with the *production of critical consequences*" (p. 127). Pedagogies for *political autonomy*, as Graham calls them, aspire to help connect such knowledge and consequences. In my own terms, this connection is the enabling and encouraging of response to the media producers' social situations. Graham sets such pedagogies in contrast to those serving *artistic autonomy*. She explains this latter term

with reference to Pierre Bourdieu's theory of an artistic sphere, a social space discursively conditioned to operate with virtuous "disinterest"—that is, magically setting artists apart from the burdens facing wage-labourers and mundane institutions. Graham goes on to critique the merging of education and art for *artistic autonomy*. Pedagogies that:

> deny social consequences in the spaces semiotised as art must be understood as a key factor in art and creativity becoming … important instruments of state (and corporate) governance of subjectivity. The 'creative' person—if dissociated from their micro and macropolitical circumstances of production, in favour of an idealized, or aesthetically separate, condition—is much less likely to acknowledge the conflicts of these circumstances, let alone mobilise to resist or struggle against the sites in which conflicts are experienced. (2010, p. 127)

Instead of the creative ability to improvise being learned as a way of enacting virtuous disinterest, how did *Speed Stunned Imaginations* potentially nurture the connection between imagination and fabrication, thinking and doing, or inside and outside of the studio, *as* the critical connection of knowledge and consequences?

Another way to situate this question is to return to the argument presented thus far, which brings us to the following tension: many of the same skills and sensibilities of improvisation that are practiced in serving entrepreneurialism are also necessary for the creation of an inclusive public life. Building a common world depends on "society's willingness to welcome others and foster public life without the easy prejudice afforded by laws, customs or tradition" (Poyntz 2013, p. 867). A democratic public can only emerge, in other words, when a diversity of concerns are included in public deliberation—concerns from different social worlds, and which cannot be known in advance because they arise through the process of deliberation itself. Poyntz (2013) goes on to suggest how media discourses, school curricula, and government policies aimed at ensuring youth become good citizens do so, too often, by painting strangers as "difficult and dangerous others" (p. 865) who represent forms of unpredictability and uncertainty best excluded from our lives; yet, as he argues, when this happens, the opportunity strangers offer to enrich public life is also diminished:

> Stranger hospitality invites serendipity into one's world, the promise of surprise that reminds us that things need not be as they seem. Strangers

> pull us out of a state of being into a state of becoming because new people and new situations bring different parts of our selves into view (p. 868)

Without convening people who are unfamiliar to one another, without gathering different ideas and ways of relating them, there is less chance for public discussion to provide encounters that destabilize and thus open up our own worldview, provoking new thought and the curiosity to test alternative possibilities. If, as Poyntz argues, "strangers are a necessary, significant and enabling feature of modern democracies" (2013, p. 865), how exactly are we to convene in the uncertainty present between strangers? If the public space of the production studio is to be encouraged, this is an especially important question to answer, given media production's historically inherited disposition that strives for *certainty* throughout its processes (as presented in the previous chapter).

There is a sense throughout Poyntz's argument that public practice benefits from, if it doesn't require, participants' potential to improvise. After all, if the destabilizing ideas and experiences strangers bring are important to public life it is because we can't always be entirely ready for them or be sure how the "unknownness of others" (Poyntz, 2013, p. 867) will challenge us. Furthermore, if we resort to predetermined forms of encounter it is "the easy prejudice afforded by laws…" (p. 867), that tends to hold sway. Simply stated, surprise cannot be forced—what we refer to as "surprise" is not the replicable result of a clearly defined formula specifying certain isolated stimuli in a controlled context. Of course, if encounters between strangers are to benefit public discussion, they need to be part of a longer committed practice, rather than remaining fleeting instances of surprise that leave us feeling merely dumbfounded. To have lasting effect, ephemeral moments of surprise must be spun together and woven into the texture of public life, while still promoting the specificity of each strange encounter, vital to its power to destabilize our hardened preconceptions. If the production studio is to become hospitable to a wide range of concerns, weaving them into a durable texture without homogenizing their diversity, this requires a careful type of cultivation. It is clearly important to learn how to meet such a diversity of concerns with *flexibility* in the face of the uncertainty of process, *sensitivity* in the face of the chaos of one's environment, and *curiosity* in the face of our unfamiliarity with the stranger—that is, it is important to learn how to improvise. This is especially true in the production studio, wherein techniques

seeking to control production displace unpredictable processes by disposing outsiders, aging technological devices, and the chaos of the environment outside.

Crucially, improvising a common world in this way needs a particular approach to the things of production—including the "raw" materials, the tools, the room of the studio, our hands, eyes, and ears, and the resulting artifacts at each moment. In the entrepreneurial city, where adventurous do-it-yourselfers are under pressure to sell their flexibility, practices that improvise to produce hospitable public spaces through media production must move beyond what Lefebvre (1991) calls, “the realm of ‘pure’ abstraction…the realm of representations” (p. 129). Pedagogy must use improvisation in such a way that the social relations of media production “project themselves into space, becoming inscribed there, and in the process producing that space itself” (Lefebvre, 1991, p. 129). Taking up improvisation as part of a critical praxis must emphasize the things of production as focal things inextricable from practice. If improvised action uses *whatever is on hand* as focal things, these are the things that orient production, and gather the meaningfulness of the production process itself. Borgmann (1984) seems to be describing *whatever is on hand* when he summarizes focal things as:

> …concrete, tangible, and deep, admitting no functional equivalents; they have a tradition, structure, and rhythm of their own. They are unprocurable and finally beyond our control. They engage us in the fullness of our capacities (p. 219)

In producing *Speed Stunned Imaginations*, waste acted as a focal thing organizing and urging improvisation, a spatial practice bringing together people and places normally kept apart.

3.3.1. Repurposing Discarded Bicycles

The music for our project was performed on a set of instruments that George and Robyn built out of salvaged materials, scavenged out of economic necessity, but embraced as a creative constraint. In collaboration with other musicians, they took apart discarded bicycles and recombined them into an orchestra for performing traditional Indonesian-style music, known as *gamelan* (Figures 3.1, 3.2, and 3.3).

Figure 3.1 Part of the *gamelan* orchestra built from discarded bicycles: *gangsa*.
Note: This is one pair of *gansa*—the Indonesian name for these metallophones struck by wooden hammers. Here, Robyn and George are demonstrating *kotekan*, a compositional feature whereby two performers play interlocking patterns on two *gangsa*, the sum of which is heard as one melodic line. Photo by author, 2015.

Figure 3.2 Detail of the *gansa*.
Note: Notice that bicycle frame tubes, cut to different lengths, act as the bars which are struck to create the sound; and they are suspended using bicycle brake cable housing fastened to bicycle forks. Photo by author, 2015.

Figure 3.3 Part of the *gamelan* orchestra built from discarded bicycles: *ceng-ceng*.

Note: This is a *ceng-ceng*, the Indonesian name for these cymbals played by clapping them down onto those mounted on the board. Notice that bicycle chainrings serve as the cymbals. Photo by author, 2015.

Repurposing discarded bikes not only widened the selection of timbres at their disposal as composers; in addition to stimulating new aesthetic or representational possibilities, reconfiguring discarded bikes into an orchestra also connected the musical activity back out to the social context from which the bikes came. As their website notes, their take on *gamelan* tradition "found its musical inspiration from Bali, Indonesia and its raw materials from the scrap metal bins of Vancouver. Members of the ensemble collected over 100 discarded bicycle frames to build their instruments, tuned to the musical scale known as 'pelog'" (Publik Secrets, n.d.b). As this quote suggests, though pursuing a rather varied set of interests, Robyn and George managed to fit them together, identifying themselves as formally trained *gamelan* musicians, as participants in Vancouver's do-it-yourself cycling community, and as artists who craft things out of found waste materials. As an artifact, the bike *gamelan* is a combination of these factors. Using articles of waste—discarded bikes—wove together people, places, practices, and materials that normally remain in different worlds.

Robyn and George have had formal training in the conventions of Balinese *gamelan*. They have performed in the orchestra *Gamelan Gita Asmara* under the direction of UBC ethnomusicologist, Michael Tenzer, who is also the custodian of UBC's traditional *gamelan* set. Translating *gamelan* outside of the university institution required some ingenuity on Robyn and George's part since traditional *gamelan* sets are very expensive. This is not only because of the cost of the primary materials, and the aural and manual skill required during crafting, but because *gamelan* instruments cannot be individually purchased; they must be obtained as a set because each instrument is tuned to the others in the set—not an external reference pitch, as is common in Western music—and, given that the majority of the set is comprised of metal percussion instruments, this is done at the time of fabrication, after which retuning is not a simple matter. Therefore, in making a *gamelan* set out of discarded bicycles, Robyn and George bypassed the capital cost needed to obtain a complete professionally crafted set.

However, more than just an effort to cope with their material conditions, however, Robyn and George were also drawing on the materials, knowledge, and collaborators around them to create a particular kind of social world. Local community bike repair centres they frequented or worked at—Pedal Depot (now closed), Our Community Bikes, the UBC Bike Kitchen, and Kickstand (which George co-founded)—put them in continual contact with discarded bikes and people interested in helping. They also found many discarded bikes at the Gropp's Gallery Collective's space, a garage turned workshop, where they shared tools with other sculptors, welders, costume makers, and the like (Figure 3.4).

Figure 3.4 Robyn turning discarded bicycle frames into the bars of a *gangsa*.
Note: Once cut roughly to size, the bars were tuned by sanding or bending the bars to raise and lower the pitch. This took place in a garage turned into a collective workshop space, provided by the Gropps Gallery Collective. Photo by George Rahi, 2012.

It is an interest in waste that catalyzed the construction of the bike *gamelan*. Repurposing discarded bikes entailed seeing the bicycles as more than mere commodity, imagining what else they could become other than their stated technological function. Bicycles, like other machines, are said to "work" in relation to what a given social group perceives their purpose to be (Bijker, 1995). Technological devices "work properly" or, alternatively, are dysfunctional not simply because of a success or failure of materials, but because of a success or failure of materials to meet specific expectations within a particular social-historical context. That Robyn and George were able to come across so many discarded bikes—bikes that didn't "work" anymore—is very specific to a city like Vancouver, where cycling has become mainstream (as discussed earlier). With stricter expectation placed on bicycles to easily and safely transport Vancouverites around the city every day, there is a surplus of discards—bikes are more frequently

refurbished or replaced altogether by new purchases, so that what George called “bike graveyards” (personal communication, August 25, 2015) are common sights in community workshops like Kickstand and the Gropp’s Gallery. The bicycles that found their way to such graveyards may have failed to “work” for certain populations who required a device for efficient daily cycling. Though in Vancouver’s specific setting, these bikes were devalued with respect to this strict use, as waste, they became available for potential repurposing. They could be approached for the multiple uses they actually offered. As discarded bikes, they were in flux between stable identities—and their respective spaces—as spare parts in a community bike shop, as scrap metal fit for the smelter, or as material for imaginative repurposing in the hands of artists. The wasted bikes lay in between states of stable being, and for this reason piqued Robyn and George’s curiosity to find alternative uses for them.

Working with waste recalled a history of changes in bike design, innovations that foregrounded cycling’s value as efficient transportation. By striking and listening to these bike frames, they encountered this history quite materially. While building the bike *gamelan* instrument, Robyn and George discovered that older frames sound better (personal communication, August 31, 2015). As George explained, aerospace industry innovations had made certain new alloys and welding processes available to other industries by the 1970s. New bikes tend to be made of these materials, which are harder than the steel used in older frames. The strength of new alloys allows a reduction in mass and, thus, a lighter bike frame: the gauge used in newer frames, because of the strength of the alloy, can be tapered so that it is thinner in the center of each tube, and thicker only at each end, where needed for joints. While new bike frames are prized for being lightweight, enabling a swifter ride, George said they do not sound as good as older steel frames; older frames, having a gauge which is heavier and straight (i.e., not tapered), ring out for a longer time and resonate a richer set of harmonics, both of which are desirable qualities for the *gamelan* instruments they were building. Notably, because the taper is on the inside surface of the tube, not visible from the outside, it was only through repeated listenings that George began to tune in to the sound of older bike frames and the history he was sounding out. Old heavy bikes piling up in repair shops happened to be ideal *gamelan* material. Freeing up the storages of shops, which were always tight on space, fulfilled the project’s material needs. Listening to waste materials

drove this symbiotic relationship, and in turn, embedded the instrument makers in their social historical context.

Fashioning a *gamelan* orchestra out of discarded bikes actually assembled different materials, people, places, practices, knowledges, and ideas that otherwise do not normally come together because they belong to different social worlds—such as UBC's Balinese *gamelan* society and Vancouver's community bike repair centres. This became clear to me in a photograph of the bike frame tubes, having just been cut and tuned, and laid on a table and labeled according to their Balinese names (Figure 3.5).

Figure 3.5 Bike frame tubes, cut and tuned.
Note: Using the tools and space at the Gropps Gallery garage workshop, bicycle frames were cut and tuned to the *pelog* scale. With felt marker on masking tape, each bar in the photo is labeled according to its corresponding note using Balinese naming convention: ning, nong, neng, nung, and nang. Photo by George Rahi, 2012.

Pictured is an artifact that brought together scrap metal frames from bike graveyards, a workbench in a shared garage, and Balinese music theory; it is an instrument that was produced by formal music training with a university professor, by the surplus of devalued bicycles in Vancouver, and by a craft artist garage-workshop. Waste acted as a focal thing, as parts were collected from various bike graveyards, as they were cut and tuned

to the *pelog* scale, and as different instruments were proposed, tried out, and re-adjusted (Figure 3.6, 3.7, and 3.8). As a focal thing, the heap of bike waste co-involved different people, excited to test out its various sonic possibilities, to feel the vibrations of the grinder in hand and see sparks fly (Figure 3.4), or to lay parts out on the floor and move them into the innumerable ways they could be attached together. In committing themselves to working with waste, Robyn and George were forced to improvise to bring these elements together as instruments, elements that did not customarily fit together.

Figure 3.6 **An earlier version of the *gangsa*.**
Note: This configuration of tubes was to be played by four performers. The tubes pictured here were later rearranged into a formation like those in Figure 3.1, above. Photo by George Rahi, 2012.

Figure 3.7 A much earlier version of the gangsa: construction.
Note: This one was tuned to *pelog*, but, unlike subsequent versions like those in Figures 3.1 and 3.6 above, this configuration of tubes bore no resemblance to a conventional *gangsa*. Photo by George Rahi, 2012.

Figure 3.8 A much earlier version of the gangsa: in use.
Note: Same instrument pictured in Figure 3.7. Public interaction taking place at Trout Lake Park. Photo by George Rahi, 2013.

While the orchestra was in this sense itself an unusual assembly of elements, it was also a durable artifact that, in turn, gathered people and places normally kept separate. Building it out of discarded bikes made possible a *gamelan* experience that is difficult to realize with a precious traditional set. Traditional sets require strict safeguarding—physically and spiritually—as they are customarily associated with Hindu ceremonies. Though Robyn and George show deep respect for the tradition, their *gamelan* is significantly less precious, being made of discarded bikes, allowing them, for example, to perform in less predictable spaces like on a public street (Figure 3.9), or to let children play the *gamelan* unsupervised (Figure 3.10).

Figure 3.9 A crowd gathered around the bike *gamelan*, performed in the middle of East 6th Avenue, off Main Street, Vancouver, during a bicycle-themed street party.

Note: This event took place in front of the Gropps Gallery. Photo by George Rahi, 2013.

Figure 3.10 A child playing the bike *gamelan* at the Vancouver Children's Fest.
Note: Photo by George Rahi, 2014.

Robyn noted the bike *gamelan* also allows them to feel like they can experiment with unconventional performance techniques or compositional ideas; she said that although being a music composer and having played *gamelan* for many years, she never composed for *gamelan* until she did so for the bike *gamelan* (personal communication, May 31, 2015). Whereas traditional custom safeguards a certain relation between instrument and practice, engaging the *gamelan* through waste bikes unlocked a different spatial practice. By persistently working with waste, Robyn and George committed themselves to responding to whatever was on hand, and the complex and unpredictable array of influences this brought.

3.3.2. Listening Out Through *Kotekan*

This does not mean, however, that Robyn and George completely abandoned tradition. One of the unique aspects of *gamelan* is its intricate coordination of performers, and the kind of listening necessary to do so. Robyn had each participant sit behind a *gangsa*, the Indonesian name for the specific instrument we were learning to play. Its row of horizontally suspended metal bars, in this case, were tubes cut out of bicycle frames (Figures 3.1 and 3.2). After very briefly explaining the *gamelan* tradition, and that the *gangsa* before us were refashioned bicycle parts, Robyn showed us how to play them. She had us join her in repeating a simple sequence of eight notes on our own instrument. We did this for four minutes to grasp the notes as a unified melodic line, and then she divided the sequence into two interlocking parts, so that half of us played the first, third, fifth, and seventh notes in the sequence, and the other half played those in between. This is a recurring compositional feature in *gamelan* music, called *kotekan*; two performers play interlocking patterns on two *gangsa* (as show in Figure 3.1), the sum of which is heard as one melodic line. McGraw (2008) calls it a "complex division of musical labour" (p. 138) allowing the orchestra to play melodies at speeds faster than any single player can perform alone. To do so, the orchestra must achieve a disciplined coordination of hands and ears. However, *kotekan* is not merely a means of playing melodies quickly. George referred to *kotekan* as "partner patterns," appreciating that the use of such patterns actually writes "the group rather than the individual" into the *gamelan* experience (personal communication, March 11, 2015). Significantly, *kotekan* is inextricable from the instruments, the hands, eyes and ears of performers, from teaching and rehearsing together, and the texture collectively woven through performance. It cannot be separated from the particular group dynamic needed in order to engage *gamelan* in its social richness.

Similar to other metallophones, one plays the *gangsa* by striking its metal bars of various lengths with a wooden hammer to resound a pitch. Uniquely, however, convention requires performers who are playing an interlocking pattern to manually dampen each bar they strike, and to do so at the exact moments their partner plays a subsequent note on their own instrument, so that the notes resounding on partnered *gangsa* do not overlap. In other words, between two *gangsa* that are playing one

interlocked pattern, there is only ever one note resounding. This requires a distinct coordinated movement of each individual performer (Figure 3.11), whereby their dominant hand, as it strikes each bar with the mallet, is continuously followed by their non-dominant hand, which touches the last bar struck, thereby muting it.

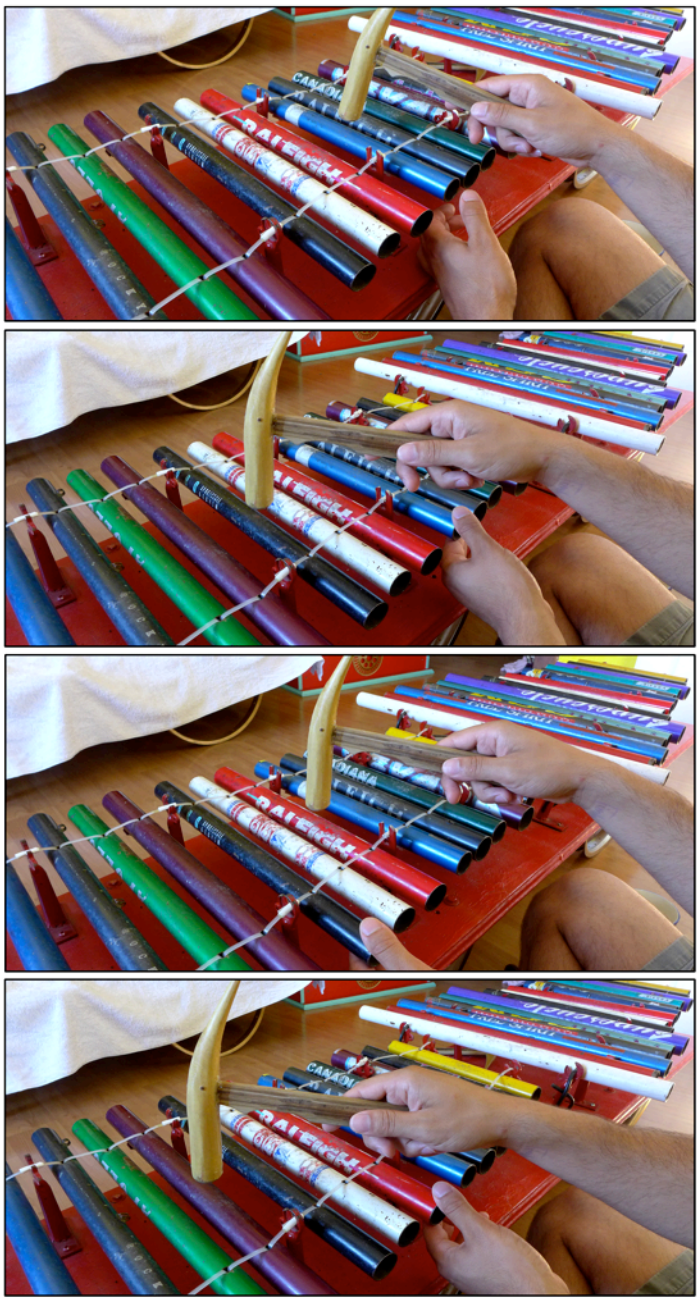


Figure 3.11 Sequence illustrating the coordinated movement required of an individual *gangsa* player, so as to mute each note played.

Note: In each frame, from top to bottom, notice the left hand mutes the note struck by the hammer in the previous frame. Photo by author, 2015.

This technique is important for producing clarity, sharpening the interlocking rhythm of each part. If the bars are not dampened, their pitches ring out for several seconds, overlapping subsequent notes and muddying up the overall pitch contour intended to be heard. If it is important, however, it is also not an easy technique to learn, as I discovered. It is in fact much like patting one's head and rubbing one's belly at the same time. And if it was not easy to learn, neither is it clear how Robyn could impart this technique other than by having us do it, again and again.

Robyn barely used words, choosing instead to play the eight-note pattern, having us follow, and correcting us bit by bit. She pushed us into performing, with little preparation beforehand. At one point, as Robyn counted us in to begin playing the pattern, I tried requesting further explanation of my part. As she counted, "One, Two…" I interjected, "I'm having trouble with the…" to which Robyn nonchalantly countered "…you'll get it, Three, Four." She seemed adamant in having us attempt playing, again and again, rather than preparing us by explaining with words what we needed to do. As we repeated the sequence, she moved in front of each participant's instrument, sitting opposite so that she faced them. Using her own hammer, she joined them in striking their metal bars (Figure 3.12).

Figure 3.12 Robyn teaching a pattern by performing on the same instrument as students.

Note: While the student attempted to play the pattern correctly, Robyn joined in, striking the same metal bars at the same time as the student. Photo by author, 2015.

I was making some mistakes when she joined me at my instrument. I found it difficult to concentrate on *both* the present note I was supposed play, and the note I had just played and was meant to dampen. It seemed almost impossible to mentally direct one hand to act in the present, and the other delayed by a fraction. At first, when Robyn began striking my instrument's bars with me, it confused me, and I made even more mistakes. I found it frustrating. That's not helping, I thought. But, as Robyn persisted; not stopping to let me recover from stumbling, I was forced to keep up. In stumbling, and being frustrated, I was confused enough to stop trying to control my hands with my thoughts, and, momentarily, succeeded in doing the technique properly. I later noted to the others how my calculated thinking seemed to get in the way of feeling the music. In hindsight, my difficulty arose in preoccupying myself with mentally controlling my hands, that is, by attempting to separate my thinking brain from what my hands were doing, so as to instruct where my left and right hands were to be at each and every moment. This kind of self-control tried to disembody my hands, treat them as devices for striking the correct notes. It also meant I was listening narrowly to myself instead of listening to the group and how I interlocked with it. Success came, unexpectedly, when self-control failed and I thus let myself fall into doing what Robyn was pushing me to do.

What I experienced by failing to control my hands in this manner was the feeling of my own actions being in tension with the group. At the moment when I was suddenly able to do it, I had the sensation of, not controlling myself, so much as riding the energy of the group. I was playing, not simply by moving my hands in isolation from the rest of my body, but as a consequence of listening to the other parts that interlocked with mine. Though I was crafting each note in the time and space between my hands, my hands almost moved by themselves when listening to the collectively produced melody. However, I quickly made mistakes when, mesmerized, I relaxed too much and *only* listened, forgetting to move my hands at all. The kind of listening needed, in other words, was a listening that stretched or extended beyond myself, but intensely. In this sense, being able to play *kotekan* depended on listening in tension with the group, a peculiar kind of "listening-out" (Lacey, 2013). We used group listening as an integral part of soundmaking—my competence as a performer was inextricably tied to hearing my part in relation to everyone else's. I listened through the group.

While other forms of group music I have participated in require performers to listen to each other, they rarely include the requirement that one must intertwine one's performance with the other players by listening with such intensity. Using *kotekan*, the composition, in its chronological entirety, is segmented at a *note-by-note* level, and distributed among the different individual performers. It therefore only comes together to have the intended complete effect through the collective performance. Furthermore, *kotekan* writes the group into rehearsal as well. Because any pattern, absent its interlocking partner, is continuously full of gaps, performers achieve only little by rehearsing alone, not being able to hear the entire piece. There is in other words a direct correspondence between being able to listen to the sum of interlocking "partner patterns" and performing one's designated half of a *kotekan*. Notably, as George suggested, this is also sustained by engaging *gamelan* as an oral tradition:

> …if we wanted to, to make this whole process easier and simpler, we could notate music, you could…read off the sheet music and we'll spend a lot less time together, rehearsing, cause we won't need to show each other [the parts] over and over again…but it wouldn't be the same *feeling* of the group perseverance or the group effort, and so in that way, it seems like there's these maybe inefficient ways—inefficient from one perspective, but they are also like providing an important social environment, or context. (personal communication, March 11, 2015)

Furthermore, according to Balinese tradition, *gangsa* are purposely detuned to each other when the instruments are first built so that each pair of instruments, played together, creates a psychoacoustic phenomenon referred to as *beats*, a kind of pulsating or shimmering acoustic effect. Robyn and George followed this convention when they tuned the bike frames used as the *gangsa* we were playing (for technical details, see Paelinck & Vitale, 2006). Specific *gangsa* are, in other words, built to be played together; without their purposely built partner instrument, there can be no shimmering texture. The kind of listening we learned to use in *kotekan*—listening beyond oneself intensely—therefore encompassed individual performers, instrument construction, the striking-and-dampening playing technique, and repetitive group rehearsal.

Learning to play *kotekan* on discarded bikes offered a particular meaning. While the bike gamelan appears to be a whimsical invention, it can sustain a rigorous practice. We made "real" gamelan music, music that is valued as an authentic engagement with

the tradition. Waste here was not simply the frivolous component of a shocking novelty act. It sustained the actual engagement with a challenging collective listening process. Despite a dominant culture of disposability, we were learning to organize ourselves by making use of what was supposed to be discarded, distanced, and forgotten.

3.3.3. Collecting Differing Impressions

In leading the workshops through which we produced the final work, the story told by way of shadow puppetry and gamelan, Robyn and George avoided having us finalize a script before creating the parts. We did not script the story in minute detail, specifying what the completed work would look and sound like, in advance of making the puppets and composing the music. In place of such a script, we spent the first three weeks building up a store of experiences through several exercises that opened us up to influence from each other and the world outside the studio. Robyn and George expected that some of the observations that participants made during these exercises would "work their way into the final work" as content (personal communication, February 28, 2015). However, rather than figuring out the plot of the story on paper, and how various components would fit together, such as how each puppet would look, move, and sound in relation to other puppets, a kind of group rhythm was fostered instead, from which content was produced almost as a by-product. In this sense, emphasis was placed on learning to work together to respond to what came our way, whereas finalizing a script too soon would have precluded this.

As an icebreaker the first day, we sat in a circle and took turns speaking. Each of us made a statement that revealed to the group something about ourselves, while taking our cue from the previous statement made. Going around the circle several times, always in the same order, each statement was recorded on a small piece of paper that was then affixed to the wall, creating a long strip of related but different statements. The result was a narrative that was continuous from one piece of paper to the next, and meandering overall. While this initial result could certainly have been revised to have a more conventional dramatic plot, with an introduction, a climax, and a resolution, what it demonstrated to us was a way of storytelling that is initiated by finding connections between the fragments of our rather different personal biographies.

We also went on a thirty-minute group soundwalk to sensitize our listening in preparation for an exercise on the *gangsa* that required improvisation on our part. Immersing ourselves in the heavily trafficked environment outside the studio, we kept quiet as we traversed and listened to a variety of significant transportational routes, coming across images and events that were related to our theme. These included the Clark-Knight Corridor, a busy freeway and truck route connecting the Port of Vancouver to Richmond and the U.S. border; the Adanac bike path, which includes a large volume of cyclists from Downtown Vancouver to Burnaby to the east; Prior Street, successfully opposed by local citizens from becoming a freeway in the 1970s, yet forced to support increased traffic access to the Georgia Viaducts and downtown ever since; the train tracks, coupling the Ballantyne Pier cruise ship docks to the region, and conducting grain and container cars from the port to the False Creek Flats, an area filled in mid-century to recover space for the four rail yards in operation today; and, Malkin Avenue, the original shore of False Creek, today lined with the warehouses of fruit and produce wholesalers whose trucks manoeuver in and out without pause. Though we did not immediately reflect on the way these routes intersect each other spatially and historically, the soundwalk brought us out of the studio and into the visceral textures and rhythms of the surrounding traffic routes to listen in dedicated silence. Though done as a group, it produced a variety of personal feelings and reflections, which we discussed immediately afterward; we recognized that the same soundscape was perceived differently. While one participant said that the roar and rattle of the semi-trucks felt too close for comfort, another enjoyed the moment of delay between the light turning green and the engines accelerating; while one heard numerous kinds of motors, and wondered where the individual cars were traveling to, another heard it as a mass wash of sound, like a river. The soundwalk impressed upon us a common palette of differing perceptions of the world from which we would later draw when deciding how to represent traffic with music during the shadow play.

Robyn had us try what she explicitly referred to as an “improv” exercise on the *gangsa*, in contrast to the coordinated discipline required for *kotekan*. First she gave everyone a few minutes to come up with a short musical fragment, a simple sequence of notes. She then asked us how many different ways we could play our musical fragments, drawing attention to the possibility of performing the same sequence of notes

in a variety of ways, each of which altered the feel of the melody significantly; we noticed we could perform our fragments loudly and softly, quickly and slowly, the internal rhythm could vary, we could play the same notes on a different octave. Next she asked us to emulate “a soundscape or sound environment.” She told participants to play their fragment in such a way that it sounded like the soundscape of Clark and Venables. Everyone played their fragment at once, and the layered melodies, and the way they were being played, added up to a cacophony at times, though dynamically interesting too, being varied in tempo and volume. Robyn asked what our motivations were. One person said she was trying to make her part sound dangerous like a truck by playing low notes assertively, intercut randomly with high notes to sound like truck parts squeaking and rattling as it rode over bumps in the road. Another said she was playing slowly then suddenly increasing in speed to sound like traffic accelerating after the stoplight turned green.

The spirit of such exercises was to encourage us to be receptive to the many different phenomena and thoughts we encountered, collecting them together even if they were seemingly unrelated. They were, of course, related in that they were collected by the same group of participants, those of us concerned with the production process. In being impressions, what was collected at this point was rather ephemeral; still, the exercises left impressions on us in relation to concrete things in the world, providing a common ground we could point at and discuss.

For example, one evening we were trying to figure out how to perform the musical parts for one of the scenes in the shadow play. The projected scene displayed different lanes of traffic (Figure 3.13), and it was decided that each performer would take their cue from the vehicles that drove down the lane assigned to them.

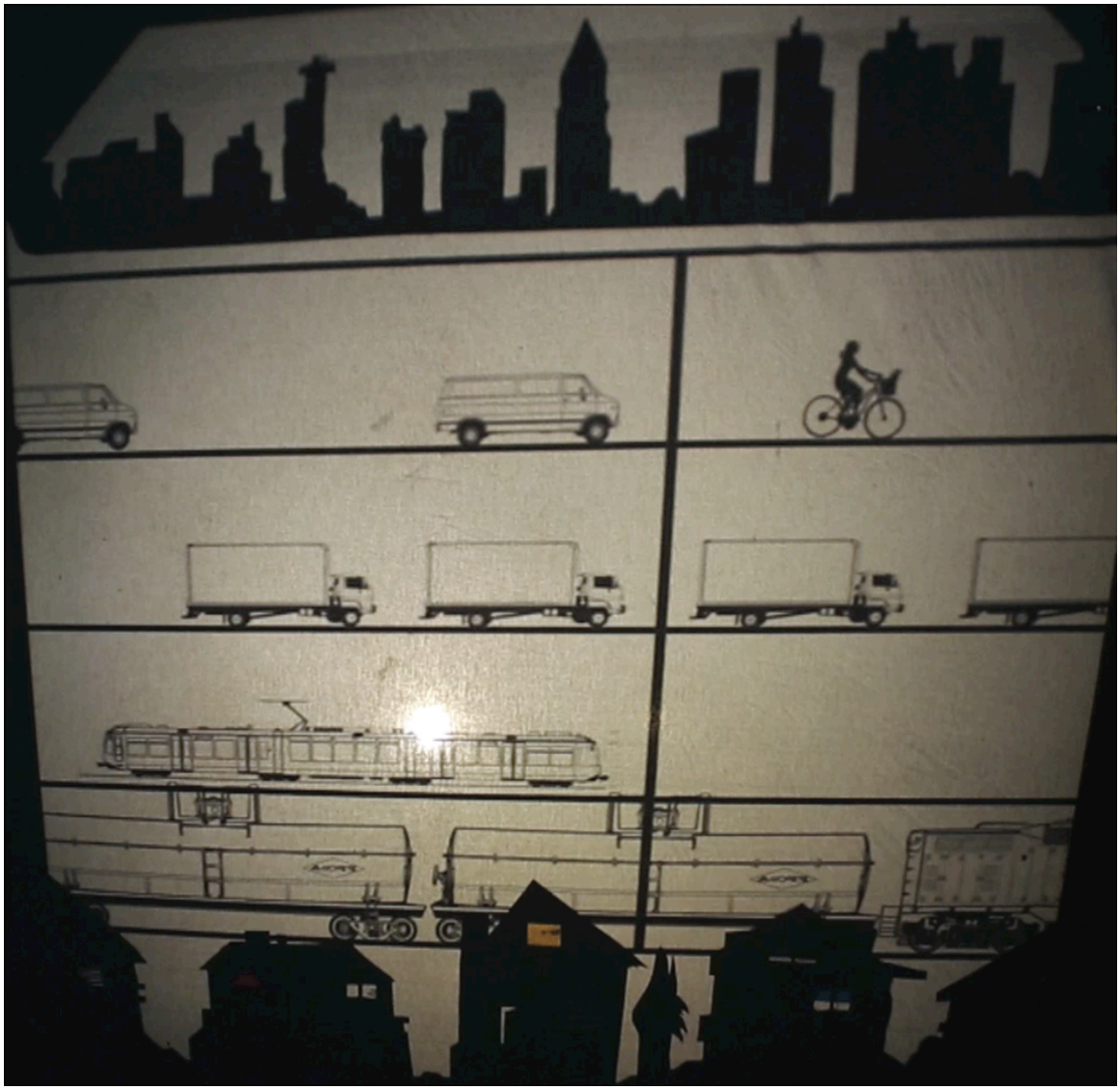


Figure 3.13 Traffic lanes scene from *Speed Stunned Imaginations* shadow puppet component.

Note: Vehicles, as they travelled left to right down each lane of traffic, functioned as performance cues, but exactly what these cues indicated was debatable. Photo by author, 2015.

The question was raised as to how we were to interpret duration. One person suggested performers simply play their part whenever there was traffic in their lane. This meant that if a performer saw traffic, they would play their instrument, regardless of where the vehicle was in the lane. Others worried that such an interpretation would not provide enough nuance; they insisted that the spaces between the vehicles needed to be observed. Another person proposed using the houses on the bottom edge of the frame

to decide when to play. Adding to this, someone else made the analogy, “What if we pretend we’re all in this house?” pointing to the one in the middle of the projected frame, “pretend we’re listening to the traffic go by.” The proposal was for various musical parts to be played with more intensity as traffic neared that house; once a performer’s vehicle passed the house, they would play softer and softer until it disappeared off screen. However, another person thought this would sound like we were “over-thinking it.” Yet another exclaimed, “It works! Anything works, as long as you acknowledge the space.” Even though the group ultimately decided not to agree on a clear set of rules for interpreting this particular scene, the soundwalk and the improv game clearly provided the discussion with a recent and grounded common experience of listening to traffic rhythms in the area.

Importantly, we did not have a finalized script to settle such questions of how to proceed. There was no unified vision in advance of figuring it out as a group. Absent this, we used our memories of the noisy trafficked environment outside the studio as a foundation for working together. We had collected differing impressions first, and then forced ourselves to bring them together. The soundwalk perhaps helped us collaborate even when we did not agree; we learned during the soundwalk that the same urban soundscape is perceived differently—one group walk brought together multiple valid perceptions of the same real world. In turn, not agreeing often seemed to be, itself, a valid way of collaborating while composing. In fact, in the case of performing the traffic scene, the sum of our differing interpretation methods probably resulted in a sonic texture that was more variegated and suggestive of “traffic” than if we had been in perfect coordination. We can think of composition here, not as writing a script which is then followed, but as the process of collecting material and “placing together” different perceptions of them; or as George put it “putting things close together and seeing what types of interactions become possible” (personal communication, April 21, 2015).

3.4. Conclusion

While Robyn and George’s project never claimed to share media education's broad aims—such as empowering participants by critically analyzing media institutions, technologies, texts, and practices (Hoechsmann & Poyntz, 2011)—it nonetheless

allowed me to consider how waste, as part of praxis, can open up the production studio to a range of outside influences which have, historically, been excluded for the sake of efficient production. I considered pedagogical opportunities not solely as mental and verbal activities; I have tried to understand analysis, discussion, and interpretation as spatial practices. The activities studied—instrument construction, performance that depends on group listening, and the process of placing together differing impressions of the world—were partly organized through waste. Improvising with waste offered the project physical, mental, and social space for thinking through bodies, places, and material things that are usually absent from production experience. It opened up an intersubjective space for potential collective judgment that would normally be disposed. Waste provided both focus and disruption; things normally discarded necessitated improvisation to weave them together, focusing the project's endeavour, while at the same time disrupting the sanitization of the studio and the production process with external contingencies.

As reviewed in this chapter, improvising with waste, or making-do with whatever is on hand, is linked to a set of skills and sensibilities that can serve both entrepreneurialism and inclusive public life. The City of Vancouver fosters flexible, self-driven activities and spaces as part of a broader neoliberal project, and left at that, improvisation is most likely taken up discursively as virtuous detachment, and waste is merely a shocking feature, an avant-garde aesthetic that bewilders and nothing more. The fact that artists and other creative people, intentionally or not, often help advance gentrification by recycling junk into art and "wastelands" into interesting neighbourhoods then marketable (Ley, 2003) indicates, among other things, that improvising with waste has social consequences, whether artists take responsibility or not. Creating something out of discarded objects can pleasantly surprise us; finding value where there seemed to be none tantalizes the fantasy of alchemy, of making something out of nothing. Improvising with waste can having shocking results.

However, though it is important for enticing curiosity, media education's use of waste must do more than shock us with fleeting instances of surprise. To have lasting effect, pedagogy must use waste as part of a longer committed practice to draw us out of our controlled spaces and into a common world. Whereas waste management

sanitizes our experience of the city, a central task of praxis-based pedagogy that uses waste should be to aid creative pursuits to explore the critical knowledge gained in working with waste in connection with the consequences for physical, mental, and social space. This means linking critical knowledge and consequences (Graham, 2010) and becoming hospitable to the uncertainty strangers bring (Poyntz, 2013), processes which are not quick and efficient. We must engage waste in a way that widens our understanding of the world, linking our personal concerns and curiosities with those of others. Using waste, we can listen out to encounter those people, things, ideas, and histories that are regularly excluded, displaced, and forgotten in striving to keep intact the cohesive social space of the livable world-class city. We should follow the opportunities presented by waste to take such detours, unusual routes which might disturb our usual frame of reference. A significant part of the previous sentence is "*might* disturb"; the detours we can take through waste do not always lead to rich sites of learning. They can also lead to dead ends, uninteresting places (and often do). Developing meaningful encounters through waste requires patience and longer periods of time, ingredients that are scarce in our society.

A particular constraint we encountered made this apparent. Robyn and George told me that the biggest challenge for the project was low and inconsistent attendance, an odd predicament given the fact that a great number of people expressed interest during the call for participation. George noted that, of course, some people could have changed their minds, realizing the project was not what they first imagined. Others obviously had job schedules that conflicted with the project's timeline. However, Robyn and George also spoke of poor attendance as probably being a result of the expectations placed on young people to fill their schedules only with productive activities that have clear outcomes for their futures, such as gaining skills for employment or social networking. Because *Speed Stunned Imaginations* was a project without such obvious incentives for participating, it could easily be considered an inefficient use of time—indeed, a *waste* of time and energy. Robyn imagined that some participants were therefore, perhaps expectedly, "budgeting their capabilities…they figure they can only spend so much mental energy on this project [i.e., *Speed Stunned Imaginations*]" (personal communication, March 11, 2015). George lamented that there is not much "unstructured time" (personal communication, March 11, 2015) in education. Robyn

quipped “they don’t get enough time to do nothing and hang out” (personal communication, April 21, 2015). While poor attendance hindered the project, it is interesting that Robyn and George were, through these comments, connecting the problem back to the broader culture of speed and productivity; the project was clearly suffering from the very problems it set out to explore. Robyn even noted that, had the project taken place outside Vancouver, perhaps on one of the coastal islands, the “mental space” of participants, as she called it, would have affected the project very differently:

> I mean here [in Vancouver] we have kids who are working their butts off and they’re working their butts off ‘cause they need the money too. The drive is put on them, it’s not just their decision. One kid is working construction cause he needs to work, and the other I think is graduating a year early—that’s pretty extreme, you know, you’re going to finish school a year early…that must be a lot of work! It seems like it’s mostly self-driven, but it comes from somewhere. (personal communication, March 11, 2015)

And where *does* it “come from”? Having been tripped up by poor attendance, the project fell upon situated personal experiences of Vancouver’s social context. As I interviewed Robyn and George, the discussion about the project as a waste of time and energy evoked the shared conditions within which participation took place. These personal connections to the city could have grounded an exploration of the otherwise abstract social processes producing Vancouver. Yet, we did not recognize the opportunity to fold these personal experiences into the project.

Perhaps this was due to the limits of exploring the issue within the project’s timeline. In fact, Robyn admitted to “having a freak out” when the project seemed to progress too slowly to meet the deadline (personal communication, April 21, 2015). Still, even this “freak out” expressed a personal avenue for exploring the grand social process making Vancouver. Robyn’s feeling of frustration—which arose from the possibility of not producing an art work by the deadline—expressed the project’s contingency as it existed in Vancouver; her anxiety came out *in relation to* the obligation she had to the funder, the Western Front, which, like any artist-run centre in Vancouver, is financially bound and therefore reasonably expects a work to be produced in return. Once presented with these problems—Vancouver-specific problems—could there have been a way to use

them to pursue the broader problems of speed culture and the entrepreneurial city? Probably, but it would require a longer duration of engagement.

If developing meaningful encounters through waste requires longer periods of time, a media education project requires durable things around which to convene. Already, we have seen that the set of bike *gamelan* instruments provides such durability for practice, as evidenced by the many different projects that have used it as a focus for production. In terms of media production, this most obviously translates to tangible recordings forming a durable archive. How could archives of discards be resounded through collective performance?

Chapter 4. Conclusion

Composing with Waste

This thesis has used waste—a rich conceptual, physical, and social thing—to consider two dynamics of media production, which were examined through the notions of disposability and responsibility. Media production can both encourage a responsibility toward others and the city and, conversely, reinforce their disposability. The thesis explored mediated listening to understand how the studio's social space is sanitized. Countering this, it also explored possible alternatives that gather media producers in response to one another and the city outside the studio. Through a study of noise control, it was proposed that individual freedom is spatially managed, perceived, embodied, and upheld via the ethos of disposability. The thesis investigated the way e-waste management and media production techniques converge with disposability in the pursuit of convenient and sanitary experience; how the studio as a socially meaningful space of collective listening and judgment is made disposable by the routine practices of modern recording; and how pedagogical intervention might engage waste to listen out to encourage a more complex and responsive relation to media production and the urban space of the global city. Learning to listen-out today—under conditions of disposability—requires that we question Vancouver's livability and digital immateriality, which sanitize public space in the service of a highly individualized notion of freedom. We might ask, for whom is this city livable? For whom is its technology immaterial? To the exclusion of whom, and to what end?

The art project researched in the third chapter demonstrated how waste holds potential for countering the sanitization of the production studio. Waste was engaged by using discarded bicycles to build an instrument; by using the instrument to then sustain a challenging collective listening process; and by listening to the noisy environment outside the studio to form a compilation of differing perceptions of the same world.

Through waste, a basis for working together was coordinated. People, things, places, and concerns that would normally be considered extraneous to the process, unnecessary and therefore obstructing efficient production, were instead used to introduce complexity. It initialized the possibility of responding to social worlds from which the studio is customarily kept separate.

Participants began composing *with* waste. They used the material, symbolic, and social registers of waste to place together—indeed compose—various perceptions of the world, various people, places, and sets of knowledge. Composing with waste becomes more critical when it places us together with the people, things, histories, and ideas that are regularly excluded, displaced, and forgotten in producing the social space of the livable world-class city. What might be called a waste-composition praxis (until a better name is devised) would sound out this composition to help perceive alternative social meanings that complicate and disrupt the dominant narratives of livability and immateriality.

Such a goal is surely too much to expect from one media project. While a single project might provide moments of coherence, briefly gathering our questions and inquiry skills for collective contemplation, they rarely last long enough for more complex interactions to take place. How could one otherwise brief project become the more durable focal practice necessary to shore up the ability to respond ethically?

The answer I proposed at the end of the third chapter was to build an archive of recordings. To the extent that moments of listening are stored on audio media, recordings seem to lend themselves to their own archiving. In conjunction with other strategies, archiving can prolong and complicate the accomplishments of a short-term media education project. Indeed, it is not coincidental that soundscape composition grew out of the making of the World Soundscape Project (WSP) archive, as Truax has noted (1996). As a way of proposing the potential continuation of my research beyond this thesis, I would like to briefly consider it in relation to the WSP archive.

4.1. The Media Archive as a Noisy Collection

If media education is to use archiving to grapple with the problems I have presented in this thesis, the archive needs to be listened to in a particular way. It must do so to bring us into contact with people, things, ideas, and concerns normally disposed by media practices, such as archiving. Toward this end, those engaged in praxis would use the mental and physical aspects of listening to the archive to challenge their understandings of media and how they influence Vancouver's social production. Recalling production as praxis (Hoechsmann & Poyntz, 2012), this would entail making sense of mediated relations to the city by creatively engaging the archive as a medium—not simply amassed content—and for the purpose of encountering worlds otherwise disposed.

Doing so would require disrupting the conception of the archive as a collection of recordings that "transparently" represent the world. It would require disrupting the attendant mode of listening. Sound reproduction companies have long promoted such listening, making use of what Jonathan Sterne (2003) has called the discourse of fidelity, in order to market records, player pianos, microphones, and speakers (Seaver, 2011; Sterne, 2003; Suisman, 2009; Thompson, 2002; Truax, 2001). Science too adopted recording machines to "faithfully" reproduce sounds as they existed in the world, before their mediation by such devices; fidelity was assured by their mechanisms which apparently removed the reliance on embodied skill and human interpretation (Bruyninckx, 2012), factors which would presumably distort the veracity of recorded material or diminish their capacity to document the real world. In other words, fidelity is premised on the notion of transparency. In the industry's view, the sound-reproducing apparatus ideally acts as a "vanishing mediator" (Sterne, 2003, p. 285). Any indication of the production process involved is, ideally, concealed and silenced so that there is no difference between the original acoustic event and its reproduction (see also Doane, 1985). Sounds of distant pasts or distant places are thus transmitted "immediately" to the present listening context. Meanwhile, listening feels like an activity free of material requirements and social interdependence. To the degree that the medium vanishes, there is little chance of questioning our relations through it.

The archive, as a preservationist project, seems at first to simply serve the discourse of fidelity. We could say that an audio archive, accordingly, collects recordings toward an ever more "complete" and transparent representation of the world. This perception of an "unmediated reality" works against a central pedagogical aim of soundscape studies—understanding the social relations between people, media technologies and conventions, and environments. In what way has the WSP archive in fact served this pedagogical aim, and not simply further concealed the mediation at work in the archive? It begins with the creative use of the archive as a medium.

The WSP was a way of responding to the social-environmental production of everyday life. The archive was initially a project to document sonic environments (Vancouver's as well as some in Europe and across Canada), and to use these recordings to "promote increased public awareness of environmental sound through listening and critical thinking" (Truax, 1996, p. 54). However, its guiding philosophy turned away from that of pure transparent preservation, toward creative compositional engagement (Marontate, Robertson, Clarkson, in press; Truax, 1996). The archive has served as recorded material for the creation of numerous soundscape compositions. This shift asserted that listening is a mediated act, and composing placed importance on creatively engaging the process of technological mediation. As discussed in chapter two, the compositional theories of Truax and Westerkamp propose that recording and listening through technology are formative parts of how we perceive sonic environments and live everyday life. Composing with the environmental recordings held in the WSP archive is an activity that acknowledges and further complicates this relation to Vancouver's environment.

While, in one sense, an archive may strive for completeness, it also presents further problems, which serve to reveal its process of mediation. The WSP archive hosts an aggregate of artefacts that are not reconcilable into a static silent unity. The contents of the audio recordings do this most obviously in that they offer rather different tracings of the same city. This is a geographical difference—different places in Vancouver were recorded; but it is also a difference due to the longer temporal span of the archive—many of the *same* places were recorded three times, once in the 1970s, in the 1990s, and again in 2010, allowing a longitudinal comparison of their changing soundscapes

(Marontate, Robertson, Clarkson, in press). In addition to this difference in environmental sonic content, the collection expresses varying idiosyncratic production techniques, the specific issues of interest of contributing recordists, and their incidentally recorded comments relating their thoughts—all of which potentially help us to listen to the recordings as situated "listenings" (Szendy, 2008). Not only do we hear changes to Vancouver's environment; the recordings "reflect changing methods and values of their creators…[and are] manifestations of the complex interplay of human and non-human networks marked by political, economic, environmental, material and social conditions" (Marontate, Robertson, Clarkson, in press, p. 530). These differing components of the archive are incongruent, working against the ultimate completion of a noiseless collection transparently representing Vancouver. Instead of a static silent unity, this noisy unity multiplies the possible experiences of mediated environmental listening.

Furthermore, the archive resonates an assortment of devices and technical formats used in field recording and in playback. This aspect—the variation in functional machinery supporting the project—has yielded not only noticeably different aesthetic qualities during the playback of recordings; it has also resulted in an accumulation of different playback devices and recording media. For the transparent archive, this assortment poses problems in the form of discrepancies between formats, or the deterioration of machines. These problems can be taken up to further the pedagogical endeavour of soundscape studies. Indeed, I would argue it is not only possible to do so, but, as stressful as it would be, it would be integral to activating the potential of a waste-composition praxis to sound out alternative social meanings of livability and immateriality.

4.2. Unraveling the Media Archive

The Sonic Research Studio at SFU houses the WSP archive. It also provides composers with the hardware and technical support staff for listening to the archived material. Currently, the studio has a wide variety of hardware machines spanning different decades, media formats, and functionalities. Indeed, the WSP collection, as a *media* archive, implies not only sound, as if it were already present, but the specific equipment and servicing staff needed to actuate the sound recordings. Using the WSP

archive is heavily dependent on staving off the continuous threat of machines breaking down or becoming obsolete.

In an interview conducted by Dr. Jan Marontate, Truax referred to the archiving of audio as a "nightmare" (Truax, 2012b); having been the main caretaker of the collection during its first forty years, he has seen many industry changes and knows full well that "you have to have the machines, or you have to migrate" to newer technical formats. The archived recordings exist on quarter-inch audiotape, digital audio tape, and on a computer hard drive, having been recorded on a Nagra tape recorder by Peter Huse, Bruce Davis, and Howard Broomfield in the 1970s; on a Sony DAT recorder by Bob MacNevin in the 1990s; and on a Marantz compact flash recorder by Vincent Andrisani in 2010 and 2011. In the interview, Truax (2012b) recalled the "panic about the longevity of analogue tapes" around the start of the 1990s, due to the organic instability of the binding agent in their manufacture. The WSP tapes were thus migrated to Betamax videotapes, encoding them digitally by using a Sony PCM-F1 as an analogue-to-digital processor. However, Truax continued, the setup was cumbersome and Beta tapes were difficult to cue. So a student, Brian Garbet, was hired to dub them again to Digital Audio Tape (DAT), a format which had become recently available. Explaining why they did not choose the more obvious route of migrating the archive to hard drive, Truax recalled, "you couldn't get hours and hours, like 200 hours [of computer hard drive capacity]...digitization that we just take for granted now, and large disc space, that's definitely in the 2000s" (2012b). Another student, Nathan Clarkson, has recently re-digitized the entire collection, so that it now sits on a hard drive connected to the internet, making it easily accessible outside the Sonic Research Studio. While it is undoubtedly a major accomplishment, Truax nervously joked that this latest migration will not be the last: "we're buying twenty years" (2012b).

While the logistics of archiving media can be a "nightmare," in talking about the difficulties, Truax was also actually demonstrating a wealth of information normally *absent* from the common experience of the WSP archive. In grieving about these difficulties, he portrayed the archive as a complex social process, historically situated, and involving tenuous relations between people, machines, and formats. The difficulties mentioned also suggest many opportunities for relating an alternative experience of the

medium. Disruptions brought on by industry changes and material decay posed technical problems, to be sure. However, technical problems unravel media relations normally hidden by modern recording technique. They reveal the technological mediation accomplished by the machines and the support staff. Inherently part of technological mediation, they provide moments that, although frustrating—or rather, because they are frustrating—break the unquestioned "static" background infrastructure that supports mediated listening. Problems can be cracked open to study the social historical process of archiving, a process that *includes* troubleshooting, repairing, and recalibrating machines, or dealing with their obsolescence. This is possible, both, while actually troubleshooting and, as the interview with Truax shows, in retelling the attempts to troubleshoot. While the general response to technical problems is to resolve them as quickly as possible so that production can resume, they also afford unique moments for reflection and involve us in technological mediation as a longer process.

Furthermore, technical problems also spill outwards in space. For example, it may be that, when the take up reel on a tape machine fails to collect audiotape properly, the source of the problem can be located inside the machine as a dried out rubber idler wheel that has cracked. Yet, where this takes us does not end there. The unravelling of media relations can bring us across different spaces that are not regularly encountered as part of the condition of mediated listening.

For instance, we can link the Sonic Research Studio to another space in the same building, a space no less important for making the archive amenable to listening. This is a room that stores surplus media gear from SFU's School of Communication, equipment that is broken, obsolesced, or otherwise obstructing smooth production processes. Similar to the bike graveyards that Robyn and George drew on to build their *gamelan* instrument, this is a space that holds devalued machines and peripherals until they are either put back into action elsewhere in the school (likely toward some less demanding application), gleaned for parts to repair other machines, or sent off to e-waste recycling. This surplus equipment room is central to the materialization of the Sonic Research Studio, to the way it is perceived and lived. The WSP archive has sustained a prolonged engagement with Vancouver's soundscape through audio media technologies housed in the Sonic Research Studio—and as it continues to do so, it

requires on-going care, which in turn produces other spaces such as this surplus equipment room.

Even this room, however, is not a final destination. As Jennifer Gabrys (2011) suggests, the perceived immateriality of electronics (as discussed in chapter 1), and attendant practices, depends on "modes of materialization that render infrastructures imperceptible or ephemeral" (p. 58), modes that make use of "dispersed material infrastructures" (p. 58). A surplus gear room is one of many places quietly holding together the sense of immateriality, momentarily holding discards together in one physical location, allowing us to study what the increasing rate of obsolescence has otherwise made difficult to perceive. There are people, stories, and knowledges associated with, for example, the tape machines and computers that are moved into the surplus room, held there, and eventually moved out. The surplus room offers a spatial substance and historical rhythm normally absent from the Sonic Research Studio. Following electronic discards when they are removed from the surplus room, where else do they lead? Whom else are they connected to? Which other stories and ideas would be crossed? A waste-composition praxis would bring us across these dispersed people and places, producing compositions by placing them together, in conversation with each other, and with those normally associated with media production.

4.3. Steps Toward Composing with E-waste

Taking up residence in a place like the surplus gear room, a waste-composition praxis could create an archive paralleling the WSP's, encouraging crosstalk between the two. It could, for instance, pursue a particular oral history of media technologies in Vancouver. It could even include the repair and repurposing of discarded electronics, to use them as tools for recording. Soundscape composition would become a situated endeavour through its tools, yielding an experience and an account of "immaterial" technology and the "livable" city that would be very different from the ones enshrined in the *Greenest City 2020 Action Plan* and the *Vancouver Economic Action Strategy*.

There are at least three obstacles to undertaking such a project, each of which, however, presents an opportunity. The first is quite general: the taboo character of the

subject. Smoothing over the consequences of mass consumption is “the systemic social avoidance of waste” (de Coverly, McDonagh, O'Malley, & Patterson, 2008, p. 298), upheld through our socialization toward garbage, its concealment in trash bins, and the efficient work of garbage collectors. E-waste is even more taboo; this is because media technologies, as Miller & Maxwell explain (2013), are consistently “endowed with a unique symbolic potency, based on volume, verisimilitude and velocity” (p. 118):

> Right now, the mere mention of the political-economic arrangements that make i-Things possible, or the environmental consequences of their appearance and disappearance, is…an unwelcome buzz kill—not a cool way to converse about cool stuff. (p. 120)

Of course, part of the purpose of a waste-composition praxis would be to, in fact, challenge this taboo. Still, while it might mean killing the buzz—the enchanted fervor with which technological devices are met—it does not have to mean killing all possible pleasure. Those involved in the project should take care to work from a place of personal significance and curiosity. One’s ideas of what is “cool” about media technology might even shift. Still, this praxis would continuously face a resistance to talking openly about waste, let alone touching it and working with it, stemming from guilt about consumption and concern for safety.

Another obstacle arises from the drag this praxis would put on the Sonic Research Studio and the normal teaching of audio production. Waste-composition praxis would create a conflict, detracting from the efficiency that is customarily expected of modern studios (an expectation discussed in chapter two). The more deeply the project were to engage the quagmire of issues brought up around waste, the less coherent the production process would be. Reacting to this, waste-composition praxis might be isolated as its own project, distinct from the modern studio, so as to not hinder it. However, such isolation diminishes the possibility of composing, bringing together fields normally kept separate. While some separation may be necessary for the traditional concerns of efficient production, the relevance of waste-composition is sown in relation to regular studio practice—in bridging different spaces, “cross contaminating” the modern studio with people and concerns that would otherwise be strangers. It would be important, therefore, not to relegate waste-composition to yet another quietly hidden room, though how it is joined to the studio and allowed to cross-contaminate it is a

question that would need to be discussed.

A third obstacle is that the knowledge needed to produce the parallel archive would be too great and varied for one person. Were such a project to engage a diverse number of activities, such as conducting interviews, recording and editing sound, tracking discarded electronics, and repurposing broken machines, it would need to draw on a wide-ranging set of skills, interests, and tools. This diversity of resources reasserts the need for collaboration. Asking for help, trying out different ideas, or sharing tools and space would, of course, not only be a necessity; group work would be desirable as it would help form a core learning group and listening public for the project. The challenge for building a waste archive could be more subtly put: to paraphrase Irit Rogoff (2010), it is not simply a matter of finding people capable of accomplishing already-known tasks, but actualizing the existing group's latent potentiality for learning—exploring the meanings of the global city's e-waste by using the assemblage of skills, interests, and tools already held within the present group, or possibly developed between its members, and doing so in such a way that is not stifled by the possibility of failure, but instead may "understand [failure] as a form of knowledge production rather than of disappointment" (p. 40).

In proposing the above experiment, I am only beginning to imagine how various histories and ideas might be placed together by composing with e-waste. The practices and discards associated with e-waste have undoubtedly physical and social dimensions, and varied meanings. What would livability look and sound like if we followed e-waste as it is moved and managed in Vancouver? How might it change our understanding of the discourse of disposability and the way we are involved in the production of urban space? The interrelation between the WSP archive and the parallel one I proposed, between the studio and the surplus room, could act as a junction for catalyzing such a study of media and the city.

The waste-composition praxis that has preliminarily been described is not limited to the WSP archive, of course. It could become part of any regular production practice to problematize disposability by composing an alternative experience of Vancouver and its media technologies. Thinking and doing media production through waste can focus it as

an improvisatory public practice, one that includes, remembers, and responds to the things, people, and histories avoided and expelled in Vancouver's current formulation of a livable city. And it offers a way to do so even within a technological paradigm and historical situation that facilitate the disposability of such responsibility. While waste offers these possibilities, their fruition takes an ethics of listening, keeping ears open even when encountering unfamiliar, disagreeable, or discomforting ideas or modes of expression. Pedagogy must encourage such an ethics. In a social context that sweeps aside such confrontations, such an ethics would respond with possibilities for taking root in the dust that collects in the gutter.

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Appendix.

Consent Form

Title of Study: Studio as hearth: Fostering public space in the production studio

Who is conducting the study?

My name is Pietro Sammarco. I'm a graduate student at Simon Fraser University (SFU), and this research will be part of my thesis, supervised by Dr. Stuart Poyntz, will eventually be available in the SFU library.

Who is funding this study?

The study is not being funded by any agency or person, other than myself.

Why should you take part in this study?

I'm doing this study to explore how community production projects, like this one that you're facilitating, contribute to social change. Creative production today, in the digital era and in a global city like Vancouver, is generally easy to do by oneself. I want to learn how community projects actually help the participating artists become excited about collaborating with others and learn how other people understand the world. To put it slightly differently, this study attempts to understand the production studio as a kind of public space.

To do this, I'm pursuing three objectives:

1. Explore what the project leaders' roles are.
2. Explore how the tools and the material artifacts of the project help the participating artists encounter the social context in which they're doing the project.
3. Explore the challenges posed by my role as both participant and researcher.

Ultimately, my hope is that the findings of my research will help you, myself, and others attempting such community projects in future learn how the production activities successfully bring participants together to listen and respond to each other and the social world in which this art project takes place.

What happens if you agree to be part of my study? How is the study done?

Your participation is voluntary. You have the right to refuse to participate in this study. If you decide to participate, you may still choose to withdraw from the study at any time without any negative consequences. If you say '*Yes*' to participating in my study, you will be involved in the following ways:

- *Interviews*

Over the course of the community project, I will interview you a few times. I'm not deciding an exact number of interviews ahead of time—it'll depend on how often

you feel like talking to me, and how much I may want to interview as a result of how the project unfolds. Each interview may last between ten and thirty minutes, and I will stop any interview if you ask me to, for whatever reason.

- *Field notes*

As part of notes that I will be taking regarding other aspects of the projects, I will take notes that reflect on my thoughts and observations about your participation as a workshop leader and mentoring artist in this community project. Your "involvement" in this case would entail letting me take notes about you (it would require nothing more on your part).

- *Audio recordings of the production environment*

Part of my education is in listening to sounds around me for what they tell me about the social environment I'm in. Therefore, with your consent, I will be making some audio recordings during the production process to reflect on the pace, rhythm, and collective movement of the process. These recordings will be made with the intention of studying, not what individual participants say to each other, but instead how, as a facilitator, you yourself listen and respond to the collective movement in the in the production studio. Being part of my study, you would allow me to analyze recordings in which your voice, or other sounds that identify you, are heard. I would be retaining audio recordings in audio format for the duration of my research. I will stop any recording if you ask me to, for whatever reason. You may also request to withdraw from my research any recording I make.

Note that the results of those who do not participate in this study will not be included in the research.

Is there any way being in this study could be bad for you?

From experience, I know that it is common to get a little crazy during the process of being creative, opening ourselves up and trying things out with others that otherwise would be considered weird. When we experiment, we take risks and sometimes do things that might be embarrassing under normal circumstances.

I'm not out to embarrass anyone, of course. I consider your participation in my research a privilege, and will be considerate of the way I write about you in regards to the above.

There are otherwise no foreseeable negative impacts to you resulting from your participation in this study.

What are the benefits of participating in this study?

Participating in this study may directly benefit you. It is likely that being involved will help you discover certain aspects of your creative process that you may not have otherwise noticed. In future, others may similarly benefit from reading the results of this study.

My research can also help raise awareness about these kinds of community projects, and the intentions behind them.

Will you be paid for taking part in this study?

You will not be paid for taking part in this study.

How will your identity be protected? How will your privacy be maintained?

I am the only person conducting this research. All research materials that contain information about you will be kept safe and not shared with anyone. All data, including that printed out onto paper and on my personal digital storage devices, will be held in my possession in a locked cabinet at home. Data will be kept up until the completion of my Master's degree in the Fall of 2015, after which it will be destroyed. There will be no future use of this data.

Regarding the audio recordings, some sounds we make clearly identify us as individuals. It is fairly likely that I will incidentally record the sounds of people who wish not to be part of my study. If that happens, I will promptly delete from the recording any sound of their voice or other sounds that identify them individually (for example, unique laughing, sneezing, whistling). This means that the segment of the audio file in which the person's identifiable sounds are located will be edited out and deleted, and I will only keep and analyze the remaining audio, which does not contain their sounds.

What if you decide to withdraw your consent to participate?

You may withdraw from this study at any time without having to give reasons for doing so. Likewise you may withdraw any data, and I will not analyze any data that you ask me to withdraw.

What will happen with the study results once the study is complete?

The study results will be reported in my graduate thesis, which will become available through the SFU library. The results may also be presented at an academic conference. I would also be more than happy to provide you a hardcopy of the report as well, to read and share as you see fit.

Who can you contact if you have questions about this study?

I may be reached at [redacted] or [redacted] if you have any questions about the procedure. You may also contact Dr. Stuart Poyntz, my supervisor, at [redacted] or [redacted]

Who can you contact if you have complaints or concerns about the study?

If you have any concerns about your rights as a research subject and/or your experiences while participating in this study, you may contact Dr. Jeff Toward, Director, Office of Research Ethics at [redacted] or [redacted]

Signature

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason.

• Your signature below indicates that you have received a copy of this consent form for your own records.

• Your signature indicates that you consent to participate in this study.

_____

Participant Signature Date

_____

Printed Name of the Participant

Version: March 12, 2015