

## CHAPTER FIFTY-NINE

MODERNISM AND MUSIC IN CANADA  
AND THE UNITED STATES

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Musical modernism in Canada and the United States is most notable for the ways it restages musical practice as a means of engaging the question: of what does music actually consist? To pursue this question, we discuss the Canadian and American postserialisms of which the indeterminacy pioneered by John Cage is emblematic, but which also include graphic scoring, minimalism, happenings, and other practices that substitute an emphasis on process for European serialism's engagement with the biases built into conventional notation. From there, we discuss jazz and improvisation, where we suggest that 'music' is taken to reside primarily in its practice such that compositional creativity is inseparable from the ability to perform. Finally, we consider technical innovations in the study of sound as a physical phenomenon, showing how electronic innovations are enabled by acoustic experiments with alternate tunings and just intonations that predate them. Taken together, these three lines of thought by no means exhaust what musical modernism is in Canada and the United States, but they point towards contributions to modernism in general that are emphasized by practitioners in both countries.

## CAGE AND CANADIAN/AMERICAN POSTSERIALISMS

The jumping-off point for our argument is Canadian and American musical modernism's relation to the 12-tone serial composition practices that were central to European modernism. While the experimental impulse of serial practice developed by Arnold Schoenberg influenced Canadian and American practitioners of both jazz and art music, the prescriptiveness of this approach was less resonant. For example, John Cage's lessons with Schoenberg helped him develop the disciplined approach that characterizes much of his work, but did not directly influence its substance. Similarly, while jazz musicians in the 1940s at times borrowed serialism's atonality, the resulting music bore little resemblance to this element of its provenance. This was partly due to other forces that shaped jazz's early development, particularly Afro-diasporic musical cultures and the racial politics of the early twentieth century. In short, serial methods were rarely germinal in Canadian and American musical modernisms, even when serial effects were audible.

Postserialism is thus ironically more significant to Canadian and American musical modernism than serialism itself, where postserialism denotes a set of practices that sometimes even predate serialism's sedimentations in Canadian and American music. The pre-history of Canadian and American musical modernism includes both European figures who loom large in the global history of modernism – Schoenberg, Stravinsky, Strauss, and so on – and composers such as Conlon Nancarrow and Ruth Crawford Seeger. Nancarrow lived in relative isolation and produced works for player piano that were impossible for humans to perform. Seeger was influenced by American folk music as much as by the serial methodology she regularly employed. Canadian and American musical modernism contributes to the development of musical techniques, but also – and more importantly – intervenes in what music is: Canadian and US modernism charts an unprecedented expansion of 'music', moving it off the page of conventional notation and into the always-changing world of cultural practices.

Perhaps the central figure of Canadian and American musical modernism is John Cage, who exemplifies his milieu's spirit of excitement and interdisciplinarity. Cage is notable for his pioneering use of non-standard instruments, and early in his career composed a number of works for percussion: *Quartet* (1935, for four percussionists), *Trio* (1936, for three), and the *Constructions* series. In this, Cage was influenced by the French composer Edgard Varèse, whose *Ionisation* (1929–31) was the first Western composition to use exclusively percussion instruments. Cage was also attracted to Varèse's term for his work: 'organized sound'; Varèse's eschewal of harmony in favour of timbre and rhythm necessitates a new conception of what music is, what it means, and how it matters.

This new conception demanded new technical innovations. In addition to being amongst the first to use radios and electronics as live instruments, Cage also developed a new acoustic instrument in 1940: the prepared piano, a conventional piano with objects (such as bolts, screws, pieces of rubber) inserted on its hammers and between its strings to obfuscate pitch in favour of timbre. In addition to its aesthetic properties, this instrument takes practical advantage of the ready availability (and relative smallness) of pianos and the fact a single pianist can play a number of distinct timbres (using different preparations). Both combined to make the instrument popular in Cage's collaborations and co-productions with dancers, including Merce Cunningham, his artistic and personal partner.

Another way of understanding the shift that comes with Cage's use of percussion is to note that pitch is not absent per se in percussion instruments, but is dispersed and indeterminate. For Cage, indeterminacy became so important that he supplemented his conceptual and technical expansion of music with an indeterminate methodological one: he began applying chance operations in various parameters of his works, including their structure, pitch, rhythm, density, and duration. These operations were executed in myriad ways: the use of dice, imperfections in paper, and the *I Ching* system of divination. Cage thus ushered in an approach to music that closed the gap between music and everyday sounds by treating all sound as meaningful. The most notorious example of this approach is *4'33"* (1952), his famous 'silent' piece in which performers are instructed to play nothing throughout the work's three movements.

In a different type of indeterminacy Cage also experimented with graphical approaches to notation, which lead to works that varied dramatically from

performance to performance. This approach – which did not originate with Cage – played an important role in Canadian and American musical modernism.<sup>1</sup> Composer R. Murray Schafer has made use of non-standard notation, and many of Schafer's scores – including his 12-part *Patria* cycle (1966-present) – treat the score's appearance as part of the aesthetic project. Finally, many composers abandoned conventional notation altogether, preferring graphic renderings and 'event scores' consisting entirely of text.

A significant collection of such instruction scores is Yoko Ono's 1964 *Grapefruit*:

TUNAFISH SANDWICH PIECE

Imagine one thousand suns in the sky at the same time.

Let them shine for one hour.

Then, let them gradually melt into the sky.

Make one tunafish sandwich and eat.

(1964 [Spring])

This break with musical convention is partially due to Ono's close association with the visual and performance art scenes where music was understood in relation to other conceptual practices. The lines between these disciplines were increasingly porous; the expansion of music Cage advocated did not simply cover all sounds, but all practices. Indeed, Cage's definition of theatre – 'something which engages the eye and the ear' – applies equally to musical performance (qtd. in Kirby and Schechner 1965: 50).

This shift took place in an interdisciplinary scene that often included sociality as an aesthetic practice. Cage and Ono were both part of Fluxus, a loosely knit intermedia group comprised of dozens of artists from multiple disciplines. Both also participated in 'happenings', chaotic multidisciplinary events.<sup>2</sup> The emerging American scene partially obsoleted disciplinary boundaries: artists as different as Meredith Monk, Morton Feldman, John Ashbery, William Burroughs, Elaine Summers, and dozens of others circulated in close proximity.

This emerging scene helped dissolve conventional boundaries between 'high' and 'low' art. What came to be known as musical minimalism highlighted this shift through its association with the New York downtown music scene, which included non-traditional musical fora: Steve Reich and Philip Glass were amongst the first composers to present their work outside the concert hall, in locations from public squares to art galleries. Reich was notable for his 1965 *It's Gonna Rain*, consisting of two mono recordings of the same track looped at slightly different tempi to produce a composite effect that is difficult to disentangle. This technique of 'phasing' became Reich's main compositional method during the 1960s in *Piano Phase* and *Violin Phase* (1967) and *Drumming* (1970).

Musical minimalism – 'by definition, any music that works with limited or minimal materials' – is characterized by repetition of brief motives, a steady beat, and a perceptible process (Johnson 1991).<sup>3</sup> The resulting sound anticipates later developments in popular electronic music, an influence readily heard in Terry Riley's *In C* (1964), one of minimalism's major early works. *In C* consists of 53 short musical cells played

by any number of instrumentalists, each repeating them as many times as she wishes (and pausing between segments as long as she wishes). This form of indeterminacy – where the composer presents a constrained set of nonetheless determinate choices to the performers – is aleatoric: although performers have different options available, it is possible to play a wrong note since the composer achieves a predetermined result only by using a slowly shifting sonority and steady beat (for Cage, by contrast, the goal was to use indeterminacy to subvert authorial intention).<sup>4</sup>

Cage's life and work connect many disparate activities and characterize the spirit of this time and place: treating music as a *process* more than a *thing*. This approach captures the departure from serialism undertaken by many Canadian and American composers.

## JAZZ AND IMPROVISATION

The processual nature of music is nowhere more evident than in jazz and improvisation, yet the tension between Cagean postserial practices and their antecedents also bears on jazz's development as a modernist form in Canada and the United States. The implications of serialism for tonal harmony and its expanded use of dissonance afforded a modernist foothold. By the 1950s, jazz's imbrication within a modernist purview had been well established. Since the 1940s, bebop had 'routinely' been called modernist (Rasula 2005: 157): melodic and harmonic developments by musicians such as Charlie Parker, Thelonious Monk, and Dizzy Gillespie foregrounded technique and virtuosity. Bebop's emergence as the heir to swing in the late 1940s was reflected in swing's battle with Dixieland revivalism, which in turn reenacted the conflict between traditionalism and modernism 'so endemic to Western culture' (Gendron 2002: 123).

Bebop's importance to modernism lies in how it marked jazz musicians' adoption of a highbrow European aesthetic stance, and made it a 'fundamental element of their music' (Laver 2009: 2). The 'emancipation of dissonance' that 12-tone composition promised was reflected in the increasing atonality of bebop: musicians tended towards abstracting harmonic frameworks in solos, and the language of improvisation became further removed from the melodic content of any given 'head'.<sup>5</sup> The smaller size of bebop combos allowed improvisation to flourish, and shifted the focus back onto soloists and group interplay.

While tracing a causative narration of shifts in improvisational style is problematic, improvisation's trajectory in the twentieth century has been typically modernist in its assault on convention. While free jazz in the mid-1960s was connected to that decade's turbulence, its role as a modernist expression manifests in how sound became a legitimate component of improvisation outside of harmonic or structural considerations.<sup>6</sup> In a similar vein to Cage's reclamation of the piano's percussive qualities, pianist Cecil Taylor's aggressively rhythmic approach to improvisation appears with his 1956 debut *Jazz Advance*: the atonal and cluster-filled solos forecast the style of improvising Taylor would cultivate in later decades, foregrounding the piano's physical and material sonorities over its ability to play harmonically and melodically.

That sound itself can be a locus of meaning separate from its rhetorical associations manifest in improvisatory practices explored in the 1960s by Coltrane, Pharoah

Sanders, Albert Ayler, and Sun Ra. Coltrane's technique of rapid harmonic and scalar runs, dubbed 'sheets of sound' by Ira Gitler,<sup>7</sup> achieve the opposite of their intended effect, obscuring harmony and meter in a lattice of sound that highlights the saxophonist's mastery of technique and improvisation. In Coltrane's recordings from 1966–7, the saxophone's timbral resources become as much a component of improvisation as any other musical element, exemplified in the album of duets with drummer Rashied Ali, *Interstellar Space* (1967). Coltrane acolytes Sanders and Ayler both extensively used the altissimo register, overblowing, and multiphonics, elaborating the sonic vocabulary available to jazz improvisers. Finally, the afrofuturism of Sun Ra relied on complex myth-narratives about black cultural rejuvenation as much as on misappropriating musical technologies to create the vision of a 'prosthetically enhanced future' (Dery 1994: 180): Sun Ra's pioneering use of electronic keyboards and synthesizers (dating back to the 1950s) prioritized an experimental approach to sound and timbre, radically expanding notions of performance.<sup>8</sup>

### INTONATIONS, TECHNOLOGIES, AND SOUNDSCAPES

In different ways, both jazz and postserialism move music's materiality away from notated scores towards embodied practices. The Cagean ethos of listening and the jazz ethos of doing parallel technical innovations in the study of sound as a physical phenomenon. This shift occurs along a number of lines, which at times intersect and at others diverge. We discuss this shift in three veins: loudspeaker practices flowing from the advent of the phonograph in the late nineteenth century; work involving equal temperament and just intonation issuing at once from scientific findings and attention to older non-Western musical practices; and approaches to sound that acknowledge its social life by treating it ecologically.

The loudspeaker's invention remains a critical development: virtually every predictably repeatable or transportable sound, from recordings to synthesis, operates through it. Such a change naturally had tremendous consequences for musical modernism at all levels, affecting audiences, composers, and performers. Pianist Glenn Gould ultimately eschewed the vagaries of concert performance in favour of recordings produced by splicing multiple takes together to achieve an ideal interpretation. Gould also recognized the conceptual shift linked to listening practices that took place with the growing ubiquity of radio broadcasts: Gould's *The Idea of North* (1967) was conceived as a 'contrapuntal radio documentary' and uses montage and voice counterpoint 'to express the antagonism and scope of [Canada]' (Canadian Broadcasting Corporation 2013 [1967]). Clearly influenced by his predecessors in film as well as by the cut-up technique popularized by William S. Burroughs in the late 1950s, Gould also developed a specifically musical sensibility in the formal and acoustic properties of *Idea*. Moreover, Gould understood that the complexity he found so appealing in Bach's contrapuntal style (of which he was a renowned interpreter) and Schoenberg's dodecaphonic music could be extended in the context of repeated listening afforded by home playback devices: the notions of re-listening, pausing, and rewinding we now take for granted were unheard of prior to this technological development.

Recording technologies changed the production and consumption of analog music, then, by making all music potentially reproducible and re-playable in a new setting.

The potential of loudspeakers was also being explored in creating new sounds altogether, particularly through the use of oscillators controlled by changes in voltage. Artists and scientists understood that both pitch and rhythm could be expressed in terms of frequency, so that any sound could be broken down into a set of constituent actions repeated at specific frequencies. Hugh Le Caine was a key contributor to developments in this area. Most notably, around 1948 he invented the *Electronic Sackbut*, a polyphonic touch-sensitive organ ‘with which one could control pitch, volume and tone quality in live performance [using voltage control]’ (Young). Le Caine also created the *musique concrète*<sup>10</sup> piece *Dripsody* (1955), which alters the sound of a single drop of water in myriad ways. Finally, Le Caine designed the *Sonde* (1968),<sup>9</sup> an instrument that generates 200 sine tones (i.e. simple, single-pitch tones) simultaneously.

Part of the realization that a single sound can be broken down into constituent parts is the fact that every sound contains overtones (or partials), frequencies that are multiples of the fundamental pitch.<sup>11</sup> While Le Caine explored the possibilities of partials with electric technologies, other musicians attended to them in acoustic settings via alternate systems of tuning, some of them millennia old. If we accept 12-tone equal temperament as a modern invention par excellence, alternatives to it are crucial to modernism’s critical ethos.

For some composers, such as Easley Blackwood and Erv Wilson, this experimentation took the form of alternate forms of equal temperament, where the octave is divided into greater or fewer than twelve equal parts. More prominently, composers explored the use of ‘just intonation’, a system of tuning that remains true to the pitch ratios characteristic of conventional tonality (but which the latter slightly skews for pragmatic reasons).<sup>12</sup> The advantages of the just intonation system were the resulting ‘acoustically pure’ sounds and new compositional methods it implies. Thus, just as minimalist composers sometimes structured their works in terms of a predetermined process, Tenney’s *Critical Band* (1988) systematically explores the eponymous acoustic phenomenon rather than working within a rhetoric of music per se.

Increased attention to the social life of sound – to how aurality emphasizes different elements of the world than visuality and tactility – paralleled these technical changes. Acoustic ecology (sometimes called ‘soundscape studies’) focuses on how sound mediates relationships among beings and environments and began in the 1960s with the World Soundscape Project at Simon Fraser University in British Columbia, Canada. Acoustic ecology did not emerge in a vacuum but rather merges with other social movements of the time, particularly environmental activism. Similarly, strictly musical precedents can be found: Charles Ives’ use of spatiality in *The Unanswered Question* (1906), for example, suggests a sensitivity to the way that sound moves as a force through a relational field rather than existing simply as a discrete measurable entity. An important development from this movement is ‘soundwalking’, ‘any excursion whose main purpose is listening to the environment’ (Westerkamp 2001).

## CONCLUSION

Each of the three vectors of Canadian and American musical modernism we have indicated mobilizes a new understanding of musical and sonic materiality: what music is, does, and means. In addition to these major trends, there are numerous histories that

have only registered in a limited manner beyond the context of Canada the United States. Foremost amongst these trends are various First Nations and Indigenous musical practices that have for years flourished both as rigorous critiques of colonial practices and as discrete cultural productions in their own right, but which have only recently been taken up in scholarly work with a degree of specificity equal to the nuance of their creation. Like the practices we've discussed, such music expands the materialities of music in unique and specific ways, for example by questioning the predicates of authorship and ownership and by troubling distinctions between tradition and contemporaneity. These practices thus contribute to the 'variegated response to a manifold modernity' that characterizes modernism more generally (Ross 2009: 1). Thus, even as we increasingly acknowledge the plurality of the musical world, the critical project that musical modernism unfolds becomes increasingly relevant.

## NOTES

1. The question of the origin of graphical notation is not easily answerable because it is one of degrees: 'standard notation' is in essence a system of graphical elements, and varying degrees of graphical notation appear throughout the world and the histories of notation. Cage's innovation was equally to interrogate this aspect of notation and to employ it.
2. Numerous 1960s performance genres incorporated dance, theatre, music, poetry, and other artistic forms: events, environmental theatre, happenings, etc., each having its own distinguishing features and conditions. See Sallenford (2005), and, for a contemporary view on 1960s performance art, Kostelanetz (1968: 3–45).
3. As Nyman (1999: 139–41) observes, minimalism's origins can also be tied to serialism, like many of the forms discussed here.
4. Riley was not dispensing with the importance of listening and musicality for the sake of indeterminacy. *In C*'s performing directions specifically outline the conditions for a good performance: 'It is very important that performers listen very carefully to one another and this means occasionally to drop out and listen. [...] One of the joys of *In C* is the interaction of the players in polyrhythmic combinations that spontaneously arise between patterns.' Reprinted in the liner notes of Terry Riley (2009) [1964] *In C* (Sony Classical MS 7178, compact disc).
5. Thelonious Monk, perhaps the most enduring personification of bop's experimental ambitions with nakedly dissonant musical language, was a radical improviser who claimed always to be playing melodically within the ambit of the composition.
6. Free jazz has been frequently connected to larger issues that transformed the cultural landscape of 1960s America, such as the civil rights movement, Black nationalism, and other countercultural expressions of dissidence. Mark Gridley (2008) and Ingrid Monson (2007) have shown that this relationship is complex and problematic. Monson writes the harsh shrieks of John Coltrane, Albert Ayler, Pharoah Sanders, *et al.* were taken as anger rather than 'spiritual exploration'; further, borrowing a phrase from Paul Gilroy, Monson suggests that free jazz's expanded sonic language must be considered as part of an African-American 'counterculture of modernity' (2007: 304, 306).
7. This term has become commonplace to describe Coltrane's style of dense runs during the mid to late 1950s. Gitler used it first in the liner notes to the 1958 album *Soultrane*.
8. See Szwed (1997) and Locke (1999).
9. Both these instruments were initially designed in Le Caine's home studio, as Le Caine was employed as a physicist at the National Research Council (NRC) in Ottawa, developing micro-wave radio transmission and contributing to exploration in nuclear physics (Young).

10. *Musique concrète* is a style of electroacoustic music that combines recordings with synthesis and/or manipulation. Developed in the 1940s by Pierre Schaeffer, it is often contrasted with *elektronische Musik*, which uses only synthesized sounds.
11. For example, partials allow us to differentiate the sound of a piano and a guitar playing the same pitch.
12. Notably, the conventional 12-part division of the octave – and particularly the notions of consonance and dissonance that inhere in its use – is based on using these ratios to collapse naturally occurring partials into an octave. A major third ( $M_3$ ), for example, can be expressed as the ratio  $5/4$ . The first naturally occurring  $M_3$  is the fifth partial (i.e. five times the frequency of the fundamental pitch) and is heard 28 semitones above the fundamental; this pitch can be transposed down two octaves (to  $28-12-12 = 4$  semitones). Thus, for example, a ‘true’  $M_3$  above A440 Hz would be 550Hz ( $440 \times 5/4$ ). In standard equal temperament this is slightly skewed to a C# at 554Hz because the exponential increase in frequency that underwrites the ratio system is measured logarithmically so as to produce uniformity.

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