Remediating Modernism:
On the Digital Ends of Montreal's
Electroacoustic Tradition

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In the autumn of 2011, the board of directors of the Conseil des Arts et des Lettres du Québec (CALQ) initiated a series of 'digital' reforms to its funding provision for the province's artists and musicians.[1] Among producers and intermediaries in Montreal's high-profile multimedia and performing arts scenes – a public which the CALQ addressed both as its most powerful lobbying force and as its principal 'clientele' – the attention signalled a recognition of their ongoing investment in local politics and economic development. Embellished with an organically charged rhetoric of 'mutation', 'sustainable development' and 'evolution', the letter opening the report assured its readers that the digital future they imagined in their creative practices was also the best way to ensure the survival of Quebecois culture.

> In many domains today, among them that of culture, traditional mechanisms of recognition and notions of professionalism and excellence are in mutation, thereby redefining the role of organizations and support infrastructures.
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> The channels of production in the culture industry are changing, artistic practices evolving, access to the Internet at very high speeds becoming strategic, and users transforming themselves into content producers. The sum of these observations calls for a revision of public policies and government structures in the cultural sector.
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> In the end, integrating the principles of sustainable development in the framework of every government policy or strategy reflects the importance of ensuring that present choices do not prevent future generations from responding to their own needs. The

[1] Quebec's provincial arts council was established in 1994 as part of a multifaceted devolution of powers from the federal government following the failed Charlottetown constitutional accord. Diane Saint-Pierre, *La politique culturelle du Québec de 1992: Continuité ou changement? Les acteurs, les coalitions et les enjeux* (Quebec City: Presses de l'Université Laval, 2003).

demographic situation in Quebec and the context of the rationalization of state resources call for an optimization, even a redefinition of current processes and mechanisms. Digital technologies may help Quebecois society to realize this shift. In order that future generations will be able to succeed at evolving in this context, many actions must be taken right now.[2]

Note the way in which the ecological rhetoric smooths the transition from a set of concrete economic challenges – the breakdown of professional pathways and the need for efficiency in public institutions – to a call to streamline cultural production for the sake of future generations. What is at stake is the very modernity of Quebecois society. Digital technologies promise to harness and reorientate the work of consumers, and thereby empower cultural citizenship on a grand historical scale.

For the report's readership this would have been a familiar prognosis. The project of Quebecois modernity has invested a great deal in the cultural promise of technological progress. Montreal in particular has a long-standing reputation as a cultural crucible, which both anglophone and francophone media often justify by contrasting it with the imagined cultural homogeneity of the rest of North America. Surviving as the dominant metropolis of a lost francophone 'archipelago' scattered across a majority anglophone continent, Montreal indexes a subversive sense of European sophistication in the face of a dominant American empire.[3] This preconceived otherness has a profound effect on cultural life. Funding designed to preserve the city's unique cultural status flows from all levels of government. The most recent wave, which began at the turn of the millennium after the near calamity of Quebec's second attempt to achieve sovereignty by referendum in 1995, has favoured the multimedia industry as a new driver of economic growth. One of its primary motivations was to compensate for the collapse of the city's shipping and industrial base, which had languished over the preceding 30 years of economic and constitutional turmoil.[4] Many of the institutions targeted by the new digital-arts policy also owed at least part of their existence to the post-Fordist gentrification policies that filled Montreal's once yawning economic gaps.[5] Real and imaginary had thus worked together to stage Montreal as the natural home of Quebec's – and by extension Canada's – digital revolution.

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[2] Geneviève Béliveau-Paquin, Sophie Le-Phat Ho and Alain Depocas, *Faire rayonner la culture québécoise dans l'univers numérique: Éléments pour une stratégie numérique de la culture* (Quebec City: Conseil des Arts et des Lettres du Québec, 2011), 3. All translations from French-language sources are my own unless otherwise indicated.

[3] Dean Louder and Eric Waddell, *Du continent perdu à l'archipel retrouvé: Le Québec et l'Amérique française* (Quebec City: Les Presses de l'Université Laval, 2007); Bill Marshall, *The French Atlantic: Travels in Culture and History* (Liverpool: Liverpool University Press, 2009).

[4] Annick Germain and Damaris Rose, *Montreal: The Quest for a Metropolis* (Chichester: Wiley, 2000).

[5] Thomas Pilati and Diane-Gabrielle Tremblay, 'Le développement socio-économique de Montréal: La cité créative et la carrière artistique comme facteurs d'attraction?', *Canadian Journal of Regional Science*, 3 (2007), 475–96.

The last decades of the twentieth century also saw Montreal earn a reputation as one of the main hubs of the transnational electroacoustic circuit. The scene has a reputation as a melting pot of European and North American sounds. The francophone studios established at the Conservatoire de Montréal and the Université de Montréal in the 1970s and 80s were largely identified with the research conventions of acousmatic music, an auditory and compositional practice invented by the Parisian Groupe de Recherches Musicales (GRM).[6] Meanwhile, the anglophone composers at McGill University developed what seemed to their neighbours a more 'American' approach, linking experimental electronic sound-making with research in psychoacoustics, sound engineering and digital instruments.[7] The smaller studios at Concordia University and the Université du Québec à Montréal (UQÀM) focused mainly on practical education, but also played a key role in developing professional support networks. In spite of its internal differences, however, the scene mounted few challenges to the aura of detached, modernist formalism that accrued to academic electroacoustic composition on both sides of the Atlantic at the time in places like Paris and Stanford.[8] Intermedia work, for example, flourished primarily in the gaps between academia, experimental theatre and the multimedia industry.[9] Then, by the middle of the 1990s, a strong enough network of media production companies, software start-ups, Artist-Run Centres (ARCs), unlicensed loft venues and nightclubs had formed to pose a threat to the hegemony of the academic studios.[10] Soon the 'media art' sector had established important institutions and festivals of its own, inspired and partly supported by international art and technology organizations like Transmediale, Ars Electronica and the International Symposium on Electronic Arts (ISEA). Indeed, the media arts' own independent council had anticipated the CALQ initiatives with its own *états généraux* in 2008.[11] Reform efforts such as the 2011 CALQ digital-arts forums addressed a

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[6] Francis Dhomont, 'Is There a Québec Sound?', *Organised Sound*, 1 (1996), 23–8; Réjean Beaucage, 'Schaeffer au Québec en quelques allers-retours', *Pierre Schaeffer*, ed. Évelyne Gayou, Portraits polychromes, 13 (Paris: Institut National de l'Audiovisuel, 2008), 19–23.

[7] *Compositional Crossroads: Music, McGill, Montreal*, ed. Eleanor Stubley (Montreal: McGill-Queen's University Press, 2008).

[8] Pierre-Michel Menger, *Le paradoxe du musicien: Le compositeur, le mélomane et l'état dans la société contemporaine* (Paris: Flammarion, 1983); Susan McClary, 'Terminal Prestige: The Case of Avant-Garde Music Composition', *Cultural Critique*, 12 (1989), 57–81; Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley, CA: University of California Press, 1995); Jann Pasler, 'The Political Economy of Composition in the American University, 1965–1985', in Pasler, *Writing through Music: Essays on Music, Culture, and Politics* (Oxford: Oxford University Press, 2008), 318–62.

[9] Damien Charrieras, 'Trajectoires, circulation, assemblages: Des modes hétérogènes de la constitution de la pratique en arts numériques à Montréal' (Ph.D. dissertation, Université de Montréal, 2010).

[10] Patricia Schmidt, 'Québec Electric: Montréal, Mutek and the Global Circuit' (MA thesis, McGill University, 2010).

[11] Conseil Québécois des Arts Médiatiques, *Rapport final: États généraux des arts médiatiques* (Montreal: Conseil Québécois des Arts Médiatiques, 2009).

public that folded the electroacoustician into a larger whole. From now on, it would be the interdisciplinary media artist whose work would be considered as the measure of innovation. Explanations for the shift emphasized the move to a digital marketplace: if the electroacoustic aesthetic had declined, it was because academic studios no longer had a monopoly on access to technologies now available for free or at low cost on the internet.

Of course, such claims of consumer empowerment and institutional flattening also have a global dimension. And the familiar litany of digital effects the CALQ report seems to invoke is not particular to cultural professionals. Elsewhere digital technology has also been said to shorten the attention span, threaten the centrality of 'liveness' and undermine Western traditions of concentrated, receptive listening.[12] Many have credited the digital with reshaping the field of cultural production to model principles of 'openness' and 'democracy'.[13] Political claims like these have accompanied digital communication since its invention.[14] The digital's articulation with modern liberalism now functions almost as naturally as the way particular digital applications afford characteristic sounds.[15] And yet the practices included in accounts of the digital revolution do not always depend on specifically digital technologies: analogue, mechanical, environmental, relational and conceptual practices appear to have been empowered by the digital as well.[16]

My interest is in the role such claims about the politics of the digital play in attempts by cultural institutions to police the intersection between media and aesthetics. In his work on data forensics, Matthew Kirschenbaum emphasizes the way in which 'popular representations of a medium, socially constructed and culturally activated to perform specific kinds of work' are substituted by theorists for a 'comprehensive treatment of the material particulars of a given technology'.[17] For Kirschenbaum, the meaning of this substitution lies in the way in which 'Western consumer culture' has 'succeeded in evolving sophisticated and compelling conceits for depicting information as an

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[12] Jonathan Sterne, 'The Death and Life of Digital Audio', *Interdisciplinary Science Reviews*, 31 (2006), 338–48; Simon Emmerson, *Living Electronic Music* (Aldershot: Ashgate, 2007); Daniel Levitin, *The Organized Mind: Thinking Straight in the Age of Information Overload* (London: Viking, 2015); Adam Harper, 'How Internet Music Is Frying Your Brain', *Popular Music*, 36 (2017), 86–97.

[13] Christopher Kelty, 'Geeks, Social Imaginaries, and Recursive Publics', *Cultural Anthropology*, 20 (2005), 185–214.

[14] Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago, IL: University of Chicago Press, 2006).

[15] Mark Katz, *Capturing Sound: How Technology Has Changed Music* (Berkeley, CA: University of California Press, 2004); Ragnhild Brøvig-Hanssen and Anne Danielsen, *Digital Signatures: The Impact of Digitization on Popular Music Sound* (Cambridge, MA: MIT Press, 2016).

[16] Georgina Born, 'Relational Ontologies and Social Forms in Digital Music', *Bodily Expression in Electronic Music: Perspectives on Reclaiming Performativity*, ed. Deniz Peters, Gerhard Eckel and Andreas Dorschel (London: Routledge, 2012), 163–80.

[17] Matthew Kirschenbaum, *Mechanisms: New Media and the Forensic Imagination* (Cambridge, MA: MIT Press, 2008), 36.

essence unto itself, or more properly, information as a synthetic (at times even haptic) commodity'.[18] But what Kirschenbaum's analysis does not provide is a strong sense of the cultural work such ideological tropes help their believers to achieve. Here, then, I take an approach informed by the work of the anthropologist Ilana Gershon, who describes a 'media ideology' as a culturally and historically specific understanding of the way in which media shape communication and determine what utterances are appropriate to a given channel or device.[19] The way in which cultural institutions determine which practices are properly 'digital' depends less on any actual use or material operation of the technologies in question than on the cultural and political ideals that they represent. Institutional commitment to these representations structures the ambitions and capabilities of practitioners to such an extent that their practices take on their ideals as essential properties. More than any specific material thing, then, what is at stake is the construction of the digital as what Karin Knorr Cetina has called an 'epistemic object', an inherently open and processual symbolic whole that can take on new properties as knowledge and practice develop over time.[20]

Of course, there is no shortage of accounts identifying the aesthetic 'traits' which are unique to digital technologies. Ragnhild Brøvig-Hanssen and Anne Danielsen, for instance, tell us that we hear certain musical gestures as digital in varying degrees because the musicians in question have chosen to amplify the corresponding material features of the technologies they use.[21] But their analysis tells us little about why such specific features are selected to signify mediation, or indeed about how these signifiers come to earn their place in a particular generic repertory. Georgina Born's account of musical mediation adds welcome complexity to this picture. First of all, it demands that we understand the material and the aesthetic as 'mutually mediated', so that neither technological affordance nor musical gesture takes precedence as the source of a particular transformation.[22] Borrowing the term 'quasi-object' from Michel Serres, Born suggests that music's emergence from a complex of socio-material relations does not foreclose on questions of causality, subjecthood or objecthood.[23] Mediation, to cite Richard Grusin's recent attempt at redefinition, 'should be understood not as standing between preformed subjects, objects, actants, or entities but as the process, action, or event that generates or provides the conditions for the emergence of subjects

[18] *Ibid.*, 38.

[19] Ilana Gershon, 'Media Ideologies: An Introduction', *Journal of Linguistic Anthropology*, 20 (2010), 283–93.

[20] Karin Knorr Cetina, 'Objectual Practice', *The Practice Turn in Contemporary Theory*, ed. Theodore R. Schatzki, Karin Knorr Cetina and Eike von Savigny (London: Routledge, 2001), 175–88.

[21] Brøvig-Hanssen and Danielsen, *Digital Signatures*.

[22] Georgina Born, 'On Musical Mediation: Ontology, Technology and Creativity', *Twentieth-Century Music*, 2 (2005), 7–36; Born, 'Music and the Materialization of Identities', *Journal of Material Culture*, 16 (2011), 376–88.

[23] Born, 'On Musical Mediation', 7; Michel Serres, *The Parasite*, trans. Lawrence Schehr (Minneapolis, MN: University of Minnesota Press, 2007), 225.

and objects, for the individuation of entities within the world'.[24] Born goes further, however, in showing that musical mediation is not simply a matter of 'immediate' social and material relations as given in experience; rather, it engages multiple intersecting 'planes' of relation that entangle it in the production of sometimes distant identities, institutions, communities or genres.[25] By this account there is never a question of nailing down what specific material features of the digital have given rise to its familiar social and sonic character. These features have always already been co-produced at the intersection of ongoing cultural and political processes. Given this complexity, what is remarkable is not so much how effective new technologies can be, but rather how stable and reliable their social attachments can become.

Alongside my interest in the becoming political of the digital is a parallel interest in the becoming digital of particular publics. Specifically, the 'digital' public addressed by the 2011 CALQ report mapped onto a long-standing set of conflicts over the aesthetic and social destiny of electroacoustic music in relation to newer genres outside academia. Electroacousticians in the city had developed an entrenched image of themselves as embattled mavericks, their hard-won authority misunderstood and overlooked by a mainstream concerned more with novelty than with substance. The electroacoustic literature portrayed musicians and artists on the margins of the electroacoustic tradition as empowered more by new digital mediations than by musical ideas.[26] From both sides, the opposition appeared to fulfil the promise that digital technology would gradually transform the field of cultural production into a flat, postmodern utopia. Expressions of this promise begin to appear in the electroacoustic literature around the mid-1990s. The popularization of the internet, and the concomitant miniaturization and personalization of computing technologies, seemed to challenge the hegemony of university studios, and thus set the stage for unprecedented diversification.[27] The ideal of a digitally mediated democracy is now one of the main factors cited in the eclipse of electroacoustic music's academic hegemony. But technological progress is far from being a sufficient explanation for the ways these institutions and scenes have been transformed.

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[24] Richard Grusin, 'Radical Mediation', *Critical Inquiry*, 42 (2015), 124–48 (p. 129).

[25] Georgina Born, 'Music and the Social', *The Cultural Study of Music: A Critical Introduction*, ed. Martin Clayton, Trevor Herbert and Richard Middleton, 2nd edn (London: Routledge, 2012), 261–74.

[26] Joel Chadabe, 'Remarks on Computer Music Culture', *Computer Music Journal*, 24 (2000), 9–11; Simon Emmerson, 'From Dance! to "Dance": Distance and Digits', *Computer Music Journal*, 25 (2001), 13–20.

[27] Bob Ostertag, 'Why Computer Music Sucks', *Resonance*, 5 (1996), 2; Kim Cascone, 'The Aesthetics of Failure: "Post-Digital" Tendencies in Contemporary Computer Music', *Computer Music Journal*, 24 (2000), 12–18; Simon Waters, 'Beyond the Acousmatic: Hybrid Tendencies in Electroacoustic Music', *Music, Electronic Media and Culture*, ed. Simon Emmerson (Aldershot: Ashgate, 2000), 56–83; Christopher Haworth, '"All the Musics Which Computers Make Possible": Questions of Genre at the Prix Ars Electronica', *Organised Sound*, 21 (2016), 15–29.

Norms of public-making in art music have posed considerable resistance to the kind of diversification imagined by electroacousticians at the turn of the millennium. In Canada, for example, government funding bodies enforce a hard boundary to protect 'non-commercial' production from the pressures of popular competition.[28] Grants and awards are kept at arm's length from political and social influence by delegating the selection process to independent peer-review boards largely made up of past grant-holders. These rules were instituted at the inception of the federal arts council in the 1950s as part of an effort to advance the professionalism of Canadian artists that Jody Berland attributes to a kind of 'mimetic' nationalism, an attempt to generate models of unified Canadian identity for wider public consumption.[29] The ideal that the artist should want to be free from external constraint is imbricated in the construction of cultural modernity itself. Since Canada is an aggregation of multiple overlapping nations, all of which represent themselves artistically to some extent, this modernist ideal recurs across multiple overlapping jurisdictions.[30]

Pierre Bourdieu defined the 'autonomous field' of cultural production as one in which producers address an audience made up for the most part of their own peers rather than any larger lay public. He drew his model from the nineteenth-century French literary avant-garde, in which 'producers-for-producers' competed for access to a market in 'symbolic capital' which appears divested of commercial necessity, but actually demands a considerable level of economic privilege from participants.[31] Bourdieu's classic portrayal seems to relate economic autonomy to the modernist ideal of aesthetic autonomy, that dialectical opposition between the 'advanced' artwork and society which Adorno famously saw as emerging after the 'liquidation' of the Romantic tradition.[32] Although these criticisms do align, it is important to remember that Bourdieu was using the notion of autonomy in a more limited and technical sense and not, primarily, arguing about aesthetics. The mixed or 'heteronomous' capital Bourdieu ascribes to commercial art requires the support of some useful activity or function. The field structured around autonomous capital relies on the 'magical operation' of economic reversal, embodied in conventions that 'consecrate

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[28] Crucially, changes introduced to mark the 150th anniversary of Canadian confederation in 2017, also dedicated to the goal of fostering 'digital' innovation, have begun to break down these protective 'silos', encouraging applicants for funding to describe their own genre associations instead of submitting under predefined ones. It remains to be seen what effect this will have. Robert Everett-Green, 'Canada Council to Simplify Access to Arts Funding', *Globe and Mail*, 3 June 2015.

[29] Jody Berland, 'Nationalism and the Modernist Legacy: Dialogues with Innis', *Capital Culture: A Reader on Modernist Legacies, State Institutions, and the Value(s) of Art*, ed. Jody Berland and Shelley Hornstein (Montreal: McGill-Queen's University Press, 2000), 14–38 (p. 17).

[30] Charles Taylor, *Reconciling the Solitudes: Essays on Canadian Federalism and Nationalism* (Montreal: McGill-Queen's University Press, 1993).

[31] Pierre Bourdieu, 'The Market of Symbolic Goods', in Bourdieu, *The Field of Cultural Production: Essays on Art and Literature*, ed. Randal Johnson (Cambridge: Polity, 1993), 112–41 (p. 125).

[32] Theodor Adorno, 'Correspondence with Benjamin', *New Left Review*, 80 (1973), 55–80.

[…] preexisting social difference' by clearing a space that privileges disinterested and arbitrary judgment.[33]

As many of Bourdieu's critics have argued, the operations that produce these limits in cultural time and space are not predetermined by some enduring abstract structural hierarchy so much as reiterated over time in dynamic patterns of imitation and opposition.[34] What I aim to show here is that the iterative constitution of the autonomous field also allows a degree of change and negotiation in the 'exchange rates' of the different symbolic goods that circulate across it. Thus while the value of interdisciplinary 'digital' practices may have risen and the value of academic electroacoustic music may be in decline, neither change significantly destabilizes the distinctions and allegiances that elevate the status of a restricted set of elite musical practices. On the contrary, the turn to the digital could index an increasing scarcity of material resources, intensifying divisions among artists rather than alleviating them. In fact, claims that the new genres and new technologies mediate a better social and aesthetic future in Montreal are nearly identical to the modernist tropes previously associated with the old electroacoustic tradition. Instead, I argue, these claims can be thought of as participating in a complex 'remediation' of the autonomous field of production. I use the notion of remediation advisedly, keeping in mind Born's intersectional model and Gershon's attention to communicational convention. Here it is not simply a matter of the shaping of new media by old media in the sense of Jay Bolter and Richard Grusin's original coinage.[35] While institutions may often look to new technologies to remedy the inequalities of the past, they can also shape technological practice so as to sustain the dominant order.

Instead of further naturalizing the social and aesthetic associations of digital technologies in terms of their inherent *non-human* materialities, I want to understand how and why musicians and policy-makers go about pressing them into preconceived, often idealized *human* ends. A seemingly innocuous set of assertions about the preservation of a minority settler culture in the digital age also provides a point of entry into a broader consideration of the ways that technological change can be abstracted into aesthetic value. Grounded in 16 months of ethnographic fieldwork, my examination takes the form of a series of snapshots that show how, in spite of

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[33] Pierre Bourdieu, *Practical Reason: On the Theory of Action*, trans. Randal Johnson (Stanford, CA: Stanford University Press, 1998), 22.

[34] Edward LiPuma, 'Culture and the Concept of Culture in a Theory of Practice', *Bourdieu: Critical Perspectives*, ed. Craig Calhoun, Edward LiPuma and Moishe Postone (Cambridge: Polity, 1993), 14–34; Luc Boltanski and Laurent Thévenot, *On Justification: Economies of Worth*, trans. Catherine Porter (Princeton, NJ: Princeton University Press, 2006); Georgina Born, 'The Social and the Aesthetic: For a Post-Bourdieuian Theory of Cultural Production', *Cultural Sociology*, 4 (2010), 171–208.

[35] Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 2000).

significant rhetorical transformations, inequalities between genres can persist even after the eclipse of a dominant tradition.

A 'digital culture'

My fieldwork in Montreal began in May 2011 on the day of a highly anticipated federal election, the third in Canada in five years. Its results were portrayed in the media as marking a new stage in Canadian democracy. First, voters in Ontario, the country's economic core, shifted away from the previously dominant Liberal Party to construct the first Conservative majority in 20 years after a long string of ineffectual minority governments. Second, voters in Quebec shifted to the left-leaning federalist New Democratic Party (NDP), leading to the defeat of all but three members of the Bloc Québécois, the separatist protest party which had held nearly every federal seat in the province since 1993. As a result, the NDP became the official opposition party. Analysis in the press dubbed this Canada's first 'social media election', citing the influence of the *vague orange* ('orange wave', after the colour of the NDP logo) campaigns which ignited Quebecois Facebook and Twitter traffic in the weeks before the vote. Divergent narratives emerged almost immediately to explain this shocking change in the fortune of a party which had never held more than one seat in Quebec since it first posted candidates in 1962. Anglophone media reported the swing as signalling a drop in support for political separation and a new era of harmonious federal cooperation. In the francophone press, however, the turn seemed to indicate renewed isolation from the rest of the country. The NDP held 75 – slightly more than a quarter – of the seats in the House of Commons: Quebec's population had thrown its considerable federal influence behind a left-wing political orientation which the rest of the country seemed not to want to share. Complaints began to emerge from separatist quarters that the NDP had defrauded Quebecois voters to lure them away from their 'natural' support for the independence movement. It began to emerge that some of the NDP candidates had no serious connection with the province: they had never visited their ridings, and a few could not even speak French.

Campaign advertisements for the defeated Bloc Québécois lingered on the walls of Montreal's metro system in the weeks following my arrival. One depicted a track of stage lighting suspended above a vacant proscenium illuminating the curt slogan *Parlons culture* – a phrase signifying something between the English 'we speak culture' (as in, 'culture is our language') and the more imperative 'let's talk culture'. Like the Bloc's main campaign slogan that year, *Parlons QC*, these posters capitalized on the strong connection between language and place which characterizes dominant constructions of Quebecois identity. Here, however, the word 'culture' also gestured towards a connection between identity and the arts. This double meaning has served both separatist and counter-separatist purposes throughout Quebec's political

history.[36] The political scientist Diane Saint-Pierre situates its roots in the 'humanist' (*anthropologique*) thinking that drove cold war efforts to establish a discourse of 'cultural rights'.[37] Policy discourse during the emergence of the separatist movement in the 1960s deployed the concept of culture to signify both sovereign control over cultural *resources* and provision for cultural *needs*.

It was in this spirit that the separatist sociologist Fernand Dumont proposed a definition of culture with two layers.[38] 'First culture' for Dumont was the common-sense body of practices, meanings, ideals and models, akin to Bourdieu's *habitus*.[39] First culture is that which is always already present for individuals depending on where they were born. This layer of culture delineates the practices and objects included in Quebecois constructions of cultural rights and needs. It is this notion of culture to which Quebecois politicians refer when they speak of the immigrant populations that they host as minorities as *communautés culturelles* (cultural communities).[40] Dumont's 'second culture' is the acquired, ideological and historical consciousness that comes about through cultivation and education, including the arts. Quebecois nationalism places a high premium on the arts as an economic and social resource.[41]

Culture is thus not simply a background against which musical production takes form. Debates around what culture *is* are central to the public life of cultural producers and consumers. Quebec's aspirational status as an independent nation is deeply invested in both the first culture associated with language and place and the second culture expressed in artistic pursuits. In the past, this relationship was primarily mimetic. 'Since the political realm cannot offer its own proofs of the nation's reality,' writes literary scholar Erin Hurley, 'the fictions of cultural production frequently bear the burden of proving *le fait national*.'[42] Literary, musical and theatrical avant-gardes in the 1960s and 70s sought to reflect the everyday life of the rural population. But

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[36] Richard Handler, *Nationalism and the Politics of Culture in Quebec* (Madison, WI: University of Wisconsin Press, 1988), 102–10.

[37] She cites UNESCO interventions, André Malraux's *Maisons de la culture* programme in France and the decolonization movements of the West Indies and Algeria as particularly influential. Saint-Pierre, *La politique culturelle du Québec de 1992*.

[38] Fernand Dumont, *Genèse de la société québécoise* (Montreal: Boréal, 1993).

[39] Pierre Bourdieu, *Outline of a Theory of Practice*, trans. Richard Nice, Cambridge Studies in Social Anthropology, 16 (Cambridge: Cambridge University Press, 1977).

[40] Handler, *Nationalism and the Politics of Culture in Quebec*, 158.

[41] State support for cultural and social programmes has played a central role in marking nationalist political territory in Quebec. Comparative studies of the sovereignty movements in Quebec and Scotland emphasize how the drive towards devolution of powers has mirrored the decline of the welfare state since the 1970s. Nicola McEwan, *Nationalism and the State: Welfare and Identity in Scotland and Quebec* (Brussels: Peter Lang, 2006); Alisa Henderson, *Hierarchies of Belonging: National Identity and Political Culture in Scotland and Quebec* (Montreal: McGill-Queen's University Press, 2007).

[42] Erin Hurley, *National Performance: Representing Quebec from Expo 67 to Celine Dion* (Toronto: University of Toronto Press, 2011), 22.

genre, language and identity-bending spectacles such as those of Cirque du Soleil, Ex Machina and Carbone 14 have become increasingly emblematic of Quebecois creativity. Perhaps disillusioned by the waning of separatist sentiment, or perhaps in response to the proliferation of hybrid Quebecois identities as the population becomes more ethnically mixed, these new cultural representatives portray a kind of cosmopolitan ambivalence towards markers of origin. This plays into a popular essentialism contrasting the 'gestural' and 'emotional' character of francophone performance with the 'textual' and 'rational' focus of anglophone productions.[43] In practice, however, performances of Quebecois identity are difficult to divide along essentialized ethnic lines. The complication is particularly salient in Montreal. The patterns of translation which characterize everyday life in the city coalesce into a range of multilingual identities, expressions shaped by the gaps between languages and cultures.[44] Disguised and misread markers of identity render the city's linguistic and cultural character notoriously difficult for outsiders to decipher.[45] Its disparate traditions of acousmatic music, disco, prog rock and intermedia theatre have all made use of such complications of identity. In many ways, the complexity of mixture in Montreal, more than non-anglophone identity per se, is what makes culture there stand out as an issue.[46]

The city's reputation as a place where culture is a local speciality transcends local discourse. The independent rock scene, for example, is now widely mythologized as a kind of perfect storm generated by the constant migration of anglophone students from other parts of the continent.[47] Many were attracted to Montreal universities in the late 1990s by low tuition rates, cheap property values due to the slow recovery of the real-estate market following the second sovereignty referendum, and strict tenant protection laws.[48] The conditions benefited not only bands, but brands like Vice Magazine and American Apparel, which rose from Montreal's student ghettos to define global hipsterdom. Visual representations associated with these scenes paint a conspicuously displaced picture of Quebecois pride. Arguably the most popular and enduring band to emerge from the post-referendum independent rock scene is Arcade Fire, a group which draws most of its members from outside the city and releases its albums with an American independent label. They promoted their 2012

[43] *Ibid.*, 14–15.

[44] Sherry Simon, *Le trafic des langues: Traduction et culture dans la littérature québécoise* (Montreal: Boréal, 1994); Elspeth Probyn, *Outside Belongings* (Abingdon: Routledge, 1996).

[45] Will Straw, 'Music from the Wrong Place: On the Italianicity of Quebec Disco', *Criticism*, 50 (2008), 113–32.

[46] Alexandrine Boudreault-Fournier and Laurent Blais, 'La comète Piu Piu: Nouveaux médias et nationalisme en mutation', *Anthropologie et sociétés*, 40 (2016), 103–23.

[47] Geoff Stahl, 'Tracing Out an Anglo-Bohemia: Musicmaking and Myth in Montreal', *Public*, 22/23 (2001), 99–121.

[48] While tuition rates for non-resident students are higher than those for residents, residency can be established by living in Quebec for one year before undertaking full-time studies.

tour with a T-shirt featuring a stylized map of the province and the English-language warning 'Don't mess with Quebec!', riffing on a popular slogan for Texan tourism. The scene's annual point of convergence is a festival established in the late 1990s known as Pop Montreal. A variation on the 'buy local' poster hung on the lamp posts on busy St-Laurent Boulevard during the past few editions of the festival encouraged shoppers to weigh the value of goods *made icitte vs. made ailleurs*. The expression defies translation because, like many local idioms, it combines two languages. It playfully thwarts Quebec's notorious laws restricting the linguistic content of all signage to French, and succinctly encapsulates a salient local linguistic idiosyncrasy. The identity it signifies is perhaps best described as 'post-national'.[49]

Historical narratives play an important role in reining in this kind of cross-cultural promiscuity. The period known as the *Révolution tranquille* or Quiet Revolution is particularly effective in this regard. Accounts both inside and outside Quebec consider this time, situated roughly between the death of the conservative premier Maurice Duplessis in 1959 and the first sovereignty referendum in 1980, as one of national rebirth and self-actualization following the suppression of the francophone majority by a Catholic clerical orthodoxy and an Anglo-Canadian business elite.[50] New political aspirations arose among a rapidly urbanizing francophone population experiencing unprecedented economic empowerment.[51] Mainstream politicians downplayed problematic notions of ethnic particularity and revolutionary struggle, however, to construct a broader programme of modernization that led to sharp drops in church attendance, widespread educational reform and the Keynesian nationalization of energy and financial infrastructure.[52] Harnessing technological progress for the public good became a central component of nation-building strategy.[53] These efforts reached a symbolic peak in the massive urban redevelopment projects undertaken as Montreal prepared to host the World's Fair in the summer of 1967 and the Summer Olympics in 1976.[54] Traces of these events are still etched deep into the face of Montreal's urban core. Over the course of 20 years, the city's core sprouted an arts complex modelled on Lincoln Centre, an imposing crop of modernist skyscrapers, an ostentatious network of high-flying concrete traffic interchanges, an artificial island, a colourful

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49   Monica Heller, *Paths to Post-Nationalism: A Critical Ethnography of Language and Identity* (Oxford: Oxford University Press, 2011).

50   John Dickinson and Brian Young, *A Short History of Quebec* (Montreal: McGill-Queen's University Press, 2008), 305–6.

51   Jane Jacobs, *The Question of Separatism: Quebec and the Struggle over Sovereignty* (New York: Random House, 1981).

52   Jocelyn Létourneau, *Que veulent vraiment les Québécois? Regard sur l'intention national du Québec (français) d'hier à aujourd'hui* (Montreal: Boréal, 2006); Sean Mills, *The Empire Within: Postcolonial Thought and Political Activism in Sixties Montreal* (Montreal: McGill-Queen's University Press, 2010).

53   Taylor, *Reconciling the Solitudes*, 51; Hurley, *National Performance*, 20–1.

54   *Expo 67: Not Just a Souvenir*, ed. Rhona Richman Kenneally and Johanne Sloan (Toronto: University of Toronto Press, 2010).

underground transit system and two new university complexes.[55] The period is central to Montreal's reputation as a site of cultural dominance and as an icon of technological advance in Canada. Present-day cultural sentiment has been deeply affected by this weaving together of modernist technological projects and humanist notions of ethnic and linguistic empowerment.

The 'creative cities' strategies advocated by local lobby groups have intensified this connection, increasingly calling upon technoculture as an instrument of economic growth. The Quartier des Spectacles development initiated in 2002 set the tone, transforming Montreal's former red-light district into a permanent multimedia festival space.[56] In the language of provincial bureaucrats inspired by global creative-economy policies, such convergence between cultural institutions and business would facilitate 'transfers of expertise' and help artists secure access to specialized infrastructure. Business lobby groups called upon 'creatives' to become more involved in the local tourist industry.[57] Meanwhile, the culture ministry refocused arts funding on the provision of 'added value' by replacing some project funds with grants to stimulate corporate arts patronage.[58] Transnational policy trends aligned with and intensified the home-grown mythos of untapped vitality and diversity. Echoing transformations in cities around the world, post-Fordist gentrification advocates deployed artists and musicians as spokespeople for a more prosperous future.[59]

When professional consultations for the CALQ's new digital-arts initiatives began in the late spring of 2011, the province had already begun to prepare for the fiftieth anniversary of the 1967 World's Fair. Combined with the renewed feelings of cultural solidarity that followed the election results, plans for commemorations of the Quiet Revolution lent the meetings a strong sense of collective purpose. Rumours circulated about who would receive major commissions for the culminating celebratory events in 2017. Ten smaller meetings were held, each addressed to one of the disciplines the council supported with its existing funding instruments. The largest meeting heard three days of interventions from the literary sector. The second largest addressed the clientele for the proposed digital-art programmes. The bulk of the invitations to the two-day gathering went to prominent intermediaries and previous grant-holders in Montreal. Musicians, sound artists and music promoters made up a considerable part of the digital-art guest list, in spite of the fact that a meeting specifically for musicians had already taken place. The music consultation had focused on traditional instrumental and vocal genres, while the digital-art

[55] Gildas Illien, *La place des arts et la révolution tranquille: Les fonctions politiques d'un centre culturel* (Quebec City: Les Éditions de l'IQRC, 1999); Germain and Rose, *Montreal*.

[56] Joel McKim, 'Spectacular Infrastructure: The Mediatic Space of Montreal's "Quartier des Spectacles"', *Public*, 45 (2012), 128–38.

[57] Simon Brault, *Le facteur C: L'avenir passe par la culture* (Montreal: Voix Parallèles, 2009).

[58] Frédérique Doyon, 'Mécénat Placements Culture, version améliorée', *Le devoir*, 2 October 2013.

[59] David Harvey, *A Brief History of Neoliberalism* (Oxford: Oxford University Press, 2005); Adam Krims, *Music and Urban Geography* (New York: Routledge, 2007).

forum attracted musicians working in experimental and interdisciplinary settings. Delegates received a point form agenda a few days in advance informing them that the committee sought proposals to enhance the 'viability' of the field in five domains: creation, production, diffusion, promotion and advanced training. Nevertheless, concerns on the day gravitated repeatedly towards the category framing the discussion. How should the council identify specifically 'digital' productions? What defined this new medium that attracted musicians, visual artists, computer programmers and conceptual artists alike?

For the public servants leading the forum, the answer seemed to lie in a shared heritage of experimentation. The opening presentation revolved around a timeline mapping out the genealogy of the prospective genre. It began with international points of reference like the legendary 9 Evenings project at Bell Laboratories in 1966 and the foundation of Pierre Boulez's Institut de Recherche et de Coordination Acoustique/ Musique (IRCAM) in Paris in 1977. It continued with a list of starting dates for local artist-run institutions and festivals: the multimedia installation festival and computer animation competition Images du Futur (Images of the Future), curated by Hervé Fischer and Ginette Major every summer between 1985 and 1996; the web-focused multimedia centre Agence TOPO in 1993; the research-orientated SAT (Société des Arts Technologiques) and the feminist Studio XX established in 1996; Perte de Signal and the Fondation Daniel Langlois in 1997; the Elektra festival in 1999; and the Mutek festival, the inter-university art and engineering consortium Hexagram and the public sound installation *Silophone* built by the local duo The USER, all in 2000. Delegates were encouraged to embrace and celebrate this tradition of aesthetic mixture and interdisciplinarity. Together, the committee argued, these institutions had built Montreal into a 'hub for the digital arts', a beacon of creativity and diversity in North America with an international profile comparable to 'a little Berlin', thereby referencing not only the German city's post-reunification success as a hotbed of film, performance and electronic dance-music production, but also specific partnerships with Berlin-based festivals such as Transmediale and its younger sister Club Transmediale (CTM). Surviving architectural icons of Montreal's modernization attested to the durability and continuity of the tradition. In this regard, convenors suggested, digital mediation was only the most recent twist in a 'rhizomatic' network of progressive technological innovation.[60]

But there was little agreement when it came to defining the new discipline in strictly technological terms. Whenever the floor opened to commentary, delegates consistently cast aside any attempt to ground the genre in material or conceptual terms. Theoretical efforts to ground the scene in notions like 'digital material', 'code'

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[60] Deleuzian metaphors are popular with Montreal's music and media art critics. See, for example, Genevieve Letarte and Bernard Schütze, 'Mycologie urbaine: Montréal, ses scènes et ses sons', *Parachute*, 107 (2002), 102–13; *Dix ans de création numérique*, ed. Marie-Ève Charron (Montreal: Perte de Signal, 2008); Nathalie Bachand, *Angles art numérique* (Montreal: ACREQ, 2009).

or 'feedback' found only limited support. The prominent sound-art curator Eric Mattson, known for his work showcasing experimental musicians at the annual Mutek festival, stood several times to express his doubt that the council could ever actually distinguish an essentially digital quality or style. Where, he asked, would this leave producers working in analogue or mechanical media? Would digital-art committees simply ignore more conceptual practices exploring language or the body? Ideological unity was nowhere to be found. Pockets of dissent boiled over during breaks around the dominance of middle-aged male voices in the meetings and the lack of effort to make funding accessible to women and indigenous populations. An open letter of complaint prepared by a group of open-source software and hardware activists was roundly rejected.[61] Conversation quickly returned to safer matters like infrastructural support, international distribution networks and peer-review practices.

And so, culture emerged again as the explanation for the scene's cohesion. The director of the Elektra festival, Alain Thibault, argued the case. Accepting that a degree of mutual recognition had already obtained among key players, the question now was one of keeping up with the 'perpetual evolution' of technology. What was at stake, Thibault suggested, was not a sedimented tradition so much as an overarching 'digital culture' in continuous mutation. Instead of particular subcultures distinguishable by their computational preoccupations, Thibault's diagnosis deployed the digital as a kind of 'master sign' for the destabilizing force of late modernity itself: an index of speed, interchangeability and fluidity.[62] He also echoed the separatist trope of modernity as the end point of a passage from childhood to adulthood, the teleological inclination of a self-actualizing, independent political body.[63] In this view, a diversity of expressions was not a challenge to be overcome but a positive feature of digital progress. Harnessing the digital as a dynamic cultural resource was the best way to empower Quebecois artists on the world stage.

Local academic electroacoustic studios were conspicuously absent from the construction of futurity offered at these consultations, and the subtext of Thibault's intervention suggests an explanation. His invocation of digital culture echoed a paper he had published in the local new-music journal *Circuit* in 2002 expressing the reasons for his own break with electroacoustic tradition.[64] Thibault's own initiation to electroacoustic music had taken place in the mid-1970s at the fledgling Studio de Musique Électronique de l'Université Laval, where he studied with one of the first teachers of acousmatic music in the province, the GRM-educated multimedia

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[61] Réseau Koumbit, 'Logiciel libre: Lettre ouverte au CALQ', Montreal, 16 June 2011.

[62] 'Introduction', *Memory Bytes: History, Technology, and Digital Culture*, ed. Lauren Rabinovitz and Abraham Geil (Durham, NC: Duke University Press, 2004), 1–19 (pp. 4–5).

[63] Handler, *Nationalism and the Politics of Culture in Quebec*, 140–58; cf. Diane Lamoureux, *L'amère patrie: Féminisme et nationalisme dans le Québec contemporain* (Montreal: Les Éditions du Remue-Ménage, 2001).

[64] Alain Thibault, 'Culture numérique et électroacoustique', *Circuit*, 13 (2002), 51–6.

composer Marcelle Deschênes.[65] In 1980, when Deschênes went on to become the founding author of the electroacoustic curriculum at the Université de Montréal, Thibault was among the first cohort of postgraduate students. He learnt by assisting her with her ambitious intermedia operas, and soon garnered a reputation as an unrepentant heretic himself. His early compositions, such as *OUT* (1985) and *Volt* (1987), used piano-roll sequencing software to construct dark, new-wave-inspired sound palettes, complete with driving drum-machine patterns and sampled vocals plundered from radio and television broadcasts.

In 1993, he became director of the electroacoustic concert society ACREQ (Association pour la Création et la Recherche Électroacoustique du Québec), of which Deschênes had been among the co-founders in 1978. Before his arrival, the directorship of ACREQ had changed hands every couple of years, but Thibault transformed the institution into a personal outlet and remained in permanent control. Over the ensuing decade, he gradually increased the distance between the organization and the electroacoustic studios, first focusing activities on his own productions and then expanding outwards with the first Elektra festival in 1999. Written at the culmination of ACREQ's new identity, his *Circuit* article reads as a defiant manifesto. In it he imagines digital culture as a counterpoint to academic mediocrity, a tuning-in to changing demands generated outside the canon. He calls for renewed openness to the technical and stylistic fluidity of electronic dance musics, praising the direct concatenation these genres seemed to make between machine, rhythm and embodiment. Digital culture was much more than a response to new technological conditions. It stood for all the sounds and materialities that the electroacoustic tradition seemed to have left out.

The following summer saw the launch of ACREQ's Biennale d'Art Numérique (BIAN), expanding the Elektra festival's remit into a showcase for digital culture across the city. In an interview with me several months later, ACREQ's assistant director Nathalie Bachand described the development strategy as one of 'infection': in the years leading up to BIAN she had taken positions on the boards of other local institutions in an effort to align them with ACREQ's vision.[66] In 2011, however, most of the sound artists and composers with whom I spoke still expressed frustration with ACREQ's dominance. There was a conspicuous mismatch between Thibault's revolt against the electroacoustic tradition, on the one hand, and his festival's consistently high-brow programming, on the other. High-intensity, abstract, monochromatic audiovisual spectacles – typified by immersive showstoppers like Austrian artist Kurt Hentschlager's 2006 fog, strobe light and subwoofer piece *Feed*, which featured on Elektra's programme no less than four times between 2007 and 2011 – had become

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[65] Rosemary Mountain, 'Creating and Contributing: The Expansive Spirit of Marcelle Deschênes', *Musicworks*, 86 (2003), 14–21; Marie-Thérèse Lefebvre, 'Micheline Coulombe Saint-Marcoux et Marcelle Deschênes: Pionnières dans le sentier de la création électroacoustique', *Circuit*, 19 (2009), 23–41.

[66] Interview with Nathalie Bachand, Montreal, 28 May 2012.

the festival's mainstay. As a representative of the Mutek festival put it to me, in spite of the occasional inclusion of techno producers in its programmes, Elektra was clearly 'for the head' and not 'for the feet'. Cinema seats and gallery installations prevailed over dance floors. There was also a heavy focus on the festival's international profile, to the extent that I heard several artists complain that ACREQ had fallen out of touch with local sounds. Programming rarely diverged between Elektra and the Québec Numérique events that ACREQ organized in Paris. The same small group of international artists reappeared year after year. Instead of uniting the scene around a common cause, the spectre of a 'digital culture' gave programmers an alibi that excused them from accounting for frictions and inequalities. An imaginary, essentially digital plurality provided far more flexibility and prestige than the complex and contentious plurality of local aesthetic traditions and specific technological affordances.

'Robust, but invisible'

The academic electroacoustic scene had already begun to adjust itself to the new order. The long-running acousmatic concert series Rien à voir, established in the early 1990s by three disciples of the French composer Francis Dhomont, had recently rebranded itself as Akousma, a festival of 'immersive digital musics'. Montreal's two largest electroacoustic research studios, at McGill and the Université de Montréal, were in the process of rebranding their own programmes around terms such as 'digital music' and 'digital composition'. Decidedly minor in comparison, the smaller, practically orientated electroacoustics offering at Concordia University was busy catching up as well. And the changes it was undergoing were closely connected with the advance of digital culture policies.

Since it is not as strongly attached to conventional conservatoire training or scientific research, Concordia has a relatively dynamic relationship with notions of discipline, and thus its stake in aesthetic and technological progress is quite high. In a paradoxical way, it is both among the oldest and the newest electroacoustic composition programmes in the city. The first undergraduate major in electroacoustics was awarded only in 2005, but the courses at its core were first offered in 1970. Concordia itself came into being only in 1974, through a forced amalgamation of the adult education institution Sir George Williams University, administered by the Young Men's Christian Association (YMCA), and the anglophone Catholic seminary Loyola College, as part of the sweeping secularization and democratization reforms initiated by a Quiet Revolution public commission on the Quebec education system.[67]

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[67] *L'éducation pour tous: Une anthologie du Rapport Parent*, ed. Claude Corbo (Montreal: Les Presses de l'Université de Montréal, 2002); Yves Lenoir, 'Le Rapport Parent, point de départ de l'ancrage de l'école québécoise dans la logique anglophone nord-américaine', *Canadian Journal of Education*, 28 (2005), 638–68.

The YMCA's focus on applied and adult education has survived the merger to this day, and Concordia continues to cultivate a more pragmatic and flexible image than its more famous neighbours. Music teaching at Concordia falls under the authority of the Faculty of Fine Arts. Students can study for undergraduate degrees in classical performance, jazz performance, composition or electroacoustics. The department emphasizes pedagogy over research: no standardized postgraduate degrees are available. For some time, however, the electroacoustics area at Concordia did play an important role in organizing and representing electroacoustic researchers at the national level. Between 1986 and 2008, it hosted the Canadian Electroacoustic Community (CEC), a national professional society complete with its own open-access journal, an annual conference and a substantial archive of historical recordings.[68] It also maintained an international mailing list for electroacoustic composers and organized an annual student competition. Lately, however, attention and resources had begun to shift.

In 2001, the university had secured the first wave of funding for a major new art and engineering research consortium known as Hexagram. The project was among the first in the arts to receive support from the Canadian Foundation for Innovation (CFI), a federal body for engineering and infrastructure development founded in 1997. Its mandate was to foster interdisciplinary collaboration between media artists, academic research and the local multimedia industry. For nearly a decade, the consortium operated as an independent research board with partners at both Concordia and UQÀM. Activities were coordinated by a full-time team of administrators.[69] Then, in 2008, following disputes over mismanagement, this centralized structure was dissolved, and each university took full control over its share of the partnership.

The original CFI grant covered the provision of new studios, laboratories and digital design workshops whose interests cut across the various disciplines at the universities and other local institutions. Several Hexagram researchers had strong ties with ACREQ and the SAT, for example, so firm connections developed with the emerging digital-arts scene. Electroacoustics at Concordia remained at a distance from the new studios, despite the fact that one of its most active researchers, the composer and musicologist Rosemary Mountain, had helped to write the original grant application. In part, this was because the new technical and performance standards at Hexagram seemed to undermine the authority of long-established electroacoustic practice. Convergence only began in earnest in 2011 after the former Hexagram administrator Ricardo Dal Farra had been moved into the department as interim chair. When I arrived, staff were in the process of adapting to new facilities after moving from a relatively remote suburban campus to a new plate-glass office building shared with the School of

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[68] Rosemary Mountain, '"Sculpting" Sound: The Story of the CEC', *Journal of the Canadian Association of Music Libraries*, 29 (2001), 25–8.

[69] For an analysis of this earlier incarnation, see Jean-Paul Fourmentraux, 'Governing Artistic Innovation: An Interface among Art, Science and Industry', *Leonardo*, 40 (2007), 489–92; and Fourmentraux, *Artistes de laboratoire: Recherche et création à l'ère numérique* (Paris: L'Harmattan, 2011).

Business. The art and technology complex housing the Hexagram consortium, which had once been a half-hour bus ride away, was now reachable in ten minutes through a tunnel connected to the university's metro station. On the one hand, this afforded electroacousticians access to new interdisciplinary collaborations; on the other, it diminished their responsibility over classrooms, studios and equipment. Scheduling and spatial decisions which had once been handled more or less informally now underwent intense administrative oversight. Instead of using equipment internal to the department, instructors were now forced to draw from an interdepartmental pool of resources in which provision for discipline-specific habits and practices came second to the faculty-wide standard. On a material and spatial level, interdisciplinarity went hand in hand with a loss of heterogeneity.

The bulk of the resistance to Hexagram's nascent hegemony came from the founder of electroacoustics at Concordia, Kevin Austin. He had begun teaching in the music department while still studying as an undergraduate at the pioneering McGill studio in the early 1970s, and was instrumental in the genesis of the city's electroacoustic scene. He remained generally popular with students. Alumni included members of Arcade Fire, whose international success Austin proudly attributed to their rigorous electroacoustic training: this was a pedigree that connected them with the excellence of the international avant-garde. Austin himself had trained with the Hungarian-born composer Istvan Anhalt on equipment designed by the pioneering Canadian engineer Hugh Le Caine. The McGill studio's idiosyncratic oscillator banks, variable-speed tape machine and sequencer-like SSSG (Serial Sound Structure Generator) all came from Le Caine's workshop at the National Research Council in Ottawa.[70] Austin was such an expert on the Le Caine equipment that he remained at McGill as de facto technical assistant for several years after the Argentinian composer Alcides Lanza took over direction of the studio in 1971.[71] Although he arrived at Concordia with no teaching experience, the more pragmatic department afforded him the space to elaborate upon and systematize the approaches he had learnt under Anhalt. Working primarily with untrained musicians in a department without a composition stream, he could set assignments informed less by traditional music theory than by the cybernetics and phonetics research which had inspired the first wave of European electroacousticians.[72] His teaching still preserved the naturalism of the cold war avant-garde, conflating synthesis technique with an ideology of unmediated, objective auditory awareness.[73]

By the time Austin had settled into a permanent position at Concordia in the early 1980s, the courses he offered there were already surpassed by the better-funded

[70] Gail Young, *The Sackbut Blues: Hugh Le Caine, Pioneer in Electronic Music* (Ottawa: National Museum of Science and Technology, 1991).

[71] Alcides Lanza, 'McGill University: Its Electronic Music Studio Complex', *Interface*, 9 (1980), 59–69.

[72] Morag Grant, *Serial Music, Serial Aesthetics: Compositional Theory in Post-War Europe* (Cambridge: Cambridge University Press, 2001).

[73] Benjamin Piekut, 'Sound's Modest Witness: Notes on Cage and Modernism', *Contemporary Music Review*, 31 (2012), 3–18.

studio research being conducted at McGill and the Université de Montréal. Similar programmes had also taken off at universities in Toronto, Kingston and Vancouver.[74] Having limited opportunities to expand his course, Austin channelled his energy into remote connections. The idea of creating a national network came to him around 1982 or 1983, he told me. After the university awarded him a small technology grant to buy modems for the department's small collection of Apple II personal computers, he established his email list. This, he claimed, was the fulfilment of a promise inherent in the technology he had worked with as a student. 'This was the beginning of the technology that was going to allow the evolution that I had been waiting for 12 years previously.'[75] The idea of a national electroacoustic society arose from the galvanizing Wired Society conference at the Music Gallery in Toronto in 1986. The Canadian League of Composers (CLC) had traditionally rejected composers who worked only in electroacoustics, so the CEC would provide a kind of alternative union for those marginalized by the instrumental tradition. For Austin, steeped in the new telecommunications media, there was a more radical ontological distinction to be made as well. The bond between the members was not to be based on shared aesthetics – this would invite the same kind of exclusions that electroacousticians had experienced under the CLC. The way to avoid this, Austin believed, was to define the CEC in communicational terms:

> The word 'music' doesn't appear on the CEC website. It was designed to look at the nature of the technology and understand human communication in information theoretical terms. You have a source, a channel and a receiver, and this can be broken down into multiple sources, channels and receivers […] and the 'electroacoustics' is part of this chain that connects the ideas of this person to the cognition of this person. The idea is to make this part of the chain robust, but invisible.[76]

Present-day undergraduates at Concordia still learnt according to this principle. According to staff, the constraints an electroacoustician faced were not determined by genre, but inscribed into the communication process. Residual aesthetic biases returned, however, whenever questions of repertory arose. One example of this return came in the required electroacoustic history course 'From Edison to iPod'. At the time of my fieldwork it was being taught by a young instructor in the final years of a Ph.D. in music education. Responding to questions about the curriculum following one of my first visits to the department, he showed me the chronological listening syllabus he had prepared for the course. It began with the birth of modern sound recording, and

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[74] François Guérin, 'Electroacoustic Music', *Encyclopedia of Music in Canada*, ed. Helmut Kallman, Gilles Potvin and Kenneth Winters (Toronto: University of Toronto Press, 1992), 409–12 (p. 410).

[75] Interview with Kevin Austin, Montreal, 16 December 2011.

[76] *Ibid*. For a similar account dating from the early years of the CEC, see also Kevin Austin and George Lewis, 'On Identity and Fragmentation of the Ea/CM Community', *Computer Music Journal*, 20 (1996), 6–8.

proceeded by profiling the pioneering studios of the 1950s and 1960s. The challenge, he explained, was to find representative material for the last period, from 1980 to the present: there seemed to be few compositions of enough critical importance to merit inclusion. He laughed uncomfortably over the fact that the last few selections had been composed more than a decade *before* the invention of the iPod.

According to Austin, the task of sustaining tradition was difficult because the influence of pioneers like Anhalt and Le Caine had simply become too diverse and too fragmented to perceive. So long as the technological means of communication advanced, its democratization would increase. He advanced this theory at every opportunity. In an impromptu speech during the intermission of a concert on the twenty-fifth anniversary of the CEC in November 2011, for example, Austin danced among the assembled students and guests miming the growth of the organization as if it were a miniature city. Electroacoustics, he explained, had never been an exclusive club. It was a 'community', inclusive of musicians who did not necessarily see themselves as members, regardless of genre or style. 'We speak for everybody who uses loudspeakers to make sound,' he declared magnanimously. In the beginning, the growth of the community had been vertical, but now it was increasingly flat and horizontal. Practices that had accumulated on the fringes, like 'live electroacoustics' and 'turntablism', would one day overcome the centre. 'There's a kid with an iPad who's eight years old now and will have ten years of experience when she enters the programme,' Austin speculated. 'I don't want to have to teach that kid!'

But there was a certain affective friction between Austin's embrace of an expanding economy of practices and his desire to link it to a single chain of historical events. If the ideal was to keep the connections across the electroacoustic community 'robust but invisible', then there should be as little intervention as possible. But if connections continued to proliferate without intervention, then the community might lose sight of its unified basis in communication technology. Effectively, technological progress had condemned the electroacoustic tradition to usher in its own downfall. With few exceptions, the students to whom I spoke at Concordia dismissed their instructors' respect for the historical avant-garde as so much conservatism. Even those who embraced the electroacoustic tradition tended to wrap their attachment in self-deprecating humour. The current CEC president arrived at the anniversary concert sporting a T-shirt bearing the ironic slogan 'Sex, Drugs, and Academic Electroacoustic Music', which had been given out at a conference in Mexico City the previous summer. I complemented him on the joke, and a former student standing within earshot admitted to having the same shirt. This was a student who was now pursuing an interdisciplinary degree at Hexagram, and had been rather critical of the electroacoustic tradition in interview. Its supporters and its detractors could clearly share the ironic sentiment engendered by its decline.

The work of the maverick always feels futile when it reaches the critical point at which synthesis with the mainstream is no longer avoidable. Recalling to me how harshly the national composers' unions had once rejected electroacousticians, Austin

compared the bitterness of the marginalized CEC to that of the Greek tragic figure Electra. For Austin, Electra seemed to represent the electroacoustician's desperation at being denied access to the art-music world. Betrayed and banished by her own mother, Electra recognizes herself as the rightful heir to the throne, but is incapable of taking revenge without thereby bringing misfortune upon herself.[77] The metaphor was shot through with ironies. Not only was this a remarkably feminized character for a community in which women had struggled so long for access;[78] it was the same character that Thibault had used to name his decidedly *anti-electroacoustic* festival. Both seemed to want to inherit the prestige of the avant-garde tradition (their metaphorical mother) by destroying or surpassing it with the help of 'the digital', but to do so would make the kind of prestige they sought impossible. For Austin, however, the sentiment of defiance and exile was far more real. The true extent of the electroacoustic tradition's bitterness was evident only now that it had lost its grip on its own rebellion.

'Tainted blood'

In the weeks following my semester at Concordia I met with the CEC's co-founder, a former student of Austin named Jean-François Denis. Denis left his academic career behind in the late 1980s to found the label empreintes DIGITALes with the Ottawa-born composer Claude Schryer. The goal of their collaboration was to issue high-quality electroacoustic music on the latest digital formats: first CD, later multichannel audio DVD, and in the future, Denis promised me, the highest definition multichannel streaming format. Instead of the multicomposer programming common in classical recordings, however, each disc would profile an individual. The name of the label indexed these defining features through a bilingual play on the French term for 'fingerprint'. Although still operating from a residential apartment in the city's eastern

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[77] Euripides, *Electra*, in *Medea and Other Plays*, ed. Philip Vellacott (Harmondsworth: Penguin, 1963), 105–52.

[78] Although I did not have access to official data for other years, I did note that women were outnumbered by a factor of 20 to 1 in the 2011 cohort of electroacoustic undergraduates at Concordia. Efforts to establish spaces for women in the scene began as early as the 1970s, but representation remains a pressing concern. See Marie-Thérèse Lefebvre, *La création musicale des femmes au Québec* (Montreal: Les Éditions du Remue-Ménage, 1991); Andra McCartney, 'Gender, Genre and Electroacoustic Soundmaking Practices', *Intersections*, 26 (2006), 20–48; and Patrick Valiquet, 'Animating the Object: Marcelle Deschênes and Electroacoustic Education in Quebec', *Organised Sound*, 22 (2017), 385–93. For analysis of the role that the Electra myth has played in historical efforts by men to enclose the expression of female sexuality in shame and taboo, see also Lawrence Kramer, 'Fin-de-siècle Fantasies: Elektra, Degeneration and Sexual Science', *Cambridge Opera Journal*, 5 (1993), 141–65, and Simone de Beauvoir, *The Second Sex*, trans. Constance Borde and Sheila Malovany-Chevallier (New York: Vintage, 2011), 50–62.

Plateau neighbourhood, the label has gone on to gain a global reputation as the definitive arbiter of the acousmatic sound, with a particular emphasis on composers from Canada and the United Kingdom.

Given such self-consciously digital branding, I thought to ask Denis if he could think of anyone in Montreal whose work had a characteristically digital aesthetic. At first, true to acousmatic principles, he protested. Electroacoustic music is a music 'made of sounds', he told me: one intends a certain sonic quality, and attempts to realize it with whatever equipment is at hand.[79] If a composer is influenced by the equipment, their work is concerned with something other than sound. He offered the example of Jean Piché, who composes in a multimedia genre he calls *vidéomusique*. Then, at my insistence, Denis took a scrap of paper from his desk and sketched out a timeline of the local field. Alongside the foundation of key festivals and institutions, he pinpointed instruments that had transformed some aspect of production or consumption. A cluster of reference points seemed to emerge around 1990: his own label, the Akai S1000 sampler, the Alessis ADAT digital tape format. But the most important event of this period was a festival Piché himself had curated, the penultimate edition of a touring showcase of 'downtown' composers known as New Music America (NMA).[80] NMA created a 'new dynamic in Montreal', Denis claimed. For the first time, a festival encompassed the whole gamut of contemporary sounds. No one could have ignored Piché's impact.

Piché had his first training in electroacoustic music in the mid-1970s at the Université Laval, where he worked in the same studio as Deschênes and Thibault. He then left Quebec to study at Simon Fraser University (SFU) in Vancouver with the co-founder of the acoustic ecology movement, Barry Truax.[81] It was there that Piché began using a digital computer to program his compositions. After short periods at Stanford University in California and the Institute of Sonology in Utrecht, Piché continued to make his home in Vancouver for several years. He started a family there, and found work producing commercial music and jingles at Mushroom Studios, a popular recording site among rock bands. He soon left behind the mainframe programming of the academic studios when he became one of the first private musicians in Canada to buy a Fairlight CMI, the Australian standalone sampling and sequencing system popularized by Peter Gabriel and Kate Bush.[82] Around the same time, Piché's former colleagues Deschênes and Thibault adopted the Fairlight at the Université de Montréal as well. Its pop-orientated sample library and piano-roll sequencing interface gave their music a rhythmic quality which set it apart from the modernist orthodoxy. The hybrid style of works like Deschênes's monumental new-wave-inspired *OPÉRAaaaAH!* (1981–3) set the standard for intermedia production in Canada. Indeed, sequencing-heavy compositions such as these are perhaps the closest

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[79] Cf. Pierre Schaeffer, *Traité des objets musicaux* (Paris: Éditions du Seuil, 1966).
[80] *New Music Across America*, ed. Iris Brooks (Los Angeles, CA: California Institute of the Arts, 1992).
[81] See Barry Truax, *Acoustic Communication* (Norwood, NJ: Ablex, 1984).
[82] Interview with Jean Piché, Montreal, 16 May 2012.

we can come to a material point of divergence between electroacoustic music and what later became digital art.

After his stint in Vancouver, Piché had moved on to Ottawa, where he worked as a programme officer for the music section of the Canada Council. He made a name for himself there by introducing a new genre category positioned between classical, traditional and popular experimentalisms known in Quebec as *musique actuelle*.[83] The new category opened up new channels of support to crossover improvisers and composers with links to jazz and rock. It was thus as a federal policy-maker that Piché began to shape Montreal's sound. Genre-bending work that had previously gone unrecognized by the council's peer-review committees would now receive full consideration. And although there were still those at home who questioned his federalism, his success as an intermediary of Quebecois interests in Ottawa earned him new credibility. When the faculty of music at the Université de Montréal announced a new position in electroacoustic music in 1988, Piché joined Deschênes as the studio's second full-time faculty member.

As artistic director of NMA in 1990, Piché would solidify his reputation for pluralism. Subtitled Montréal Musiques Actuelles, the Montreal edition of NMA brought together contemporary Canadian and Quebecois composers and improvisers with rising stars from the American and European downtown scenes. The list of guests would be considered adventurous even today: it included conceptual composers like La Monte Young and Alvin Curran, feminist pioneers like Joan La Barbara and Hildegard Westerkamp, and rock crossover artists like Rhys Chatham, Einstürzende Neubauten and Brian Eno.[84] The American producers behind the annual touring showcase sold it as a celebration of diversity in the face of cloistered academic tradition. In a review published a few months after the festival, Piché echoed their optimism. For him, NMA proved that the 'most important American aesthetic currents' of the day were those flourishing outside the university. The goal of a progressive new-music festival should be 'to make co-exist, under the lights of the same stage, every type of musical expression demonstrating a willingness to push back the limits of the language of its choice'.[85] Piché denounced the 'snobbism' of the 'partisans of hard discipline' among Montreal's critics and musicians. This was a music that could finally speak to audiences on their own terms. 'One of my little satisfactions of the festival', he wrote, 'was a comment from a sympathetic regular of the "punk" bar Foufounes Électriques. For him, *musique actuelle* was even more crazy (*sauté*) than industrial rock!'[86]

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[83] Literally, 'current' music. See Sophie Stévance, *Musique actuelle* (Montreal: Presses de l'Université de Montréal, 2012).

[84] Iris Brooks *et al.*, 'Montréal Musiques Actuelles/New Music America 1990: 1 Novembre–11 Novembre 1990', *Musicworks*, 50 (1991), 49–53.

[85] Jean Piché, 'Montréal Musiques Actuelles / New Music America 1990: Post-mortem d'un festival', *Canadian University Music Review*, 11 (1990), 138–40 (p. 138).

[86] *Ibid.*, 139.

Piché's confrontation found broad support among Montreal's younger electroacousticians and sound artists. Kathy Kennedy, experimental vocalist and founder of the feminist media art centre Studio XX, declared, 'Montréal's community could never again succumb to academic complacency after the shrieking of choirs and church bells in the streets, the kumungo pluckings through deafening silence at Foufounes Électriques.' An even more provocative response came from the critic George Dupuis, who described Piché's festival as 'less an affront to the FIMAV [the long-running Festival International de Musique Actuelle de Victoriaville, which shared Piché's pluralist leanings] than to the historically staid Montréal scene (which, in recent years, seems to have run out of the blood tainted by Boulezian influences)'.[87] This image of 'tainted blood' would have been extremely loaded at the time. In 1991, Canada was still reeling from a massive government scandal in which thousands of haemophiliac patients had been given unscreened transfusions of blood infected with Hepatitis C and HIV (human immunodeficiency virus). The scandal escalated into a public inquiry, which led to the dissolution of the Canadian Red Cross Society in 1993.[88] Dupuis's critique shows how polarized the claims of modernists and postmodernists had become at this pivotal time. Indeed, high-profile dissenters in Montreal asserted that Piché's pluralism would lead to a complete breakdown of musical value judgments if left unchecked.[89] Cracks had begun to show in the canon, and debates around what was to come next had reached their highest pitch.[90]

Piché's work has since transcended the vitriol and retained its cross-genre appeal. More orthodox figures like Denis praise his efforts as a vital part of the continuation of Montreal's electroacoustic tradition. During my fieldwork I attended warmly received lectures by Piché in the music departments at Concordia and McGill. He continued to describe his work using theoretical concepts borrowed from acousmatic theory. In a 2004 interview about his audiovisual composition *Sieves*, for example, he connects his approach with Michel Chion's theories of cinematic synchresis:[91] 'I compose with the images the same way I do with the sound material, in the sense that I will distort and process them with varying degrees of recognisability,' he explains. 'The complexity of the image is associated with the complexity of the sound.'[92] Meanwhile, proponents

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87 Both comments are from a collective review in the Toronto-based journal *Musicworks*. Brooks *et al.*, 'Montréal Musiques Actuelles'.

88 André Picard, *The Gift of Death: Confronting Canada's Tainted-Blood Tragedy* (Toronto: HarperCollins, 1995).

89 Jean-Jacques Nattiez, 'Faut-il tout accepter?', *Circuit*, 1/2 (1991), 43–50; Dominique Olivier, 'Montréal: Portrait d'une saison hybride (1990–1991)', *Circuit*, 2/1–2 (1991), 163–78.

90 Note that this was also the period when the anti-modernist interventions of figures like McClary and Born first began to rise to the attention of anglophone musicologists.

91 Michel Chion, *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Columbia University Press, 1994).

92 Paul Steenhuisen, *Sonic Mosaics: Conversations with Composers* (Edmonton: University of Alberta Press, 2009), 262.

of digital art like Thibault were attracted to the high-tech quality of his productions, which demanded expensive, cutting-edge rendering and projection equipment. Also audible were the years Piché had spent in a rock studio. He drew inspiration from a mix of American minimalism and favourite British prog bands like Hawkwind and King Crimson. Consonant drones and repetitive percussion patterns, sometimes generated from recordings of instrumental performers, continued to betray his debt to these styles.

At a noise show in a Villeray art gallery one night in 2012, a musician with whom I was speaking showed me that he had installed Piché's 1980 composition *Rouge* as the ringtone on his smartphone. This musician had dropped out of a Concordia electroacoustic degree for what he described as 'aesthetic reasons', but still felt a close connection with Piché's music on this informal, everyday level. As Bernard Gendron has noted, the 'secondary aesthetic practices' of musicians – their styles of consumption and taste – play an important role in expressing their aspirations.[93] According to Born, we can understand these markers as mediating allegiance with genre as imagined community.[94] But electroacoustic music is not the end point of the chain of mediations here. On the contrary, I would argue that by using Piché's electroacoustic music as his ringtone, the noise musician was actually performing his solidarity with Piché's *rejection* of the genre.

A look at *Rouge*'s recent history reinforces this interpretation. *Rouge* was the first track on a 1982 LP entitled *Heliograms* which documents the early computer compositions Piché realized at Stanford and SFU. In early 2011, the album appeared on an anonymous avant-garde MP3 blog called Continuo. It was here that *Heliograms* first rose to the attention of Montreal's loft denizens. Piché found a new champion in the experimental rock musician Roger Tellier-Craig. Tellier-Craig had begun his career as a guitarist and synthesist in post-rock bands like Godspeed You Black Emperor! [*sic*] and Fly Pan Am, but by 2012 his work was at the forefront of an underground 1980s revival inspired in equal parts by italo disco and the new-age sounds of composers like Vangelis. From this perspective, Piché's prog and minimalism-inspired juvenilia sounded almost prophetic. Soon Tellier-Craig approached Piché to arrange a re-release of *Heliograms* on vinyl.

Piché welcomed the renewed interest in his early work, although as he told me in interview, he regarded the choice of format as fetishistic and misguided. In his view, the idea of analogue being 'warmer' or more natural than digital was just a kind of marketing myth: the fact was that it had always had lower bandwidth than digital formats. That was why he had turned to the computer in the first place. Why should anyone nowadays have to struggle to hear a signal through the noise? So Piché

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[93] Bernard Gendron, *Between Montmartre and the Mudd Club: Popular Music and the Avant-Garde* (Chicago, IL, University of Chicago Press, 2002), 18–19.

[94] Born, 'Music and the Materialization of Identities', 378.

responded with what amounted to his own personal reappropriation. He extracted two sections, *Rouge* and *Ange*, from the 1982 album, remastered the audio in a high-definition digital format and joined the two compositions together with a seamless fade. He then set about designing animations to accompany the new arrangement, assembling HD footage from a trip to India in Adobe After Effects and processing it to near abstraction. This new *vidéomusique* realization of *Rouge* and *Ange* premièred at the next Elektra festival in early May 2012.

If we follow Tellier-Craig's work from the same period we can discern a further bifurcation. The video for Piché's remastered *Rouge* compares readily, for example, with Sabrina Ratté's video for Tellier-Craig's 2012 track *Data Daze*, released under their collective pseudonym Le Révélateur. The two works are strikingly similar. Both feature pulsing minimalist-derived algorithmic rhythms and shimmering, string-like synthesizer pads. Both animations are organized around shifting, brightly coloured, almost fractal checkerboard patterns. While Piché's video modernizes *Rouge* with high-definition effects, however, Ratté's video for *Data Daze* produces an uncanny, pseudo-vintage quality. In effect, *Data Daze* recreates *Rouge* as the rarefied, ghostly discovery it was for the MP3 blogger who set the whole chain in motion. Viewing and listening to the two side by side, it is almost as if the historical sequence of the two tracks were reversed: *Data Daze* looks and sounds like a distant precursor to *Rouge*. Piché's pluralism had given birth to a monster. If the electroacoustic influence could still be heard, it was circulating endlessly across a web of mediations linking the Stanford computer music studios, the Elektra festival and the noise musician's mobile device.

'Coalescence'

By the summer of 2011, it was clear that the boundaries of electroacoustic music were shifting, but it was not clear who was responsible for defining the motivation for the movement. There was no simple homology between aesthetic, technological and social factors. Generational allegiances seemed to have little role to play. New and old figures alike rushed to articulate alternative accounts of electroacoustic history and meaning. Claims to liberalization and democratization arose from both sides. Policy-makers and power-brokers hoped to gather these changes under the unified banner of 'creative' technological progress. But on the ground, matters were never quite so simple. The digital seemed to promise both a means of breaking down electroacoustic hegemony and a means of renewal from within.

The debate over which side would carry this progress forwards also provided an alibi for dominant figures in the scene who were increasingly being called upon to address more concrete inequalities. This played out most obviously in the gendering of concert and festival programmes. Women's expressions have historically been severely limited in electroacoustic and other art-music scenes, both in Montreal and

elsewhere.[95] Because gender was a matter of open debate, however, it tended to cover up the intersectional matter of racial inequality. Women's absence was in a sense highlighted by their minimal inclusion. The absenting of black, Asian and aboriginal artists from the electroacoustic and digital-art scenes in Montreal was almost without exception, and thus rarely rose to attention. Efforts to correct the dynamic behind these exclusions faced a complex battle, because they not only were enshrined in the structures of dominant institutions, but also informed the immediate and material construction of performance conventions.

One of the most outspoken critics of social inequality in the scene at the time of my fieldwork was the composer and visual artist Freida Abtan, a former student of both Austin and Piché. In one sense, Abtan was an advocate for the kind of expanded electroacoustic plurality that her teachers espoused in their work. She performed this commitment in her deeply personal audiovisual aesthetic, mixing electronic dance music with industrial, experimental and acousmatic influences. Her career path cut across the disciplines of computer science, music and the visual arts, and she extended this interdisciplinarity to her generous engagements as a teacher and concert promoter. While many of the feminist interventions in Montreal's electroacoustic and sound-art scenes favoured separate spaces, outside the scene's overwhelmingly straight male mainstream, Abtan had adopted a more conciliatory tactic, struggling to appropriate and pluralize conventionally gendered spaces and positions of authority.[96] This kept her busy, and we crossed paths repeatedly as I conducted my fieldwork. Over the course of my stay she taught computer programming classes for visual artists at Concordia, worked as a software engineer for a handful of Hexagram researchers, volunteered as a conference organizer with the International Computer Music Association, completed her doctorate in computer music and multimedia from an American ivy-league university and organized an informal monthly concert series. Her work was also proudly eclectic, however, and for many this was reason enough to dismiss her efforts.

In her concert series Abtan sought to set up conditions in which the wide of range of styles and practices circulating in Montreal could meet and coexist. She had encountered a diverse group of friends and colleagues over her many years in the city, and this was a place to bring them together. The venue for these meetings was a small cafe on the ground floor of a residential building in the rapidly gentrifying former immigrant neighbourhood known as Mile End. The cafe was called Cagibi – the colloquial word for a small storage room or closet. It cultivated the kind of hip, thrift-store intimacy that appealed to Mile End's growing population of students and

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[95] Tara Rodgers, *Pink Noises: Women on Electronic Music and Sound* (Durham, NC: Duke University Press, 2010); Georgina Born and Kyle Devine, 'Music Technology, Gender, and Class: Digitization, Educational and Social Change in Britain', *Twentieth-Century Music*, 12 (2015), 135–72.

[96] Both have a long history in the feminist critique of science and technology. For a comparison, see Judy Wajcman, *Feminism Confronts Technology* (Cambridge: Polity, 1991).

culture workers. Spread across two rooms in a ground-floor shop front, the venue was stuffed with vintage furniture and wistful artwork. The kitchen, facing east towards Boulevard St-Laurent, served small vegan dishes, drinks and coffee. The room facing Rue St-Viateur to the north was fitted with a small stage and a battered sound system. Noise from a busy adjacent intersection leaked through large windows lined with dusty house plants. The atmosphere in the back room approached that of a small bar, but the owners had recently received a warning from city inspectors that their alcohol licence permitted them to serve drinks only with food. So the audience was often reserved, discouraged from lingering after the music had finished.

Each of the instalments in Abtan's series had a name, and my first visit was on a night she had entitled Coalescence. When I arrived hoping to make a recording of the performances, she was busy taking admission, so she directed me to introduce myself to the musicians and find out how they were set up. First on the bill was an improvised duo by local sound artists Émilie Mouchous and Andrea-Jane Cornell, both former students of Concordia's electroacoustics programme. Cornell worked as music director at the McGill student radio station, and Mouchous had settled into an administrative job at an independent gallery in the village of Granby, a short drive away on Montreal's south shore. The duo had arranged their gear on a worn-out sofa positioned to the side of the audience. Mouchous played a bulky black Korg MS-10, a popular vintage analogue synthesizer, with a handful of short patch cables poking out of its iconic faceplate. One of the cables extended to a small patch of red and white fabric. Mouchous had quilted the patch with conductive thread, and could modulate the synthesizer by folding and stretching it in her hands. Cornell's set-up consisted of a handmade wooden frame with amplified pieces of yarn stretched across it, a couple of guitar-effect pedals and an ageing white laptop that ran a sampling patch she had written in the visual programming language Max-MSP. They both patched their instruments into a small mixing board hidden under the sofa, and its output ran through a single monitor speaker they had positioned on the floor by their feet.

The other performers on the bill had assembled their gear on tables at the front of the stage. Four silver Apple laptops faced the audience with their identical backlit logos glowing brightly. Each was neatly wired to a blinking MIDI controller and high-resolution digital audio interface. Like Mouchous and Cornell, each of the other acts had elected to play through their own separate mixer and sound system. The duo scheduled to play second consisted of the director of Hexagram, Chris Salter, and a visiting collaborator from the Netherlands introduced by the stage name TeZ (Maurizio Martinucci). They had brought a sound system with them from the university downtown, positioning the four speakers on high stands surrounding the audience. The third duo on the bill, the self-proclaimed 'intelligent dance music' group Foil, would use the house system, a pair of multipurpose speakers normally used by rock and folk acts. From the sofa, I overheard Mouchous and Cornell crack jokes about needing a new computer. They were clearly aware of the gendered hierarchy the instrumentation suggested. Their choice of the intimate, almost domestic space of the

sofa over the public space of the stage, although definitely aligned with the expectations of their habitual loft audience, seemed here to foreground the gender division even more.[97] At any rate, the unusual proliferation of speakers and mixers clearly broke the norms of concert amplification. There was no single point of reception for the audio signal. Each act would effectively try to impose the space they wanted.

As the start time approached, a larger than normal audience poured into the small back room of the cafe. I recognized several prominent figures: a handful of Hexagram researchers, electroacoustic faculty from a couple of the university studios, a small contingent of regulars from the loft scene. Notable figures from ACREQ and Hexagram sat at the back with a small entourage. True to Abtan's goal of setting up a meeting point for contrasting genres, these were publics not accustomed to sharing tastes. But their coalescence into one audience would prove difficult. Listeners sat chatting and waiting for the first performance as the scheduled start time passed. There was finally a flurry of negotiations at the back of the room. Abtan had originally scheduled Mouchous and Cornell to play first. Salter and TeZ complained that their guests were in a rush and would not be able to stay. Finally, Abtan conceded that they could open the programme instead.

The performances that followed dramatized the groups' technological and social differences. Salter and TeZ featured complex spatialization techniques more appropriate to the carefully treated acoustic of a Hexagram laboratory than to a noisy bohemian cafe. They sat behind their laptops and barely moved over the course of their half-hour set. Their sound palette was subdued, textural and abstract, suggesting the stark machinic worlds of glitch or ambient techno. If perhaps somewhat monotonous, the music was also highly polished. It began almost inaudibly. Twittering, scratching loops spun seamlessly around the four-speaker sound system in accumulating layers, sometimes developing into rhythmic patterns with the help of thumping sub-oscillator beats before fading away. For 20 minutes, they built the layers into a long, full-spectrum drone, which then dropped abruptly into dramatic silence. After the applause, Salter and TeZ quickly packed away their speaker system and left, conspicuously taking their high-profile audience with them.

Mouchous and Cornell's performance sounded like a deliberate countermovement to the first. Their set-up was heterogeneous, tending towards the tactile and performative. They played from what they told me were their 'graphic scores' for the evening – triangular sheets of pink paper drawn up by a comic-book artist who owned the art and antique shop next door. Their improvisation proceeded through a series of jagged timbral tableaux. As they began, Cornell scraped together a pair of ceramic saucers accompanied by the delicate whining and squelching of Mouchous's MS-10. The synthesizer part developed into a long textural solo, first over a quietly skipping loop recorded from Cornell's plucked strings, and later over a field recording of frogs and crickets. The combination of textures cultivated an almost pastoral mood. After only

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[97] Doreen Massey, *Space, Place and Gender* (Cambridge: Polity, 1994).

half an hour, it drew to a close with a long, low-frequency drone pulsating under a layer of surreal backwards scraping noises from the computer. Again, the applause was followed by an unmistakable audience exodus. Only a few people stayed to hear Foil push the café's sound system as hard as they could, posing and rocking behind their laptops. Repelled either by the volume or the style (it was impossible to tell for certain), the audience shrank ever further.

There is no simple way to interpret the frictions produced by Abtan's attempt to foster a new electroacoustic plurality that night. Perhaps her guests' failure to rise above the professional hierarchies and entrenched gender imbalances left a dissonant note in what should otherwise have been a harmonious mixture of sonic practices. Perhaps Abtan's curatorial vision pushed the ideology of digitally engendered diversity too far, and the conjunction was simply not strong enough to support such stark aesthetic dissension. Yet another interpretation might focus on the technological differences between the various genres in play. Perhaps the fragmentation came about because each act expected, and tried to reconstruct, a mutually incompatible set of infrastructural conditions in their performance. I want to hold on to all three of these interpretations. What is clear is that matters of professional, aesthetic and technological distinction still flow through social and institutional channels that increase the concentration of cultural capital. While the relative value of certain practices and aesthetics may have changed, the power structures musicians must negotiate to rise in the ranks still presume a certain embrace of the 'serious' disposition. In this sense, discourses of organic creativity and plurality simply add a flourish of Bourdieuian bad faith.[98] Competition over cultural capital continues, and all the better when competitors believe they have chosen it freely.

Conclusion

Bourdieu's reproductive framework has been rightly criticized for defusing performative subversions of the prevailing order, and thus potentially reinforcing the unequal distribution of power it purports to unmask.[99] A variety of new digital practices, not all of them exclusively digital in a technical sense, have indeed been put forward for their potential to reconfigure the modernist hierarchies that structure the electroacoustic canon.[100] In the digitalization of Montreal's electroacoustic scene,

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98 Richard Jenkins, *Pierre Bourdieu* (London: Routledge, 2002), 158.

99 Jacques Rancière, *The Philosopher and his Poor*, ed. Andrew Parker (Durham, NC: Duke University Press, 2004); Caroline Pelletier, 'Emancipation, Equality and Education: Rancière's Critique of Bourdieu and the Question of Performativity', *Discourse: Studies in the Cultural Politics of Education*, 30 (2009), 137–50.

100 For example, Monty Adkins, Richard Scott and Pierre Alexandre Tremblay, 'Post-Acousmatic Practice: Re-evaluating Schaeffer's Heritage', *Organised Sound*, 21 (2016), 106–16.

however, what is at stake is not necessarily a set of organic subversions from below. Musicians and artists have been heavily incentivized from above to compete among themselves, and must now do so for smaller and smaller portions of concentrated state support. Digital media may afford cheaper production and distribution of musical commodities,[101] but they provide no guarantee of progression in the cultural hierarchy that institutions still depend upon for legitimacy. Funding has remained concentrated in the most prestigious practices, which have converged with the most potentially lucrative areas of research and production. In many cases, then, the decline of old aesthetic orthodoxies indexes little more than the degree to which neo-liberal capitalism has infiltrated electroacoustic practice. Like the excesses of Burning Man for the tech workers of Silicon Valley, the rise of interdisciplinary digital-art festivals in Montreal gives unity to the social and economic vision of the local technology industry and its political supporters.[102] It is, of course, crucial to keep sight of the local differences that can shape individual experiences of epoch-defining concepts like neo-liberalism and post-Fordism.[103] As Gershon has argued, however, a critical anthropology of neo-liberal formations cannot stop at localism, but must also stress the contradictions in scale, power and morality that structure neo-liberalism itself.[104] This is what I have tried to show by highlighting the intersection of neo-liberalism with an existing modernist ethos of cultural distinction. The efforts of formations like ACREQ and Hexagram have to a degree diversified the aesthetic options within the space of Montreal's electroacoustic tradition. And neo-liberal policy encourages us to think of these transformations as the beneficial result of a successful harnessing of new technologies. But such transformations do not erase the institutionalized inequalities that govern access to positions of power, nor are they ever reducible to the autonomous influence of technology.

In Markus Krajewski's history of the index card, he suggests that there may still be value in Claude Shannon's classic definition of the theory of communication as a study of signals travelling from sender to receiver across a noisy channel. The place of 'mediation' in this model is to assist engineers in managing the noise that disrupts the signal as it travels. In order to keep mediation operating within an acceptable range of meaningfulness and order, sender and receiver must work together to limit the entropy of these inevitable disruptions.[105] As digitalization intensifies, scholars should of course

[101] Jeremy Morris, 'Understanding the Digital Music Commodity' (Ph.D. dissertation, McGill University, 2010).

[102] Fred Turner, 'Burning Man at Google: A Cultural Infrastructure for New Media Production', *New Media and Society*, 11 (2009), 73–94.

[103] David Hesmondhalgh, 'Flexibility, Post-Fordism and the Music Industries', *Media, Culture and Society*, 18 (1996), 469–88; Benjamin Tausig, 'Neoliberalism's Moral Overtones: Music, Money, and Morality at Thailand's Red Shirt Protests', *Culture, Theory and Critique*, 55 (2014), 257–71.

[104] Ilana Gershon, 'Neoliberal Agency', *Current Anthropology*, 52 (2011), 537–55 (pp. 546–7).

[105] Markus Krajewski, *Paper Machines: About Cards and Catalogs, 1548–1929*, trans. Peter Krapp (Cambridge, MA: MIT Press, 2011), 5.

remain vigilant to the noise it inserts into existing sociomusical channels. But that vigilance must include the ongoing reciprocal actions whereby people mediate and remediate the noise of the digital, such that communication can proceed according to established expectations about what already constitutes good musical knowledge and behaviour. The digital is not an external force that transforms contemporary musical culture independently of human desire. Rather, musical engagements with the digital are the very materialization of human desire, and in many cases desire is still difficult to disentangle from the modernist mythologies that ensure unequal flows of capital and concentrations of power.

ABSTRACT

This article examines ongoing efforts to associate the decline of the modernist electroacoustic music tradition with the rise of digital technologies. Illustrative material is drawn from ethnographic and archival fieldwork conducted in 2011 and 2012 in the Canadian city of Montreal. The author surveys examples of institutions, careers, performances and works showing how the digital is brought into the ideological service of existing musical orders and power structures by musicians, policy-makers and other intermediaries. Drawing upon the social theories of Pierre Bourdieu and Georgina Born, as well as on contemporary media theory, the author argues that accounts of the disruptive agency of digital mediation are incomplete without a corresponding attention to the complex cultural mechanisms by which it is kept under control. What is at stake in the transformation of Montreal's electroacoustic tradition is not a collapse so much as a further remediation of modernist social and aesthetic principles.