INTRODUCTION

< 40: Emerging Voices

Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it. Anything invented after you're thirty-five is against the natural order of things.

—Douglas Adams [1]

In the spring of 2011 Alvin Lucier retired from Wesleyan University after 41 years of teaching. On the occasion of his combined 80th birthday and retirement party, I gave him the notebook (recently unearthed from an attic) that I had kept in 1972 as a freshman in his "Introduction to Experimental Music" course [2]. Reading these notes for the first time in almost 40 years was a sobering experience. Lucier had exposed me to paradigm-shifting music at the exact moment when, in the words of David Behrman, "established techniques were thrown away and the nature of sound was dealt with from scratch" [3]. Behrman's *Wave Train*, Lucier's *I am sitting in a room*, Steve Reich's *Come Out*, Pauline Oliveros's *I of IV*, David Tudor's *Rainforest*, Terry Riley's *In C*, Philip Glass's *Music in Parallel Fifths*, the AMM, the AACM (Association for the Advancement of Creative Musicians) and the Scratch Orchestra were all less than 10 years old. As an 18-year-old I was witnessing the birth of new musical genres that established—in the wake of John Cage—the axioms on which much of the music of the subsequent decades was built.

Since then I have continued to hear great new pieces, but I have detected no shift in the underlying terrain of music that rivals the magnitude of change that took place in the 1960s and 1970s. I find this admission more than a little depressing, and worry that I have fallen prey to Adams's Syndrome. My students are still tremendously inspired by works like *I am sitting in a room* (which has become a de facto art school anthem), but I know I would never have become a composer if Lucier had been playing music that was 40 years old. So, for the sake of my students, not to mention my own gnawing curiosity, I am always searching—not just for individual examples of good music, but for a collection of pieces or a coalition of artists that, taken together, suggests something bigger: a movement that is striving to change something fundamental about how we experience music.

The intensity of this quest accelerated as I approached the ominous milestone of my 60th birthday, and I decided to crowdsource my questions through a volume of *Leonardo Music Journal* devoted to the writing of artists under 40. Although our sample set is minuscule by the standards of big data (75 initial proposals received, 55 papers submitted, from which 29 were chosen for publication) it nonetheless provides insight into trends, concepts and techniques deemed noteworthy by an emerging generation of sound artists.

Not surprisingly, technology remains a driving force behind many of the innovations discussed. Just as the proliferation of almost-affordable tape recorders inspired landmark works of the 1960s (*I am sitting in a room*, *Come Out*, *In C*), and the Lego-like simplicity of integrated circuits facilitated the rise of homemade electronic instruments in the 1970s, so the ubiquity of computers (from the great and powerful Macintosh to the modest and minuscule Arduino), the maturation of the Internet, and the plummeting price of previously exotic technologies have been critical to the rise of recent musical movements.

This maturation of ubiquitous personal computing is reflected here in several papers on performance interfaces and network culture. Andrea Young and Ludvig Elblaus (together with his colleagues Carl Unander-Scharin and Åsa Unander-Scharin) describe digital means for extending the human voice, while Bridget Johnson focuses on multi-touch interfaces for sound diffusion. Jonathan Weinel, Stuart Cunningham and Darryl Griffiths extend the notion of the personal performance interface into the realm of "affective audio" and "life soundtracking." Noel Celtovic brings music and sound to the deaf by electrically stimulating his listeners with Transcutaneous electrical nerve

stimulation (TENS) technology. Discontent with the "the persistent stasis of instruments," Cody Eikman builds electroacoustic instruments that race through the performance space. Nadia Ratsimandresy re-creates one of the earliest electronic instruments, the onde Martenot, with contemporary software tools.

Juan Rubio contributes an anthropological analysis of the ritual of "telematic" performance with network systems. Elen Flügge discusses music drawn from cloud data and social network resources such as Twitter, while Owen Vallis, Jordan Hochenbaum and Jasmin Blasco embed tweets in a Borges-inspired sound sculpture. Fernanda Sa Dias analyzes the album app as a new format for interactive music distribution. Kay Festa outlines the multiple roles that technology plays in her performance collective.

Sonification and advanced data manipulation are central to several papers. Mitchell Akiyama examines the history of sonification in sound art, with an emphasis on "numerical epistemology." Yoon Chung Han sonifies fingerprints and other skin patterns to create music. Ian Fleming's compositions combine data analysis of audio glitches with techniques of spectral music.

The decreasing size, weight and price of audio recorders have contributed to a revival of interest in field recording and the emergence of post-musique concrète "phonography." Budhaditya Chattopadhyay describes his reworking of the Bangalore soundscape, while Anastasya Koshkin contributes an essay on the audio relocation of remote environments.

While many of the authors foreground the role of new technology and draw attention to its enabling capacities, others seek novel applications of the "obsolete" and the anachronistic, or address the inherently quotidian, anti-futurist identity of our machines. Daniel Wilson scavenges his material from garbage bins, then anonymously "tapedrops" the resulting music in public places. James Connolly and Kyle Evans combine digital devices with older analog televisions. Heather Contant uses simple coils of wire to "sniff" electromagnetic pollution and reveal the sonic signatures of everyday appliances.

Byungjoo Lee updates the familiar acoustic guitar by "decoupling" its strings and bridges from its body, while Kazuhiro Jo reinvents the record player by mastering discs from graphics software and cutting records live in concert. Daniel Iglesia adapts one of the first audio visualization tools—the oscilloscope—to serve as a real-time score for an improvising ensemble. Kristin Erickson uses computers and software models to choreograph human actions, transforming bodies into digital output devices.

Some of the authors address the more general question of the position of technology in creative practice or larger aesthetic issues. Nicolas Bernier discusses balancing "high" and "low" technology within his work. Phillip Hermans looks for emergent aesthetics in the work of younger Latin American electronic musicians. Natacha Diels highlights the role of the uncanny in her music, while Jesse Seay contributes a practical list of dos and don'ts for audio installations. Si Waite applies techniques of indeterminacy to the creation of pop music songs.

Jonathan Chen has curated the music accompanying this volume, which is being published in MP3 album format for the first time—a technical update to accompany our attempt to peek over the musical horizon.

Of course the Leonardo community is inherently self-selecting: Most of our authors think a lot about technology (we get precious few papers from Bach scholars or vocal coaches). So as an indication of global trends in musical culture, this volume must be taken as inconclusive. Nonetheless I detect a few significant shifts in attitudes and working methods. Art has always been about shaping data, but the post-Internet explosion of big data has nurtured new styles of sound art squeezed out of everything from seismic vibrations to sunspot activity to social networks. At the same time, compared to 40 years ago, there's more skepticism about the idea of technological progress. Younger artists are looking at the whole tool, indeed often the whole toolbox—from touchscreens to turntables, coils of wire to calls of the wild. At the intersection of these two trends, there is renewed interest in the community of people interacting with technology.

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References and Notes

1. Douglas Adams, *The Salmon of Doubt* (Random House, 2002) p. 111.

2. A scan is available at <www.nicolascollins.com/notebooks.htm>.

3. David Behrman, liner notes to David Behrman, *Wave Train* (Alga Marghen CD, 1998).