

The Frequent Listener

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ABSTRACT

The Frequent Listener combines electro-acoustic fixed media audio with live performance of two players who improvise with the inner structures of a grand piano. Instead of using its keyboard, they produce tones and feedback with handheld tactile transducers and small low-power amplifiers. Because all the sounds are heard in the concert space through loudspeakers, there is little distinction between what sounds recorded versus live.

1. THE FREQUENT LISTENER

“The Frequent Listener” is a live performance with grand piano and recorded soundscape composition in the Joan James Harris Theater at the Atlantic Center for the Arts. The fixed composition, a 10:12 track for 2-channel stereo output, was composed by Eric Leonardson. Leonardson directed two artists and conference participants, Alex Braidwood and Lisa Schonberg to perform *in* rather than *on* the piano in real time, improvising their accompaniment to the fixed “media soundscape” (Figure 1).



Figure 1: Performance documentation of Ale Braidwood and Lisa Schonberg

Manually touching, pressing, and moving a pair of handheld tactile transducers around and across the landscape of the piano interior surfaces and facets, its strings, the inner frame; the players were tasked with quickly learning how to play inside the piano. Their expertise and confidence in live performance and attentive listening enabled Braidwood and Schonberg to understand and effectively use their new instruments. The

transducers are an 8-Ohm coil output driver held in one hand and a piezoelectric contact microphone held in the other hand. A third handheld instrument was also used, Leonardson’s self-built light-sensitive oscillator.



Figure 2: Performance documentation (detail)

To a point this performance was about hands: manually discovering materials and their behaviors to produce sounds. Listening for what the hands tell, so to speak. Because the output vibrations of the coil driver are received (as input) by the piezo pickup, resonances and feedback loops are made audible. Braidwood and Schonberg would vary their sounds by manually touching, pressing, and moving their transducers around and across the landscape of the piano interior, its strings, the inner frame, pin blocks, and the treble and bass bridges. Essentially, they were exploring inside the piano, discovering how and which sounds they could produce sound from these resonant properties with or against the sounds of the recorded composition (Figure 2).

Using microphones and speakers as instruments departs from standard music practice and serves as the focus of Leonardson’s performance work with amplified objects, notably his Springboard, built in 1994 [1]. Another instrument invention is his Janky Fondler, a handheld light-controlled triple oscillator, built in 2014. In this performance, Braidwood and Schonberg swapped their piezo contact mike for the Janky Fondler, enabling them to send pitched vibrations into the tactile transducers while changing its angle to the ambient light. This in turn varied the frequency of the oscillators’ signal. The physical gestures of the performers in turn correlate with changes in the sounds.

The experiment combined the acoustic fixed media work with his interest in DIY hardware hacking and instrument construction, mapping the haptic and motoric control of each player's body into acoustic space. The fixed media audio component of the work was composed from processed recordings, from Leonardson's local environment, at the shore of Lake Michigan in Chicago. A diverse range of familiar and unusual sounds include car and plane traffic, birds, rain hitting glass indoors. The recordings were made with a X/Y stereo microphone, homemade contact microphones, a hydrophone, and an accelerometer. This last device was very useful for picking up the interior vibrations of solid objects. This is audible near the start of the recording as small stones are lifted by waves and tap against a steel breakwater to the accelerometer is attached. To large extent, the recording focuses on the geophonic, water and waves on the lake, snow, ice, rain, sleet, and thunder. The interior pings, hisses, and rumblings of steam heating infrastructure are of water harnessed for warmth indoors. Following in the manner of soundscape composition established by Hildegard Westerkamp and Barry Truax,¹ pitch-shifting, time-stretching, and spectral transformations through techniques of granular synthesis and convolution transformed these recorded materials, lending the composition an abstract, musical yet otherworldly quality.

2. CONCLUSIONS

With student assistants from Stetson University, Professor Chaz Underminer provided sound reinforcement and operational production support. Their role was important here. Rather than serving as background, they made sure the recorded soundtrack occupied much of the auditory foreground, maintaining a balance between recorded and live sounds.

Electroacoustic music rendered through loudspeakers removes the visual and physical gesture of players and sources and may challenge the listening audience. The ability to amplify materials in real time is key to mapping the haptic and motoric impulse of each player's body into acoustic space while producing a diverse range of unusual sounds. Working the iconic Steinway piano on the theater stage in real time offered a way to visually correlate physical gestures with sound making, and to some degree, for the audience's benefit to reconnect the cause-and-effect relationship between sounds made and sounds heard. Projecting these typically inaudible vibrations of solid objects into acoustic space, electronically amplified via transducers and loudspeakers, back into the piano's tensioned strings and soundboard produces — in a way that follows David Tudor's "Rainforest" — a coupling with the concert space. Transformed by digital studio techniques these are remade expressively, to compose an imaginary sound world from environmental sound.

Acknowledgments

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3. REFERENCES

- [1] Leonardson, E. "The Springboard: The Joy of Piezo Disk Pickups for Amplified Coil Springs," *Leonardo Music Journal*, vol. 17, pp. 17–20, 2007.

¹ Renowned for their work in the World Soundscape Project, Hildegard Westerkamp and Barry Truax are considered two of the most important progenitors of the electroacoustic genre known as soundscape composition. Truax developed and applied granular synthesis in the first works of the genre, and later added convolution to the other computer-based techniques for creatively manipulating real world sounds. In addition to their sizable discography of works both have published numerous articles, most available on their websites, respectively <https://hildegardwesterkamp.ca/> and <https://www.sfu.ca/~truax/index.html>