

Summerland

Exploring the Intersection of Spiritualism and Technology at the Dawn of the Electrical Age

MATTHEW OSTROWSKI

ABSTRACT

The author describes *Summerland*, a generative installation for 24 computer-controlled telegraph sounders. This work uses texts from Samuel F.B. Morse and his contemporary, the Spiritualist medium Kate Fox, as source material, driving the sounders through both linguistic and spectral encoding of their words.

REANIMATION

Over the past several years, I have developed a series of works using multiples of quotidian objects, robotically controlled by generative algorithms, as sound producers. My work as an electronic musician and composer has always featured concrete materials; incorporating the tangible world and its capacities for diegesis and signification into formal musical structures has always been, for me, one of the most intriguing aspects of electronic media.

These works turn the traditional model of *musique concrète* on its head: Rather than invoking an absent real-world object through its invisible and often transformed sonic evocation, I use algorithmic techniques to drive visible (and very present) objects to transform themselves by creating sounds beyond their habitual confines. Reanimated, they become speakers, in both senses of the word, acting simultaneously as sources of abstract sound and as characters with agency, signification and a past. This grant of sentience gives them room to reveal, alter or undermine their culturally determined meanings. For these objects to speak in a true voice, the formal structures conducting them must in some way emerge from their cultural matrix, creating a living dynamic between the objects *qua* objects and the manner of their activation.

Summerland was preceded by *Western Electric* (2012–2015), a generative installation for 15 MIDI-controlled dial telephones [1]. For those of my generation, and anyone who has seen movies made before 2000, the phone already carries a wealth of associations, making it ripe material for the

approach described above. The processes that control that work, mostly concentrating on swarm intelligence and small-world network algorithms, engage a particular set of ideas about the telephone as a cultural artifact. For *Summerland*, I went further back to the heyday of the telegraph, which, unlike the telephone, predates most of us now living. To answer the question of what formal techniques might best reveal the telegraph's place in our cultural imagination, it was necessary to do a great deal of research into its technical and social history (see Figs 1 and 2).



Fig 1. *Summerland*, detail, Newburgh, NY, 2018. (© Matthew Ostrowski. Photo © Mariano Wainsztain.)

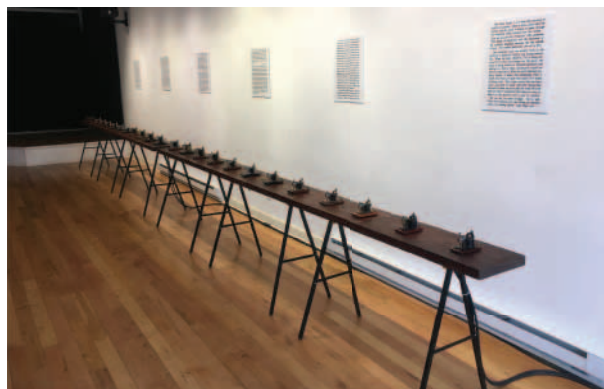


Fig 2. *Summerland*, Livingston Manor, NY, 2018. (© Matthew Ostrowski)

Matthew Ostrowski (artist, programmer), Harvestworks, Inc.,
496 Broadway, New York, NY 10013, U.S.A. Email: news@ostrowski.info.
Web: www.ostrowski.info. ORCID: 0000-0002-9704-9593.

See www.mitpressjournals.org/toc/lmj/29 for supplemental files associated with this issue.

“WHAT HATH GOD WROUGHT?”

On 24 May 1844, this message was sent from Washington, DC, to Baltimore, officially opening the first completed telegraph line using the electromagnetic system that Samuel F.B. Morse developed. The dot-and-dash alphabet, invented by his assistant Alfred Vail [2], and the relay-based technology used to transmit it soon overtook alternative systems of long-distance communication in development in other parts of the world. By 1851, more than 21,000 miles of telegraph cables had been strung across the United States [3], and telegraphic communication had entered the popular consciousness.

Before the spread of telegraphy, sending a message by post could take days if not weeks, and the electromagnetic telegraph, which made communication virtually instantaneous, appeared nothing short of miraculous. Electricity, an invisible and dimly understood force, was only one short step away from magic in the popular imagination [4]. The idea that such a quasi-magical force could be scientifically verified and managed led to speculation as to the existence of other incorporeal forces that could possibly be harnessed. Invisible action at a distance—what we now call telematics—has always been a hallmark of the supernatural. For laypeople, scientists and engineers alike, it was not unreasonable to ask whether communication with points much farther removed than Baltimore or San Francisco might be possible as well.

Four short years after the opening of the Morse-Vail telegraph line, two adolescent sisters living in the small town of Hydesville, NY, began hearing mysterious rapping sounds inside their house. These knockings were confirmed by local worthies, and within weeks people were flocking to the Fox cottage to hear the sounds for themselves, which the girls claimed to be messages communicated to them by the spirit of an itinerant peddler who had been murdered and buried in the basement by a previous occupant.

Kate and Maggie Fox became a local, and within two or three years, a national and international phenomenon [5], holding séances and filling theaters with demonstrations of spirit rapping and table-turning. Their appearance on the public stage marked the beginning of what became known as the Modern Spiritualist movement [6], which centered on the belief that the souls of the dead had moved on to another plane. Contact with that plane was possible through the natural talents of a medium, who served as a human antenna through which the spirits could communicate by table-tapping, automatic writing or other methods. The influential medium Andrew Jackson Davis dubbed this “spiritualized zone in space” the Summer Land in 1867 [7].

Although the Hydesville knockings were far from the first cases on record of invisible spirits—they had been associated with knocking sounds since at least the 1590s [8], and stories regarding “responsive poltergeists” answering questions with knocks date at least as far back as 1767 [9]—it was only in the wake of the Fox sisters’ public demonstrations that communication with the dead became a phenomenon of mass interest.

It is hard to exaggerate the depth and breadth of Spiritualist belief throughout the English-speaking world in the

late nineteenth and early twentieth centuries [10]. Although many regarded it as no more than charlatanry, the idea of communication with the dead was a serious topic for scientific inquiry, leading to the birth of such institutions as the American Society for Psychic Research in New York and the Institut Métapsychique International in Paris. Many scientists were deeply involved in psychic research, among them leading “electricians” (as electrical engineers were called at the time) who sought to detect the undiscovered forces that could bring Spiritualist communications and other phenomena into the domain of scientifically verifiable knowledge. Cromwell Varley, for example, one of the key figures in the laying of the first transatlantic telegraph cable, was deeply interested in Spiritualism, and even attended séances with Kate Fox [11].

Prior to the spread of Spiritualism, communication with the dead was primarily undertaken by mystics and necromancers with an ultimate goal in mind, such as foretelling the future or finding stolen goods [12]. In the post-telegraphic era, the demonic overtones of such contact disappeared. The intercourse became conversational, and the arrival of telegraphic technology provided a metaphor and model for these extramundane communications; the most popular Spiritualist newspaper in the United States was *The Spiritual Telegraph*. Ben Franklin, viewed in America as the father of electricity, made frequent appearances at séances, and it was even communicated to Kate Fox that Franklin had invented the apparatus that made it possible for the inhabitants of the Summer Land to make contact with the living [13]. As early as 1851, Davis sees a direct connection between telegraphy and spiritual contact: “The spirits . . . are enabled through these mediums, or conductors, to . . . produce rappings, like the magnetic telegraph, corresponding to letters of the alphabet” [14].

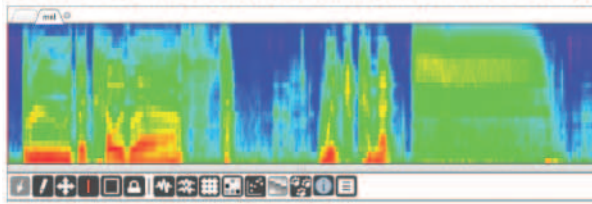
Morse, the devout son of a Calvinist preacher, did not express any interest or even awareness of the Spiritualist whirlwind his invention had unleashed. His intellectual path followed a very different direction from the Modern Spiritualists, who stood strongly in favor of the progressive causes of the day, such as the abolition of slavery, women’s suffrage and temperance [15]. Morse’s religious vision was of a muscular Christianity, intimately entwined with notions of racial superiority, aristocratic rule and imperial domination. A believer in the divine origin of slavery, he published a book describing secret Catholic conspiracies to turn America into a monarchy [16] and in 1835 ran for mayor of New York on the Nativist Party ticket. Considering himself chosen by Heaven to bring forth this technology [17], he saw the revolution in communication he initiated as a divinely inspired means of achieving universal harmony, implemented through the spread of Protestantism, the consolidation and extension of Anglo-Saxon economic and political power and the civilization of the “barbarous races” [18,19].

“A KIND OF RAPPING SOUND”

The telegraph sounder has a unique position in the history of audio reproduction. This device, invented by Morse’s assistant Alfred Vail, uses electromagnets to pull an iron cross-piece attached to a brass lever toward an anvil, causing a tap,

ORIGINAL FOX TEXT: ...Through the telegraph which connects....

24-BAND MEL ANALYSIS (using pipo.mel from IRCAM MuBu package)



MEL VALUES (time on Y axis, sounders on X axis; values later scaled to sounder frequency range)

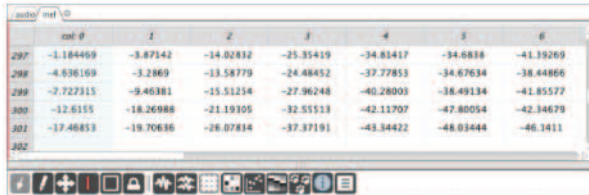


Fig. 5. A 24-band mel-scale spectrogram from a Kate Fox séance, 16 May 1871. Amplitudes of the bands are used to control sounder frequency in one of *Summerland*'s algorithms. (© Matthew Ostrowski)

spectral analysis. I then used this data to drive the sounders, attempting various mapping approaches in an effort to synthesize something resembling a voice (see Fig. 5).

Given the mechanical limitations of the instrument, the entire undertaking was somewhat absurd. However, it is precisely within that absurdity, like communication with the dead, indeed like communication at all, that one must search and perhaps find a nugget of fool's gold that will serve the purpose. Ultimately, the goal became not to re-create speech but to create the *feeling* of a spoken message not quite received.

THE ELECTRICIAN'S TASKS

I chose to use audio signals as my control source, driving each sounder with a pulse wave. This gave me both a very high degree of timing accuracy for events that often happen at 20+ Hz [21] (the boundaries of audio rate and about as fast as the sounders would go) and the ability to filter or otherwise alter the waveshape for added control over the intensity of the attack and release of the sounders. The 24 channels of audio are sent to a MOTU 24 I/o [22], a DC-coupled interface. The individual audio outputs are then sent to a voltage-controlled current source designed by James Lo (see Fig. 6). As the sounders vary considerably in resistance (depending on their original function in a network, from 4 to 130 Ohms), each sounder is driven by either a 5- or 12-volt source, and the amount of current for each sounder is adjusted individually.

The sounders, sourced entirely from eBay, needed cleaning and minor repairs at most, even though many had obviously spent the last half-century in a barn or attic. Mechanically simple and solidly built, the main challenge the sounders pose is tuning, keeping the balance between the depth of the throw of the lever and the tension of the counterbalancing spring.

ALGORITHMIC UTTERANCES

The composition was written in Max/MSP 8 [23], with additional tools from IRCAM's MuBu packages [24]. The compositional aim of the work was to create a sense of pres-

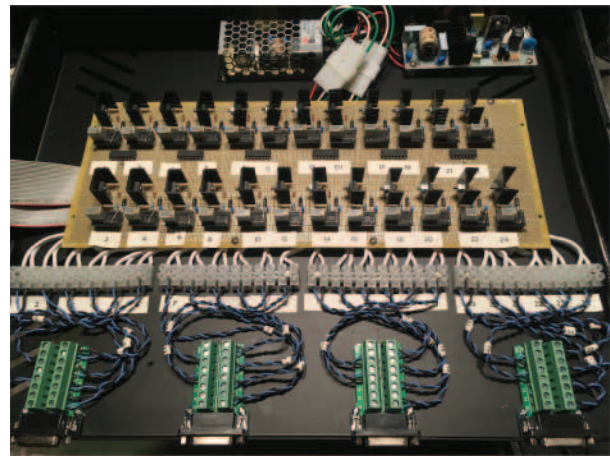


Fig. 6. Audio-to-sounder converter, designed and built by James Lo. (Photo © Matthew Ostrowski)

ences—each with its own character—manifesting, uttering and incorporating, sometimes alone, often overlapping, and punctuated by other spectral phenomena such as cold winds and flying objects (for which I composed some non-language-driven routines). Because *Summerland* is an installation, meaning audience members have control over how long they stay, it is critical that the generative structure be varied and lively enough to keep them engaged from a purely sonic standpoint.

To this end, my program comprises several modules, each expressing an “utterance” from either one of the two textual sources or a purely musical gesture. These modules trigger each other through a series of overlapping and interrelated Markov chains, meaning the decision to play one module is dependent on the previous module played and the overall state of activity in the system (see Fig. 7).

Each module contains a set of possible parameter states.

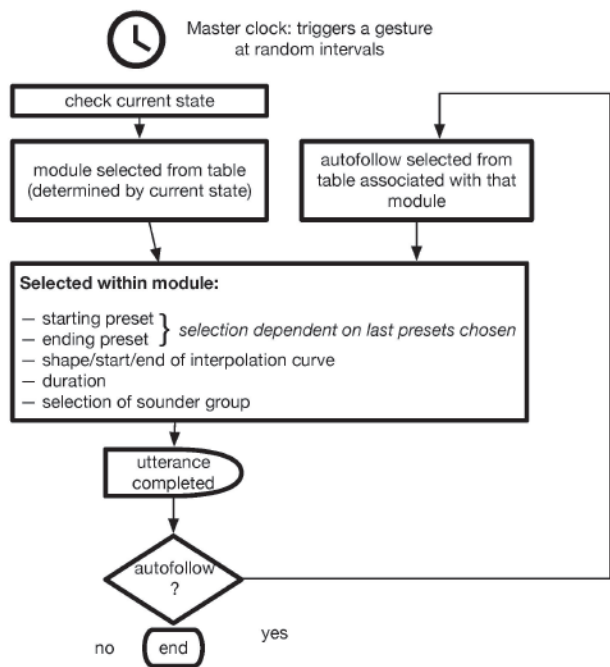


Fig. 7. Schematic of *Summerland* generative composition. (© Matthew Ostrowski)

On activation, a starting state, ending state and duration for the utterance are selected, and the utterance interpolates between those two states over the course of its playing, creating constantly dynamic shifts in an unstable field. Silence is not uncommon.

THE ELECTROMAGNETIC SÉANCE

Looking back into the antiquity of telecommunications, *Summerland* is a séance, taking the form of a conversation between Kate Fox and Samuel Morse, incarnating their voices in streams of clicks through a medium no longer

able to articulate. They speak in their own idioms: Morse, in the mummified progenitor of the binary codes whose descendants now, ghostly, penetrate the ether around us; and Fox, hearing taps coming from the Summer Land, speaking through an ultimately opaque barrier of brass and wire. Thus, the elusive promise of communication, and the inevitably faulty nature of any medium, is built into the very attempt to make the sounders speak. Nevertheless, the psychic and electromagnetic forces we can summon from the ether can still evoke the dimly seen ghost, the sudden chill, the unnerving rap of unseen knuckles on the medium's table.

Acknowledgments

Summerland was made possible by the New York State Council on the Arts with the support of Governor Andrew M. Cuomo and the New York State Legislature and an Emergency Grant from the Foundation for Contemporary Arts. Thanks to Liz Hollander, James Lo, Andrea Parkins, Amanda Remus and Andreas Sommer.

References and Notes

- 1 For a full description of *Western Electric*, see www.ostrowski.info/?page_id=32.
- 2 J. Cummings Vail, ed., *Early History of the Electro-Magnetic Telegraph, From Letters and Journals of Alfred Vail* (New York: Hine Brothers, 1914) p. 27.
- 3 Richard B. DuBoff, "Business Demand and the Development of the Telegraph in the United States, 1844–1860," *Business History Review* 54, No. 4, 459–479 (1980).
- 4 A. Bowdoin Van Riper, *Science in Popular Culture: A Reference Guide* (Westport, CT: Greenwood Press, 2002) pp. 69–72.
- 5 Barbara Weisberg, *Talking to the Dead: Kate and Maggie Fox and the Rise of Spiritualism* (San Francisco: HarperSanFrancisco, 2004) pp. 78–86.
- 6 The movement was eventually incorporated in a loose alliance, the National Spiritualist Association of Churches, based in Lily Dale, NY, a stone's throw from Hydesville. It remains active to this day.
- 7 Andrew Jackson Davis, *A Stellar Key to the Summer Land* (Boston: Colby & Rich, 1867).
- 8 Wolfgang Neuber, "Poltergeist the Prequel: Aspects of Otherworldly Disturbances in Early Modern Times," in Christine Göttler and Wolfgang Neuber, eds., *Spirits Unseen: The Representation of Subtle Bodies in Early Modern European Culture* (Leiden and Boston: Brill, 2008) pp. 5–6.
- 9 K.A. Berthelen, *Die Klopff-und Spukgeister zu Olderwitz und Herwigsdorf bei Zittau* (Zittau: Im Selbstverlage des Herausgebers, 1864) p. 66.
- 10 David K. Nartonis, "The Rise of 19th-Century American Spiritualism, 1854–1873," *Journal for the Scientific Study of Religion* 49, No. 2, 361–373 (2010).
- 11 Richard J. Noakes, "Telegraphy Is an Occult Art: Cromwell Fleetwood Varley and the Diffusion of Electricity to the Other World," *The British Journal for the History of Science* 32, No. 4, 421–459 (1999).
- 12 Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge: Cambridge Univ. Press, 2000).
- 13 Sarah Elizabeth Langworthy Taylor, *Fox-Taylor Automatic Writing 1869–1892; Unabridged Record* (Minneapolis: Tribune-Great West, 1932) p. 162.
- 14 Andrew Jackson Davis, *The Philosophy of Spiritual Intercourse: Being an Explanation of Modern Mysteries* (New York: Fowlers and Wells, 1851) p. 27. Quoted in Anthony Enns, "Spiritualist Writing Machines: Telegraphy, Typtology, Typewriting," *Communication +1* 4, No. 1 (2015).
- 15 An excellent source on this is Ann Braude, *Radical Spirits: Spiritualism and Women's Rights in Nineteenth-Century America* (Bloomington, IN: Indiana Univ. Press, 2001).
- 16 Samuel F.B. Morse, *Foreign Conspiracy against the Liberties of the United States* (New York: Leavitt, Lord & Co., 1835).
- 17 Edward Lind Morse, ed., *Samuel F. B. Morse: His Letters and Journals, Vol. 2* (Boston, New York: Houghton Mifflin, 1914) p. 223.
- 18 Rod Giblett, *Sublime Communication Technologies* (London: Palgrave Macmillan, 2008) pp. 42–49.
- 19 Morse [17] p. 270.
- 20 Amédée Guillemin, *Electricity and Magnetism* (London and New York: Macmillan, 1891) pp. 688–693.
- 21 Heinrich Hertz, for whom the unit of frequency was named, was himself an honorary member of the English Society for Psychical Research, invited by his friend and colleague Sir Oliver Joseph Lodge, the wireless telegraphy researcher, spiritualist and president of the American Society for Psychic Research from 1901 to 1903.
- 22 Now discontinued, replaced by the 24Ao:www.motu.com/products/avb/24ai-24ao.
- 23 www.cycling74.com.
- 24 www.forumnet.ircam.fr/product/mubu-en.

Manuscript received 2 January 2019.

MATTHEW OSTROWSKI is a musician, composer and audio artist. He has an AB in history from Oberlin College and studied digital synthesis, composition and psychoacoustics at the Institute of Sonology at the Royal Conservatory in The Hague. He develops interactive software for artists at Harvestworks, teaches at New York University and is an artist mentor for the Columbia University MFA Sound Art program.