

## Improvisation

*Some nights I couldn't get anything interesting out of the synthesizer and then there were those magical nights when it seemed every new sound was a source of inspiration. . . . A tiny movement of a wire or knob could make a huge difference. Filters were imperfect and the stray capacitance of my hand changed things. . . . Broken modules were frustrating, but with experimentation I found they could produce even more interesting sounds. . . . No longer interested in making tapes, I just wanted to experience new sounds, to find the elusive combination of timbres that would enable transcendence. . . . I was living with a machine and it was becoming part of me [1].*

**S**o writes Trevor Pinch of his first synthesizer, painstakingly cobbled together in 1973 from plans in a hobbyist magazine. In our technologically mediated world, most of us value our computers, phones, cars and saxophones for their rational utility—their ability to get a job done efficiently, predictably and reliably. For playfulness, exuberance and inspiration—in love, art, food or music—we turn to people, not machines. But Pinch speaks of his instrument not as one would a typical machine, but rather as one might a might a volatile lover or—more to the point—a moody musician: unruly and irrational perhaps, but an inspiring collaborator nonetheless.

Musicians have long had a tendency to anthropomorphize their instruments, but the embrace of idiosyncrasies of the kind Pinch describes is a relatively recent development. David Tudor expressed the zeitgeist of the homemade electronic music scene of the 1970s when he titled his loose collective of young performers “Composers inside Electronics”: in describing his approach to circuitry, Tudor said, “I try to find out what’s there—not to make it do what I want, but to release what’s there. The object should teach you what it wants to hear” [2]. This openness to the inherent musical implications of the technology went beyond the *compositional* process: the unfamiliarity of such new devices, combined with the unreliability of amateur workmanship that Pinch describes, led to unpredictable *performances*. No matter how the pieces were scored—conventional staves, prose instructions, graphic notation, oral tradition—the instability of the instruments demanded flexibility: that ability to think on one’s musical feet that we usually associate with improvisation.

The proliferation of commercial MIDI synthesizers in the 1980s and computer music software since the 1990s has been characterized by a growing rationalization of behavior—electronic instruments today behave more like cars than Pinch’s balky filters. Yet the spirit of stray capacitance and loose wires lives on as a musical aesthetic: Self-described improvising musicians have embraced electronic devices over the past few decades—either as extensions of more traditional instruments, or as instruments in their own right—and the tradition of the open-form score, dating from the heyday of unpredictable circuits, perpetuates a spirit of improvisation in “composerly” circles as well.

For LMJ20—the 20th-anniversary issue of *Leonardo Music Journal*—I invited authors to reflect on the role of improvisation in technologically tinged music. The response was significant. We received far more submissions than we could publish in print—included in this issue are abstracts of several papers with links to their full versions on the web [3].

A dozen papers address various strategies and techniques of performing with technology. Pianist Sarah Nicolls contributes case studies of four interactive works for piano and live computer systems. Ben Neill and David Rothenberg discuss their collaborative activities with

clarinet, trumpet and a host of signal processors. Doug Van Nort describes his turntable-inspired “greis” software system, developed for use with the improvisational trio Triple Point, while Dafna Naphtali and Hans Tammen analyze their interactive improvisations for “Endangered Electric Guitar” and software signal processing. John Robert Ferguson and Robert van Heuman discuss “exploring the dialectical relations between precision and indeterminacy” in their electronic duo. In Nick Fox-Gieg and Margaret Schedel’s collaboration, the bowing gestures of a cellist control real-time computer animation, while drawing on a graphics tablet produces musical sounds.

The development of improvisation strategies for non-improvising classically trained instrumentalists is the focus of Chapman Welch’s essay. Improvisers’ interpretation of real-time computer-generated scores is the focus of Michael Dessen’s article on his multi-location “tele-matic” performances. Joanne Cannon and Stuart Favilla describe techniques for improvising the spatialization of electronic sound for the Bent Leather Band, while Koray Tahiroğlu details his experiments with solar-powered sound circuits and SMS-based electronic work that allows audience participation.

Four authors contributed papers focusing on details of musical hardware and software. Jon Rose provides a witty history of the electronically extended violin bow. John Fenn posits the musical significance of artist-designed “boutique” guitar effect pedals. William Hsu details his “timbre-aware *ARHS* improvisation system,” while Joshua Pablo Rosenstock recounts the development of *iGotBand*, a video game for improvisers.

Several contributors chose to emphasize the more theoretical, analytical or historical aspects of improvisation. Richard Dudas employs the term “comprovisation” in his lucid overview of the interplay of composition and improvisation in interactive music with electronics and computers. Sebastian Lexer outlines a methodology for developing software tools optimized for non-idiomatic free improvisation. Vincent Cee proposes a theoretical framework for discussing improvisation in a “post-literate society.” Michael Young reflects on aspects of intimacy and identity in technologically mediated performance, while Jonathan Impett focuses on the question of improvising musical form. Leonardo Peusner’s paper presents mathematical and graphic tools for visualizing and synthesizing improvised music. By analyzing the vocalizations of the Australian Pied Butcherbird, Hollis Taylor “challenges the assumption that improvisation is a process unique to humans.” Aura Satz provides a history of the role of music and sound in *séance* culture.

We’ve included two submissions that, while falling slightly outside the rubric, seemed of particular relevance to the *LMJ* community: Perry Cook and Scott Smallwood discuss their solar-powered laptop orchestra project, SOLA; and Andrew Lucia, Christopher Lee and Matthew Lake analyze and illustrate patterns in the early works of the composer Karlheinz Stockhausen.

Tara Rodgers, founder of the Pink Noises project for women in electronic music, has curated an insightful CD for this issue. *Sounds Like Now: Improvisation + Technology* features electronically enabled improvisation.

Improvisation has always been an essential part of musical culture—composition, as we know it from European “art” music, has been the exception, rather than the rule. But musical instruments traditionally, almost universally, have been pretty deterministic devices, prized for their accuracy and control, whether used for playing notes off paper or improvising freely. In the wake of John Cage, however, there emerged a perceived need for instruments that embodied some degree of indeterminacy themselves. The development in the 1970s of affordable integrated circuits that could be assembled, Lego-like, by non-engineers was well timed, from a standpoint of musical history: it paved the way for a generation of silicon luthiers who built the first of these indeterminate instruments. And, whether one labels one’s music “composed” or “improvised,” as Neill and Rothenberg observe some 4 decades later, “when performing with live electronics, improvisation becomes inevitable.”

### **On Another Note**

For 20 years, *Leonardo Music Journal* has served as a voice for improvisers and iconoclasts strewn across the musical globe. I want to take this occasion to thank those who made the effort to write articles and contribute audio tracks; the curators who designed and organized the CDs; the members of the editorial board who advised us on direction and reviewed manuscripts; the able editorial crew in the Leonardo offices who transformed texts and managed production; and the *LMJ* community at large, for its ongoing support.

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### **References**

1. Trevor Pinch, "The Synthesizer," in Sherry Turkle, ed., *Evocative Objects* (Cambridge, MA: MIT Press, 2007) p. 167.
2. David Tudor and Victor Schonfeld, "From Piano to Electronics," *Music and Musicians* 20 (August 1972) pp. 24–26. See also the special issue Composers inside Electronics, *Leonardo Music Journal* 14 (2004).
3. For these articles, as well as other materials (such as audio files), see the online supplement to this issue at <mitpressjournals.org/toc/lmj/-/20>.