

About This Issue

Over fifteen years ago, *CMJ* published a special issue in memory of computer music pioneer Iannis Xenakis, who had died the previous year. Our former associate editor James Harley, a Xenakis expert, edited that issue and contributed his own survey of Xenakis's electronic music. We now revisit that topic by "zooming in" on one of the works Harley had discussed, Xenakis's multimedia and architectural installation *Diatope*, which included the musical composition *La Légende d'Eer*. Elisavet Kiourtsoglou has conducted new research on the subject. Whereas previous scholars have analyzed the music of *La Légende d'Eer* in detail, her article focuses on the architectural aspects of *Diatope* in relation to both the light show and the spatialization of the music. This new information should prove vital to any potential physical or virtual-reality (VR) reconstruction of the installation. (See the article in *CMJ* 33:2 by Vincenzo Lombardo et al., who created an analogous VR reconstruction of the Phillips Pavilion at the 1958 World's Fair, a temporary building that Xenakis designed for the spatialized playback of his and Edgard Varèse's music, as well as for visual projections accompanying the latter composer's piece.)

Being both a composer and an architect, Xenakis was naturally drawn to visual interfaces for music, as evidenced by his Unité Polyagogique Informatique CEMAMu (UPIC) device. The UPIC featured a tablet on which the user could draw sound-synthesis

waveforms (the axes being amplitude versus time) and entire compositions (pitch versus time). A similar fascination with "drawing" sound appears in this issue's second article, by Axel Berndt, Nadia Al-Kassab, and Raimund Dachsel. Their device, however, is intended for performance, and so the x-axis represents not time but stereophonic panning. The y-axis represents frequency. Called TouchNoise, their system synthesizes noisy sounds, using Brownian motion, flocking, and flow fields to algorithmically control the movement of potentially hundreds of sinusoids in frequency and space. The user can apply multiple fingers to the screen simultaneously to directly manipulate the synthesized spectra in various ways.

The next article, by Aengus Martin and colleagues, describes the compositional algorithms behind Agent Designer, their Max-based software that plugs in to Ableton Live. Agent Designer uses variable-order Markov models and rule induction to learn from human-composed musical examples, after which it generates new arrangements of previously prepared "clips" (short audio or MIDI patterns, in Ableton's terminology). The article examines not only the effectiveness of the algorithms but also the usability of the software by musicians who are not computer programmers.

Whereas this issue's first three articles treat musical creation, the final article occupies a domain that can be considered creation's inverse: analysis, that is, pattern extraction

from existing music. More specifically, the article's topic lies in the field of audio-based music information retrieval and its subfield of audio-based melody categorization. The authors, Nadine Kroher and José-Miguel Díaz-Báñez, are interested in supporting ethnomusicological research, especially regarding variants of a folk tune and embellishments of a melody. They present their computational techniques for extracting the melody from a recording and for computing similarities between pairs of extracted melodies. The article then describes experiments that tested their techniques. The first experiment performed interstyle classification to distinguish between the *debla* and *martinete* styles of flamenco music. The second performed intrastyle classification to distinguish between two substyles of a flamenco style known as *fandango valiente*. The third experiment explored automatic categorization of "tune families" (variants of a tune) in a large corpus of Dutch folk songs.

In this issue's Reviews section, Seth Rozanoff examines an album of music for electric guitar and computer. Our reviews editor, Ross Feller, then reports on a book about the centrality of transducers to electroacoustic composition. Finally, Spanish electronic-music veteran Andrés Lewin-Richter casts a discerning eye—and ear—on the Manhattan portion of the 2017 New York City Electroacoustic Music Festival.

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Front cover. A figure from the article by Berndt, Al-Kassab, and Dachsel showing a screen image of their TouchNoise software.

Back cover. This illustration from the article by Kroher and Díaz-Báñez shows visualizations of intrastyle categorization of flamenco melodies. The styles in question are *martinetes* (left) and *fandangos* (right). For details, see the article.