



FIG. 9: Combining Vanguard's Trancogate, arpeggiator, and delay line produces lots of rhythmic variety.

The filter has resonant lowpass, highpass, and bandpass modes with 6, 12, and 24 dB per octave slopes along with several multiband configurations. The filter is followed by delay and reverb effects and an output section with overdrive distortion. You can route each of the two ADSR envelope generators to volume, filter cutoff, pulse width, and oscillator tuning.

The Trancogate and arpeggiator provide flexible, tempo-based modulation. The gate has 16 steps, variable attack and decay, separate stereo channels, and an amount control that balances between the gated and ungated signal. The arpeggiator has five modes — up, down, alternating, random, and play-order — and the rate and duration are set separately. You can generate a lot of action using the Trancogate, arpeggiator, and delay together (see Web Clip 9).

## Rick Jelliffe

### Neumixturatronium (\$29.95, Win, VSTi)

Neumixturatronium is a variation of a variation of an early (possibly the first) electronic musical instrument, the Trautonium, invented by Friedrich Trautwein in the 1930s. German physicist and Trautonium virtuoso Oskar Sala made significant modifications, most notably the introduction of subharmonic synthesis, in the Mixtur-Trautonium. Neumixturatronium is a noble attempt to realize the Mixtur-Trautonium as a VSTi plug-in.

Subharmonic synthesis uses frequency dividers to create new waves whose frequencies are whole-number divisors of the source wave. The subharmonics have the same waveform as the original, typically a sawtooth. A combination of four subharmonics is called a mixture or bank, and



The oscillators have 31 waveforms, including 8 random forms ranging from the sample-and-hold-like R2D2 to white noise. Two of the waveforms, Sine AM and Sine FM, provide basic modulation timbres. Each oscillator has a dedicated triangle-wave LFO that you can route to tuning, pulse-width, and filter cutoff. Using more than one of the LFOs to modulate filter cutoff produces complex filter patterns.

Vanguard's multimode