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The Persistence of Elusion: Hard and Soft Dances

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This improvised performance exploits the structure of a classic drum machine and turns it on its head. Whereas efficient signal-rate coding has all sounds and events derived from a single constantly-incrementing clock, this performance forces the clock to be ever-changing. Surprising sounds emerge from these previously innocuous synthesized percussion instruments, and complex “melodies” of temporalities emerge, in a play amongst stability and surprise. It is a study in the elegance of deriving all elements from a single data source and an endeavour to let the “native” voice of this instrument resonate freely.

First, some disparate points woven together in this piece:

1. Salvador Dalí's famous painting *The Persistence of Memory* (1931) features several clocks in various stages of melting like rounds of Camembert cheese in the sun, as he put it, the pinnacle of Dalí's play with the “hardness” and “softness” of various things throughout his work.
2. The Roland TR-808 Rhythm Composer, which was produced for a few years in the early 1980s, failed commercially due to its rigid interface, then to be embraced at a discount by a cult following in electronic dance music (EDM), inspiring acid house to emerge from early, more disco-oriented, house music. In Dalí's terms, the “hardness” of the 808 lay in its interface and was so extreme that it led EDM artists to squeeze out (or in their terms, “squelch”) what expressiveness and novelty could be found in it, aside from the original intentions of its designers.
3. Many modern students of electroacoustic music are taught to program at the higher-level control rate, as opposed to the signal rate. Control-rate thinking seems to more naturally fit a composer's imagination; signal-rate coding is more akin to electrical circuit design, inventing a contraption that by its nature will behave in the desired way on its own rather than awaiting and executing control-rate instructions as they come. There is a trade-off between bending a program to your imagination and exploring what comes more naturally for the machine. The harder (less immediately natural) way of thinking may reveal unimagined delights if pursued with the right mind-set — perhaps such results are not as much “soft” as they are “juicy.”
4. Social dance music relies on certain measures of stability and predictability in time: a steady pulse, sections in multiples of four bars of four beats each, etc. This supports the social act of unrehearsed dance: one wants to be able to participate readily. Time is rigid for this reason, as opposed to music of the classical concert tradition in the last century or two, in which time is free to be more flexible and expressive itself. However, even much classical music is connected to the notion of dance or sustains stable rhythms even though the audience is sitting. Too, Warp Records' seminal *Artificial Intelligence* album presented “electronic listening music” that still largely honoured a danceable beat even though the android on the album cover was clearly seated comfortably. Many composers wrestle with how to treat time, or they embrace one approach somewhat dogmatically.

The Persistence of Elusion: Hard and Soft Dances constructs and then deconstructs the rigid structure of a classic style drum machine like the 808 and with it the notion of stable temporalities. Having constructed a machine that can faithfully reproduce a conventional kind of music, driven by one master clock, and with every sound and event elegantly derived from that constant clock in signal-rate coding style, I turn to seek the native voice of this contraption: What song does it sing more naturally, when I free the clock from its rigidity and turn it into the heart of flexible expressiveness?

At the heart of signal-rate coding style is a clock, which can simply be a variable that is incremented with each audio sample (and CD-quality audio has 44,100 samples per second). This becomes the source of life for everything that follows. A simple modulo operation wraps the ever-climbing clock into a sawtooth wave. Further arithmetic and Boolean operations can twist the clock into almost any shape needed to yield signals or control envelopes.

The virtual drum machine in this piece is constructed in this way, even with rudimentary stochastic processes (a noise generator plus a sample-and-hold function) to create fluctuations in loudness and sieves that shape the likelihood of note events occurring. This work begins with a prelude that explores these features, the drum machine as originally intended, with “hard” time.

The brief prelude and its innocuous danceable beat are followed by the body of the work which explores “soft” time: The clock itself is made to change perpetually. This evokes surprising sounds from the various instruments, including howling melodic gestures and sounds like chanting crowds (somehow).

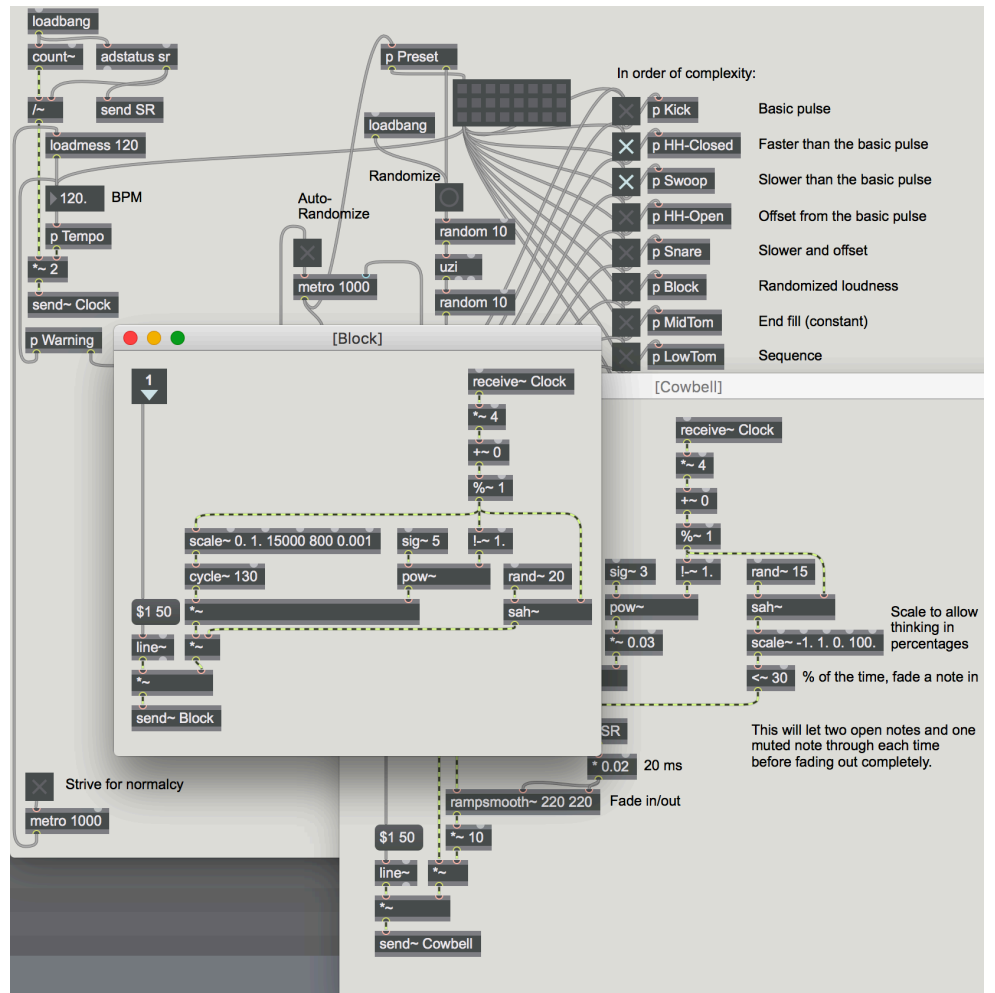
In performance, perhaps ironically, the constantly-changing nature of the clock is hard coded and I, as the performer, am left to respond to what emerges from it by using the rigid interface of toggle switches for each voice. This is obviously not what anyone would choose if they began with the intention to create flexible rhythms extemporaneously, but that is what makes this performance novel: it explores the unexpected musical phenomena that can emerge from such a bad user interface design predicament. Robbing the performer of the ability to make any of his own ideas happen, I am forced to use the controls the device offers and roll with what comes out of it naturally. I become more like a conductor than a performer, or as I see it, in a position like Lawrence D. “Butch” Morris in his Conduction system of conducting ensembles of improvisers.

Composers (and other artists) famously thrive when given constraints, and a performance scenario like this provides more extreme constraint, more in the spirit of John Cage’s works, in which he seeks to “write himself” out of the compositions. However, whereas Cage’s works might align more with Barthes’s *Writing Degree Zero*, I see performance experiences like this work as amplifying the creative intuition of the performer by creating a crucible that strains or restrains his rational, in-control intellect.

I also consider this work as part of a longer inquiry in seeking the native voice in apparatuses and in performance situations. Prior works in this line of inquiry include multi-modal feedback loops, circuit bending, site-specific compositions, and intermedia devised performances. With the notion of clock-twisting added to this discussion, it may become appropriate to also call this mode of composition *intrinsic* besides being *native*. It seeks the aesthetic experiences that can be had by more deeply understanding and experiencing the situation of the performance itself, rather than forcing it into human-conceived scripts.

The musical surface of the work engages the question of the danceable pulse in music that is decidedly for listening. Surely seated minds can appreciate the ability to construct anticipations when given discernible patterns, but the mind is also able to “dance” (or follow along with its constructed models for listening) facily along with any change no matter how surprising, even if there are multiple patterns audible at once. This work enters this field of play, in which the temporality itself can be bent expressively and combined in harmonies and dissonances. In this, the “beat” becomes a kind of non-pitch melody that might be brought into conversation with Schoenberg’s *Klangfarbenmelodie* and moment form as explored in John Zorn’s *Cat O’Nine Tails* and Karlheinz Stockhausen’s *Kontakte*.

Fig. 1.



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