



With Machines:

**Dead Animals
Live Circuits
Human Voice**

The wheel is considered to be a cornerstone invention in our civilization. Wheels were key in early irrigation systems for producing food. The passenger car is built on four wheels. The car is on the one hand a great symbol of power in (post-)modern society, giving freedom of movement to those who possess one. At the same time, car exhaust is the greatest destroyer of breathable air on our planet. The consumption by cars of fossil fuel is the cause, via the greenhouse effect, of global warming, which threatens the viability of vast terrestrial ecosystems. Technology is capable equally of aiding life, and threatening life.

All applications of technology demand scrutiny. Bigger, brighter and faster are not enough. Technology can and should truly augment the domain of possible creative expressions and interactions. The priorities, values and processes of tradition do not need to be paved over. Artists can make these evaluations personally and collectively in ensembles, ethnic groups, and larger agglomerations. Perhaps you will formulate an African response to these issues? Today, I give you my personal perspective and knowledge regarding some particular technologies and their application to performance. I hope you will ask social, as well as technical, questions.

There are many applications of technology to music. Recording technology lets us preserve and distribute performances. This can be beneficial to artists, and audience alike, enhancing the breadth of awareness and the depth of collective memory. However, any particular technology is prone to a gamut of uses. Local performers may get displaced by glossy merchandise. For example, in Madina, the town 5 kilometres north of here, where I live, it seems pre-recorded pop-music has replaced live traditional musicians in 99% of wake-keepings and outdoorings. A friend of mine, Frances Kofi, who was the lead drummer in the Ghana Dance Ensemble, tells of a wake-keeping at which some youths attacked him verbally for playing the traditional Ewe music, Agbadza, on drums, and thus displacing such pop-music. As in many other professions, machines can replace people. What good is music without human participants?

We who live with technology can confront questions of context and control. What social relationships does technology engender? Who defines the terms, and who is served? As an artist, I work to take these matters into my own hands. While I am bound on many levels by the greater prevailing socio-economic milieu, I can struggle to stake out a space within which to create.

Regarding social organization, I demand terms which combine autonomy for individuals to express themselves with the social cohesion of community. These are the relationships of "the good life", both within a project, and for society as a whole. In my search for precedents, I have been lucky to come in contact with the cultural traditions of West Africa.

In the drum language tradition of the Ewe people of South Eastern Ghana, autonomy and community are embodied by complex, interlocking, cross-rhythmic frameworks which articulate proverbial poetry. Regarding the particulars of its form and function, the expatriate Ghanaian composer and performer, C.K. Ladzekpo, has written,

Among the Ewe of Southern Ghana, a legendary metaphor, '*Ela kuku dea be wu la gbagbe*', which means 'A dead animal screams louder than a live one,' is commonly used to explain the human experience that inspired the origin of the drum . . . a super voice surrogate was built out of the skin of a dead animal that could deliver the message louder and clearer.[§]

[§] Ladzekpo (1991). "Some Facts about Sub-Saharan Dance Drumming". Program Notes for a concert of the African Music and Dance Ensemble. Oakland.: Mandeleo Institute.: p1)

C.K. is talking about how drums can speak to express human voice.

Technology can also serve as a super-voice surrogate. In my work, digital sampling is used to create new voice elements, enlarging the scope of expression. John Cage has posited that any and all sound constitutes music. I use the actual sound of a particular event at a particular place to represent that context. Thus, I evoke those scenarios by invoking their acoustic signatures. With digital sampling, and MIDI, I am able to make these sounds available to live musicians. The dynamic component of spontaneous musical interaction in performance is not disrupted by the introduction of machines.

As a traditional West African village will use music, dance, cloth, and environmental design to express a consistent aesthetic of community interrelationships, so, in accord with *The Unified Theory of the Spectacle of the Environment**, I contextualize technology and performance forms in my work through an articulated set of interrelationships among human beings. *j.p. morgan presentation* is a scene from my extended spectacle of the environment, or opera, the economic survival rite of passage.

[[video excerpt]]

The musical structure of *j.p. morgan presentation* extended my work with West African polyrhythmic frameworks to add new degrees of freedom, as suggested by the African-American composer, Anthony Braxton, with his "Solar System Logic". Previously, in my compositions, I had created interlocking parts with an attention on how they resolve. These resolutions arrive once every bar, or at some number of bars which is a power of 2 (2, 4, 8, 16).

j.p. morgan presentation is a polymetric composition in which 3 of the musicians have different cycles, each with an odd number of beats, consistent in length: a 5 beat cycle, a 7 beat cycle and an 11 beat cycle. The fourth musician works always with off-beat, duple phrasing. Each performer is given a set of modules with the same duration. Through most of the course of the piece, they may move back and forth freely among their assigned modules, and may make variations if they maintain "the feel". The result is an always changing polymetric interaction with no resolution.

The exceptional time, musically, is when the drummer "rings the phone". This dynamic signal brings the other performers into structural variations. The drummer rests and then rings the phone again to call the musicians back into their rhythmic ground cycles. The dynamic signaling performance model originates in traditional music such as the Ewe Agbadza.

Unfortunately, in the video you have just seen, there is only a small footage, in the prelude, whip crack solo. of the drummer, Royal Hartigan, who is triggering the samples. A palate of digitally sampled sounds, including a typewriter, a Xerox machine, a telephone, and a whip crack are made available to the drummer, who accesses them via a MIDI device, the drum KAT. The score directs the drummer to improvise with the whip crack sounds, and then to use the full set precisely in an eleven beat cycle. Directions for bass drum and typewriter are not structurally different.

MIDI, the Musician's Digital Interface, is a standard for the interconnection, between sound modules, and what the specification calls controllers -- I call them human interfaces. A human interface triggers a sound module. In this instantaneous, or real-time, chain, the musician's action brings forth sound, like playing any musical instrument. At the time of performance, the separation of the elements is not perceivable. In a typical keyboard instrument -- what you might call a "synthesizer" -- both of these elements occur in the same package.

MIDI separates the electronic generation of sounds from their triggering. The information about what sound to play for how long and how loud, is transmitted digitally, across wires, in real time. Polyphony is supported on one cable. The standard has allowed manufacturers to build devices which specialize in

* Kerne, A., & Lang, M. [1994. *The Spectacle of the Environment*: unpublished pamphlet]

any part of the process. Computers may also control MIDI sound modules directly, which has permitted the development of computer programs called sequencers. Sequencers are like multi-track tape recorders. They permit the recording, playback, and precise editing of multiple concurrent MIDI streams.

The first typical application of MIDI was to allow one keyboard player to control multiple synthesizers from the same keyboard. Fortunately, more creative applications are possible. Many different human interfaces, not just keyboards, have been implemented. The Drum KAT, which you have seen on the video today, is one such, supplying percussive triggers which a percussionist strikes alongside of her or his drums. Another is the BodySynth, invented by a San Franciscan, and presented to large audiences by the art-pop musician/composer Laurie Anderson. The BodySynth senses muscle activity, and so can create a MIDI data stream directly in response to the movements of a dancer. There are also electronic wind instruments.

The sound module in *j.p. morgan presentation* is a digital sampler. Digital recording technology turns a stream of sound into a set of numbers for real-time storage, retrieval, and processing by computers. I could spend a whole semester talking about this alone. A compact disk, or CD, player uses the same means, as does digital audio tape, or DAT. You could think of the sampler as the player of a CD on which I have recorded my whip crack, phone, and typewriter. The MIDI triggers let the percussionist instantaneously command a segment of the CD to play back. It happens that you can play multiple selections of this hypothetical CD simultaneously. Also, real time pitch shifting is supported. Thus live circuits take their place with dead animals as super voice surrogates.

Before we have discussion, I will play some of the audio again, this time without the video. The sound in both cases is the same, but this video machine does not support stereo. You can hear the separation of the samples and voices better here. Note that this recording is a of the actual live performance.

The wheels of technology will run us down or carry us to the fields of our dreams. As artists, as human beings, we choose. Know your voice, know your culture. Use dead animals, and live circuits where you will. Speak your mind.