Unfortunately I am unable to attend the Electronic Music Performance symposium in Brisbane this weekend. However I offer the following thoughts on "instrument building in performance," in the hope that they may provide some insight into my view of the relationship between instrument building and performance.
> *-- Ross Bencina, November 25th 2003, Melbourne.*

Some Notes Regarding Instrument Building in Performance

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Five Instrument Builders: Antonio Stradivari, Harry Partch, Miller Puckette, Warren Burt, Thomas Jirku

- instrument builder as craftsman - instruments (Violins) facilitate performer expression / tone colour (cf. also the piano)

- instrument builder as composer - instruments built to facilitate and articulate compositional approaches (non 12-TET tunings)

- instrument builder as composer/performer/developer - develop software (Pd) which can be used to assemble instruments

- instrument builder as composer/performer/software user - builds 'instruments' by assembling existing software (AudioMulch, Vaz, Scala, Building Blocks etc).

- instrument builder as performer - the performance involves building the instrument, but not in the Fluxus sense of "everything is performance", but rather, because it is natural to want to make the instrument as part of making the music

Tool

Instrument as a tool to make sound.

Evolving Tool

Instrument as a design which evolves over time to meet the needs of composers and/or performers (consider the evolution of the transverse flute).

Invention

Instrument as an invention, created in response to technical possibilities (MAX/MSP), musical requirements (Piano), or compositional necessity (Partch non 12-TET tunings).

Continuum

Create one instrument and spend a lifetime learning to play it <---> create a new instrument every week without exploring all of its possibilities.

Creativity

- Make something you think might be useful and let others work out what it's good for.

- Make something you need.

- Necessity is the Mother of Invention

Misc

Composition specific instrument vs. instrument to compose for

Deferral of implementation.

It's possible to view the act of instrument building as "deferral of implementation". What I mean by this is that in an improvising performance (aka real-time composition) it is possible to imagine sounds or procedural expressions (musical processes) which are, at the time of performance, beyond the limits of the performer and/or instrument, or which perhaps are at these limits and thus are difficult to perform. If one makes a mental note of such limits during performance one can later implement these capabilities (either by practicing a new performance technique or extending the instrument) in order to make them available to later performances. To the degree to which the instrument permits "real-time extension" the instrument may be extended ('built') as an integral part of a performance (cf. toolkit-as-instrument).

Performance

Much can (and has) been said about the nature of performance, the degree to which the performer is/can be "prepared" for the performance and so on. The kind of performance I am most interested in here is that where the outcome is, to a large extent, unknown. This is a mode in which the performance is an improvisation, in the sense of a real-time composition (not so much in the sense of interpretation). In this mode, certain materials (sounds, treatments, processes) are pre-prepared, however much is unknown - ideally there is great flexibility in what can be articulated - the performance can be a stream of consciousness, a dialog between performer and context (materials, performance space). Of course the range of materials offered by (for example) a saxophone are quite different from those offered by a computer running (for example) the AudioMulch software along with whatever plugins and sound samples the performer brings to performance.

Evolution: an issue of timescales

Given the right "user interface", the process of instrument design can be brought into performance: Instead of evolving an instrument over centuries, the instrument can be modified or created anew in response to the real-time requirements of the improvised performance context. In this sense, the instrument-as-toolkit is not just a toolkit for creating instruments, but it is also a toolkit-as-instrument: the creation of instruments becomes and aspect of being an instrument. There are orchestral parallels (using a trumpet mute for example).. but I'm thinking more along the lines of putting a workshop and brass foundry on stage, and more.

Navigation, Parametric Continuum, Discrete Selection

Consider "traditional performance" as in-time navigation through points in a (fixed) multidimensional parameter space (e.g. trombone: lip pressure, slide position, bell direction). Instrument building in performance might simply involve a larger parameter space (more dimensions, larger available ranges within dimensions), perhaps with the ability to change the "mapping" - how the space is navigated - replace a go-kart with a snowboard; or it may involve actually changing the space (introducing new dimensions, warping existing dimensions). For example, plugging in a new effect adds new dimensions (e.g. flanger: modulation depth, modulation rate etc etc) - selecting a new soundfile to play adds dimensions - mapping a parameter to a MIDI knob adds dynamic control over a previously static parameter. Two effects (processes) may sound similar with certain parameter ranges, but may sound totally different (offer different expressive capabilities) in other parameter ranges. The performer is forced to choose up-front between the two effects. Instruments set limits as well as offering possibilities -- what if one wants to switch from canoe to mountain-bike mid-stream?

Economy of Materials