Digital Musique Concrète

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Examples of Concrète in pop and underground music as influenced by new technologies

II Computers - consequences (REVIEW)

A Tape techniques enhanced

1 **cut/splice** - durations determined by sample rate and other factors (may need to explain sample rate)

2 **speed** - can slow down or speed up a sound recording without affecting pitch

3 **pitch** - can raise or lower pitch without affecting speed

4 **direction** - can play forward and backward (no change)

5 **timbre** - complex computer analysis can "morph" one timbre to another based on time-varying spectral character (may need to explain this briefly) in addition to changing amplitude envelop (may need to explain this and relate to chopping off attack)

B Computer techniques

1 **same ability to filter, reverb**, etc., but more complex and controllable - no longer using single circuits or physical devices, but digital signal processing. more precise and flexible

2 **analysis/synthesis** routines allowed for manipulations of sound characteristics that weren't available with just the recorded sound

3 computer allowed for more control over **multi-channel** environments - octophonic (define) setups very common

4 able to take **amplitude envelope** of one sound and spectral characteristics of another - more on this in another lecture

Excerpt from:
http://en.wikipedia.org/wiki/Musique_concrète

After the 1950s, Concrète was somewhat displaced by other forms of electronic composition, although its influence can be seen in popular music by many bands, including The Beatles, in their song "Revolution 9"; Pink Floyd, most notably in the finale of the song "Bike" and in *The Dark Side of the Moon* (although concrete music techniques can be traced in multiple compositions of the band), and Roxy Music, in the intro to their song "Re-Make/Re-Model". Around 1967 and 1968, avant-garde musician Frank Zappa made several musique concrète pieces with the help of the "Apostolic Vlorch Injector" at Apostolic Studios in New York City. The resulting sound, as heard on "The Chrome Plated Megaphone of Destiny" from *We're Only In It For The Money* and "Dwarf Nebula Processional March & Dwarf Nebula" from *Weasels Ripped My Flesh*, is a series of bizarre, swirling buzzes, beeps and whooshes.

Traditional and non-traditional *Concrète* experienced a revival in the 1980s and 1990s. Artists like Ray Buttigieg with his experimental series "Earth Noise" and "Sound Science Series" and John Oswald's Plunderphonics use found and intended sounds in old and cutting edge techniques, although modern sampling technology is now often used in place of magnetic tape.

Recently, the growing popularity in all forms of electronica has led to a re-birth of *Musique concrète*. Artists such as Squarepusher, Christian Fennesz, Francisco Lopez, Ernesto Rodrigues, Junkielover and Scanner use many *Concrète* techniques in their music while often being classified under more common electronica genres such as IDM or downtempo.

New Technology - VAX 11/780

The 11/780 pictures is similar to the “CARL” computer
at the Center for Music Experiment at UCSD.

"VAX" was originally an acronym for Virtual Address eXtension, both because the VAX was seen as a 32-bit extension of the older 16-bit PDP-11 and because it was a commercial pioneer in using virtual memory to manage this larger address space.
For a while the VAX-11/780 was used as a baseline in CPU benchmarks because its speed was about one MIPS.

New Technology - Fairlight CMI

Fairlight Instruments was founded late in 1975 by Kim Ryrie and Peter Vogel in Sydney, Austrailia, after discussing a microprocessor controlled synthesizer. Early on, they began working with fellow Aussie Tony Furse, an engineer and electronics whiz, who had already been working on a digital synthesizer for several years. The synthesizer, called the Quasar M8, was a hand wired monster that took 2 hours to boot.

New Technology - E-mu Emulator

"At the 1980 AES show, [Dave] Rossum and his E-mu compatriots spotted a few novel musical products on display. 'The Fairlight CMI had just come out,' Rossum explains, 'and that was the first time we had a chance to see one of those'.... 'Another product was from a French company called Publison, who had a digital delay line with a voltage controlled clock rate. You could take an audio sample - capture sound in memory - and trigger it monophonically from a keyboard. A gate from the keyboard would turn the voice on and play once through the sample.'

New Technology - E-mu SP-12

i.e. the "Drumulator II"” Roger Linn's company continued to set the pace for drum machine development in the early 1980's, and after the roaring sucess of the Drumulator, E-mu Systems moved into the upper end of the market in 1984.

The Drumulator II was a complete revision of the original. It was designed with user sampling, MIDI and SMPTE, far better controlsʌ and a LCD. It takes its looks straight from the Emulator II, as well as using the same buttons and sliders !

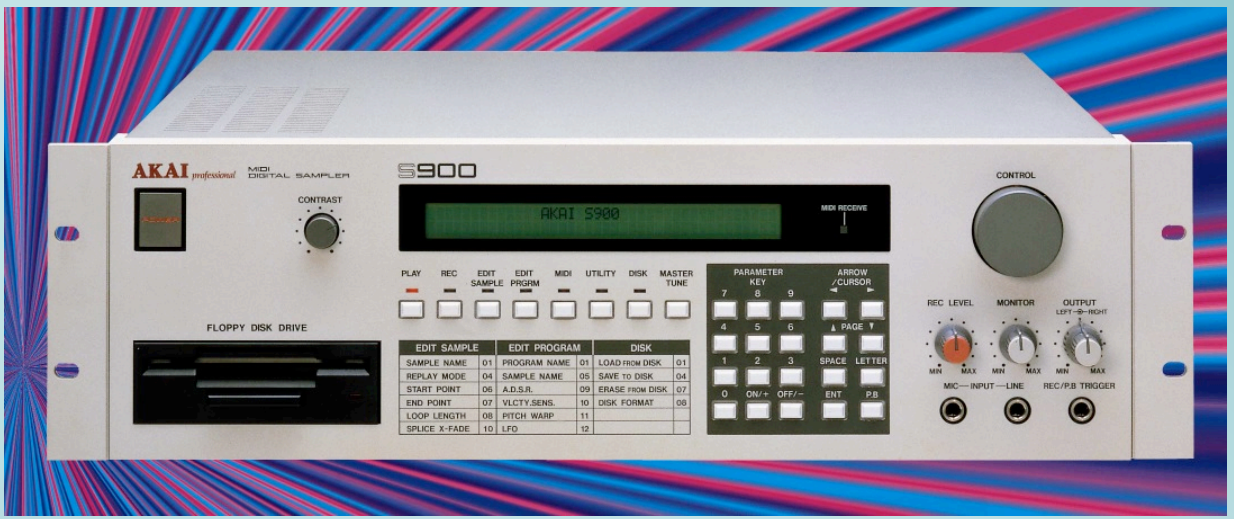
SP-12 stands for Sampling Percussion at 12 bits.

New Technology - Ensoniq Mirage

The Mirage preceded the revolutionary EPS and EPS-16+ sampler workstations in the Ensoniq line-up. Historically, the Mirage was one of the earliest affordable sampler synths, originally listing under $1,700.

Most people searching for a classic sampler/synth would look towards the EPS and EPS-16+ from Ensoniq. After all, their specs, design and quality are superior. However, there is a certain amount of nostalgia concerned with the Mirage. It has been used by **Skinny Puppy, Jimmy Edgar, and Jimmy Jam and Terry Lewis.**

New Technology - Akai S900



The Akai S900 is a 8-voice, 12-bit sampler module. It featured a maximum of 11.75 seconds of sample time at its highest sampling rate of 40kHz, or even more with sampling rates as low as 7.5kHz. Memory is set at 750KB and is not upgradable. Editing consisted of eight edit pages (Play, Record, Edit sample, Edit program, MIDI, Utility, Disk, and Master) accessible by pressing one of the eight buttons along the bottom of the good-sized display screen. To the right of these buttons is a numeric keypad, curser control buttons, and a playback button (plays back a sample after recording it). To the right of these are the control wheel, mic and line inputs, input and output level knobs, and trigger input for triggering recording start or play-back.

New Technology - Mellotron

The **Mellotron** is an electromechanical polyphonic keyboard musical instrument originally developed and built in Birmingham, England in the early 1960s.The Mellotron (along with its direct ancestor the Chamberlin) was, in effect, the world's first sample-playback keyboard. The heart of the instrument is a bank of magnetic tape strips (these tapes were parallel linear, not looped as has sometimes been reported or presumed), each tape with approximately eight seconds of playing time; playback heads underneath each key enables performers to play the pre-recorded sound assigned to that key when pressed.

Links and Sound Examples

- **http://en.wikipedia.org/wiki/Musique_concrète**

- **Beatles - *Revolution 9***
- **Pink Floyd - *Bike***
- **(Fairlight) - Art of Noise - *Beat Box, Paranoimia, Close to the Edit***
- **(Emulator) - Depeche Mode - *People are People***
- **(Emax) - Nine Inch Nails - *Down in It***
- **Tackhead (Keith LeBlanc, Adrian Sherwood) - *Hard Left***
- **(Ensoniq Mirage) - Skinny Puppy - *Dig It***
- **(Akai S900) - Nitzer Ebb - *Lightening Man***
- **(Mollotron) - Moody Blues - *Nights in White Satin***
- **Kraftwerk - *Numbers, Pocket Calculator***