

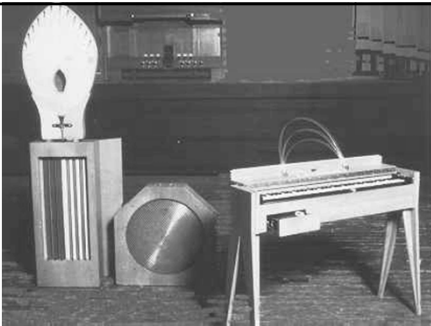
Electronic Music: The Early Years



Theremin:
Invented by Lev Sergeyevich Termen,
1920

Clara Rockmore:
the first to "master" the instrument

Pamela Kurstin:
Adapts to Jazz



Ondes Martenot invented by Maurice Martenot 1928

French National Radio

- Experimentation in recording studio
- Pierre Schaeffer from 1948 experiments with recorded sound: layers, loops, variable speed, & other editing procedures
- Used recorded "sound objects" as basis
 - Any sound from nature or musical instruments

Musique Concrète

- Hugh LeCain (1914-77)
 - Canadian scientist and inventor
 - *Dripsody* (1955) source material is a drop of water
 - Created on prototype of variable speed tape recorder

German Radio (Cologne)

- Favored electronically produced sounds and **total** control over all parameters of sound
- **Serial Music:** music in which all parameters of sound are strictly controlled, often an expansion of 12-tone technique
- Electronic music offered best possible way to control **every** aspect of sound (duration, timbre, pitch, attack, decay, etc.)

Karlheinz Stockhausen (1928–2007)

- Among most important young composers in post-war Germany
- No single “style”, tended to experiment with a new technique, master it, then move on
- Studied with Olivier Messiaen
- Major figure at Darmstadt summer courses



Gesang der Jünglinge (1956)

Reconciles electronic and *concrète* elements

Source Material:

- boy singing from Book of Daniel (Bible)
- electronically generated sounds (sine waves, modulated sine waves, white noise, clicks)

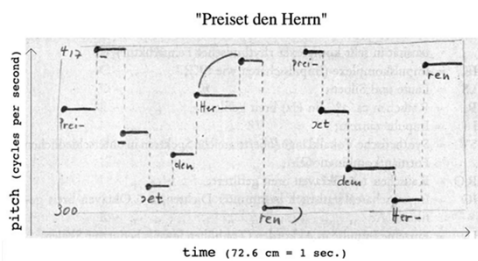
Organization of Material:

Vowels —————> Consonants
Continuum mimicked by electronic sounds

5-channel spatial performance intended

Breaks text down into units and rearranges them:

Preis et den Herrn
Den Pries et Herrn
Prei den herrn set
Eipr set den nHerr



Philips Pavilion, Brussels World's Fair, 1958

Le Corbusier (architect)
Iannis Xenakis (architect)
Edgard Varèse (composer)

Poème Électronique played
continuously through
400 speakers



Synthesizer

- RCA Mark II Synthesizer (1959) consolidated control over various mechanisms using punched paper tape



Moog Synthesizer included keyboard
Wendy Carlos *Switched-On Bach*
(1968) allowed for precise tuning
and timbral shifts

David Tudor (1926-96)

- Worked with John Cage—interested in sonic events
- *Rainforest* commissioned by Merce Cunningham Dance Company 1968
- Loudspeaker: as instrument, not just device
- Piece explores resonant characteristics of small objects which are amplified and altered
- Later versions: *Rainforest IV* (1973) musical-sculpture “event”

Tudor *Rainforest IV*: 5 hour installation of amplified sounds; people interact with “sound sculptures”; natural sounds mingle with amplified ones



Electronic + Live performance

- 1960s:
 - Limits of audible complexity reached
 - Turn attention to combining live and recorded music *or* live electronic music (music generated live in concert)
- Relaxation of control
- Move into realm of theater—spatial music emphasized

Milton Babbitt (1916–2011)

Philomel for pre-recorded soprano, live soprano, and synthesized sound

- How effective is the notation?
- What is the relationship between the 2 voice parts? What effect do the 2 voices make?

Laurie Anderson (b. 1947)

performance artist

- Electronically modified instruments
- Digitally manipulated voice in live performance
- Performances are theatrical events (*United States* 2-day long event, 1983)
- First Artist-in-Residence for NASA (2004)



O Superman (1981)

Sampling or “Plundering”?

What happens when the musical material of recordings becomes the basic elements of a new composition?

Are recordings a fixed and solid “thing”, immutable?
How might they be seen as fluid?

Ownership ~ Harm Creation ~ Shared Culture

Ownership of idea? Of material?

Thomas Jefferson:

He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.