

(11/28) ELECTRONIC MUSIC

1. Modes of Musical Reproduction before the Electronic Era
 - a. Earliest?
 - b. Music boxes
 - c. Player pianos
 - d. Cylinders and acoustic recording
 - e. Electronic microphones and electronic amplification: the 78 era
 - i. With acoustic music: Kurt Weill, *The Tsar has his Photograph Taken*
 - ii. Also Darius Milhaud, Paul Hindemith.
 - iii. John Cage, *Imaginary Landscape* series (beginning 1939)
2. *Musique concrète*
 - a. Tape!
 - i. Properties of tape
 - ii. Uses (also: uses of photographs?)
 1. transformation of pitch
 2. transformation of time
 3. beyond the realm of equal temperament
 4. overdubbing
 5. additive synthesis
 6. subtractive (via white noise) synthesis.
 - iii. Limitations
 1. transformation of pitch = transformation of time
 - b. Pierre Schaeffer *ca.* 1948.
 - c. Formation of studios – Paris, Cologne, Milan, Columbia University
3. Generation of *purely* electronic sounds
 - a. Thaddeus Cahill, telharmonium (1906): limitation? two hundred tons!
 - b. Lev Teremin's musical device, the theremin (1920)
 - c. Maurice Martenot, *ondes martenot* (1928) – more flexible in pitch and timbre.
 - i. Messiaen tended to write for multiple ondes martenots
 - d. Generation of three types of waves:
 - i. Sine
 - ii. Square
 - iii. Sawtooth
 - e. Varese, *Poème Electronique*
 - f. Attracted serial composers disappointed with the limitations of serial music
 - g. Soon became disappointed themselves in the limitations of pure electronic music.
 - h. Mixture of *concrète* and studio sounds became popular.
 - i. Stockhausen, *Gesang der Jünglinge* (1956) first major work in this genre.
 - j. Score to the movie *Forbidden Planet* — first popular electronic music

4. Synthesizers
 - a. RCA Mark II – given to Columbia—Princeton after RCA had no use for it.
 - b. allowed immediate playback of recorded timbres and transposition of those timbres
 - c. advantages: allowed for more “musical” interface; smaller; **much** quicker composition.
 - d. disadvantage: eliminated some of the control that the composers sought
 - e. compromise position: use synthesizers combined with studio sounds.
 - f. Robert Moog – made the synthesizer much smaller.
 - g. Wendy (né Walter) Carlos – *Switched-On Bach* (1968); *Clockwork Orange*

5. Live and electronic music
 - a. Mario Davidovsky, *Synchronisms* series (1962–?)
 - i. What can and can’t you do with live musicians with electronics?
 - b. Milton Babbitt, *Philomel* (1964)

6. “Who Cares if You Listen,” reprise.
 - a. Has there been a popular product of serialism?
 - b. If we can’t justify serialism and other experimental (that is, non-popular) composition, can we justify any classical music?

Next class:

Cage and Aleatory

Course Evaluations

Papers due 12/7 (not 12/5 as in the original syllabus).

Next Tuesday:

Compose an (extremely short) work that uses aleatoric methods. Bring at least 7 copies of the work to class and be ready to explain how aleatory is used. This should take no more than an hour or two (I know you have really difficult end of semesters both here and in other subjects).