Determinacy vs. Indeterminacy

In Post-WWII Years, there is a dichotomy between Determinacy (or Ultrarationality) and Indeterminacy. One person who was involved in both movements was John Cage (1912-92).

- Cage was a native Californian whose major teachers included Arnold Schoenberg, Henry Cowell, and “life”. Because of studying with Schoenberg, Cage experimented with 12-tone technique, but soon branched off in other directions.
- His studies with Cowell inspired an interest in non-western, particularly Asian philosophies and religions (Hindu and Zen Buddhism) as well as music of non-western cultures. Because this music is percussion-intensive, Cage took strong interest in percussion ensembles. In late 30’s, Cage composed set of percussion ensemble pieces called Constructions. An example is Third Construction (1941).
  - Instrumentation includes 20 cans of different sizes, tom-toms, gongs, cowbells, cricket callers (made of split bamboo). Near end there is roaring sound created by rubbing head of bass drum. Cage separated instruments into timbral categories: metal (cans, gongs), wood and skin (claves, tom-tom), and sustained (roaring bass drum, blown conch shell).
  - Rhythm is motoric: derived from non-western philosophical views and chanting: the piece is continuous rather than progressive (developmental). In this way, Cage explores time issues, another important focus of his.
- Cage was also interested in new sound resources, such as Cowell’s alternate uses of piano. Cage initiated concept of prepared piano, which has objects inserted around, onto, under strings; variety of objects (nuts and bolts, pencil erasers, weather stripping) and their locations cause variety of timbres not expected of piano.
  - Sonatas and Interludes (1946-8) contains 16 Sonatas and 4 Interludes for prepared piano. Fifth sonata is on listening list. Fifth sonata from this piece sounds like percussion ensemble piece, but all performed on piano. Like Third Construction, has very continuous rhythmic aspect.
- So far, all of this music has been “composed.” Cage’s next step was to experiment with chance in music.
  - Distinction between chance and indeterminacy: in chance music, composition decisions are made, but according to a method that reflects chance (toss coin, roll dice). One has a specific score when the piece is done. Indeterminate (also “aleatoic”) music leaves decisions up to performer (via inexact notation, random order of parts or whatever). (New Harvard Dictionary uses “chance,” “aleatory,” and “indeterminacy” interchangeably: no wide agreement on use of these terms)
  - Cage’s best-known “chance” piece is Music of Changes (1951). Each detail of the score was determined by toss of 3 coins six times: these results directed him to a specific number on the I Ching (Book of Changes, a 4000 yr old Chinese intuitive decision-making system based on the binary logic of Yin/Yang); process gave Cage a single pitch; he repeated the process to determine duration, timbre, other parameters. Result was precisely notated score determined by chance.
- Other Cage experiments:
• Distinction between sound and silence. He pointed out that in normal environment there is no such thing as total silence; there is “a medley of random sounds floating all around us.” To Cage, the distinction is relative rather than absolute: music consists of (mostly!) sounds that are intended; silence is sounds that are unintended.

• Eastern philosophies taught him that awareness of silence is one of the disciplines of contemplative life (meditation).

• In 4'33" (1952) a performer sits at piano for required amount of time but without playing. Passing of three “non-movements” is indicated by arm movements. Cage’s intention is that the audience became aware of the “silent music” of the auditorium.

• Eventually Cage set up situations where outcome couldn’t be predicted at all. Fontana Mix (1958) calls for “parts to be prepared from the score for the production of any number of tracks of magnetic tape or for any number of players, any kind and number of instruments.”

• The score has 10 transparent sheets with lines and dots; intended to be read as graphic notation. The idea was complete spontaneity.