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John Cage: **FONTANA MIX** (1958/59)  
Implementation as a generative sound environment  
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*Fontana Mix* was composed in 1958 at the Studio do Fonologia in Milan where John Cage was working on a piece for four tape recorders. The composition is unusually notated – the score consists of sheets and transparencies with printed points, squares, curves and lines that are to be freely overlaid upon one another. The constellations that result from this chance procedure are applied to musical parameters to create a possible realization of the piece.

This isn't an 'opus' in the classical sense, rather it is a 'construction kit' for non-intentional production of music, which allows the creation of different pieces: along with *Fontana Mix* for tape, John Cage composed *Aria* for mezzo soprano (1958), *Water Walk* (1959), *Theater Piece* for 1-8 performers (1960), and Cornelius Cardew used it for the realization of his *Solo for Guitar*.

In *Fontana Mix* Cage developed his concept of indeterminacy that he continued to use in countless variations throughout his life. As a composer, he separated himself from his work, so that the work's existence was not dependent on subjective compositional decisions, but rather on the objective instance – chance. The aim of this non-intentionality is the „freeing of sounds, to let them exist on their own, instead of being used to express emotion or meaning”. [1] Associated with this is the rejection of any expression.

Cage did not intend that the application of chance was a license for free choice. As an artist concerned with 'structural thinking', Cage invented ingenious composition systems in which precisely defined sound material was organized 'non-intentionally' based on his systems of rules. For *Fontana Mix* and *Variations* he developed a graphic chance generator, afterwards he used the Chinese oracle book *I-Ging*, and from the 1980's on, he used a computer program developed by Andrew Culver [2]. It's no wonder that Cage integrated the computer into his production process. It freed him from the time consuming and tedious labour of communicating chance values but still lead to the wished-for result: sounds, free of intentional arrangement.

This was the starting point for my own realization of *Fontana Mix*. After I began to make use of Cage's described graphical methods, I soon realized that I wasn't going to get far. Therefore I decided to realize the piece with my own program **FontanaMixer** in Max/MSP. In the program, I strictly adhered to Cage's given instructions: the chance-based choice of 6 parameter values (ranging from 1 to 20) for each sound event, including the duration and 'time bracket' (position in time). The continually changing parameter values influence the character of each sound generator. Based on granular synthesis and chance procedures, sound material is split into the small particles and then re-formed into new and unforeseen sound objects.

As basic sound material, I used the voice of John Cage [3] and sounds from nature.

You can download this software from Karlheinz Essl's website:

<http://www.essl.at/>

## References:

[1]: John Cage: Zur Geschichte der experimentellen Musik in den Vereinigten Staaten; in: *Darmstädter Beiträge zur Neuen Musik*, Bd. 2, hrsg. von Wolfgang Steinecke. Mainz: Schott, 1959.

[2]: <http://www.anarchicharmony.org/People/Culver/CagePrograms.html>

[3]: John Cage Interviewed by Jonathan Cott (1963)  
[http://www.archive.org/download/CottInterviews/CottwithCageR1\\_vbr.mp3](http://www.archive.org/download/CottInterviews/CottwithCageR1_vbr.mp3)