

Indeterminacy, Score, Performance

About *Halo* installation by Kimchi & Chips

(<https://www.kimchiandchips.com/works/halo/>)

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Only mediocre works of art have verbal “meanings.” The best ones do not. They need to be experienced. They can’t be reduced to a set of keywords, topics, themes, or issues.

Although this experience can be almost instantaneous in theory, I can’t think of a single work conceived for such split-second viewing. Instead, practically in all cases, an artwork asks us to dedicate some time to being with it. In many works, including most music pieces, the time needed is programmed by the work itself. John Cage’s 4’33” lasts exactly 4 minutes and 33 seconds in every performance. The length of conventional music compositions in Western culture is not fixed as precisely. Each performance is a realization of a score by individual performers or a conductor and an orchestra, and its length may vary slightly from one performance to the next. For example, performances of *First Symphony* by the famous twentieth-century Russian composer Alfred Schnittke can vary between 91 and 94 minutes. The same is true of all genres of live performance that follow a script, including dance and theatre.

But how much time is needed to properly “see” a painting, photograph, sculpture, or installation? A few minutes? A few years? One definition of a visual masterpiece is that you never get bored looking at it. There is always something that still remains for you to discover. So one answer can be eternity. However, as far as I know, no-one has ever verified this by conducting an experiment.

The mechanical, electrical, and electronic media of the industrial era standardized creation, distribution, and presentation of cultural works. The motor of a film camera, film projector, gramophone, record player, magnetic audio tape player, and other media machines runs at a constant speed. This standardization enabled new media such as cinema where images are sampled at regular temporal intervals and played back at the same speed. So unless we are dealing with certain experimental films (e.g., *Outtakes from a Life of a Happy Man* by Jonas Mekas), every showing of a film on a single film reel lasts exactly the same time and not a second longer or shorter.

Industrial machines such as the motor did not only enable new “media arts” in a direct material way. They often became the subjects of the arts. Between the First and Second World Wars, many modernist artists and filmmakers celebrated the new beauty of moving machines in their works that featured machine tools, airplane propellers, and the rotating wheels of trains and trams.

Halo belongs to a different era. Today our feelings about modernity and industrialization are often ambivalent or negative. Ruthless exploitation of natural resources, environmental degradation, and climate change are among the undeniable consequences of industrialization. Instead of admiring the machines we made, we now want to pay closer attention to nature, which is more rich, complex, interconnected, and variable, but also apparently more fragile. However, nature in itself is not the subject of *Halo*.

Halo does not contain a detailed depiction of nature, framing it for our contemplation or admiration like classical Western landscape painting. Nor does it follow the tradition of East Asian ink and wash painting, which aims to convey the “spirit” of the subject without depicting all its details. So if *Halo* does not represent nature or our impressions of it, what does it do?

Ninety-nine mirrors controlled by a computer follow the sun throughout the day, reflecting and beaming its light into precise positions along a volume of mist droplets. When conditions are perfect - the sun is bright so you can see your own shadow and there is no wind - these 99 light beams together create a circle. But this does not happen very often. Even the slightest wind disturbs this “light drawing,” so instead of a full circle, we

only see its bottom part. It is mesmerizing and very satisfying to sit and watch this process for a long time. On the one hand, it is impossible to predict the process of circle formation - how much of it we may see in the next moment. On the other hand, the microscopic particles of water are very easily disturbed by the slightest wind, so the parts of a circle that we do see in a given moment are not solid. The shapes are unstable, flickering, wavering.

Is *Halo* a game? I think that an element of a game is indeed present. When we engage in *play*, this process is enjoyable in itself. A play does not require achieving a goal, but a *game* does. So we can say that in *Halo's* game, the goal is to wait until we see a full circle. But it is a strange game because it does not require any physical actions from us. In fact, we can't even affect how it proceeds. The only one thing that we can do - and this is what *Halo* does ask of us - is watch and wait. But this still does not make it into a real game. After the goal is achieved and we finally see a perfect 360-degree circle, we want to stay and watch more. So perhaps *Halo* is both a game and play at the same time.

Formally, *Halo* belongs to the genre called "computer controlled installation." There is nothing wrong with this category, except that today it encompasses so many different works which operate in so many different ways that it does not tell us anything about the uniqueness of this particular work. So rather than looking for precise terminology within the field of media arts, let's see if we can use concepts from another much older aesthetic field - music.

In Western music, the development of musical notation gradually led to a separation between the author and the performers. Originally, the composer would direct the performance of his own music. It was only later on that others also started to perform the printed scores. These performers could interpret various aspects of the composition in different ways. The same score was realized differently in each performance. What kind of interpretations (or variations) were allowed and desired depended on the country and historical period.

In the middle of the 20th century, John Cage started promoting a new approach to composing music that he called *indeterminacy*. In this approach, a musical piece is deliberately composed so that it can be performed in substantially different ways, allowing for variability that went far beyond allowed interpretations in classical music performance. Earlier composers said to have used indeterminacy as an approach include the Americans, Charles Ives (1874 - 1954) and Henry Covell (1897-1965); Cage also refers to Johann Sebastian Bach's *The Art of Fugue* from the middle of the 18th century as an important example of indeterminacy.

In parallel to Cage's *indeterminacy*, the related term *aleatory* was proposed in Europe by Werner Meyer-Eppler. According to his definition, "a process is said to be aleatoric ... if its course is determined in general but depends on chance in detail" (Werner Meyer-Eppler, 1955. "Statistic and Psychologic Problems of Sound," *Die Reihe* 1, p. 55). While some use the terms *indeterminacy* and *aleatory* interchangeably, for others *aleatory* has a more narrow meaning - it is a chance choice between a limited number of possibilities. The word *alea* in Latin means "dice." In the late 18th and early 19th centuries, musical dice games were popular in Europe. A piece had several measures and each measure had several versions; which version was played was determined by throwing dice.

Composers and music theorists defined different types of indeterminate music. In one type, chance operations are used while the piece is being composed, but performances of the score do not vary. (Cage's *Music of Changes* from 1951 was composed in this way by using *I Ching*.) In another type, chance operations are used during the performance. As an example, consider Terry Riley's *In C* (1964), an early minimalist composition written for an indefinite number of performers. The work contains 53 numbered musical phrases. Each performer can repeat each phrase any number of times before moving on to the next. However, Riley also suggested some constraints - his directions indicate that the performers in the ensemble should try to stay within two to three phrases of each other. The performance has no fixed length and can last anywhere from twenty minutes to a few hours.

Can these concepts from music history and theory help us to better understand the uniqueness of *Halo*'s system? Does it have a score and a performance? What is being left to chance? What type of aleatory do we have here?

On a general level, the "score" of this piece can be described as follows: if direct sunlight is available, use it to form a circle on the volume of mist. This score also contains the precise details to control the position of 99 mirrors, which move during the day to accommodate the changing position of the sun. In contrast to works such as *In C*, in *Halo* the "performers" (i.e. the mirrors) do not decide how to interpret the score. However, their always perfect performances are "subverted" by the slightest wind, which interferes and prevents the perfect circle from being completed.

But this is not all. *Halo* also relies on a second source of unpredictability - the presence of sunlight. The sun around which the Earth rotates does not vary its strength, but whether we see direct sunlight or not depends on cloud conditions. As I found out when writing this text, cloud types include hundreds of species and are even arranged in a hierarchical system that dates from the early 19th century (https://en.wikipedia.org/wiki/List_of_cloud_types). The behavior of the cloud layers affects *Halo*'s performance. Sometimes the shape of a circle can appear slowly; at other times, when direct sunlight suddenly illuminates the scene, the circle appears as if by magic, suspended above the ground in mist particles.

We can now return to the beginning and ask: does a great work of art need to delight us forever, allowing us to always discover something new? I don't know. What I can tell you is that *Halo* certainly can be watched for long periods of time on different days and its magic persists. And even if you only experience *Halo* once, you will never forget it.