

Longwood University

Karlheinz Stockhausen and The Atomic Age of Design

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Music and art not only travel parallel to each other, but both often directly reflect the current state of humanity within different cultures and countries. Listening to *Kontakte* by Karlheinz Stockhausen of the late 1950's, this piece sounds extremely chaotic and tense, using numerous different types of timbres, instrumental music, and electrical impulses created by an impulse generator. Produced during the midsts of the Cold War, when tensions and political chaos were heightened in America, a conclusion can be drawn that the chaotic and tense nature of this piece is truly reflective of the state of Americans during this time. Interestingly, this chaos and tension heard within Stockhausen's *Kontakte* is seen inversely within art during the same time. Characterized and influenced by "references and responses to nuclear science and the atomic bomb,"¹ the "Atomic Age of Design" was particularly playful and color-filled. This almost child-like nature of art during the Atomic Age of Design is speculated by some to have been "a way of taming anxieties over the destructive power of atomic weapons,"¹ while others believe that this trend "reflected the optimism some Americans held toward the peacetime applications of atomic science"¹. With these two forms of art situated alongside each other, it might seem to some that the two came from completely different time periods under entirely different atmospheres.

Originally realized and created between 1958 and 1960, *Kontakte* was recorded in the Westdeutscher Rundfunk electronic-music studio in Cologne. Stockhausen's *Kontakte* utilizes innovative and complex techniques that make this piece as unique as the Atomic Age of Design, divided into sixteen sections with nearly ninety subsections. The electronic portion of Stockhausen's piece was also made up of "five [different] forms of movement in space [interacting] in a constantly fresh way with differing rapidity and spatial direction,"⁹. These five different forms, including "rotation, looping movements, alternation, of fixed sources, ... [and] isolation of points in space,"⁹ are what gives this electronic portion of

1. "Atomic Heritage Foundation." *Atomic Heritage Foundation*, 2018, www.atomicheritage.org/.

9. Wörner Karl H. *Stockhausen: Life and Work*. Edited by Bill Hopkins, University of California Press, 1973.

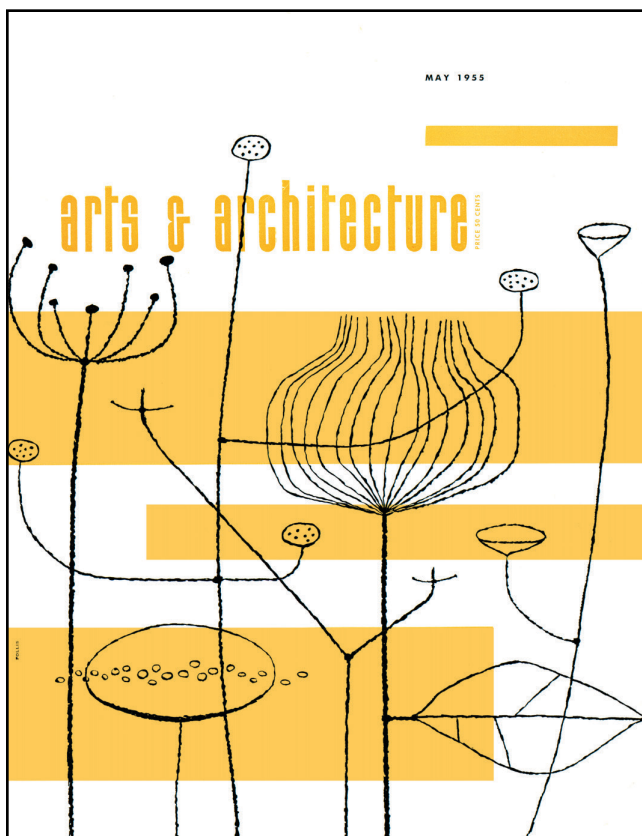
Kontakte structure and separation between the six types of timbre within the piece. When creating this piece, Stockhausen explored fundamental musical relationships through the use of electrical impulses made from an impulse generator (see fig. 2-1). This impulse generator is a piece of equipment that produces very short high-voltage or high-current surges, then fed through a feed-back filter, creating what can be perceived as varying frequencies. The specific impulse generator that was used by Stockhausen operated “between 16 impulses per second and 1 impulse in 16 seconds...with impulse durations between 1/10000 of a second and 1 second”⁹. Stockhausen made a point of conducting experiments with this impulse generator as to produce specific timbres, creating rhythmicised impulse sequences. As a result of these experiments, Stockhausen used six different categories of timbres in his piece, including “metal sound, metal noise; skin sound, skin noise; wood sound, [and] wood noise”⁹. Conducting these experiments, Stockhausen discovered that sound is not “simply something that is put together from different components simultaneously superimposed, but [is] the result of a linear sequence of impulse in time, and that it is the temporal intervals between impulses...that regulate the distinctiveness of timbres”⁹. This discovery further develops Stockhausen’s style with his belief that “People...are forces. And then when people listen to [his] music they will become what the music is.”² Following the discovery and development of this electronic



2-1 • An impulse generator, similar to the one Stockhausen may have used

2.Cott, Jonathan. *Stockhausen: Conversations With the Composer*. Picador, 1974.
9. Wörner Karl H. *Stockhausen: Life and Work*. Edited by Bill Hopkins, University of California Press, 1973.

portion of Stockhausen's *Kontakte*, his piece was performed at the 34th World Music Festival in the concert hall of Cologne Radio in 1960. This performance brought the addition of instrumental music into the piece. Prior to this, Stockhausen's piece was not accompanied by instrumental music of any kind. Using four loudspeaker groups, the electronic portion of the piece was played while a percussionist and a pianist played their instruments alongside the loudspeaker groups. With the addition of the percussionist and pianist uniting or separating the six different categories of timbre within this piece, this piece was provided with a 'moment form' where each moment of the piece is individual and self-regulated. This form



3-1 • John Follis (American, 1923-1994) Cover for the May 1955 issue of *Arts & Architecture* magazine.

provides focus on the 'Now', "as if it were a vertical slice dominating over any horizontal conception of time,"⁹.

During this same time, design in America was largely influenced by the developments in the Cold War as well as atomic technology in both energy and weaponry. In response, seemingly inverse to Stockhausen's *Kontakte*, design during this time was particularly playful and color filled. The American architecture magazine, *Arts & Architecture* is one great example of this, with new issues

published monthly for over thirty-five years between 1929 and 1967. *Arts & Architecture* was published and edited by John Entenza until his resignation in 1962 when David Travers became the editor for the magazine until its closing in 1967. This cover design for the May

1. "Atomic Heritage Foundation." *Atomic Heritage Foundation*, 2018, www.atomicheritage.org/.

9. Wörner Karl H. *Stockhausen: Life and Work*. Edited by Bill Hopkins, University of California Press, 1973.

1955 issue of *Arts & Architecture* (see fig. 3-1), designed by John Follis, is one example of magazine design that showcases the playful and color-filled nature of design during this time. This almost child-like nature of art during the Atomic Age of Design is speculated by some to have been “a way of taming anxieties over the destructive power of atomic weapons,”¹ while others believe that this trend “reflected the optimism some Americans held toward the peacetime applications of atomic science”¹. In addition to print design, architectural design



4-1 • Classic Googie sign for a drive-in theatre in Warren, Ohio.

was widely influenced in many similar ways. The most prominent example of this is Googie architecture. Originating in the 1930's, the purpose of this interesting architecture was to create visual imagery that consumers would be able to recognize from the road. This style was further developed with the development of atomic energy, inspiring artist to include dynamic elements and bright colors into their design and architecture. The most used dynamic element across this age was the atomic burst (see fig. 4-1), visible in some fashion in numerous design and architectural works. This mass use of these elements began to make the idea of atomic technology more approachable and continued to ease the anxieties of the public while at the same time improving the public opinion that Americans held towards atomic technology.

In conclusion, Karlheinz Stockhausen's *Kontakte*, in comparison and contrast to art and design of the same time period, is different in many different ways, yet similar in others. The purpose of Stockhausen's *Kotakte* was to allow the audience to focus on the 'Now' as

a vertical slice of time rather than a horizontal conception. Compared to the art and design during the time, this was similar in the same way that the purpose of design and art was to focus on what was happening now and the current technological advancements. With the art during this time being playful in nature and color-filled, the purpose of these pieces was to calm anxieties of the heightened tensions during the time and to improve the public opinion of atomic technology during the time.

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