

Toward Science or Technology:

**Rescuing The Space Between
Gyorgy Kepes and Billy Kluver**

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Comparing historical movements can be a daunting task. But, when it comes to defining the disparities between two cutting edge schools of thought from the 1960's American art and technology/science movement, which many believe to be so interconnected, the task becomes even more difficult. In Anne Collins Goodyear's article from the international journal *Science in Context*, the author establishes a justifiable objective for the paper; ultimately, however, she fails to successfully support her argument. In this analysis, I will not argue with Goodyear's premise and purpose. I will assert, however, that her argument is one that should be researched and constructed further. I wish to approach Goodyear with a critical eye and reveal how her own argument does not go far enough.

Goodyear's article addresses the misconceptions concerning how two influential systems of understanding are intertwined. Furthermore, she discusses the ways in which the two founders of these systems of understanding-- Gyorgy Kepes and Billy Kluver—are often incorrectly compared. Goodyear lays out her objective by saying, “while these two (Kepes and Kluver) are generally linked due to their similarities, a close examination demonstrates significant difference in their outlook.” (611). In many ways, Goodyear's defense of her thesis is superficial. Trying to uncover how Kepes and Kluver are different, Goodyear ultimately reveals an argument that is based on surface relationships. While Goodyear's article represents an important initial examination of these two figures and their theories, I think that there are some significant omissions.

Goodyear's article “Gyorgy Kepes, Billy Kluver, and American Art of the 1960's: Defining Attitudes Toward Science and Technology,” remains an important reflection on two modern art movements during and after the late 1960s. Goodyear's research on

Gyorgy Kepes, the founder of CAVS (Center for Advanced Visual Studies) at MIT, and Billy Kluver, the founder of the experimental art and engineer collaboration group known as E.A.T. (Experiments in Art and Technology), separates each group and disconnects it from the other in terms of historical and aesthetical importance. Goodyear's argument is simple: that the reason for separating the two groups comes down to the fact that one individual did not like contemporary art of the time while the other did not like the relationship between art and science.

The European-born Kepes, who moved here with an understanding of visual arts, became a leader in the field of advanced visual theory even though he did not like modern art. In fact, Goodyear suggests that Kepes disliked most of the artwork his contemporaries produced. Furthermore, with a background in the Bauhaus school of Europe and America, Kepes' believed that art should function much like the laboratory sciences. While Kepes steered his CAVS program toward the disciplines of sciences Kluver veered away from the sciences in order to focus on the new technologies of the day. Goodyear establishes Billy Kluver's dislike of science as a focal point for the separation between Kepes and Kluver. For Goodyear, Kluver relied more on the experimental artist/engineer collaboration model and less on the model of artist as scientist, which Kepes sought after. An explanation of these fundamental differences are the basis of Goodyear's argument. Unfortunately, the author never reveals satisfactory analysis to the differences listed.

At the start of the article, Goodyear explains how the cultural context and artistic developments of the late 1960's enabled both CAVS and EAT to become viable ways to engage in the study and interconnections amongst art, science, and technology. In

Goodyear's view, it was the cultural context that enabled Kepes and Kluver to comment on how the nature of artistic practice and the role of artists were drastically changing in light of new technologies and new systems of science. Furthermore, Goodyear asserts that historically there has been little research on the difference between the two groups and how they were affected by a cultural inquisition into what could be done when art, science, and technology worked together. Goodyear establishes two main approaches to question how the two groups fostered different discussions about the future of art and artistic practice. The first of Goodyear's approaches asks for awareness to the two separate theories and practices happening at the same time that enabled a type of multidisciplinary nature. The second approach "explor[ed] the roots of divergent models of art's relationship to science and technology that co-existed at this time" (613). It is here, in this approach, that I think Goodyear is not as successful. Goodyear does suggest that other scholars have tried to address the works of CAVS and EAT, but have done so through what she calls the "dynamic of 'Art and Technology,'" rather than looking equally at the effect of science on art. Furthermore, Goodyear discusses the connection to earlier movements of the 20th century, including the Bauhaus school. I do not think Goodyear is successful in constructing a solid connection between Kepes and Bauhaus, outside of an unexplained account of Kepes' past disciplinary interaction with the Bauhaus school. Furthermore, she does not address in detail the resemblance of Kepes' practical structure at CAVS to the structure seen in place at the Bauhaus schools in Europe and the US.

The atmosphere of the 1960's became a catalyst for the successful and rather sudden establishment of art within a multidisciplinary context. Goodyear argues that the

creation of an artist/laboratory method was not as sudden as one would think. In fact, Goodyear links Kepes directly to the Bauhaus school through his association with Hungarian artist Laszlo Moholy-Nagy. Goodyear asserts that Kepes structured much of his philosophy to align with the teaching of Moholy-Nagy. In fact, Goodyear suggests that it was this admiration of Moholy-Nagy that led Kepes, who had a deep interest in film, to want to “raise art to the level of scientific investigation” (617). What we do not learn from the article is that Kepes came to the United States in 1937 and was the director of the Light and Color department at the Institute of Design in Chicago. He then moved to MIT in 1945 and took a position as an associate professor of visual design. Kepes was instructed to initiate his own design for a new school of visual design at MIT and became a full professor in 1949. Kepes founded the Center for Advanced Visual Studies in 1967 from which he served as director until 1972 (MIT News).

Early in the article, Goodyear expounds on the nature of art as a scientific discourse as something rather not talked about at all. In fact, Goodyear exclaims that it was the working of a handful of national and international stimuli that solely led to the successful collaboration of art, science, and technology. Several of these stimuli were new theoretical discussions taking place on the forefront of social and artistic concepts, including Marshall McLuhan book *Understanding Media*, published in 1964, and Reyner Banham’s *Theory and Design in the First Machine Age*, published in 1960. Along with McLuhan and Banham’s work, Goodyear accounts the importance of two additional seminal works as “treaties on theories of historic change” (615). The first of these works was George Kubler’s *The Shape of Time: Remarks on the History of Things* while the

second was Thomas Kuhn's *The Structure of Scientific Revolutions*, both published in 1962.

National attention on the confluence of art, science, and technology increased in the U.S. with the October 1957 Russian launch of Sputnik. This one event encouraged a greater awareness in the U.S. mass media, popular cultural, and the general public to the point that President Dwight D Eisenhower signed into law the National Defense Education Act, which supported artistic endeavors of science and technology. The foundation of the National Endowments of the Arts and the National Endowments of the Humanities in 1965 by Lyndon B. Johnson opened up further doors for Kepes' and Kluver's experiments.

Another force coming to the forefront in the 1960's was a want to "bridge the gap" between disciplines, including the arts and sciences. Goodyear asserts that this need to work together forced practices and theories to adopt a more multidisciplinary, collaborative stance. Goodyear explains, "the intellectual and cultural climate of the 1960s had been indelibly marked by the perceived need to bridge the gap between the "two cultures," as C.P. Snow famously termed it, of the arts and humanities on one side and the sciences on the other" (615). To address the need for more collaboration between the arts and sciences Kepes developed the CAVS program that would allow the arts to gain the methods established by the sciences. Artist would have access to research methods and models used by scientists and encouraged by theoretical concepts. The type of systematic structure Kepes created at CAVS recalls the link to Bauhaus discussed earlier. Kepes' ideas about the CAVS are explained by Goodyear:

Framing his proposal Kepes explained that the group of artist should encompass many specialties, from painting to sculpture to film, light-work, and graphic

design, and that the community should be ‘located in the academic institution with a strong scientific tradition’... While Kepes’ suggestion that the Center be established in an academic institution with a strong scientific tradition’ indicated his affinity for MIT, it also coincided with his belief that artists must be schooled in the scientific and technical idioms of their own century in order to produce authentic and socially responsible work. (618)

Goodyear argues that Kepes’ interest in the arts went past his development of the CAVS program. Kepes is also responsible for writing several articles on visual culture and the visual studies. One of his books, *The Visual Arts Today*, was criticized heavily. In this critique Kepes critics cited his lack of understanding and disdain for contemporary art as naïve and unfounded. Yet, a larger collection of writings from artists, scientists, and theoreticians allowed Kepes to achieve a level of professional expertise in the subject,-- far above others who were working with art, science, and technology. Goodyear suggests that even though Kepes did not like to address contemporary work, his books were increasingly important, As critic Richmond Hamilton states, “While being naïve in the extreme in his understanding of contemporary art, his studies on the nature of vision abound with notions of great importance for the visual artist today.” (Hamilton 91)

While Kepes’ study of the visual arts became a scientific exploration that could be qualified, Kluver’s theories were quite different. On one side, Kepes developed a system of academic parameters that constructed and engaged the study of the arts and the sciences. On the other side, Billy Kluver at Experiments in Art and Technology opened the doors to full collaboration between art and technology. European-born Johan Wilhelm Kluver came to the U.S. as a graduate of the Royal Institute of Technology with a degree in electrical engineering. In 1954 Kluver moved to the U.S. and received a

Ph.D. in Electrical Engineering from the University of California, Berkeley. He took a position as an assistant professor at the same university from 1957-1958. From 1958 to 1968 Kluver was an acting member of the technical staff at Bell Telephone Laboratories in Murray Hill. Kluver's experiences with technology allowed him to publish numerous papers, work on large projects that included installing a television antenna on top of the Eiffel Tower and devise an underwater TV Camera for Jacques Cousteau's expeditions (Paul 16). Kluver was also very interested in the contemporary art world and would converse and collaborate with artists of the time, including Robert Rauschenberg, Jean Tinguely, Yvonne Rainer, John Cage, Merce Cunningham, and Jasper Johns. Kluver's first collaboration came in 1960 when he collaborated with Jean Tinguely in building a mechanical sculpture for the courtyard/garden of the Museum of Modern Art. The work, titled *Homage to New York* consisted of a machine that would destroy itself. Made of found parts and motors the main purpose of this machine was to fall apart over the course of the evening. In fact, the machine burned down within 27 minutes. This initial collaboration with Tinguely was very important for Kluver's philosophy. Goodyear expresses that this interaction with Tinguely set a chain of events for Kluver that would quickly lead to the formation of Experiments in Art and Technology.

Kluver took his participation in the event seriously, involving his assistant at Bell Labs, Howard Hodges, to help devise an electronic system by which the sculpture, as self-destructive machine, could destroy itself. Yet although the mechanical sculpture served no functional purpose not even prolonged aesthetic contemplation, Kluver found nothing offensive in it. Complimenting the artist instead for his understanding of 'the ideal of good machine behavior' (621).

Kluver's collaboration with Tinguely on *Homage to New York* grew into a working philosophy where the collaboration process clearly became the foundation and purpose of the E.A.T. program. Kluver collaborated with Robert Rauschenberg on the

mixed media paintings Rauschenberg called “combines.” These new “combines” consisted of not only paint in the traditional sense but included working parts, lights, motors, etc protruding from the surface of the painting. This type of collaboration between art and technology led Kluver, Rauschenberg, and others to show works that combined art and technology at the 69th Regiment Armory in October 1966. The event in the Armory, titled *Nine Evenings*, included installation and performance projects that would pair artists with engineers in a working environment that was rooted in the production of the arts. The importance of this evening led both Kluver and Rauschenberg to create the non-profit organization Experiments in Art and Technology in 1967. The group of artists/engineers collaborated together in order to create something new and exciting, even if they made mistakes. In fact, making mistakes was a type of goal of the group. If a mistake was made in a project then it was seen as the artist/engineer reached outside their boundaries and was successful: as Alex Hay told Simone Whitman in regards to Kluver’s viewpoint of the collaboration model, “That if a scientist who experiments consistently turns out to be successful, it means that the scientists is wasting time [proving] matters which he already knows to be true” (625).

Kluver believed in the potential of collaboration between artist and engineer, but did not think that art would have anything to do with the discipline of science. Kluver’s stringent disbelief that art and science had anything to do with each other was a way for Kluver to lash out against the use of art as a theoretical tool. As he explained, “there were a couple of things when E.A.T. began that we avoided immediately, one was to call it art and science... ‘Art and science’ has a feeling of fakery to me... Art cannot contribute anything to science as I see it” (626). Goodyear even suggests that Kluver considered

this new collaboration between art and technology to be a “revolution” against the same old tired study of art and science that Kepes focused on. Kluver’s reliance on technology as a way to interact with the artistic process resembled his own training as an engineer where we would be asked to collaborate in order to produce large working projects. The confluence of art and technology for Kluver was a way to address unseen questions which would pop up during the physical act of engagement with a project. Goodyear believes that Kluver’s interaction with artists allowed him to be comfortable dismissing the inflexibility of the sciences as a theoretical discourse instead of a practical engagement.

From the first, Kluver indicated his discomfort with science as a partner for the artist, unlike Kepes, Kluver felt strongly that art and science were not compatible elements...but... Kluver’s discounting of science as something rigid and predictable and his espousal instead of ‘surprise, nonsense, humour, pleasure, and play’ suggest his desire for a physical rather than purely theoretical involvement in art-making. For Kluver it was in the realm of real engagement with materials that new possibilities might be tested, defying expectations. (623)

Kluver’s negative response to the sciences is never fully explained through the course of Goodyear’s article. In fact, many questions remain as to why Goodyear chose to separate technology from the sciences.

Kepes’ establishment of MIT’s Center for Advanced Studies as an academic department calls on the fact that his center would continue to grow a discourse between art and science and would hopefully remain a center where advanced studies on the subject could continue throughout the future. Kluver was not so concerned in the future of his program. In fact, Kluver did not expect his Experiments in Art and Technology to continue in the way it had been developed. In fact, as Goodyear suggests, both Kluver and Rauschenberg believed that EAT would fail as a model for engagement after its

inception, “if EAT were successful, it would be unnecessary” (626). For Kluver what was important was the ability to interact and work with artists of the time in order to push the boundaries of art and technology. EAT enabled Kluver to engage with the world of physical interaction through. Kluver saw the interaction of artists and engineers as a partnership that could push boundaries to contribute greatly to the worlds of advanced visual and technological studies, “Kluver argues that art could redefine the goals of engineering, while technology could expand the possibilities of art” (627).

Goodyear makes clear that EAT’s popularity grew rapidly. And as the group grew so did the support from industrial and commercial companies. EAT started an “Artist in Residency” program where they would place artists into supportive environments, like studios within commercial industry, in order to give artists the ability to create work. One of these residency partnerships with the Singer Company allowed Mel Bochner to take up residency and work as a artist. Other companies like CBS followed quickly on the model and supported two residences on their own. The reason the residency program was so popular, which Goodyear does not note, is that these companies saw their support of an artistic environment beneficial to their own research and even used the artists to propel ideas forward for the companies. Furthermore, the EAT structure resembled the same sort of structure that the large corporation had designed, as Goodyear suggests but once again does not elaborate on. What Goodyear suggests is that the EAT organization would quickly develop a president and a Board of Directors for which to run it’s organization. Since the purpose of the EAT group relied so much on advancing interaction of technology EAT became fully integrated within the corporation that produced the technology, or hoped to produce the newer technologies

needed in the latter part of the 20th century. It is not unreasonable to suggest that Kluver's EAT group relied on the market while Kepes' Center relied on the formation of a discipline. The difference between the academic driven discourse and the market driven consumer influence of technology pushed Kepes and Kluver's projects, though was not a focal point for Goodyear argument. Sadly, this important point is clearly overlooked.

The comparisons and contradictions Goodyear constructs between Kluver and Kepes are crucial to understanding how, in a moment of great societal change, two completely divergent paths led to the development of closely related forces in new technology and research. But, it is my point of view that for a complete understanding of the argument recognized by Goodyear further investigation is deserved. Are the different notions of Kepes and Kluver different? Yes. Does Goodyear enable that conversation to take place? Yes, and no. Goodyear's argument is warranted, but not sufficient enough for a comprehensive understanding on the topics that surrounded EAT and CAVS. In order for Goodyear to justify how the two groups and their founders considered their philosophies different we should reach further into the argument and ask more questions about the atmospheres and influences of both Kepes and Kluver. In closing, to make clear the parallels and disparities of Kepes and Kluver, we need to take a closer look at the Center for Advanced Visual Studies and Experiments in Art and Technology.

Video link

Jean Tinguely - Homage to New York (1960)

<http://vimeo.com/8537769>

Works Cited

- Goodyear, Anne Collins. "Gyorgy Kepes, Billy Kluver, and American Art of the 1960s: Defining Attitudes Toward Science and Technology" *Science in Context* London: Cambridge University Press 2004; 611-635
- Hamilton, Richard. 1961. "Review of The Visual Arts Today by Gyorgy Kepes." *Design* 154 (October); 91
- Paul, Christiane. 2003. "Digital Art" (*World of Art series*). London: Thames and Hudson Press. 16