

**AHST 4342-501 (27532)**

**History of Media and New Media Art**

**Spring 2018**

**Dr. Charissa N. Terranova**

**University of Texas at Dallas**

**Arts & Humanities**

**T-Th 1:00-2:15**

**Thursday 04/05/18**

**Discussion**

**Mainframe Experimentalism, TVs, and Distributed Networks**

# TV Charged Environments and Distributed Networks

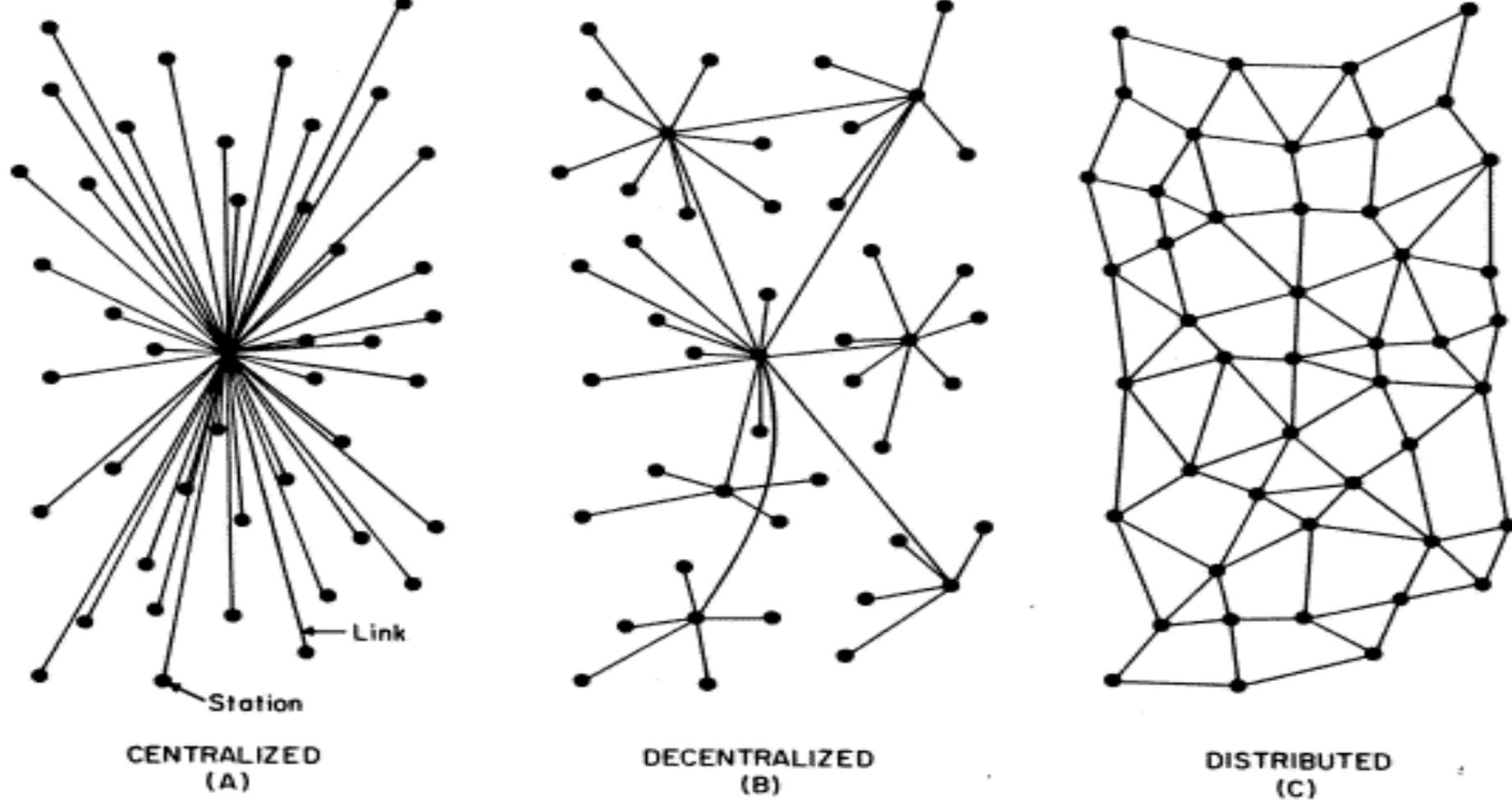


FIG. 1 — Centralized, Decentralized and Distributed Networks

Diagram of Centralized, Decentralized, and Distributed Networks from Paul Baran, *On Distributed Communications: I. Introduction to Distributed Communications Networks* (Santa Monica, CA: RAND Corporation, 1964).



Nam June Paik  
Korean-American  
[1932-2006]

## FLUXUS



Wolf Vostell  
German  
[1932-1998]

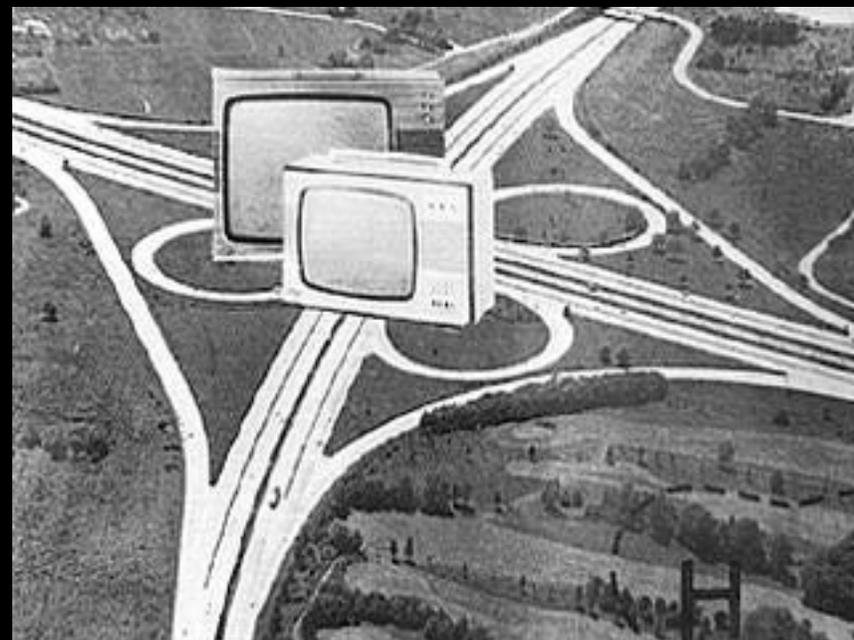


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## Wolf Vostell, "Project for a Drive-in Museum," 1970

A museum in the form of two huge television sets on a motorway junction. Vostell's notes state: "On Screen 1, c. 50x50 m, one art-work will be projected each day. Interior: hotel, with library and video service available in all rooms. Screen 2 shows a West German TV program according to choice. Interior: film and TV museum, & art and science laboratory."

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Wolf Vostell's "Concrete Traffic" being transported to the University of Chicago, June 1970. Collection Museum of Contemporary Art Chicago Library and Archives. /Photo: Jean-claude LeJeune



Such roads as this are hamper rapid movement of mechanized units of the Army and must be widened and realigned for National Defense.

Photo by E. S. Wood from

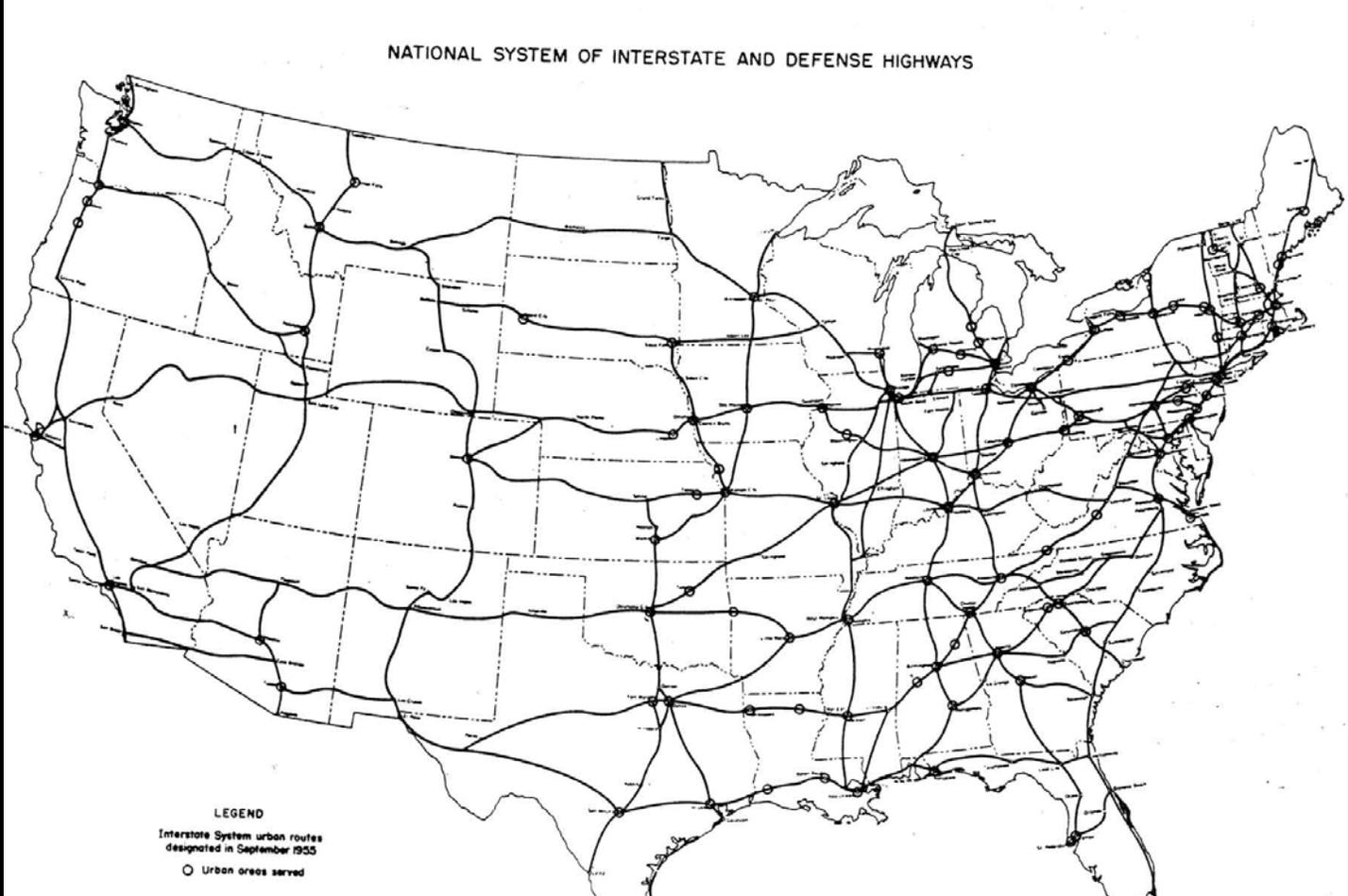
# Highways for National Defense

By C. H. PURCELL, State Highway Engineer

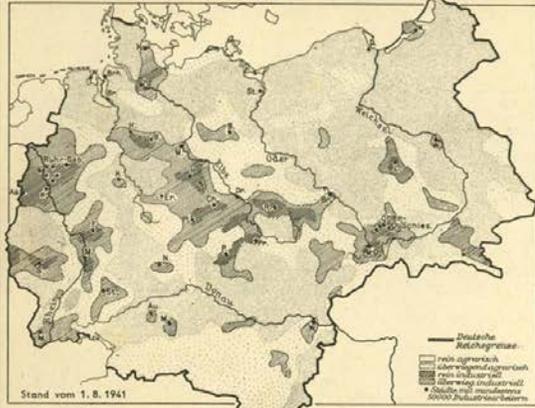
THIS IS THE FIRST SECTION  
OF THE  
NATIONAL SYSTEM OF INTERSTATE  
AND DEFENSE HIGHWAYS  
TO BE COMPLETED IN MINNESOTA  
MINNESOTA DEPARTMENT OF HIGHWAYS  
IN COOPERATION WITH THE BUREAU OF PUBLIC ROADS



The Federal-Aid Highway Act of 1956, popularly known as the National Interstate and **Defense** Highways Act (Public Law 84-627), was enacted on June 29, 1956, when President Dwight D. Eisenhower signed the bill into law. With an original authorization of \$25 billion for the construction of 41,000 miles (66,000 km) of the Interstate Highway System supposedly over a 10-year period, it was the largest public works project in American history through that time. Today this system consists of over 160,000 miles of roadways. All urban areas with a population of over 50,000 and about 90% of America's population live within five miles (8.0 km) of the network.



### LANDWIRTSCHAFTS- UND INDUSTRIEGEBIETE



### Verteilung der deutschen Bevölkerung auf Stadt und Land

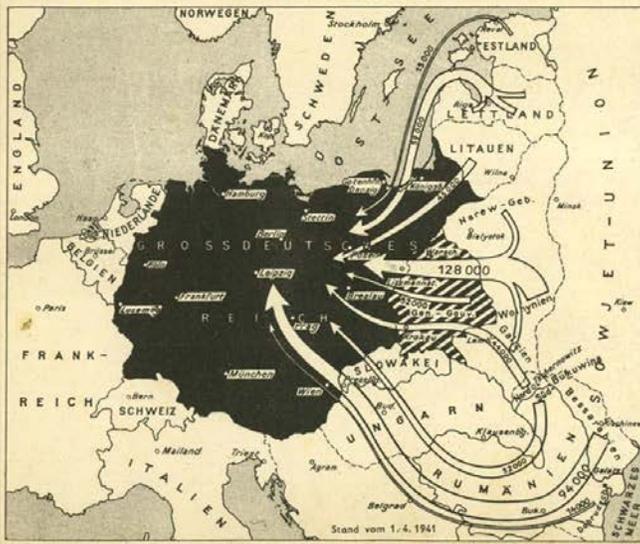
Jahr	Es wohnen (in 1000 Personen) in Gemeinden									
	mit weniger als 2000 Ew. (länd. Bevölkerung)		mit 2000 bis 5000 Ew. (Landstädte)		mit 5000 bis 20000 Ew. (Kleinstädte)		mit 20000 bis 100000 Ew. (Mittelstädte)		mit mehr als 100000 Ew. (Großstädte)	
	insgesamt	v. H.	insgesamt	v. H.	insgesamt	v. H.	insgesamt	v. H.	insgesamt	v. H.
1871	22709	42,6	4660	12,9	4209	11,6	2727	7,5	1969	5,4
1900	22230	43,9	6184	12,2	6846	13,5	6655	13,2	8711	17,2
1910	22391	38,3	6600	11,3	8039	13,8	8080	13,8	13341	22,8
1925	22369	35,4	6919	11,0	8397	13,3	8660	13,7	16886	26,6
1933	21625	33,8	7083	10,7	8819	13,4	8375	13,0	19931	30,1
1939	25052	31,6	9144	11,5	10604	13,3	10388	13,1	24187	30,5

### Im Deutschen Reich waren beschäftigt (in Hundertsätzen):

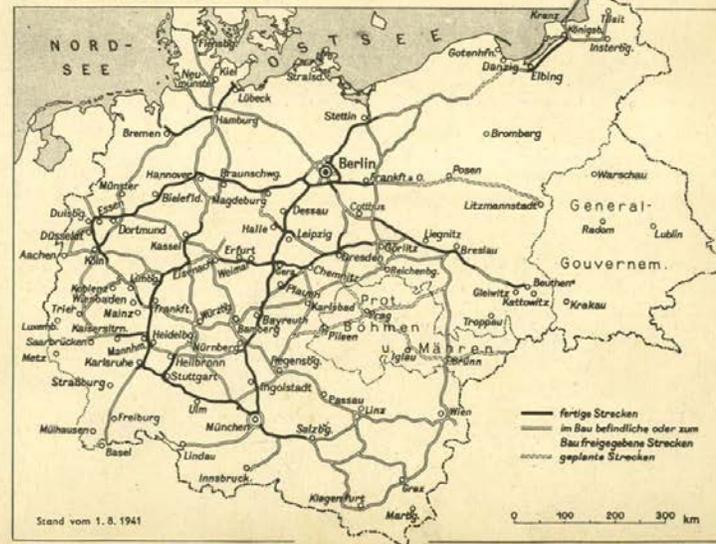
Berufliche Tätigkeit in	1882		1895		1907		1925		1933		1939	
	Erwerbspersonen	Berufzugehörige <sup>1)</sup>										
Land- und Forstwirtschaft . . . . .	42,3	40,0	36,4	33,6	34,0	27,1	30,5	23,0	28,9	21,0	<sup>1)</sup>	19,1
Industrie und Handwerk . . . . .	35,5	36,9	38,8	40,0	39,7	41,3	42,1	42,0	40,4	38,8	<sup>1)</sup>	40,3
Handel und Verkehr . . . . .	8,4	9,6	10,7	11,2	13,7	14,7	16,2	16,7	18,4	16,9		15,4
Öffentlicher Dienst und private Dienstleistungen . . . . .	5,8	5,1	6,9	5,7	6,8	5,9	6,8	6,8	8,4	7,8		9,8
Häusliche Dienste . . . . .	8,0	3,7	7,2	3,4	5,8	2,9	4,6	2,4	3,9	3,0		3,1
Erwerbspersonen <sup>2)</sup> zusammen . . . . .	100	95,3	100	93,9	100	91,9	100	90,9	100	86,5		86,7
Beruflose Selbständige <sup>3)</sup> . . . . .	—	4,7	—	6,1	—	8,1	—	9,1	—	13,5		13,3
Gesamtbevölkerung	—	100	—	100	—	100	—	100	—	100		100

<sup>1)</sup> 1939 einschließlich Ostmark und Sudetenland — <sup>2)</sup> Hauptberuflich Erwerbstätige und Erwerblose — <sup>3)</sup> Rentempfänger, Pensionäre, von eigenem Vermögen oder Unterstützung lebende Personen — <sup>4)</sup> Erwerbstätige einschließlich Angehörige ohne Hauptberuf — <sup>5)</sup> Noch nicht veröffentlicht.

### UMSIEDLUNG DER VOLKSDEUTSCHEN



### DIE REICHAUTOBAHNEN



Autobahn Network and German Settlements, 1941



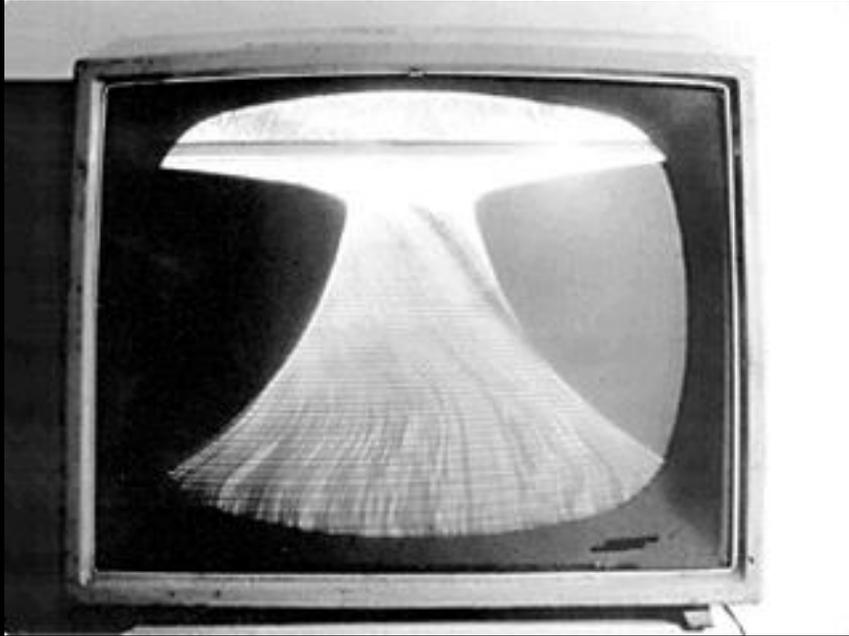
Wolf Vostell, Electronic Décoll/age, Happening Room, 1968

<https://www.youtube.com/watch?v=NDfUq31qOGs>



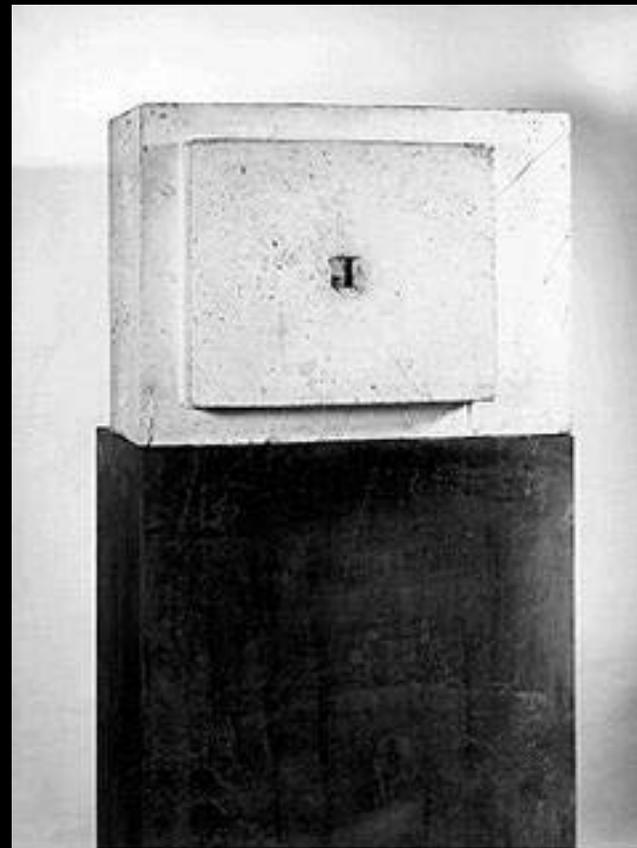
Wolf Vostell, *The Theater Is on the Street*,  
1958, documentation of the  
*Happening/Rue de la Tour de Vanves*,  
Paris

- Between 1954 and 1988, Wolf Vostell staged more than 50 happenings in which spectators became participants.
- He abandoned his studio in favor of the street
- <https://www.youtube.com/watch?v=EdIEWVELdXg>



Wolf Vostell, TV for Millions, 1959 – 1967

Wolf Vostell developed a project planned for a TV broadcast in which the TV audience participates and acts. The events; images; words; recommendations or commands are aimed to rouse in the viewers active participation, involvement, and thoughts and actions running parallel to the broadcast.



Left: Vostell, TV from Endogen Depression, 1974-1980

Right: Vostell, Concrete TV Paris, 1974-1981  
A functioning TV set has been embedded in concrete. One tiny hole reveals a glimpse of the screen. From 1969, Vostell recurrently worked with concrete.



Vostell, Endogen  
Depression, Beton  
TV (Concrete TV),  
1974-1980

There have been approximately nine versions of *Endogen Depression*, a work that Vostell started in roughly 1974-75 at the Hannover Art Museum, Germany. This installation consists of approximately forty objects; including tables, dressers and tube televisions that together bring up references of a traditional domestic home. All the televisions are half embedded in concrete and about ten of them will be turned on. In the original installation, all of the televisions were turned on with the sound turned very low. And while many of the earlier versions (pre 1980) included a group of dogs, another version included a group of live turkeys that were left to wander about the space. The turkeys bring up references to classic American themes, especially in relationship to the purely American holiday, Thanksgiving.





Vostell, Concrete Traffic, 1970  
Concrete Traffic is a large-scale outdoor public sculpture consisting of a 1957 Cadillac, which, save for its undercarriage and whitewall rubber tires, is encased in several tons of concrete.





Nam June Paik, Zen for TV, 1963

TELEVISION,  
COMPUTERS,  
AND  
VISUAL POETRY



**Nam June Paik, Participation TV, 1963-66**

Participation TV shows a television with a colored bundle of lines which explosively spread out to form bizarre-looking line formations the moment someone speaks into the microphone or produces any other type of sound. Depending on the sound's inherent quality or volume, the signals are intensified by a sound-frequency amplifier to produce an endless variety of line formations which never seem to repeat themselves or be in any way predictable.

<https://vimeo.com/49988167>



**Nam June Paik, Søren Kierkegaard Robot, 1996**

Nam June Paik arrived to New York as an immigrant in 1964. He had recently completed his studies in music and had become an enthusiastic champion of technology and electronics for use in performances and art making. New York offered rich territory in the communications industries, ground ripe with new technologies. Paik had previously studied western music in both Japan and Western Europe before moving to the United States. He had been formally trained in the arrangement of orchestral scores, actions in a script, and instrumentation. They were programs. The practical and conceptual relationships between compositions for music and code for computer programs are sound, so to speak. In 1966, Paik was invited to Bell Labs and introduced to FORTRAN computer programming by James Tenney and Michael Noll. He was well prepared and by 1967 Paik was a "Resident Visitor".





Nam June Paik, *Megatron/Matrix*, 1995, eight-channel video installation with custom electronics; color, sound

<https://www.youtube.com/watch?v=ZHGS42HI95U>

Enormous multimonitor works, such as *Megatron/Matrix* from 1995, realized his conception of cathode-ray walls using computers to help randomly switch images as they traveled from screen to screen or contracted and expanded across multiple screens. In direct opposition to two-way information flow, these works exaggerate the pleasures and terrors of one-way information flow. While utilizing his early ideas of scanning, mixing, and the archive, these works limit viewer participation to watching...They are designed to cause a not-unpleasurable lizard-brain reaction in viewers preconditioned by years of channel surfing to enjoy disjunctive information as long as it's brightly colored and highly varied. That they reduce participation to watching, offering little understanding of the social or economic structures making such information flows possible, is both a capitulation to these systems and a putting on display of their conditions of pleasure. (Kaizen, 238)

Student questions:

What is the goal of Paik's late multimonitor works with randomly switching images? Was he trying to tell us that we are experiencing information overload?

Why did Paik stop wanting to focus on audience participation later in his life?

Why did Paik give up on participatory art?

Is the modus operandi of Paik's later work with lasers (left) optical or participatory?

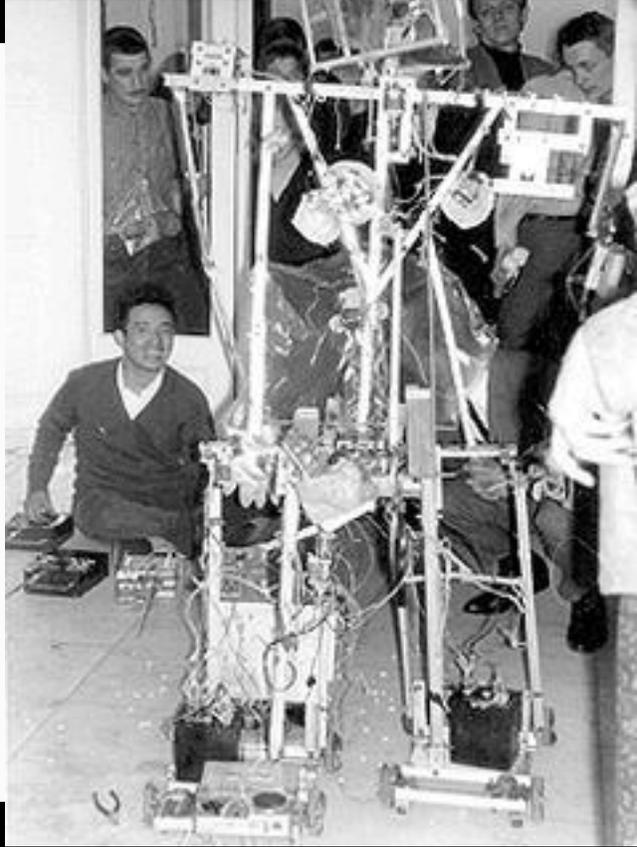
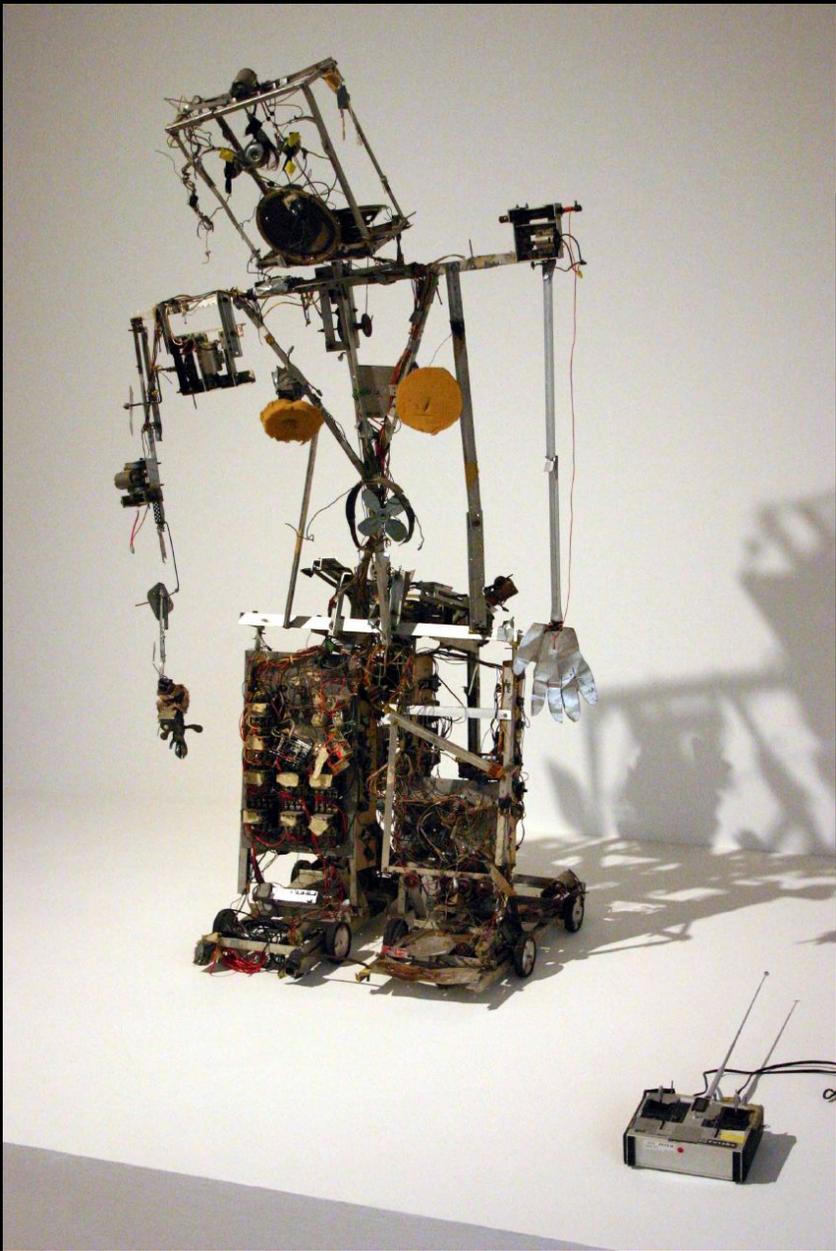


Nam June Paik, Magnet TV, 1965



<https://www.youtube.com/watch?v=cky1Eu1s9GE>

Nam June Paik, Laser Cone, 2001/2010



<https://www.youtube.com/watch?v=5-QIm7EgNIM>

Nam June Paik and Shuya Abe, Robot K-456, 1964



Left: Paik, Uncle, 1986

Right: Paik, Hamlet  
Robot, 1996



## Student question and writing:

Is popular commercial art, by definition, less serious and lower than other art?

...Paik stated "I always thought television was a great medium, but I hated the mass media part" (230). One can assume that through projects like "Zen for TV" Paik hoped to turn the mass media mechanism that is television on its head by subverting its power to sell us things, but in doing so he has only sold us something different: his own message. This message is one of tuning out the mass media, advertising, and conflict, but it is still a message of sorts. Paik still aims to use this platform to 'sell' something to observers, even if it will not result in the same financial gain as his perceived "popular commercial art."



Nam June Paik, *Megatron/Matrix*, 1995, eight-channel video installation with custom electronics; color, sound

<https://www.youtube.com/watch?v=ZHGS42HI95U>

Enormous multimonitor works, such as *Megatron/Matrix* from 1995, realized his conception of cathode-ray walls using computers to help randomly switch images as they traveled from screen to screen or contracted and expanded across multiple screens. In direct opposition to two-way information flow, these works exaggerate the pleasures and terrors of one-way information flow. While utilizing his early ideas of scanning, mixing, and the archive, these works limit viewer participation to watching...They are designed to cause a not-unpleasant lizard-brain reaction in viewers preconditioned by years of channel surfing to enjoy disjunctive information as long as it's brightly colored and highly varied. That they reduce participation to watching, offering little understanding of the social or economic structures making such information flows possible, is both a capitulation to these systems and a putting on display of their conditions of pleasure. (Kaizen, 238)

Students' questions:

How is online access different from Paik's expectations?

What would Paik think of net neutrality?

Would Paik be disappointed or pleased by the outcome of today's "instant global" community?

Students' questions and writing:

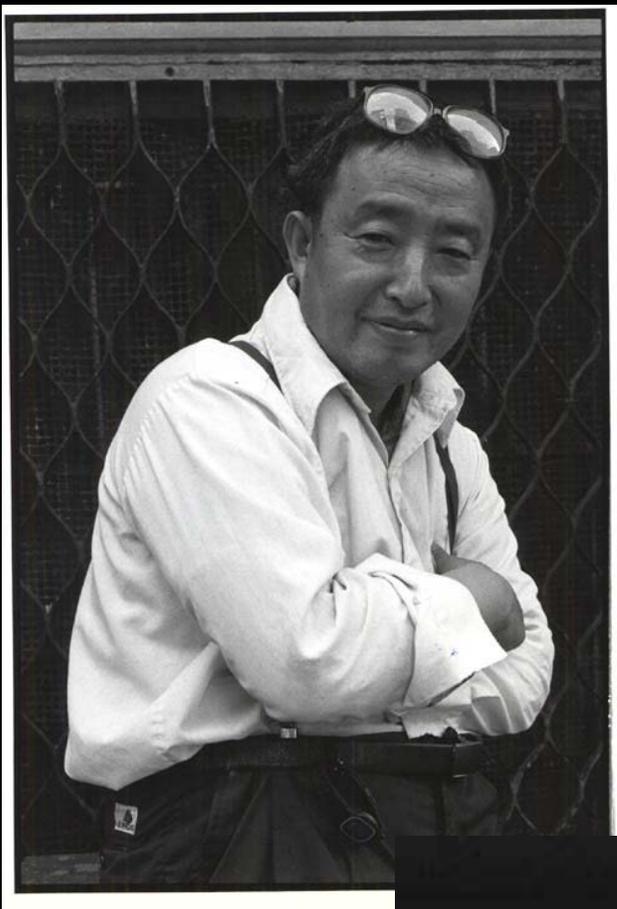
How would Nam June Paik and other Fluxus artists that dealt with interactive computer art view the rise of video games?

...Paik's main concern with regard to his computer art was reducing the alienation between the audience and the broadcasting medium, as well as introducing a truly democratic hub for information transfer, which has arguably materialized in the internet...Video games embody his desire to actively engage the human with the machine, whether a battle of wet and dry wits or together in the service of the creation of a new virtual world.

Can non-AI computers truly compose a piece of art?

...Online gaming is the most popular form of real time two-way video manipulation. It engages human interest while also promoting active communities around shared interests and ideas. While Paik would probably dismiss gaming as being in the same vein as television, the acceptance of gaming has led to an interesting twist on his original concept.

Gamification is the idea that turning a complex problem into a game makes it more approachable and fun for people to attempt to solve. In 2008, David Baker used this concept to create a game called "Foldit." In this game, players attempt to solve the structure of proteins. The key for games like this is the human ability to recognize patterns using both instinct and previous knowledge. "Games with a purpose" fit more closely with Paik's idea of avant-garde education since the majority of these games are developed by universities to solve problems that even modern computers cannot handle.



0000470DF 6 U 80807?

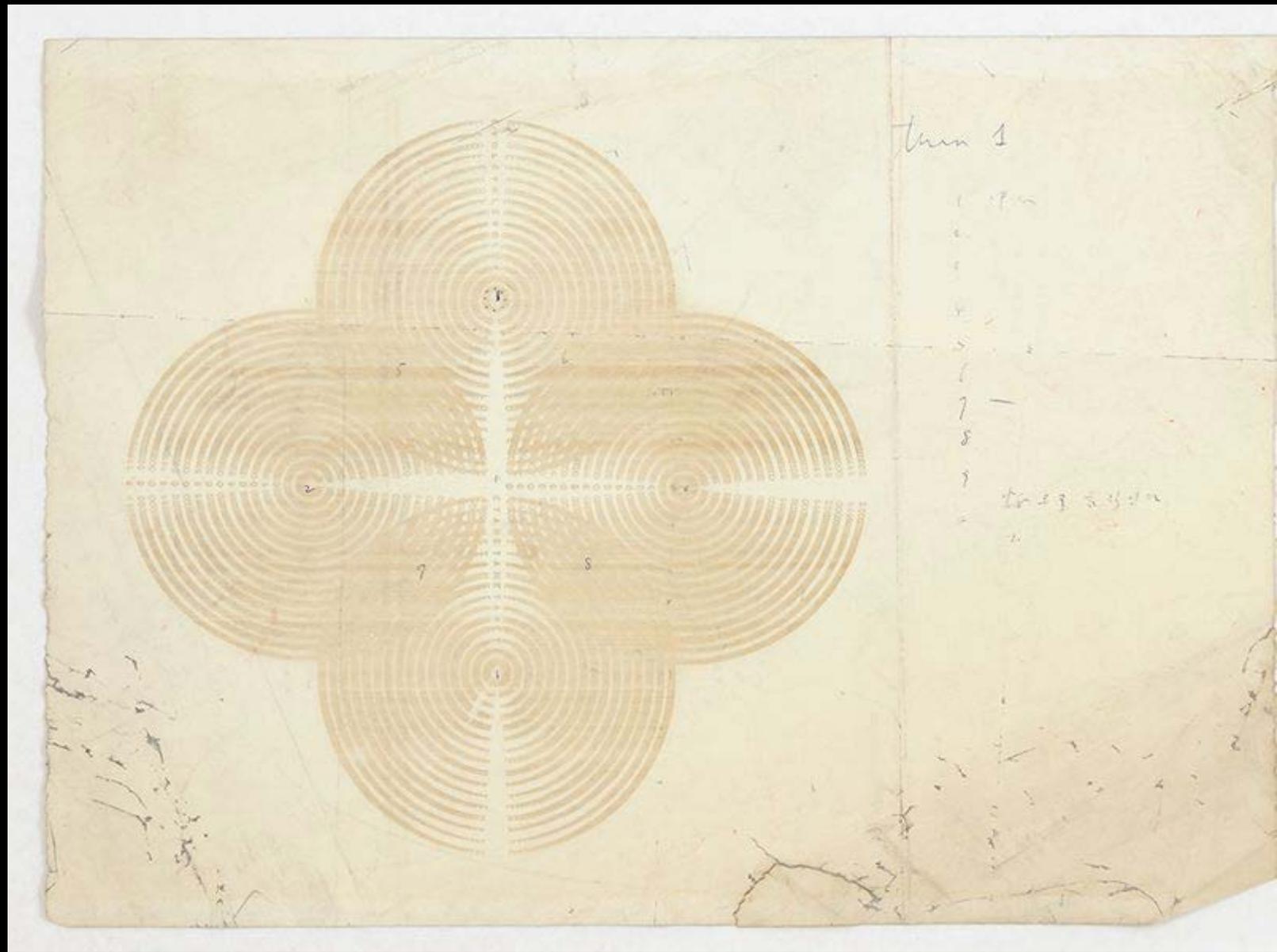
In his research at Bell Labs, Paik produced videos, graphics, computer punch cards, negatives and continuous feed printouts, all compiled from the FORTRAN programming language. Three distinct programs leading to computer-generated media reveal his work with both moving and static images. *Digital Experiment at Bell Labs* is a starkly minimal video recording of the computer screen, marking a gesture toward the origins of computer imaging. "[*Digital Experiment at Bell Labs*] shows a dot (a single pixel) that jumps randomly along a diagonal line. There is text that appears at the end, but that most likely is some sort of data dump from the computer and was not programmed by Paik. The word HEAD flashes at one point; the plotter would have created it to indicate the beginning of a movie strip of film." "The FORTRAN program to create this movie would have been quite short. A subroutine would be used to give a random number within a specified range. A fixed number would be added and the result used as the X and Y coordinates of the point to be plotted. All this would be repeated within a couple of DO loops, with each frame sent to the Stromberg-Carlson SC-4020 microfilm plotter to create the movie."

Student question:

Does capitalism influence information?

A second piece is *Confused Rain* (1967; below), a computer generated print that results from randomly placed letters spelling out C O N F U S E, suggesting a "mix of real rain and simulated rain in the computer."

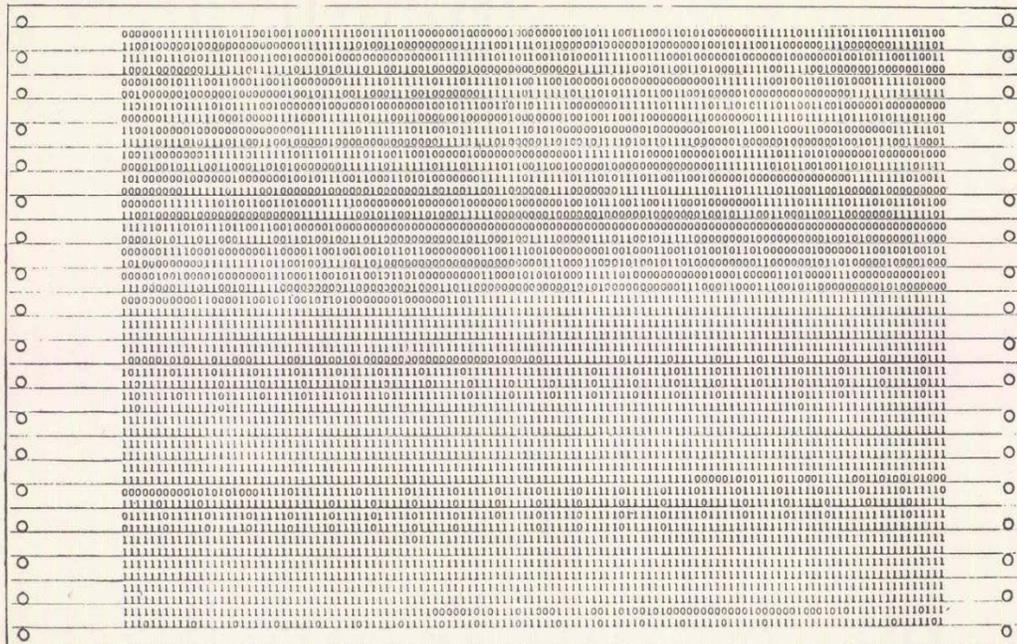
The third complete work is *ETUDE*, a previously unknown computer composition from 1968. In *ETUDE* (right), Paik wrote a computer program to create four concentric, intersecting circles displaying the somewhat irreverent text LOVE HATE GOD DOG, each repeating word composing its own diameter. While in residence at Bell Labs, Paik wrote in a letter, "it is my ambition to create the first computer-opera in music history."



Student question and writing:

Would you rather live without a global information platform acquiring relatively factual information at a much slower pace, or live with unlimited expedited access to a platform of information manipulated by private interests?

Paik sought a platform for all to have the resources to create, mix, edit, compute, and shape their own ideas. His utopic ideals saw a network managed by the public, not private, interest; a super highway for cultural exchange. Today his idea has congealed into what we know of as the internet. While Paik had high hopes for its uses, the internet is a place for global sharing, but it has also become a machine for manipulators and narcissists. This platform is more in tune with Warhol's idea of 'fifteen minutes of fame' rather than a mode of citizenship or artistry.



The first "snapshots" of Mars looked like this - because only "zeros" and "ones" could be transmitted to earth from Mariner IV. But IBM computers helped convert them into the close-up photographs you've seen - including the remarkable photographs of the Mars craters never before seen by man.

The First "Snapshots" of Mars (1966), a lithograph that Paik made just before his residency at Bell Labs consists of a page of zeros and ones from printouts sent back to Earth from Mariner IV of the surface of Mars. These were the first images from a planet long hoped to harbor extraterrestrial life. The decoding of these images would reveal a desiccated surface utterly devoid of life. Rather than give the viewer the disappointing image of barren craters that had been circulating in the media, Paik shows a section of their binary code, the raw data that made its way through space before being translated by machine into a form fit for human vision. He presents an image of a picture designed for machine consumption, its content utterly meaningless for humans in the symbolic form in which it exists...revealing the disjunction between man and machine. (Kaizen, 232)

## Student question and writing:

Could some of Nam June Paik's work serve as critical commentary on the art world?

In the 60's, Paik constructed works like "Participation TV," "in an attempt to combat idle watching" and examine "the participatory interrelations of man and machine." (230) Once he began to work with computers, there seemed to be a shift away from participatory work. Instead, Paik started to examine relationships between randomness and the constraints required to create said randomness since computers lacked "common sense." Paik's shift to working with computers brought forth a set of works examining the "disjunction between man and machine." (232) In "The First 'Snapshots' of Mars," for example, Paik "focuses on the significant differences between machine vision and human vision and the act of translation necessary for one to communicate with the other." (232) These works seem to note a shift from allowing viewer collaboration to distancing the viewer and almost working against them by creating incomprehensible anti-retinal pieces. It is as if Paik's work around this time was designed purely for machine consumption.

Through further examination of these anti-retinal works, one is reminded of the art world and its problematic elitism. Paik's works designed for machine consumption are reminiscent of other works only appreciated by art historians and critics. Considering Paik's later works that served a social commentary on society's consumption of media purely for pleasure, one is left wondering whether his early work served as commentary on the persisting problems of the art world.

Student question and writing:

Considering the goal of artistic democritization for many Fluxus artists, how does Nam June Paik's seemingly oppositional vision fit with that of the movement?

[on "The First 'Snapshots' of Mars" (1967)...]

To the uninformed viewer, this lithograph appears as merely a string of ones and zeros, and, with little frame or reference (save for a caption at the bottom of the page), one would have no understanding of or connection to the objects the code represents. Here, and when considering other works, one might argue that Paik's work represents a rejection of artistic democritization: the viewer-participant must be initiated into the joint cults of science and technology to fully understand the meaning behind his work. One might conclude that this subtextual attitude displayed in his artwork belies his statements on the egalitarian future of computing.