

TOWARD A NONCOMMERCIAL TECHNOLOGY: THE DEVELOPMENT OF  
IMAGE-PROCESSED VIDEO IN THE 1960S AND 1970S

By

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To Carol, Joseph, and Brian Culler.

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Abstract of Thesis Presented to the Graduate School  
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In the 1960s and 1970s, artists and social activists in the United States and Western Europe began to examine the television medium as a technological and cultural form. Their curiosity, fueled in part by its indomitable power over the iconic image, was heightened by the appeal that the communicative apparatus possessed in redefining the relationships among art, technology, and life. Since television had the power to challenge bourgeois televisual sensibilities, it was seen as an attractive medium: one capable of dismantling the traditional modes of production and rehabilitating the criticality and aesthetic charge of post-medium-specific practices.

Dissatisfied with the medium-specific legacy enforced by the modernists, Neo-Dadaists including Nam June Paik and Wolf Vostell started to deconstruct and recompose television sets into art-oriented objects. Critically receptive to Fluxus methodology, their program sought to transcend the craft quality of the technological medium; they did this by processing the standard televisual signal through imaging tools and techniques. (I use

the term “craft quality” to mean the televisual image as a purely technical construct—one intended for commercial TV.) As a result, a dichotomy materialized. On the one end, there was the television medium, emerging from a nexus of social, economic, and technological factors—influenced by the exigencies of industrial capitalism. On the other, there was an attempt to subvert broadcast television—that is, to open it up to a completely new realm of possibilities. For first-generation video artists, expounding on the work of Paik and Vostell while using image processing to augment the standardized signal helped to develop a noncommercial technology.

In this thesis, I examined three aspects of first-generation video art during the 1960s and 1970s. First, I describe the various dimensions of the early video practice and the issues involved in establishing its genealogy. Second, I explore the initial conception of video art in conjunction with Fluxus experiments on commercially oriented objects. Lastly, I look at first-generation video art and artists working with image-processed video. At that point, I address the significance of the Sony Portapak camera unit; and look at the historical context of video art in relation to the modernist legacy of the 1950s.

## CHAPTER 1 INTRODUCTION

It appeared for the first time that video technology would be a powerful weapon to assist language, photography, and film in the gradual dismantling of the traditional modes of cultural production, breaking down their hegemony and false claim for an organic and auratic aesthetic quality, dismantling the dominance of the fetishizing practices of painting and sculpture.

–Benjamin H. D. Buchloh<sup>1</sup>

Alternative television also meant creating images that looked different from the standard T.V. Thus, “image processing” as we know it grew out of an intensive period of experimentation that for some, in a vague way, was seen visually to subvert the system that brought the Vietnam War home every night.

–Lucinda Furlong<sup>2</sup>

In the late 1950s and early 1960s, artists and social activists in the United States and Western Europe began examining the television medium (as both a technological and cultural form). Their curiosity, fueled in part by its indomitable power over the iconic image, was heightened by the appeal that the communicative apparatus possessed in redefining the relationship between art, technology, and life. Since television had the power to challenge bourgeois televisual sensibilities, it was seen as an attractive medium: one capable of rehabilitating the criticality and aesthetic charge of post-medium-specific practices. In addition, the untapped potentiality of the commercially oriented device and its ability to usurp the authority of the real also helped to promote a socio-historical hiatus from the stronghold of modernism. As the propensity of postmodernism set in

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<sup>1</sup> Benjamin H. D. Buchloh, “From Gadget Video to Agit Video: Some Notes on Four Recent Video Works,” *Art Journal*, 45.3 (1985): p. 217.

<sup>2</sup> Lucinda Furlong, “Notes toward a History of Image-processed Video: Eric Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra,” *Afterimage*, 11.1-2 (1983): p. 35.

motion a “gradual dismantling of the traditional [modernist] modes of cultural production,”<sup>3</sup> efforts to invent new methods of artistic expression followed. What resulted was the materialization of experimental media.

Alongside the concurrent social, cultural, and political crises of the 1960s emerged an information-based society—one stemming from the evolving (industrial capitalist) consumer culture responsible for the invention of radio, television, and other forms of institutional value. Central to the identity formation of this postmodern phenomenon were advancements in technologies, such as those involving video, that provided faster means of disseminating information.<sup>4</sup> That novel modes of expression were sought out simultaneously is no coincidence, since there was a belief that the modernist formula had reached a point of political and aesthetic exhaustion. At the same time, experimental media appeared to be a revitalizing source for a new generation of artists. The use of innovative commercial technologies helped to dismantle the hegemonic institution espoused by the modernist paradigm of Clement Greenberg and his followers. Yet, it also problematized the distinction between artistic and non-artistic practices.

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<sup>3</sup> Buchloh, “From Gadget Video to Agit Video,” p. 217. Another feature of this shift included critiques of the institutional frame (the white paradigmatic cube) seen in the early works of Hans Haacke, Daniel Buren, and Richard Serra (to name a few). Their inquisitive approach helped to forge a particular postmodern flavor (in reaction to the growing commodification of art). This reaction against the commercialization of art also intersected with conceptual, performance, land-based, and public artistic practices. Together these movements helped in forming the social, political, and historical framework of the 1960s, which inherently contributed to the exploration of new forms of media, including music and video synthesizing.

<sup>4</sup> The phenomenon refers to the artistic shift that occurred in the 1960s that appropriated existing cultural and aesthetic practices—not to the development of radio and television. I use the term “video” to mean the overall phenomenon. Unless implied, it does not exclusively mean videotape.

In an attempt to subvert the residual commercialistic associations of television, artists and engineers began altering monitors into re-conceptualized, art-oriented objects as early as 1959.<sup>5</sup> The underlying reasons for their manipulation of this technology are central to any understanding of the initial conception of video art. Appropriating the television set for noncommercial purposes forced artists and engineers to seek out ways to justify the artistic legitimacy of this technological apparatus. In the process, an institutional dichotomy emerged out of the extant commercial technology to form a counter-genre that came to be known as Image-Processed video. By transcending the medium's craft quality through altering the standard television signal, artists diverted it in the direction of a noncommercial technology—an explorative dimension full of new possibilities.

**Image-Processed video.** The term “Image-Processed video” has been used to describe a type of experimental art produced since the early 1960s. It refers to a specialized genre marked by the application of various devices and techniques. These imaging tools were used to distort (the cultural residue and the linguistic codifications of) the television signal. As a technique, image processing uses light as a plastic compositional medium to define and display (visually and aurally) the various parameters of the electronic signal—frequency, phase, and amplitude.<sup>6</sup> Artists working with these

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<sup>5</sup> The significance of this date will be addressed in the following chapter and concerns the impact of Fluxus and Neo-Dadaism on video art.

<sup>6</sup> Sherry Miller, “Electronic Video Image Processing: Notes toward a Definition,” *Exposure*, 21.1 (1983): p. 22. Miller defines electronic image processing as using “those properties inherent in the medium of video” to generate art-making material. She continues by explaining that “artists work at a fundamental level with various parameters of the electronic signal, for example, frequency, amplitude, or phase, which actually define the resulting image and sound.”

coded structures were able to manipulate the electronic configuration of the signal by feeding it through raster manipulation devices, colorizers and mixers, or synthesizers. Yet this time-based medium would soon prove problematic.

The term “image processing” has recently been questioned because it encompasses and conflates all works containing synthesized or manipulated imagery.<sup>7</sup> Since the conflation includes video as both a technical craft and an artistic medium, artists and engineers face a predicament that is conjured up by an objectionable categorization; those who use image processing while seeking to transcend the craft quality of the technological medium are considered no different from technicians who use similar methods to obtain processed imagery. In other words, the classification denies a distinction between the experimental video of the artist and the technically oriented video of the technician. Including both types of video fabrication within a universal genre referred to as electronic Image Processing might therefore indicate that there are no real differences between the two modes of production (i.e., craft and art). If no distinction is made, then video artists are seen merely as skilled artisans—the very notion that many artists eschew.

Despite the rejection of the term, the categorization has proven useful for scholars in describing videotapes that share similar objectives in treating the television signal as a plastic medium.<sup>8</sup> On the one hand, the term’s inclusion of video as both a technical and

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<sup>7</sup> Furlong, “Notes toward a History of Image-processed Video: Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra,” p. 35. Furlong writes that many video artists, such as Barbara Buckner, eschew the label “image-processed video” because it conjures up specific stereotypes.

<sup>8</sup> Furlong presents the term “image processing” as inappropriate and misleading. To reduce any confusion and to remain consistent with the terminology used in the literature,

artistic medium implies that there are commonalities between the two uses: both involve image processing tools and techniques. On the other hand, there are differences between the two video practices, which include the intent, function, purpose, and overall presentation of each. My discussion of this topic will show that the quintessential distinction between the two types of production lies in the very act of subverting the commercially oriented craft. By synthesizing television and video signals, this process of subversion helped to form a new movement that sought to blend art and technology. This movement came to be known as video art.

The present study investigates first-generation video art and artists of the 1960s and 1970s. Chapters One and Two address the underlying arguments made to legitimize the artistic validity of the medium and the various dimensions involved in shaping the early genealogy of video. Chapter Three explores the initial formation of video art in conjunction with Fluxus experiments on commercially oriented objects such as the television monitor. Chapter Four focuses on first-generation video artists working in the genre of Image Processing and the consequent exploration of subsequent genres. Lastly, chapter Five examines how Image-Processed video liberated the medium socially. At that point, I address the significance of the Portapak videotape camera; and look at the historical context of video art in relation to the modernist legacy of the 1950s.

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I will continue to use the term, but in a re-defined fashion. Furlong seems to take the same attitude. See Furlong, "Notes toward a History of Image-processed Video: Steina and Woody Vasulka," *Afterimage*, 11.5 (1983): p. 12, especially footnote 4, for a more encompassing definition that I incorporate into my own working definition.

Image-processed video art shares similar objectives with its counterpart in that it features a technical flavor—one that defines it as image processed. But, it breaks from exhibiting purely technical traits. Videotapes that embrace the artistic are different in their function, purpose, and presentation.

## CHAPTER 2 THE EMERGENCE OF VIDEO ART

As a noncommercial endeavor, the emerging video art movement involved a number of contributing factors. The institutional framework for its development included technological advancements in video equipment, a new interest in the experimentation of the medium's inherent properties,<sup>1</sup> and a multitude of theoretical consequences that anticipated subsequent developments in electronic media. Together, these elements helped to authenticate video art; and its unfolding can be traced through the economic, technological, and theoretical dimensions of the medium.

### **Subverting Commercial Television, Video, and the Institution**

Conceived and nurtured in the public sphere, video would not survive without public patronage, public TV, or other public institutions.

—Martha Gever<sup>2</sup>

The explosion of communication technologies during the rise of industrial capitalism accelerated mobile privatization—a concept used to refer to the tendencies of modern urban living.<sup>3</sup> Socially, this phenomenon conflated two spaces of industrial

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<sup>1</sup> The properties include the various parameters of the electronic signal such as frequency, amplitude, or phase that define the resulting image and sound.

<sup>2</sup> Martha Gever, "Pressure Points: Video in the Public Sphere," *Art Journal*, 45.3 (1985): 238-243.

<sup>3</sup> See John Alan Farmer, "Art into Television, 1960-65" (Ph. D. dissertation, Columbia University, New York, 1998), pp. 35-36, and Raymond Williams, *Television: Technology and Cultural Form* (New York: Schocken Books, 1974), p. 26. Farmer cites Williams's *Television* as the basis for one of his theoretical approaches to the cultural dynamics of television. Farmer writes that television is a "particular incarnation of capitalist modernity," which for Williams produces a condition known as "mobile privatization."

society: the public arena of large urban centers and the privatized social realm of the nuclear family.<sup>4</sup> For the media theorist Raymond Williams, broadcasting (radio and television) was a social product of this “mobile and home-centered way of living.”<sup>5</sup> He claimed that although the home appeared to be private and self-sufficient, it still needed to be maintained by a regular supply of external sources (e.g. television sets and advertising billboards).<sup>6</sup> This is because these efficient spaces of exchange shared the function of perpetuating mythological scenarios that help in our identity formation—that is to say, socially we learn to behave in part through (televisual) interaction.<sup>7</sup> Thus, by way of electronic media and the transmission and reception of behavior, one is delivered a type of material reality that is influenced by the social exigencies of capitalism.

By the 1960s, television had become the dominant mass medium, replacing radio’s position as the centerpiece in most North American homes. As the primary mediator between consumer and entertainer, it possessed the capacity to alter our basic perceptions of reality. Williams argued, “its character and uses [referring to the televised image] exploited and emphasized elements of passivity, a cultural and psychological inadequacy, which had always been latent in people, but which television now organized and came to

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For Farmer, this condition rose out of “certain technologies of transportation and communication beginning in the nineteenth century [that were] conditioned by social exigencies of industrial capitalism.” It is this socioeconomic order that I am referring to that motivated the social importance of the medium.

<sup>4</sup> Williams, *Television*, p. 26.

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*

<sup>7</sup> It is in this regard that communicative devices played a prominent role in social organization.

represent.”<sup>8</sup> Structured as a cultural and technological form, the medium greatly increased the mobility of information and facilitated the transformation of culture from a mechanical to an electronic one. The media theorist Marshall McLuhan wrote in *Understanding Media* that this change was accelerated by the emergence of an electronic culture whose vehicle for moving information was commercial television.<sup>9</sup>

Video art evolved out of this institution as an extension of human consciousness. At first, though, the gradual redirecting of television’s familiar function (as a conduit through which social reality flowed) presented the biggest challenge for artists working in the formative stage of the new medium. This is because technological advancements were at the mercy of the broadcasting industry and the viable market to which it targeted.<sup>10</sup> According to Williams these new technologies were discovered “by an essentially internal process of research and development, which then [set] the conditions for social change and progress.”<sup>11</sup> Essentially, this made it difficult for counter-commercial operatives to adopt video because the design was geared toward broadcasting. Yet, video artists were able to construct methodological systems capable of circumventing a type of commercially determined technology.

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<sup>8</sup> Williams, *Television*, pp. 11-12.

<sup>9</sup> Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964), pp. 19-21. McLuhan reflects on the cultural significance of television in “Television: The Timid Giant” pp. 268-294.

<sup>10</sup> Lucinda Furlong, “Notes toward a History of Image-processed Video: Steina and Woody Vasulka,” *Afterimage*, 11.5 (1983): p. 14. Other reasons for the difficulty in conceiving of television as a possible artistic object included the fact that major efforts toward deconstructing the commercial apparatus did not occur until the early 1960s.

<sup>11</sup> For Williams, this condition is referred to as “technological determinism.” See Williams, *Television*, p. 13.

One of the key solutions to re-conceptualizing consumer technologies occurred through the examination and subsequent manipulation of the (linguistic, electronic, commercial, and cultural) signals produced by objects. For video artists, the exploitation of these signals meant re-defining the original parameters of the electronic codes emitted by the television set. By deconstructing the object's indexical claim to advertising, these signal readjustments challenged the broadcasting industry, and thus created an alternative to a rather restrictive, one-way commercial product controlled by multimedia companies of the late 1960s.<sup>12</sup>

The restrictive nature of the medium before the introduction of the portable videotape camera denied individuals access to equipment that would otherwise enable more possibilities in video production.<sup>13</sup> Video equipment during this period was cumbersome, expensive, and relatively unattainable. However, these obstacles did not hinder the advancement of the medium. This is because imaging devices were made available to individuals, thanks to the support of institutions interested in experimental

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<sup>12</sup> Lucinda Furlong, "Tracking Video Art: 'Image Processing' as a Genre," *Art Journal*, 45.3 (1985), p.233-234. For more information concerning the liberation of the restrictive, one-way nature of radio see Bertolt Brecht, "The Radio as an Apparatus of Communication," *Video Culture: a Critical Investigation*, John G. Hanhardt, editor (New York: Visual Studies Workshop, 1986), pp. 53-55.

<sup>13</sup> In the literature, there are conflicting dates for the precise appearance of the portapak in the United States. Jon Burris points out that some put it in 1965, while others in '67 or '68. See Jon Burris, "Did the Portapak cause Video Art: Notes on the Formation of a New Medium," *Millennium Film Journal*, no. 29 (1996): p. 4. Burris cites Paul Ryan and sticks by his 1968 date—see Paul Ryan in *Video Mind, Earth Mind: Art Communications and Ecology*, New York: Peter Lang, 1992, p. 314. However, I will use the 1965 date, because the camera was accessible in the United States as early as October 4, 1965, when Nam June Paik featured his first videotape showing at the Café Au Go Go in New York. The show was a viewing of Pope Paul VI's visit to New York, shot with a portable videotape camera he purchased that day.

video and alternatives to commercial television.<sup>14</sup> In essence, the functions of these institutions were two-fold. First, they played a crucial part in encouraging the development of electronic image processing technology. Secondly, they provided the financial support that aided in the establishment of communities interested in fostering experimental video projects.<sup>15</sup> Yet these centers were only part of the equation when it came to expanding the boundaries set by prior limitations. While it is true that they enabled access to expensive, cutting-edge video and editing machines, it was the collaborative relationship between artists and engineers that really helped to advance the refinement of electronic imaging.

In response to the early constrictive nature of the medium, artists employed engineers to construct imaging tools capable of producing specific designs. These collaborations were significant because they enabled individuals to combine their resources. In addition to encouraging joint projects, artists also promoted the dissemination of equipment plans for educational, experimental, and noncommercial purposes. In one specific instance, the Chicago-based video artist Dan Sandin generously donated the blueprints to his Image Processor (developed in 1972). By offering his plans free of charge to anyone interested in building the synthesizer for noncommercial

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<sup>14</sup> These institutions include governmental agencies and university programs. See Sara Hornbacher, "Editor's Statement: Video: The Reflexive Medium," *Art Journal*, 45.3 (1985): p. 191.

<sup>15</sup> Places such as WGBH-TV in Boston, KQED-TV in San Francisco, and the New York Experimental Center promoted a program that supported the development of imaging tools and their use in experimental projects. See Christine Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," *Leonardo*, 24.3 (1991): p. 304. For the primary aims of the New York Experimental Center, see Ralph Hocking, *Experimental Television Center*, (2002). Available [Online]: <<http://www.experimental-tvcenter.org>> [10 June 2002]. The following was taken from the mission statement available online at the Experimental Television Center's official site.

purposes, he was permitting them to explore its capabilities. Moreover, he allowed those who did not possess the necessary electrical expertise to use his device. The impact of Sandin's Image Processor proved important not only for the Chicago video art scene, but also for developments elsewhere.

### **Alternative Television: Public TV**

Another constituent that played an important role in promoting experimental video was the alternative television movement, which was responsible for the formation of public television stations in the United States. In principle, Public TV was conceived as an outlet for video artists and engineers to feature their videotapes. Those involved in its creation saw potential in broadcastable works such as *The Medium is the Medium*.<sup>16</sup> Televised on March 23, 1969 (by the Boston public television station WGBH-TV), the thirty-minute video included works by Nam June Paik, Allan Kaprow, Otto Piene, James Seawright, Thomas Tadlock, Stan Vanderbeek, and Aldo Tambellini.<sup>17</sup> The significance of the collaborative program was important for those interested in alternative video. This is because it was the first presentation by independent video artists that aired on a public television station.<sup>18</sup> In addition, the extensive use of image processing in this piece contributed to opening up an entirely new avenue for artists and engineers who began to

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<sup>16</sup> Paul Ryan, "A Genealogy of Video," *Leonardo*, 21.1 (1988): p. 40. The program, with the exception of Kaprow's *Hello*, included the random switching of signals from a network of cameras and monitors set up around Boston. Ryan notes that only Aldo Tambellini dealt with explicit social issues (about African American life in the United States). The video was produced at the New Television workshop (WGBH-TV) in Boston.

<sup>17</sup> Douglas Davis, *Art and the Future: A History/ Prophecy of the Collaboration between Science, Technology, and the Arts* (New York: Praeger Publishers, 1973), p. 90.

<sup>18</sup> Johanna Branson Gill, "Video: State of the Art: The Rockefeller Foundation, 1976," *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), p. 67.

employ the recently introduced Sony Portapak as a weapon against commercially produced photoemissions.<sup>19</sup> Eventually, this attitude attracted organizations, such as Guerilla Television, who were interested in alternative television programming. These groups emerged with the intent of usurping the commercial medium. By writing manifestos and publishing journals such as *Radical Software* (1970-76), *Spaghetti City Video Manual* (1973), and *Independent Video* (1974), they challenged the dominant cultural perspective by demystifying video technology and encouraging alternatives to broadcast television.<sup>20</sup> What resulted was an institutional schism.

### **An Institutional Dichotomy**

An institutional dichotomy divides the video medium into two categories. These include works produced for commercial and noncommercial purposes. Within the latter, another division is possible, which consists of two movements: video art and alternative television. While the previously stated distinctions are necessary for many video artists, divisions in the types of image processing are essential. This is partially because image-processed video encompasses any production created by manipulating or synthesizing the standardized television signal. Since the term conflates all works that contain manipulated imagery, artists see it as misleading. Some have rejected the term because it

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<sup>19</sup> Davis, *Art and the Future*, p. 90.

<sup>20</sup> Chris Hill, "Attention! Production! Audience!: Performing Video in its First Decade, 1968-1980," *Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Editors, Doug Hall and Sally Jo Fifer Horsfield (Chicago: Video Data Bank, 1995), p. 11. Hill recalls that these publications, "were critical in promoting a vision of radicalized personal communications, providing an education for the unsophisticated and curious, and identifying a network of fellow enthusiasts. Their pragmatic approach to the present and sometimes utopian vision for the future were shared by others who examined and challenged the delivery of basic institutional systems—education, communications, government, health—and envisioned new grassroots configurations which often centered on new or reconfigured technologies." The last two are hands-on technical guides.

connotes stereotypes, values, judgments, and myths associated with mindless, impersonal technology.<sup>21</sup> On the one hand, early video art was founded on experimental tendencies, thus requiring the so-called “mindless” and “impersonal” technology that so many artists now look at negatively. On the other hand, it is still necessary to distinguish the image processing genre of video art from others that are non-artistic in nature, but apply similar procedures in generating imagery. So how does one assign a proper name to this phenomenon without perpetuating derogatory inferences? If the differences in intent, purpose, and function are enough to warrant an institutional dichotomy between video as a technical craft and video as an artistic medium, then the name of the genre does not matter. Instead, what matters is that the orientation of the presentation attempts to subvert the craft quality of the technological medium. To this extent, the attributed classification is not the only factor in determining the substructure of the genre. Thus, video art that explores its formal properties by manipulating the standard television signal will be referred to as image-processed video art for lack of a more suitable term.

### **The Technological Dimension of Video**

Video, inextricably bound to technological changes, carries with it the priority of advancement, represented in search for better equipment, better image resolution, and ever more efficient compositional control.

–Sara Hornbacher<sup>22</sup>

Initially, advancements in equipment, as extensions to an already established array of consumer products, provided broadcast corporations with an influence over the development of video technology. Before the mid-1960s, video was nothing more than a recording substance that allowed a greater flexibility in transmitting programs into home

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<sup>21</sup> Furlong, “Tracking Video Art,” p. 233.

<sup>22</sup> Hornbacher, “Editor’s Statement: Video,” p. 191.

television sets (via the standardized signal).<sup>23</sup> However, successive advances in imaging technology would help to make the medium more efficient, inexpensive, accessible, and less cumbersome—especially in electronic recording. What resulted out of this progression was a new suppleness that enabled video to become a shared medium. In other words, a standard piece of American living room furniture became a device capable of processing images, possessing documentative capabilities, and providing surveillance for a whole host of sites.<sup>24</sup> Yet, the liberation or “sharing of the medium” also contributed to the identity crisis that many artists experienced in trying to disassociate their work from commercial TV. Given that the origins of the medium are tied to a consumer-driven tradition, and that both commercial and noncommercial factions use similar equipment, it seems only natural that artists and engineers would seek ways to establish a unique and separate identity.

The conception of video art relied on two technological forms: commercially produced equipment, such as the television monitor and the videotape camera, and noncommercial video synthesizers and processing techniques. If one is to divide the medium up using advancements in technologies as the factor with which a chronological scenario is established, then there are two phases within the first-generation video art movement—a pre and post 1965 period (determined by the introduction of the portable videotape camera). In the former stage, video artists based their program on manipulating the television medium by using external/internal imaging tools. In contrast

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<sup>23</sup> Roy Armes, *On Video* (New York: Routledge, 1988), p. 128.

<sup>24</sup> Gill, “Video,” p. 63.

to the conventional function of the television monitor, artists during this period were using the medium as an interactive device—one that could be watched and played.

In *Demagnetizer (Life Ring)* (1965) (Fig. 1), Nam June Paik applied this methodological practice to several television sets. By utilizing a magnetized ring, he interfered with the internal electronic circuitry of the device, and in turn, generated unique swirling vortexes. Without Paik's use of a magnet, however, he would have been restricted to the limits posed by the television set. Thus, by implementing imaging tools Paik was able to escape the basic visual controls of the device—something that the video artist Eric Siegel complained about, saying that they only allowed for rudimentary adjustments in brightness, contrast, and horizontal and vertical hold.<sup>25</sup> Nevertheless, this practice gravitated toward a natural inclination of image-processed video—a progression that would come with a variety of theoretical ramifications.

### Theoretical Consequences

Electronically generated iconic imagery not only would replace the inherently retrograde aesthetics of a craft-skill-oriented production with its implied exclusivity and elitist domination of the field of culture but would also—by the mere fact of its technology—establish a relationship with the dominant and dominating practice of mass culture, television, and thus reached new audiences.

—Benjamin H. D. Buchloh<sup>26</sup>

The theoretical implications of the video art movement that featured the use of image processors provoked both positive and negative reactions. Terms such as “gadget art,” “video wallpaper,” “high-tech video,” “special effects,” and “image processing,” which had been used to classify the newly emerging video art of the 1960s and 1970s,

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<sup>25</sup> Michael Shamberg, “Electronically Distort the Video Image,” *Guerrilla Television* (New York: Holt, Rinehart and Winston, 1971), p.44.

<sup>26</sup> Benjamin H. D. Buchloh, “From Gadget Video to Agit Video: Some Notes on Four Recent Video Works,” *Art Journal*, 45.3 (1985): p. 217.

were seen by many practicing artists as derogatory.<sup>27</sup> Essentially, these terms imply that video art came from a “craft-skill-oriented production” rather than a high artistic presentation.

Artists altering the “craft-skill-oriented production” also sought to establish a relationship with the dominating cultural modes and the televisual sensibilities of mainstream culture. Video art was initially seen as a radical medium that possessed the means to revolutionize society—one networked by electronics. Like in the preceding avant-garde practices, alternative television was believed to have the ability to enact social change (or at least reveal societal problems). This notion stems from ideas formulated by Neo-Dada practices and from the Fluxus deconstruction of commercially oriented objects. According to Jon Hendricks, these two movements “sought to unnerve a complacent, militaristic, decadent society by bringing art into direct confrontation with triviality and aesthetics, and to controvert the idea that art is incapable of affecting social or political change.”<sup>28</sup> To this extent, art was seen as still possessing an avant-garde dimension. But was this really the case for video art? For one thing, the untapped potential of the medium did not result in the anticipated mainstream cultural transformation. For another, the artistic institution of video was highly innovative, and helped to formulate new types of video, analogue, and digital media.

Nevertheless, the genealogy of early video art began with the appropriation of the television monitor as an artistic apparatus (originally a commercially oriented device

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<sup>27</sup> Furlong, “Notes toward a History of Image-processed Video: Eric Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra,” p. 35.

<sup>28</sup> Jon Hendricks, “Forward,” *Fluxus Codex* (New York: Gilbert and Lila Silverman Fluxus Collection in Association with Harry N. Abrams, 1988), p. 21.

used to disseminate one-way emissions as a form of entertainment). In retrospect, an irony becomes apparent when examining the development of video art and its use of the television medium. As it appears, the technological evolution began as a commercial demand for more effective means in disseminating broadcastable media. Yet the introduction of new technology such as the Sony Portapak, and the collaborative efforts of artists and engineers in providing image processing devices, enabled the emergence of a noncommercial video tradition. The next stage involved the establishment of an art genre—Image-Processed Video—that used these devices. Ironically, corporations that began the technological revolution subsequently appropriated the achievements made by their anti-commercial counterpart. Before MTV, the established institutional divide enabled artists-engineers to justify their work as having a legitimate artistic value. But with the appropriation of their technological advancements, the commercial institution blurred the fine line between the craft quality of the medium and Image-Processed Video art. However, a distinctive difference, based on intent, purpose, function, and overall presentation, would remain clear. This will be the focus of the next chapter.

## CHAPTER 3 VIDEO AS AN ARTISTIC MEDIUM

The investigative exploration of video technology began in the context of numerous political, social, and artistic movements in the 1960s and 1970s that examined and reevaluated object orientation, purpose, and function in society. During this period, artists working in these various movements (including Performance art, Modern dance, early Minimalism, Fluxus, *Nouveaux Réalisme*, Pop art, and Happenings) were experimenting with direct experience, the physicality of materials, and by extension, the social and cultural levels of reality.<sup>1</sup> For some, these investigations were ironic gestures that criticized consumer/popular cultural forms. For others (such as the Neo-Dadaists), these interconnecting practices helped to conceptualize the theoretical framework that paved the way for electronic image processing.

### **Fluxus**

Fluxus in particular played a fundamental role in the conception of video art. This movement's contribution to laying down the underlying principles for first-generation video artists included two important objectives: rejecting the constrictive, commercialistic connection of object-oriented art (a form of debunking existing commercial and artistic institutions) and stripping objects of their original meaning for

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<sup>1</sup> John G. Hanhardt, "Dé-collage/Collage: Notes toward a Reexamination of the Origins of Video Art," *Illuminating Video: An Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer, editors (New York: Aperture in Association with the Bay Area Video Coalition, 1990), p. 72.

newly formed alternatives.<sup>2</sup> Critically receptive to these strategies, Neo-Dada artists (such as Wolf Vostell, Nam June Paik) were able to base their methodological approach on a system capable of deconstructing and restructuring meaning—a procedure they applied to television.<sup>3</sup> Prior to examining their engagement with the television medium, I would like to point out a few details about the program of Fluxus that would prove to be highly influential for video artists.

Although emerging slightly before the early experiments conducted on the television set, in retrospect Fluxus was contemporary with video art.<sup>4</sup> The chronological proximity of these movements is by no means coincidental. This is because Neo-Dadaists who worked with the medium of television also associated themselves with Fluxus activities, and in so doing, shared ideas about the act of making artistically viable works that “erased or transformed the message contained within the surface codes of dominant cultural and ideological transmission.”<sup>5</sup> In this regard, both video and Fluxus artists derived their content by deconstructing objects and redefining their “surface

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<sup>2</sup> Taken from a letter, George Maciunas states to Tomas Schmit, “Fluxus is strictly against the art object as a dysfunctional commodity whose only purpose is to be sold and to support the artist.” See Jon Hendricks, *Fluxus Codex* (New York: Gilbert and Lila Silverman Fluxus Collection in Association with Harry N. Abrams, 1988), p. 37.

<sup>3</sup> Fluxus artists such as Nam June Paik and Wolf Vostell were among the first to experiment with the television medium. Their prepared television monitors set the precedence for video artistic practices to come.

<sup>4</sup> The significance of these simultaneous developments also carries with it a socio-historical context, involving both artistic developments within a particular social, political, and economic climate, which helped to conjure up certain Fluxus theories concerning the relationship between art and life.

<sup>5</sup> John G. Hanhardt, “Dé-collage and Television: Wolf Vostell in New York, 1963-64,” *Visible Language*, 26.1/2 (1992): p. 110. It is the act of manipulating the “dominant cultural and ideological transmission” of the standard television signal that enabled video artists to make artistically viable works.

codes.” Reprocessed by imaging technologies, these converted codes were thought to possess the capacity to liberate the social milieu of an electronic culture still connected to the industrial capitalist tradition. John Hanhardt explains that “in appropriating the materials of everyday life and traditional culture, [both] Fluxus artists [and Neo-Dadaists] sought to turn...discourses inside out, in the process revealing the constrictive conventions and rhetoric limiting liberated individual expression and desire.”<sup>6</sup> Following this program Neo-Dadaists sought to re-conceptualize the processes of making art by debunking dominant standards. Consequently, this attitude carried over to the early experiments conducted on television monitors. Just as Fluxus performers experimented with objects to release them from their restrictive nature, so did video artists, who manipulated the television medium in order to free it from its constrictive character. Operating within the parameters of communication, Fluxus in turn expounded the possibilities of individual expression and desire. To this extent, liberating the object from a restrictive identity was important during the development of first-generation video art. This is because it was seen as a way to rejuvenate an avant-garde aesthetic. On the one hand, existing institutions and their codifications maintained a hegemonic control over the traditional modes of making art—such as painting and sculpture. Benjamin Buchloh wrote that video as an uncharted and innovative medium appeared to be a power vehicle in the “gradual dismantling of the traditional modes of cultural production, breaking down” and “dismantling the dominance of the fetishizing practices of painting and

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<sup>6</sup> *Ibid.*

sculpture.”<sup>7</sup> On the other hand, a neo-avant-garde aesthetic promised a program capable of enacting social change by sublating art into life and by expanding the possibilities of television.

Fluxus concentrated on changing the way people perceived themselves within a cultural environment and observed how they recognized the world and objects around them.<sup>8</sup> In liberating the artistic institution from existing conventions, they were trying to further possibilities in art by using “a playfulness and humor previously associated with Dada and the seminal ideas of Marcel Duchamp.”<sup>9</sup> In doing so, Fluxus denied the “cultural hegemony” and “consumer aesthetics” manifested in contemporaneous artistic movements such as Pop art,<sup>10</sup> while challenging the societal role of artists, the function of their work, and preconceived notions concerning art and technology.<sup>11</sup>

#### **TV as an Artistic Apparatus: The Cathode-Ray Canvas**

Since painting, sculpture and music have used up their potential of innovation,  
today we must find new forms of art.

–Fred Forest<sup>12</sup>

As collage technic replaced oil-paint, the cathode ray tube will replace the canvas.

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<sup>7</sup> Benjamin H. D. Buchloh, “From Gadget Video to Agit Video: Some Notes on Four Recent Video Works,” *Art Journal*, 45.3 (1985): p. 217.

<sup>8</sup> Owen F. Smith, *Fluxus: the History of an Attitude* (San Diego: San Diego State University Press, 1998), p. 3. The latter deals with the notions of art and anti-artistic tendencies that Fluxus artists investigated.

<sup>9</sup> Hanhardt, “Dé-collage/Collage,” p. 73.

<sup>10</sup> Thomas Kellein, *Fluxus* (New York: Thames and Hudson, 1995), p. 9.

<sup>11</sup> Hendricks, “Forward,” p. 21.

<sup>12</sup> Fred Forest, “Sociological Video,” *Video '79: Video—the First Decade* (Rome: Kane, 1979), p. 80.

Nam June Paik's engagement with image processing began as early as 1959 when he started to build sculptures out of electrically modified TV sets inspired by John Cage's prepared pianos.<sup>14</sup> Frustrated with music's institutional avant-garde and determined to renew the ontological form of aural (and visual) experience, the artist began exploring the televised image as a critical examination of the everyday practice of watching TV.<sup>15</sup> For Paik, these investigations in electronic media were very significant. Not only did they mark his conversion from a composer to a pioneering video artist, but they also enabled him to transcend the discursive formal structure of music. Furthermore, by experimenting with the inherent properties of the medium, he was able to reach his audience in new possible ways.

In *Exposition of Music–Electronic Television* (March 11-20, 1963), presented at the Gallerie Parnasse in Wuppertal, West Germany, Paik premiered twelve (or perhaps

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<sup>13</sup> Douglas Davis, *Art and the Future: A History/ Prophecy of the Collaboration between Science, Technology, and the Arts* (New York: Praeger Publishers, 1973), p. 148. The quote was taken from a statement passed out at the opening of what is considered Nam June Paik's first videotape showing on October 4, 1965, at the Café Au Go Go in New York. The show was a viewing of Pope Paul VI's visit to New York, shot with a portable videotape camera he bought that day.

<sup>14</sup> Christine Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," *Leonardo*, 24.3 (1991): p. 303. For more information on the connection between John Cage's prepared pianos and Paik's altered television sets see Dieter Ronte, "Nam June Paik's Early Works in Vienna," *Nam June Paik* (New York: Whitney Museum of American Art and W. W. Norton, 1982), p. 74. John Alan Farmer wrote in "Art into Television, 1960-65" that Paik's letter to Steinecke (on May 1959) contains the first documented instance where Paik expressed an interest in incorporating prepared television sets in his work (see p. 169). In that same year, Farmer noted that Paik was experimenting with second hand television sets, from which he produced the works that he presented at the Gallerie Parnasse.

<sup>15</sup> Nam June Paik, "New Ontology of Music," *Videa 'n' Videology: Nam June Paik, 1959-1973*, Judson Rosebush, editor (Syracuse: Everson Museum of Art, 1974), p.3.

thirteen) prepared television sets (Fig. 2).<sup>16</sup> These works, including *Zen for TV* (1963) (Fig. 3) and *Manipulated TV* (1963) (Figs. 4 and 5), were interactive ready-mades based on physically manipulated photoemissions and tongue-in-cheek performances—a program that challenged the prevailing commercial form of television. Commenting on this aspect of Paik’s work, Chris Hill noted that his “1963 Fluxus modifications of television sets with powerful magnets...were ironic gestures, exposing television’s electronic materiality and toying with audience expectations around the TV set as everyday site for meditation and cultural reception.”<sup>17</sup> In “toying” with the audience Paik was revealing the device’s hidden potential. In addition, by disrupting the flow of broadcast transmissions in works such as *Magnet TV* (1965) (Fig. 6), he was exposing the participatory capabilities of the communicative apparatus. Ultimately, Paik’s Fluxus activities liberated television viewers from the restrictive, ideological coded programs invested with a false authority of the real.

The image processing technique was influential in determining Paik’s artistic direction. As time progressed, he became increasingly devoted to the medium while seeking new ways to manipulate the standardized signal electronically. In 1969, with the help of Shuya Abe, Paik built the Paik-Abe video synthesizer—a device that colorized

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<sup>16</sup> John G. Hanhardt, *The World of Nam June Paik* (New York: Guggenheim Museum Publications, 2000), pp. 108 and 111 and Johanna Branson Gill, “Video: State of the Art: The Rockefeller Foundation, 1976,” *Eigenwelt der Apparatwelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), p. 64. For a detailed description of the exhibition see John Alan Farmer’s *The New Frontier: Art and Television 1960-65* (Austin: Austin Museum of Art, 2000), pp. 44-49. None of the works survive. Much of the information regarding the exhibition comes from photos and writings of Paik and Maciunas.

<sup>17</sup> Chris Hill, “Attention! Production! Audience!: Performing Video in its First Decade, 1968-1980,” *Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Editors, Doug Hall and Sally Jo Fifer Horsfield (Chicago: Video Data Bank, 1995), p. 22.

the imagery of a standard black and white television set.<sup>18</sup> The collaboration was an important one, not only because it helped Paik to develop the processor, but also because it demonstrated his fundamental approach to making art. In addition, it reflected distaste for the ego. In a letter to Tomas Schmit, George Maciunas explained the Fluxus attitude regarding the ego by stating:

Fluxus is against art as a medium and as a vehicle for the artist's ego, since applied arts should express objective problems that have to be solved, not the artist's individuality or ego. Fluxus, therefore, should tend towards a collective spirit, anonymity and anti-individualism.<sup>19</sup>

Here, Maciunas relays the essential component of the Fluxus machine: collaboration. Within these terms, Paik's use of video technology enabled him to create art on a joint level (including aid from engineers and video imaging tools).<sup>20</sup> Moreover, Paik's investigative approach with electronic media involved a type of participatory dimension. In this regard, the viewer also became the spectator/performer in installations such as *Participation TV* (1963) (Fig. 7), which required not only one's presence, but also one's interaction.<sup>21</sup> In this way, Paik was searching for a new aesthetic, one that involved a unique phenomenological dimension.

For Wolf Vostell, another Neo-Dadaist working in a similar tradition, turning to the television medium enabled him to deconstruct an ideologically driven program. Like Paik, Vostell pursued the problem of re-defining commercially oriented objects by

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<sup>18</sup> *Ibid.*

<sup>19</sup> Hendricks, *Fluxus Codex*, p. 37.

<sup>20</sup> Davis, *Art and the Future*, p. 147.

<sup>21</sup> This is because the prepared set did not function without stepping on a floor switch (which activated the apparatus by causing flashes of light to splash on the screen). For more information regarding the exhibition see John Alan Farmer, "Art into Television, 1960-65" (Ph. D. dissertation, Columbia University, New York, 1998), pp.141-42.

altering their original meaning. However, Vostell's strategical approach incorporated the *décollage* technique.<sup>22</sup> Although French *affichistes* such as Raymond Hains and Jacques de la Villeglé were already working in the medium of *décollage* as early as 1949, Vostell claimed to have coined the term on September 6, 1954, after reading about a plane crash in *Le Figaro*.<sup>23</sup> In the first issue of Vostell's magazine, *Décoll|age, Bulletin Aktuelier Ideen, No. 1*—which included contributions from Fluxus artists like Nam June Paik, George Maciunas, and Benjamin Patterson—he defined the term *décollage* as if to accentuate its importance to his Fluxus activities.

For the *affichistes* (*décollagistes*), the technique enabled them to alter the original “surface codes” constructed by a dominant commercial culture.<sup>24</sup> John Hanhardt explains that in manipulating the message “the visual and linguistic economy of slogans and graphic announcements is torn apart by the artist to reveal an archeological layer of hidden messages, deconstructed to expose their material and ideological base” (Fig. 8).<sup>25</sup> Thus, in using a version of the *décollage* method the *affichistes* were able to de-layer both the physical and conceptual surfaces of posters. By means of a similar strategy, Vostell,

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<sup>22</sup> Hanhardt, “Dé-collage and Television,” p. 110.

<sup>23</sup> Glenn O'Brien, “TV Guide: Wolf Vostell Reconsidered,” *Artforum International*, 39.8 (2001): p. 116. In O'Brien's brief account he quotes Vostell, who explained the reasoning behind the nomenclature. The account involved a plane crash, which provoked him to search for the “strict meanings of the term” *décollage* (to ‘detach’ and ‘to die’). The news for Vostell unleashed in him “a fascination for reality, for the complex age,” and in this fascination, he felt an urgency to include directly in his art everything that he perceived, heard, felt, and learned. He took as his “starting point the literal meaning of the word *dé-coll|age* [and applied the] concept to the frank, distorted forms of mobile fragments of reality—that is to happenings.”

<sup>24</sup> Hanhardt, “Dé-collage and Television,” p. 110.

<sup>25</sup> *Ibid.*

who did not always employ video as the central element, used the *décollage* technique to fragment and abstract the television set.

In 1963, the Smolin Gallery in New York exhibited a number of the artist's works in *Wolf Vostell & Television Dé-collage & Dé-collage Posters & Comestible Dé-collage*.<sup>26</sup> The exhibition featured the *affichistes*' torn poster technique as well as prepared TV sets tuned out of focus, out of alignment, and physically distorted with paint, bullet holes, and dents (Fig.9).<sup>27</sup> Concerning its impact on the development of video art, the show was noteworthy because it presented one of the first documented instances where the television set was used as a work of art in the United States.<sup>28</sup> For Vostell, these altered TV sets were significant steps toward interrupting television's flow of entertainment—a crucial move in distorting the mobile fragments of reality.<sup>29</sup> By fracturing the televised image, he was able to subvert the (linguistic, commercial, and cultural) codes of the dominant culture.<sup>30</sup> In the process, Vostell dialectically forced the viewer to question the function of objects and to find new usages for old products.

Hanhardt sums up the work of Vostell by stating:

these images of Vostell's performances, installations and writing reveal an “anti-aesthetic” strategy which moved between media and materials as he sought to destabilize the institutional codes and meanings of the dominant culture. This effort by Vostell to erase and recompose imagery, through both viewer participation and the disruption of television, reveals a politic which seeks to

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<sup>26</sup> *Ibid*, p. 123.

<sup>27</sup> Davis, *Art and the Future*, p. 84.

<sup>28</sup> Farmer, “Art into Television, 1960-65,” p. 253.

<sup>29</sup> John G. Hanhardt, “Film Image, Electronic Image: The Construction of Abstraction, 1960-1990,” *Visible Language*, 29.2 (1995): pp. 147-48.

<sup>30</sup> Hanhardt, “Dé-collage and Television,” p. 124.

rupture the seamless flow of information and entertainment by empowering the individual.<sup>31</sup>

Thus, the Fluxus utopian program sought to enact political and social change within existing institutions. By disrupting the seamless flow of transmissions, artists such as Paik and Vostell displaced a familiar sociological construct commonly identified with the everyday. In effect, the television set that brought the Vietnam War into the private domain—the external point of exchange—would take on a new function. By decoding and re-forming imagery, these artists (working in the formative stage of video art) gave way to a new kind of image processing. The development of this genre will be the focus of the next chapter.

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<sup>31</sup> *Ibid.*

## CHAPTER 4 THE IMAGE PROCESSING MOVEMENT

The Neo-Dadaists sought to explore ways of reconnecting art and life by reverting to preceding avant-garde movements of the twentieth century. Using mass-media imaging technologies, they transformed former artistic approaches into aesthetic and political actions. Through these strategies, the neo-avant-gardists critiqued, deconstructed, and reformed the dominant social order using the emancipatory potential of image processing.<sup>1</sup> Seeing this methodology as essential for transfiguring social reality Nam June Paik, Wolf Vostell, and others developed programs centered on the electronic alteration of the standard television signal and/or the physical manipulation of the TV set. For artists, these practices no longer required a consummate skill (in painting or sculpture); rather, they demanded a technical expertise (in electronic media). By using electronic devices as extensions of their hands artists helped to transform the traditional methods of cultural production and, in doing so, emphasized the importance of technological innovation. Commenting on the complex role that technology played in developing first-generation video art, Buchloh explains:

the promise of video technology seemed to be a progressive transformation both of the traditional fetishistic production and reception apparatus of the high art institution and of the quasi-totalitarian conditions of the consciousness industry in television, advertising, and movie production.<sup>2</sup>

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<sup>1</sup> John Alan Farmer, *The New Frontier: Art and Television 1960-65* (Austin: Austin Museum of Art, 2000), p. 20.

<sup>2</sup> Benjamin H. D. Buchloh, "From Gadget Video to Agit Video: Some Notes on Four Recent Video Works," *Art Journal*, 45.3 (1985): p. 217.

Filtered through the words of Buchloh, the role of video technology was two-fold: first, it provided imaging tools that could generate alternatives to the traditional media of the high art institution; secondly, it facilitated the production of videotapes capable of delivering the medium from the “quasi-totalitarian conditions” of the commercial television industry. To this extent, the significant impact of inventive imaging technologies helped artists in formulating a new genre of video experimentation. In this chapter, I will present a number of individuals whose investigative engagement with image processing helped to cultivate the medium’s aesthetic formation.

First-generation video artist/engineers began exploiting imaging technologies out of what they believed was a need for devices that could transform the standard television signal. In actuality, however, these instruments only allowed for the alteration of synchronized electrical impulses, first conveyed by electromagnetic waves (the signal/source) and then reconverted into moving photoemissions. In this regard, the signal itself remains the same. This is because the re-adjusted and standardized signals are derived from a universal source (via electromagnetic waves or coaxial cables). Instead of altering the standardized signal, artists were changing the orientation of the impulses by converting them into patterns of electrical charges on the mosaic—a plate inside the cathode ray tube that consists of minuscule photoelectric cells.<sup>3</sup> In other words, “processing” the signal through imaging tools enabled the adjustment of electronic impulses on the back of the mosaic, thus giving artist/engineers control over the moving image.

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<sup>3</sup> John Alan Farmer, “Art into Television, 1960-65” (Ph. D. dissertation, Columbia University, New York, 1998), pp. 30-1.

### Eric Siegel: Artist as Engineer

One of the most important of these artist-engineers was Eric Siegel, who started experimenting with image processing in the late 1960s.<sup>4</sup> Although his interest in electronics is said to have begun when he successfully built his first television set at fourteen years old, Siegel did not actually become fully involved in video art until he participated in the celebrated exhibition *TV as a Creative Medium*.<sup>5</sup> Siegel's contribution to the show, held at the Wise Gallery in New York, was a video installment of *Psychedelelevision in Color*, which demonstrated his earliest experiments involving the synchronistic relationship of sound and imagery. In addition, the piece featured Siegel's use of the Processing Chrominance Synthesizer (PCS), which employed a phase modulator—a device that measured the voltages of incoming black and white signals and reassigned them with color frequencies according to their gray values.<sup>6</sup> Yet, the artist's first imaging tool was crude; it allowed little control over the image and provided no

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<sup>4</sup> Other engineers who were also interested in the aesthetic qualities of the medium were Stephen Beck, Bill Hearn, Steve Rutt, Bill Etra, Shuya Abe, and Dan Sandin.

<sup>5</sup> Lucinda Furlong, "Notes toward a History of Image-processed Video: Eric Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra," *Afterimage*, 11.1-2 (1983): p. 36. According to Furlong "Siegel recalls that it was through Thomas Tadlock that he met Howard Wise," who after seeing a version of *Einstein*—an excerpt from *Psychedelelevision in Color*—gave Siegel the money to begin work on a device that would add color to a black and white signal. Wise, on the other hand, does not recall that it was Tadlock who introduced Siegel to him. Regardless of this uncertainty, evidence still suggests that Siegel became closely involved in first generation video art as early as 1969—during his participation in *TV as a Creative Medium*. The exhibition ran from May 17 to June 14, 1969 and was the first devoted entirely to video art in the United States.

Taken from an interview with Siegel, Furlong writes that the artist "was a student at Samuel Grompers Vocational and Technical High School when he built a black and white TV camera which he completed at the age of 15." One year prior, he claimed that he built his first TV set. See *Radical Software*, No. 1 (1970), p. 20, and the exhibition catalogue, *TV as a Creative Medium* (New York: Howard Wise Gallery, 1969).

<sup>6</sup> *Ibid.*

recording capabilities.<sup>7</sup> However, Siegel later documented the results of the PCS in *Einstein* (Fig. 10) (1968), a videotape based on the earlier installation of *Psychedelelevision in Color*.<sup>8</sup> As in the latter piece, he was able to produce abstracted, psychedelic oscillations within an outline bust of Albert Einstein, while the soundtrack played Rimsky-Korsakov.<sup>9</sup>

In 1970, Siegel developed the Electronic Video Synthesizer (EVS) (Fig. 11).<sup>10</sup> Like other imaging devices, the EVS owed its debt to pre-existing audio synthesizers developed in the early 1960s by Robert Moog and Don Buchla.<sup>11</sup> This is because “both

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<sup>7</sup> Lori Zippay, *Artists' Video: An International Guide* (New York: Electronic Arts Intermix, 1991), p. 224. During the time of the exhibition, Siegel was unable to record *Psychedelelevision in Color* because the recording process available was too expensive. This is because the imagery could not be recorded directly and required an expensive process of rescanning the imagery produced with a color camera.

<sup>8</sup> *Einstein* is a recorded version based on Siegel's earlier work *Psychedelelevision in Color*. It was the first of three seminal works by Siegel that demonstrated the early use of image processing tools and techniques. The three pieces, *Einstein*, *Symphony of the Planets*, and *Tomorrow Never Knows*, also revealed the important relationship between audio and video signals in Siegel's investigation of the medium. For more information about these pieces, see Zippay, *Artists' Video*, p. 224.

<sup>9</sup> David Dunn, *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst* (New Mexico: The Vasulkas Inc., 1992), p. 116. For a detailed account concerning the electronic inner workings of the Processing Chrominance Synthesizer and the Electronic Video Synthesizer, see pages 116-121.

<sup>10</sup> For Siegel, the Electronic Video Synthesizer enabled him to generate geometric forms organized into compositional designs. See Dunn, *Eigenwelt der Apparatewelt* p. 116. For a detailed look at Siegel's EVS system, including an elaborate listing of the electronic components, see pp. 120-121.

<sup>11</sup> Chris Hill, “Attention! Production! Audience!: Performing Video in its First Decade, 1968-1980,” *Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Editors, Doug Hall and Sally Jo Fifer Horsfield (Chicago: Video Data Bank, 1995), p. 22.

sound and image are determined by the same fundamental analog electronic processes,”<sup>12</sup> and for this reason the design of video imaging tools (such as the EVS) could closely follow the inner circuitry of audio synthesizers. Of course, this was provided that they produced imagery independent of the external video signal (and generated by the input of a video camera).<sup>13</sup> Nevertheless, artist-engineers such as Siegel and Skip Sweeney were able to do to photoemissions what audio synthesizers did to sound.

### Skip Sweeney

For Sweeney, his interest in the relationship of both sound and image provided him with the possibility of experimenting with the combination of the two. As in Siegel’s *Einstein*, the use of video feedback was employed in Sweeney’s 1975 videotape *Illuminatin’ Sweeney* (Fig. 12). However, *Illuminatin’ Sweeney* featured the artist’s use of the feedback loop as a way to alter the standard television signal. By employing this method, Sweeney was able to generate an independent dynamic flow of abstracted imagery, created by pointing the camera at the television monitor.<sup>14</sup> In addition, he interfaced the outcome with the Moog Audio Synthesizer and the Vidium Colorizer.<sup>15</sup> As a result, the orientation of the camera to the monitor produced imagery simulating a

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<sup>12</sup> *Ibid.*

<sup>13</sup> Michael Shamberg, “Tools: The Porta-pak,” *Guerrilla Television* (New York: Holt, Rinehart and Winston, 1971), p. 26.

<sup>14</sup> For a complete analysis concerning the space-time dynamics in video feedback see James P. Crutchfield’s essay entitled “Space-Time Dynamics in Video Feedback: Physica, 1984” *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), pp. 190-207.

<sup>15</sup> *Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Kate Horsfield, producer (Chicago: Video Data Bank, 1995), p. 61.

swirling vortex, originally recorded in black and white, and later colorized in red, blue, white, and yellow using Bill Hearn's Vidium Colorizing Synthesizer.<sup>16</sup>

Much of Sweeney's early work relied on an interdependent relationship between audio and video synthesizers. In the early 1970s, Sweeney began to generate improvisational, image-processed videotapes using both the Moog audio synthesizer and the Vidium Colorizer.<sup>17</sup> Yet, his early experiments failed to produce the controlled results found in *Illuminatin' Sweeney*. In an interview conducted by Woody Vasulka, Sweeney explained that both patience and the use of a mirror enabled him to control the difficult nature of video feedback.<sup>18</sup> In addition, he claimed that trial and error also played a large role in helping him gain control over electronic impulses of the television set. This experimental approach is partially due to his involvement with groups interested in similar issues. In 1969, Sweeney founded Electric Eye, a performance group that focused on the experimental dimension of video.<sup>19</sup> In 1970, Sweeney and Arthur Ginsberg co-founded the media art center Video Free America in San Francisco.<sup>20</sup> In addition to holding regular videotape screenings, the center encouraged the creation of tapes that included the innovative synthesizing of video and live theater, elaborate

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<sup>16</sup> *Ibid*, p. 61.

<sup>17</sup> Zippay, *Artists' Video*, p. 224.

<sup>18</sup> Dunn, *Eigenwelt der Apparatewelt*, p. 148.

<sup>19</sup> *Ibid*.

<sup>20</sup> Zippay, *Artists' Video*, p. 224.

mounted gallery installations, and documentaries.<sup>21</sup> The center also promoted an experimental atmosphere, which was perfect for artists such as Stephen Beck, whose interests aligned with the video counterculture of the 1960s.

### **Stephen Beck**

Another pioneer in the genre of image processing was the artist-engineer Stephen Beck, whose contribution to video technology began in 1968. In 1969, while investigating ways with which he could control the behavior of light, Beck designed his first imaging device, the Number 0 Video Synthesizer.<sup>22</sup> Inspired by an interest in using sound to manipulate graphic images on an oscilloscope, the instrument enabled the artist to produce some of his earliest works, which he used in performances conducted by the composer/sound synthesis Salvatore Martirano.<sup>23</sup> In 1970, Beck began work on the Direct Video Synthesizer No. 1. Developed in San Francisco at KQED-TV (and completed in 1970 from a 1968 prototype), the device went beyond the oscilloscope display. In fact, the synthesizer was unique because it generated its own abstract imagery internally rather than from camera-recorded material.<sup>24</sup> In addition to merging music and

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<sup>21</sup> Johanna Branson Gill, "Video: State of the Art: The Rockefeller Foundation, 1976," *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), p. 78.

<sup>22</sup> Furlong, "Notes toward a History of Image-processed Video: Eric Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra," p. 37.

<sup>23</sup> *Ibid.*

<sup>24</sup> Christine Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," *Leonardo*, 24.3 (1991): p. 304. Furlong writes that Beck felt that the device "would open up a whole new territory for television as an expressive medium." See Furlong, "Notes toward a History of Image-processed Video: Eric Siegel, Stephen Beck, Dan Sandin, Steve Rutt, Bill and Louise Etra," p. 37.

imagery in a performative manner, the device also electronically fused dynamic color imagery with recorded material in real time.<sup>25</sup>

In 1975, Beck finished the digital circuits to his Video Weaver (VW). Like the Direct Video Synthesizer No. 1, the Weaver generated its own imagery. However, unlike previous devices that dealt with real time material, it employed Random Access Memory (RAM) to store and retrieve patterns. According to Beck, the VW programs patterns into memory and then weaves them “onto the screen by a set of phase shifting counters that slide and shift their count sequence in time to the video raster.”<sup>26</sup> Next, by controlling the vertical and horizontal scans of an electron gun one is able to produce an electronic loom.<sup>27</sup> Beck documented the resulting imagery generated by the VW in *Video Weavings* (Fig. 13). Taking its inspiration from nonrepresentational Islamic art,<sup>28</sup> the Weaver created rhythmic patterns that interlaced inward and outward in horizontal and vertical directions. Essentially, vertical warp threads traversed by horizontal weft threads define the video imagery. As a type of kinetic Op art, the patterns shift in multiple directions and transcribe various transparent weavings onto one another (Fig. 14).

### **Nam June Paik: The Video Montage**

Nam June Paik’s involvement in the early development of image processing was important not only because of the artist’s role in the early conception of video art, but

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<sup>25</sup> Zippay, *Artists’ Video*, p. 214. It also enabled Beck to fuse musical performances conducted by Warner Jepson and Jordan Belson with his video imagery.

<sup>26</sup> Stephen Beck, “Stephen Beck: Direct Video Synthesizer (Analog), 1970, Beck Video Weaver (Digital), 1974,” *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), pp. 122-25.

<sup>27</sup> *Surveying the First Decade*, p. 61.

<sup>28</sup> *Ibid.*

also because of his dedication to exploring the expressive medium. By 1965, Paik began to devote a large part of his energy to experimenting with the electronic boundaries of video image processing.<sup>29</sup> His emphasis consisted of creating artworks that featured elaborate sequences based on video feedback, magnetic scan modulation, non-linear mixing, and colorizing. The result was a multi-processed video of a new kind.

Sony's 1965 introduction of the portable videotape recorder, the Portapak, also played a significant role in Paik's early videotapes. After the camera was introduced in the United States, Paik quickly added it to his video arsenal, making him one of the first to use the device for aesthetic purposes. Commenting on its immediacy and profound impact on the artist, John Hanhardt explains that the Sony Portapak "proved to be the single most significant technological development to impact Paik's thoughts on media, allowing him to move his creative interests forward in multiple directions."<sup>30</sup> Yet, the camera's immediacy in recording real time material was not the only one advantage. In using the device, artists also expanded the potentiality of the medium by gaining control over the image (and the signal they processed through their imaging machines).

As time progressed, Paik began to use the Portapak and other devices to produce elaborately edited video montages that incorporated recorded material from broadcast television.<sup>31</sup> Simultaneously, Paik was also working on video imaging tools that would allow him to further manipulate and rework electronic imagery. In 1964, while

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<sup>29</sup> I would argue that this aspect of Paik's videos would be taken to the extreme in his later works.

<sup>30</sup> John G. Hanhardt, *The World of Nam June Paik* (New York: Guggenheim Museum Publications, 2000), pp. 109, 111.

<sup>31</sup> Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," p. 303.

collaborating with the Japanese engineer Shuya Abe, he began work on the Paik-Abe Video Synthesizer and Scan Modulator—a processor that offered infinite electronic color and line patterns.<sup>32</sup> However, the synthesizer was not finished until 1970, after receiving financial backing from Boston public television station WGBH-TV.<sup>33</sup> Nevertheless, his work with new imaging tools led to the completion of videotapes such as *Merce by Merce by Paik* (Fig. 15) (1978), which demonstrated his elaborate use of multiple imaging techniques.

In *Merce by Merce by Paik*, the artist transformed the video signal into a moving collage of imagery by using colorizers, mixers, Chroma-Key, and the Rutt-Etra Scan Processor.<sup>34</sup> Developed by Bill Etra and Steve Rutt in 1973, the Rutt-Etra Scan Processor enabled Paik to alter his video montage through raster manipulation. He did this by transforming the original parameters of the signal, which allowed Paik to twist, stretch, rotate, and compress the image projected on the television screen.<sup>35</sup> Structured into a two-part tribute to the choreographer Merce Cunningham and the artist Marcel Duchamp, *Merce by Merce by Paik* also incorporated a technique known as Chroma-Key—also referred to as blue box.<sup>36</sup> For Paik, the Chroma-Key method enabled him to transport

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<sup>32</sup> Hanhardt, *The World of Nam June Paik*, p. 117.

<sup>33</sup> Tamblyn, “Image Processing in Chicago Video Art, 1970-1980,” p. 304.

<sup>34</sup> *Surveying the First Decade*, p. 64.

<sup>35</sup> Tamblyn, “Image Processing in Chicago Video Art, 1970-1980,” p. 304.

<sup>36</sup> *Surveying the First Decade*, p. 64. The process took the original recorded image and videotaped it against a blue set. The resulting imagery is then subtracted and replaced electronically with another video signal.

Cunningham's studio performance into a series of irrational outdoor landscapes.<sup>37</sup> In this particular video, the artist allows us to see the blue set by occasionally fading it in and out. As a result, the process invites the viewer to engage in Paik's video manipulation in a new art form known as Video Dance.<sup>38</sup>

### **Woody and Steina Vasulka: Video Dynamism**

Woody and Steina Vasulka's contribution to the development of the genre began as early as 1969. Seeing film as an exhausted medium, Woody Vasulka began to explore video as a way to understand the inner workings of electronic imaging.<sup>39</sup> Inspired by closed-circuit, multiple-monitor video displays used by his employer Harvey Lloyd, these experiments exhibited a unique type of image processing.<sup>40</sup>

The Vasulkas' infatuation with video stems from visiting the exhibition *TV as a Creative Medium*, held in the spring of 1969 at the Howard Wise Gallery.<sup>41</sup> The significance of the exposition for the Vasulkas (as much as for the development of video art) cannot be overemphasized. On the one hand, *TV as a Creative Medium* presented the

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<sup>37</sup> *Ibid.*

<sup>38</sup> *Ibid.* Merce Cunningham was the first known person to combine video with dance in 1965 at Lincoln center.

<sup>39</sup> Lucinda Furlong, "Notes toward a History of Image-processed Video: Steina and Woody Vasulka," *Afterimage*, 11.5 (1983): pp. 13-14. Woody Vasulka was originally educated in film.

<sup>40</sup> *Ibid.*, p. 13. Furlong states that the use of closed-circuit, multiple-monitor video displays became the model for Vasulka's early work.

<sup>41</sup> Zippay, *Artists' Video*, p. 223. The exhibition presented works including Paik's *Participation TV*, Paul Ryan's *Everyman's Mobius Strip*, Thomas Tadlock's *Archetron*, Eric Siegel's *Psychedelevision in Color*, Charlotte Moorman's first performance of Paik's *TV Bra for Living Sculpture*, and Schneider's collaboration with Frank Gillette known as *Wipe Cycle*. It also featured the use of image-processed techniques such as feedback loops and audio inputs to generate manipulated images within black and white television monitors.

first show in the United States devoted entirely to video art.<sup>42</sup> On the other hand, the exhibition was influential enough to encourage them to shift their attention towards producing videotapes.<sup>43</sup> Continuing this new interest in 1971, the Vasulkas co-founded the influential media arts center, the Kitchen, where they experimented with the medium profusely.

The Sony Portapak enabled the Vasulkas' to produce one of their earliest experiments involving the electronic exploitation of the standard television signal in *Calligrams* (1970) (Fig. 16).<sup>44</sup> As in Paik's early Fluxus works (such as *Manipulated TV*), *Calligrams* involved the manipulation of the television set. However, the Vasulkas used the television control panel and a videotape camera to fragment the imagery. In *Calligrams*, Steina Vasulka explains that in altering the analog video image they first adjusted the horizontal band of the standard television signal and then rescanned the abstracted image by recording it from a camera positioned at a ninety-degree angle from the monitor.<sup>45</sup> Although the technique does not employ a video synthesizer, the Vasulkas still featured a type of image processing by manipulating the television set's horizontal band and recording it at an angle. This type of signal augmentation demonstrated the Vasulka's early approach toward generating innovative works—a program that did not

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<sup>42</sup> *Ibid.*

<sup>43</sup> Furlong, "Notes toward a History of Image-processed Video: Steina and Woody Vasulka," p. 13.

<sup>44</sup> Steina Vasulka, *Calligrams, Surveying the First Decade #5, Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Videocassette, Kate Horsfield, producer (Chicago: Video Data Bank, 1995).

<sup>45</sup> Steina Vasulka, *Calligrams, Surveying the First Decade #5*. The result created visual rhythms of abstracted images that shifted back and forth within a split screen.

restrict their search for alternative imagery.<sup>46</sup> What they wanted to achieve was an understanding of electrical energy (organized as frequencies and voltages) and they did this without turning knobs or changing the external inputs to adjust the voltage control.<sup>47</sup>

Later works by the Vasulkas involved the use of numerous video imaging tools and techniques. A case in point is Woody Vasulka's 1974 videotape *C-Trend* (Fig. 17). The latter incorporated two distinct electronic modifications. First, Vasulka skewed the shape of the video frame—the raster.<sup>48</sup> Then, by using the Rutt-Etra Scan Processor as a scan deflection tool (to modify the electronic image), he translated each horizontal line scanned by the electronic beam into “a live graphic display of voltage.”<sup>49</sup> Vasulka explained that in this case, “emphasis has shifted towards a recognition of a time/energy

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<sup>46</sup> Furlong writes, “while a number of people in the late 1960s and early 1970s were working with video colorizers, mixers, and synthesizers, the Vasulkas took a different approach. ‘Our idea right from the beginning was not to have a synthesizer. We always wanted to have open ended boxes,’ Steina explains.” The Vasulkas wanted to take a modular approach towards video imaging by using another electronic input rather than turning the knobs of video imaging tools until achieving the desired imagery. In looking closely at the methods and types of video imaging sought out by the Vasulkas, Furlong notes that “most devices that incorporated colorizing, mixing, and synthesizing functions could be controlled either through external inputs—known as voltage control—or by control knobs. By opting for input-only control, the Vasulkas were imposing an organizing structure that was derived not only from their own preconceived ideas about what might make an interesting image, but from the system itself. This is not to elevate their approach over one that Steina has called ‘knob twisting,’ but to illustrate that artists had certain choices in how their tools could be used.” See Furlong, “Notes toward a History of Image-processed Video: Steina and Woody Vasulka,” p. 14.

<sup>47</sup> *Ibid.*

<sup>48</sup> *Surveying the First Decade*, p. 66.

<sup>49</sup> *Ibid.*

object and its programmable building elements—the wave form.”<sup>50</sup> As for the empty spaces between the rolling imagery, they consist of “horizontal and vertical blanking intervals between electronic frames.”<sup>51</sup> The fusion of these two processes resulted in a three dimensional abstraction synchronous to the sounds of cars on a highway. This once again brings to mind the explicit interrelationship of sound and image in video artistic practices.

The Vasulka’s interest in the inner workings of video electronics is evident in their work that investigated the properties of audio and video signals. Experimenting with these signals was the key to their productions, which most often visualized sound. Furlong explains that two major interests taken on by the Vasulkas included the exploration of the relationship between audio and video signals and the construction of the video frame.<sup>52</sup> These two aspects can be seen in numerous videotapes, including *C-Trend* (1974) and *Reminiscence* (1974). In both pieces, framed topographical environments are transformed into visual and audio abstractions. These videotapes, along with films constructed from 1974 to 1977, exemplify Woody Vasulka’s belief that “video images were nothing more than electromagnetic energy constructed in time..., organized as voltages and frequencies—a temporal event.”<sup>53</sup> The tapes also demonstrate the relationship between time and waveform by using analog image processing, multiple

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<sup>50</sup> John Minkowsky and Bruce Jenkins, *Beau Fleuve* (Buffalo: Media Study/Buffalo, 1979).

<sup>51</sup> *Surveying the First Decade*, p. 66.

<sup>52</sup> Furlong, “Notes toward a History of Image-processed Video: Steina and Woody Vasulka,” p. 14.

<sup>53</sup> *Ibid*, pp. 14-15.

camera set-ups, and keyers to articulate spatial, temporal, and sound/image environments.<sup>54</sup> Responsible for producing patterns within the cathode ray tube, these elements aided in creating the Vasulkas' didactic oeuvre—one that contributed to the genre's character.

### **Dan Sandin and Phil Morton: Image Processing in Chicago Video Art**

The video-synthesis pioneer Dan Sandin, along with other frequent collaborators such as Phil Morton, Thomas Defanti, and Robert Snyder, helped to define an image processing format in Chicago. While producing color slides for a friend's light production company and working with the Moog Audio Synthesizer, Sandin realized that the same images could be made in video.<sup>55</sup> In 1970, the artist/engineer decided to build an imaging device modeled after the Moog audio synthesizer. The result was his Image Processor (IP), defined as a patch-programmable analog computer optimized for the manipulation of gray level signals.<sup>56</sup> By using multiple video inputs, Sandin was able to manipulate the raster by controlling the knobs of four different modules: the function generator, the differentiator, the value scrambler, and the adder multiplier (Fig. 18).<sup>57</sup> Since each component had a specific function and could be connected several ways to obtain unpredictable results, the setup of the IP was more flexible than most commercial

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<sup>54</sup> Zippay, *Artists' Video*, p. 190.

<sup>55</sup> Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," p. 305.

<sup>56</sup> Dan Sandin, *5 minute Romp Through the IP, Surveying the First Decade #5, Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Videocassette, Kate Horsfield, producer (Chicago: Video Data Bank, 1995). In this work Sandin personally delivers an explanation of his Image Processor by demonstrating its effects. The IP emulates photographic techniques such as colorizing, superimposing, burning and dodging.

<sup>57</sup> Dan Sandin, *5 minute Romp Through the IP, Surveying the First Decade #5*.

switchers.<sup>58</sup> This made it possible for other artists to develop and personalize their own imagery using the processor while simultaneously exploring its potential. Consequently, Sandin's curiosity in video technology helped to form a video art scene in Chicago. His custom designs were beneficial for Chicago artists, who no longer had to depend on commercial facilities for video equipment.

One of these artists was Phil Morton. In addition to working with Sandin in promoting the IP, Morton created video montages that exhibited traces of various styles. Although he had no interest in being affiliated with one genre in particular, a number of his works show signs of image processing.<sup>59</sup> This is evident in *General Motors* (Fig. 19) (1976), which examined the symbiotic relationship between man and machine. In it, Morton used Sandin's Image Processor to create a visual letter to his auto dealership, which he accused of inadequately servicing his van. In this video letter, the artist recants his experience in a tirade juxtaposed with sounds recorded from the faulty U-joints of his broken-down 1974 Chevy van. The imagery incorporated cannibalized excerpts from his earlier works, used as re-edited segments and distorted into abstract green and purple patterns.<sup>60</sup> As with Paik's video montages, Morton's work synthesized reprocessed imagery using multiple editing techniques. However, Morton focused on sociological issues rather than the aesthetics of electronic imaging.

Morton's narration in *General Motors* presented the problem of technological neglect through a comical comparison of his video equipment with his broken-down van.

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<sup>58</sup> Tamblyn, "Image Processing in Chicago Video Art, 1970-1980," p. 304.

<sup>59</sup> *Ibid*, p. 305.

<sup>60</sup> *Ibid*.

The former was fully functional and serviced correctly, while the latter was left in disrepair. The work professes the artist's dedication to video experimentation through technical efficiency. In essence, the message conveyed in *General Motors* stresses the importance of video technology as a necessary constituent of video art that must be in good working order.

### Ernie Gusella

For Ernie Gusella, image processing allowed the production of simple yet effective visual documents intended to confuse or play with the viewer's perception of reality. Two works that best demonstrate this are *Video-Taping* (Fig. 20) and *Exquisite Corpse* (Fig. 21).<sup>61</sup> In *Video-Taping* (1974), the artist split the television screen in half to create two side-by-side self-portraits in which the right image was an electronic negative of the left. Gusella used a suspended glass sheet from light poles, covered on the right hand side with black (or white) tape, as a filter/screen to distort the camera image.<sup>62</sup> As he removed the tape from the right side of the glass, his positive self-portrait emerged on the left side of the screen. Next, he placed the removed tape onto the left side of the glass to reveal his negative self-portrait on the right side of the screen. The artist further augmented these images by using the VideoLab (built by Bill Hearn)—a multi-channel switcher, keyer, and colorizer combined into one controllable unit. This device enabled Gusella to eliminate certain brightness levels of one video signal using the luminance

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<sup>61</sup> Gusella's visual pun "*Video-Taping*" was based on the term "videotape" and his use of black and white tape. See *Surveying the First Decade*, p. 62. The artist pointed the camera at the suspended glass sheet, thus separating him from the recording device. The set up is an implicit reference to Lacan's concept of the screen. In both cases, the screen fragments reality and leaves one with an image that can never really be seen.

<sup>62</sup> In this case, the image was the artist behind the glass sheet. It is important to note that the artist's right is the viewer's left.

keyer, and to replace it with a video signal produced by a second camera.<sup>63</sup> The resulting abstraction creates a level of confusion for the viewer, who does not completely see the image in its entirety.

In 1978, while using the VideoLab, Gusella produced *Exquisite Corpse* (Fig. 21). Obviously inspired by the Surrealist *Cadavre Exquis* (Fig. 22), the work presents a series of abstracted composite forms. In *Exquisite Corpse*, Gusella tries to mirror the Surrealist *Cadavre Exquis* by approximating images of his torso with close-ups of his face through a series of “quick, voltage-controlled live switching between two cameras.”<sup>64</sup> The resulting oscillations do not allow one to grasp the recorded frames of each switch. Instead, it generates a disoriented effect of image convergence. So, as one tries to visualize the first image another is superimposed over it, cutting the view off. In effect, the sequence denies one the ability to perceive a complete representation of Gusella. Here, the artist fragments reality playfully in real time, thus emphasizing the false authority of the televisual/recorded image.

### **Barbara Buckner**

The extensive use of imaging techniques eventually gave way to new areas of inquiry. The early work of video artists who employed image processing helped to set the stage for the next generation who continued to see the potential of the medium. As a result, video art began to evolve into numerous genres that employed documentation, narration, installation, as well as a variety of other tactics. The work of Barbara Buckner features the continued use of image processing in the late 1970s by combining metaphorical subject matter with visual and symbolic imagery. Buckner’s 1978 video

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<sup>63</sup> *Ibid.*

<sup>64</sup> *Ibid*, p. 63.

series, *Pictures of the Lost* (Fig. 23), presented a mysterious synthesis of image-processed imagery with visual metaphors.<sup>65</sup> The syncretism creates a type of visual narration represented by allegorical landscapes. Produced at the Experimental Television Center in Binghamton, *Pictures of the Lost* is composed of twenty-two silent sub-works that take the viewer through landscapes fluctuating between figuration and abstraction.<sup>66</sup> During the journey, the enigmatic work reflects a metaphorical composition of strong visual and symbolic significance.<sup>67</sup> The imagery is transformed into shifting complementary colors, which distinguishes the contrasts from light to dark and replaces the original shades of white, black and gray levels with red, green, blue and orange combinations. The result generates rhythmic visions created by a tension between abstracted and recognizable forms.<sup>68</sup> In altering electronic signals, Buckner transforms these states of consciousness into organic landscapes and visual fragmentations. Just as it was the case for the other artists mentioned in this paper, image processing allowed one to comment on the cultural form of television by fragmenting reality and presenting TV's false authority of the real.

The initial aim of first-generation video artists and engineers was thus to manipulate the standard television signal. This procedure was deemed essential in order to open up a new territory for artistic expression. Although many of these individuals had their own methodological approaches, they all had one thing in common: each used

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<sup>65</sup> Other examples featuring Buckner's exploration of the medium's formal properties can be found in *Selected Works I* and *II*. *Selected Works I* includes *Hearts* (1979), *Heads* (1980), and *Millennia* (1981). *Selected Works II* includes *The Golden Pictures* (1980) and *Greece to Jupiter: It's a Matter of Energy* (1982).

<sup>66</sup> *Surveying the First Decade*, p. 65.

<sup>67</sup> Zippay, *Artists' Video*, p. 215.

<sup>68</sup> *Ibid.*

image processing to subvert the commercially oriented apparatus in one way or another. In doing so, the consequential implications of their actions helped to formulate the early nature of first-generation video art. What emerged from this period of experimentation was the genre of Image-Processed Video art. In the next chapter, I will address the significance of the Portapak videotape camera, and discuss the historical context of this type of video art in relation to the modernist legacy of the 1950s.

## CHAPTER 5 THE PORTAPAK

The central question concerning the conception of video art revolves around why artists and engineers began using the medium for aesthetic purposes. For social activists, video (as a counter-commercial alternative) was seen to possess the ability to enact social change. For artists interested in subverting the restrictive medium, liberating video socially provided the possibility of opening it up for artistic inquiry. Regardless of the agenda, a dialogical relationship between the artist and the viewer was established in all cases. Mediated through the televisual display, this communicative dialogue becomes a type of interactive engagement—one that activates a liaison between the work and the viewer. It is within this triadic relationship that the overall meaning is established. The viewer finalizes the processed manipulations and thus confirms a bond that inextricably binds visually coded messages within a given social construct.<sup>1</sup> Here the deconstructed and recomposed imagery that involves a participatory dimension empowers the individual by revealing a political rupture in the seamless flow of entertainment.<sup>2</sup> In essence, the alteration of the standard television signal generates a type of dialectic that

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<sup>1</sup> Video art is not self-referential, because it requires exterior factors to complete its meaning; it requires a triadic interplay between the artist, the work, and the spectator/viewer. Television is meant to be watched and depends upon the viewer for its vitality. The same applies to image-processed video, for it too involves the TV set and requires a viewer.

<sup>2</sup> John G. Hanhardt, “Dé-collage and Television: Wolf Vostell in New York, 1963-64,” *Visible Language*, 26.1/2 (1992): p. 124. The viewer confirms the fragmentation of the standardized signal and its altered context.

helped artists and engineers to liberate video from the stronghold of broadcast television—an attempt at disassociating the medium from its commercial ties.

### **Addressing the Portapak**

The early development of video art involved two major moves. These include the initial deconstruction of the television monitor as an art-oriented object and the use of the Sony Portapak videotape camera. These important developments established two phases in first-generation video art and helped to form subsequent genres (e.g., narrative, documentary, and sculptural). The first stage involved the distortion of the television monitor using image processing tools and had the greatest significance in legitimizing video as an art medium. The second juncture was initiated by the inception of the Portapak, which liberated the medium by opening it up to encompass several new areas of exploration. The standard historical account of video, as Jon Burris points out, ascribes its materialization to the arrival of the Sony Portapak.<sup>3</sup> But this characterization begs the question: was the videotape camera responsible for the creation of video art?

When referring to video art in general the first thing that comes to mind is the word “video.” Yet, the inclusion of this term in a type of pre-videotape art initially seems precarious. This is because it implies that works prior to the introduction of the camera were not about video, but instead about television. Consequently, one must ask what the term “video” means in both a pre- and post-1965 context. According to Roy Armes, “video could only come into its own as a medium when provision of portable video camera and recorder units freed it from subservience to broadcasting and the domestic

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<sup>3</sup> Jon Burris, “Did the Portapak cause Video Art: Notes on the Formation of a New Medium,” *Millennium Film Journal*, no. 29 (1996): pp. 5-6.

video cassette system.”<sup>4</sup> Here, Armes suggests that in a technological context video art was inextricably bound to that which produces videos: the videotape camera. His statement inconveniently places early productions that experimented with the standard television signal—but did not use videotape—outside of what is now referred to as video art.<sup>5</sup> Conversely, Rosalind Krauss in her look at artistic practices in an age of the post-medium condition argues that Richard Serra’s *Television Delivers People* (1973) (Fig. 24) acknowledges that “video was in fact television,” a broadcast medium which “splinters spatial continuity into remote sites of transmission and reception.”<sup>6</sup> In this regard, video is a means of transference, where electronic codes are disseminated into the cathode ray tube as televised visualizations. Thus to make a distinction, “video” refers to the signal, which is a means of transmission, while “video art” references works that alter both the television/video medium aesthetically. In this way, video artistic practices do not always require the use of videotape.

### **Early Experimental Video and the Modernist Legacy**

Theoretically, early experimental video raised some concerns about the particular nature of the imagery produced. This is because there are many similarities between the

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<sup>4</sup> Roy Armes, *On Video* (New York: Routledge, 1988), p. 128.

<sup>5</sup> In the same tradition, Sherry Miller writes that the term video “reinforces the use of video as a means of creation and expression.” She makes a distinction “between the medium of video and that of the television.” The former refers to the medium with which art is made and the latter is one mode of transmission. See Sherry Miller, “Electronic Video Image Processing: Notes toward a Definition,” *Exposure*, 21.1 (1983): p. 22. My problem with this interpretation is that Miller implies that “the term ‘video art’ places emphasis on the idea of video as a means of making art rather than on television as a means of transmitting art.” I would suggest that one could not have video art without television—at least during the 1960s up to the late ‘80s.

<sup>6</sup> Rosalind Krauss, “*A Voyage on the North Sea: Art in the Age of the Post-Medium Condition* (New York: Thames & Hudson, 1999), p. 30.

preceding dominant form of painting (e.g., abstract expressionism) and the distortions generated by image processing devices. Thus, the question that emerges is why abstraction? Ultimately, abstraction was the means with which video artists of the late 1960s and early 1970s were able to separate their work from commercial imagery—a methodology based on the experimental exploration of the medium’s formal properties.

So where does video art relate to medium-specificity? In Marcel Broodthaers’s presentation of a fictitious museum entitled the “Museum of Modern Art: Eagles Department,” Rosalind Krauss sees the disappearance of the individual arts as medium-specific.<sup>7</sup> It is in this termination and the consequential critique of individual media—drawing, painting, and sculpture—as inherently distinct art forms that pioneering alternatives such as video surfaced in the 1960s. What Krauss purports to be a type of “differential specificity,” which required looking beyond reductivist modernism for new possibilities in art, was a consequence of a shift in artistic and social practices during the 1960s and 1970s—a climate referred to as “a post-medium condition.”<sup>8</sup> Products of differential, or what might be called alternative specificity, can be seen in the innovative experimental works of Fluxus artists and conceptual investigations of art. Video fits into this historical context as a post-medium phenomenon, for it too challenged the subjugated archetype set forth by the modernists. For artists working with the television medium, video was to “shatter the notion of medium-specificity” and to subvert artistic trends

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<sup>7</sup> *Ibid*, p. 12.

<sup>8</sup> *Ibid*, pp. 9, 30. Also see Krauss’s “Sculpture in the Expanded Field,” *October*, no. 8 (Spring 1979): pp.31-44. The modernist formula aimed at reducing a specific medium to its essence.

paralleling the tradition of modernism.<sup>9</sup> Regarding this paradigm shift Krauss argues that since the Portapak led to the advent of video art and the subsequent end to a progressive artistic endeavor truest to the art practice itself, it seems as if video—as well as other differential media—was essentially antithetical to the aims of purist art.<sup>10</sup> She claims that this novel medium was a product of postmodern tendencies that marked the end of art. On the contrary, I would argue that video art was not the end of art but an innovative solution to a restrictive, commercialistic, and elitist art institution, and its incorporation came at a time when the emerging electronic culture yearned for new methods of expression.

### **The Portapak and Its Legacy**

Video art relied on technological advancements that served artists and engineers in a multiplicity of ways. For instance, the introduction of the Portapak camera and its subsequent modifications furthered the potential of the medium by making it more accessible. In Deirdre Boyle's brief history of documentary video she explains that the standardization of videotape equipment not only boosted competition among video manufacturers to accelerate the development of enhanced portable cameras, but it also allowed more people to explore what the medium had to offer.<sup>11</sup> After the completion of the AV format Portapak in 1970, tapes made for one type of camera could be played back

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<sup>9</sup> *Ibid*, pp. 24, 30.

<sup>10</sup> *Ibid*, p. 24. I would argue that it was the television, as an artistic apparatus, that led to the advent of video art, not the portapak.

<sup>11</sup> Deirdre Boyle, "A Brief History of American Documentary Video," *Illuminating Video: An Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer, editors (New York: Aperture in Association with the Bay Area Video Coalition, 1990), p. 56.

on competing manufacturers' equipment.<sup>12</sup> Yet, the first version of the Sony Portapak was nothing more than a half-inch reel-to-reel system capable of recording black-and-white images and a single synchronous sound track.<sup>13</sup> Unfortunately, the system had its disadvantages; the images were difficult to edit and the sound was nearly impossible to dub.<sup>14</sup>

While it may be true that video editing was underdeveloped in the late 1960s, it did not inhibit artists such as Paik from using the camera. Furthermore, advances in the portable unit had a profound impact on the production of video art during the 1970s.<sup>15</sup> For Dan Graham, the camera allowed him to feed back “indigenous data in the immediate, present time environment” and to connect it with “parallel time/space continua.”<sup>16</sup> This immediacy permitted those such as Graham to approach the medium as a documentary device, capable of recording situations, events, or other visual

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<sup>12</sup> *Ibid.*

<sup>13</sup> Armes, *On Video*, p. 128.

<sup>14</sup> *Ibid.* Concerning the editing options of the late 1960s Chris Hill writes, “editing videotape between 1968-1971 was primitive; aesthetic strategies and narrative constructions that relied on precise editing emerged only after the development of sophisticated editing equipment made editing feasible at media art centers, TV labs, and public access centers.” See Chris Hill, “Attention! Production! Audience!: Performing Video in its First Decade, 1968-1980,” *Surveying the First Decade: Video Art and Alternative Media in the U.S.*, Editors, Doug Hall and Sally Jo Fifer Horsfield (Chicago: Video Data Bank, 1995), p. 20.

<sup>15</sup> Woody Vasulka wrote that “by the mid-1970s video as an art was fully entrenched in the galleries, with many developed genres, forms and concepts.” For more information on the Sony CV portapak see, Woody Vasulka, *Eigenwelt der Apparatewelt: Pioniere der Elektronischen Kunst*, David Dunn, editor (New Mexico: The Vasulkas Inc., 1992), p. 150.

<sup>16</sup> Dan Graham, “Film and Video: Video as Present Time,” *Video/Architecture/Television* (Halifax: Nova Scotia School of Art and Design Press, 1979), p. 62.

phenomena. It allowed the camera operator to capture an environment and to alter the time-based medium. In this regard, the videotape camera was nothing more than a type of imaging tool, and like the television set it provided a signal that could be processed.<sup>17</sup>

Nevertheless, what is unique about the Portapak is its ability to record. Its introduction aided in expanding the medium during a time when video was confined to closed circuit installations. The implication of this expansion was significant, since the device opened up the medium to the public—however, it also problematized its use in the gallery space.<sup>18</sup> Before the portable camera, the medium's use was restricted to those who understood the inner workings of electronics (or had the resources to acquire imaging tools). With the advent of the videotape camera almost anyone could explore the medium. This soon led to the creation of sub-genres within the movement, including narrative, documentary, performance, installation, and video works based on the formal and structural properties of electronic imagery and sound.

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<sup>17</sup> This was the case in Skip Sweeney's *Illuminatin' Sweeney*, where the camera was used to derive video feedback.

<sup>18</sup> It required rewinding and rethreading.

## CHAPTER 6 SUMMARY AND CONCLUSIONS

Artists and engineers developed video art in the late 1960s and early 1970s with the belief that the innovative, experimental medium possessed the capacity to enact ideological change in the evolving electronic culture of the twentieth century. Through a magnifying lens of this postmodern shift, I have linked the Fluxus/Neo Dadaist program with early video art practices (that altered the standardized signal) by focusing on the element of deconstruction that is used in Image-Processed Video art. Motivated by the potential of sublating art into life, Neo Dadaists such as Nam June Paik and Wolf Vostell began to distort television monitors in Fluxus-like deconstructions that challenged bourgeois televisual sensibilities. Theoretically, the confrontation was seen as a way not only to subvert the commercial apparatus, but also to rejuvenate an avant-garde aesthetic—one that could bring about societal change. For first-generation video artists, this methodology provided the underlying framework that would help to legitimate image-processed video as an artistic practice. This was accomplished through a two-part sequential program: first, the artists rejected the restrictive, commercialistic connection of object-oriented art by debunking existing industrial capitalist and artistic institutions; secondly, they stripped these objects of their original iconic meaning using image processing tools and techniques.

The conceptualization of subsequent genres in video art was aided by earlier practices that exploited the emancipatory potential of imaging technologies.<sup>1</sup> While works such as Wolf Vostell's *TV-Dé-collage* (1963) (Fig. 9) and Nam June Paik's *Demagnetizer (Life Ring)* (1965) (Fig. 1) set the formative structure for this new medium, technological advancements broadened the capacity for individuals to generate innovative visualizations (Fig. 15). These advances, which gave way to the relatively inexpensive, accessible, and portable Sony Portapak, expanded the boundaries of the medium. For artists and engineers, the camera presented itself as a contraption capable of widening the gap between the conception of video as a technical craft and that of video as an artistic medium. Moreover, video was thought to be capable of producing social change through the formation of an alternative television culture. But the liberation of the medium only had implications in what it allowed artists and engineers, such as the Vasulkas, Stephen Beck, and Dan Sandin to do with video, analogue, and digital media. The revolutionary claims glorified what engineers generated from the commercial medium that they appropriated.<sup>2</sup> But, electronic image processing also helped to establish a differential medium, which continued the evolving materialization of new media. It is in this evolution of the initial conception and subsequent developments in video art that we move towards a noncommercial technology—one that contributed greatly to the polemics of the 1960s.

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<sup>1</sup> Even though the categories now drawn were virtually non-existent during the early emergence of the medium in the 1960, it did not hinder the development of new video art genres.

<sup>2</sup> I am not downplaying the importance of their work. Instead, I hope to put the ramifications of image processing in perspective. In this regard, claims stating radical or revolutionary implications, which can be found throughout the literature of this topic, overemphasize, and often overlook the real social significance of the genre.

APPENDIX  
FIGURES

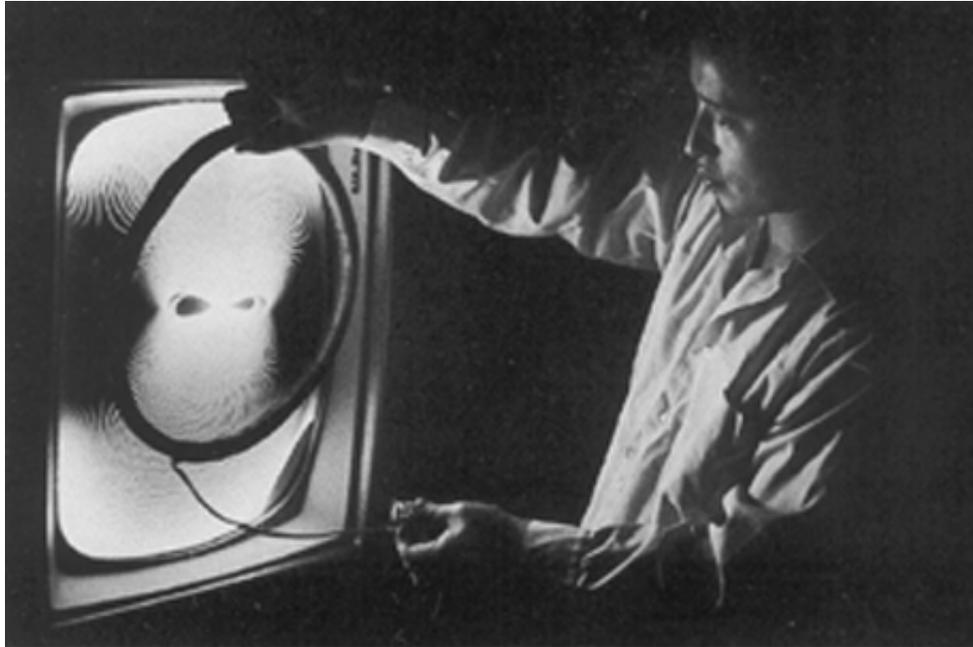


Figure 1. Nam June Paik, *Demagnetizer (Life Ring)*, 1965, handheld magnet applied to television set, approximately 18 inches in diameter, collection of artist (Farmer, *The New Frontier*, p. 48.).



Figure 2. Nam June Paik, *Prepared Television Sets*, 1963, manipulated television sets, installation view at *Exposition of Music–Electronic Television*, Galerie Parnass, Wuppertal, Germany, March 11-20, 1963 (Hanhardt, *The Worlds of Nam June Paik*, pl. 47.).

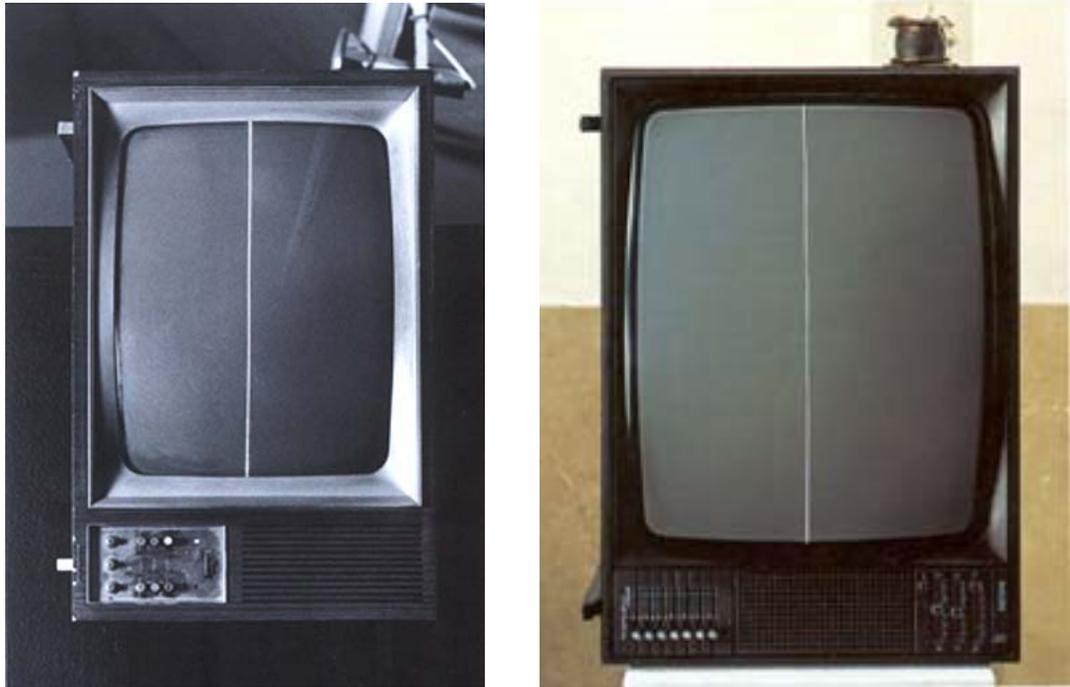


Figure 3. Nam June Paik, *Zen for TV*, 1963 (left), manipulated television set (only exists as a 1975 replica, right), *Exposition of Music–Electronic Television*, Galerie Parnass, Wuppertal, Germany, March 11-20, 1963 ((left) Bremen, *Nam June Paik: Fluxus/Video*, p. 71, (right) Hanhardt, *The Worlds of Nam June Paik*, pl. 144.).



Figure 4. Nam June Paik, *Manipulated TV*, 1963, manipulated television set, collection of Dieter Rosenkranz, Wuppertal, installation view at *Exposition of Music–Electronic Television*, Galerie Parnass, Wuppertal, Germany, March 11-20, 1963 (Hanhardt, *The Worlds of Nam June Paik*, pl. 45.).

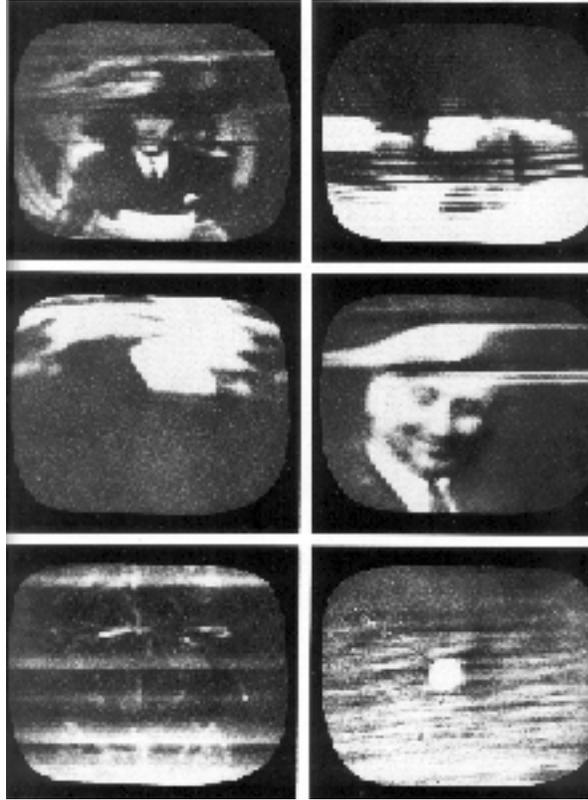


Figure 5. Nam June Paik, *Manipulated TV*, 1963, manipulated television set, video frames, collection of Dieter Rosenkranz, Wuppertal, *Exposition of Music–Electronic Television*, Galerie Parnass, Wuppertal, Germany, March 11-20, 1963 (Bremen, *Nam June Paik*, p. 73.).



Figure 6. Nam June Paik, *Magnet TV*, 1965, manipulated television with magnet, Whitney Museum of American Art, New York (Hanhardt, *The Worlds of Nam June Paik*, pl. 143.).



Figure 7. Nam June Paik, *Participation TV*, 1963 (1998 version), manipulated television with signal amplifiers and microphone (Black and White, silent), Whitney Museum of American Art, New York (Hanhardt, *The Worlds of Nam June Paik*, pl. 145.).



Figure 8. Mimmo Rotella, *Untitled*, 1963, décollage poster, Galerie J, Paris (Arnason, *History of Modern Art*, pl. 750.).



Figure 9. Wolf Vostell, *TV-Dé-collage*, 1963, manipulated television set, at *An Afternoon of Happenings, Dance, and Music*, Yam Festival, South Brunswick, New Jersey, May 1-31, 1963 (Hanhardt, *The Worlds of Nam June Paik*, pl. 109.).



Figure 10. Eric Siegel, *Einstein*, 1968, video frames, Video Databank (Horsfield, *Surveying the First Decade*).

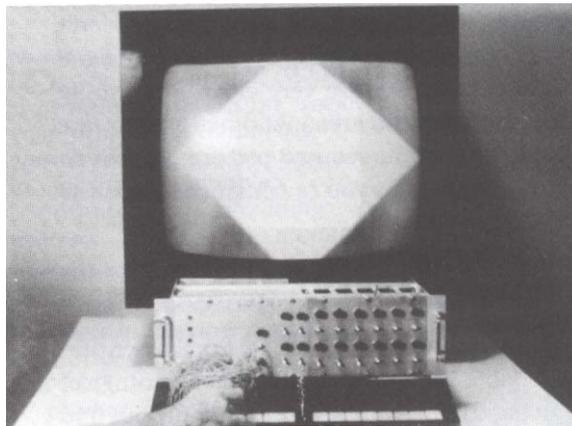


Figure 11. Eric Siegel, *EVS Videotape*, 1970, video frame, made at the Howard Wise Gallery, New York (Dunn, *Eigenwelt der Apparatewelt*, p. 117.).



Figure 12. Skip Sweeney, *Illuminating Sweeney*, 1975, video frames, Video Databank (Horsfield, *Surveying the First Decade*.).

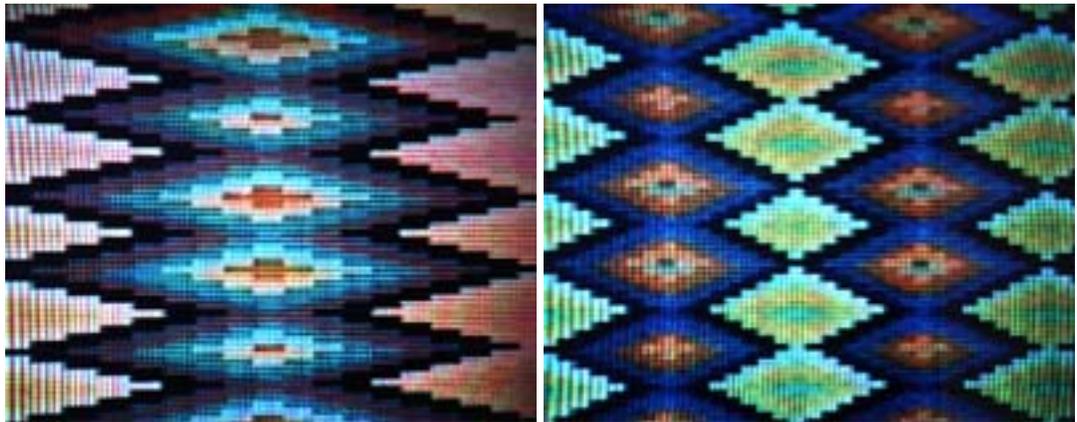


Figure 13. Stephen Beck, *Video Weavings*, 1976, video frames, Video Databank (Horsfield, *Surveying the First Decade*.).



Figure 14. Stephen Beck, *Video Weavings*, 1976, video frame, Video Databank (Horsfield, *Surveying the First Decade*.).



Figure 15. Nam June Paik, *Merce by Merce by Paik*, 1978, video frames, Video Databank (Horsfield, *Surveying the First Decade*.).



Figure 16. Woody and Stiena Vasulka, *Calligrams*, 1970, video frame, Video Databank (Horsfield, *Surveying the First Decade*).

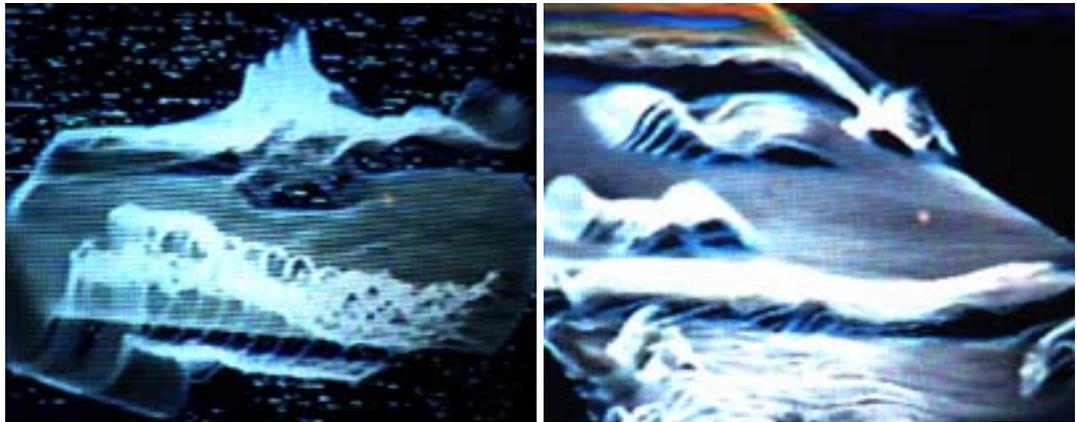


Figure 17. Woody Vasulka, *C-Trend*, 1974, video frames, Video Databank (Horsfield, *Surveying the First Decade*).



Figure 18. Dan Sandin, *5 minute Romp Through the IP*, 1973, video frames, Video Databank (Horsfield, *Surveying the First Decade*).



Figure 19. Phil Morton, *General Motors*, 1976, video frame, Video Databank (Horsfield, *Surveying the First Decade*).



Figure 20. Ernest Gusella, *Video-Taping*, 1974, video frames, Video Databank (Horsfield, *Surveying the First Decade*).



Figure 21. Ernest Gusella, *Exquisite Corpse*, 1978, video frames, Video Databank (Horsfield, *Surveying the First Decade*).



Figure 22. Man Ray, Yves Tanguy, Joan Miro and Max Morise, *Cadavre Exquis*, 1928, paper and ink (Rubin, *Dada & Surrealist Art*).

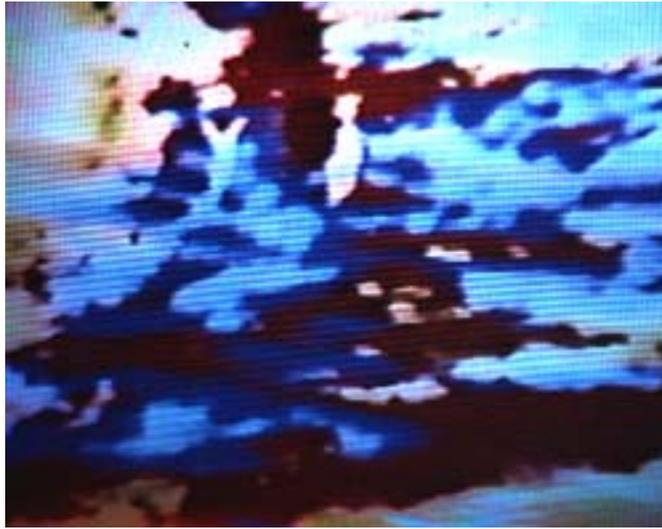


Figure 23. Barbara Buckner, *Pictures of the Lost*, 1978, video frame, Video Databank (Horsfield, *Surveying the First Decade*).

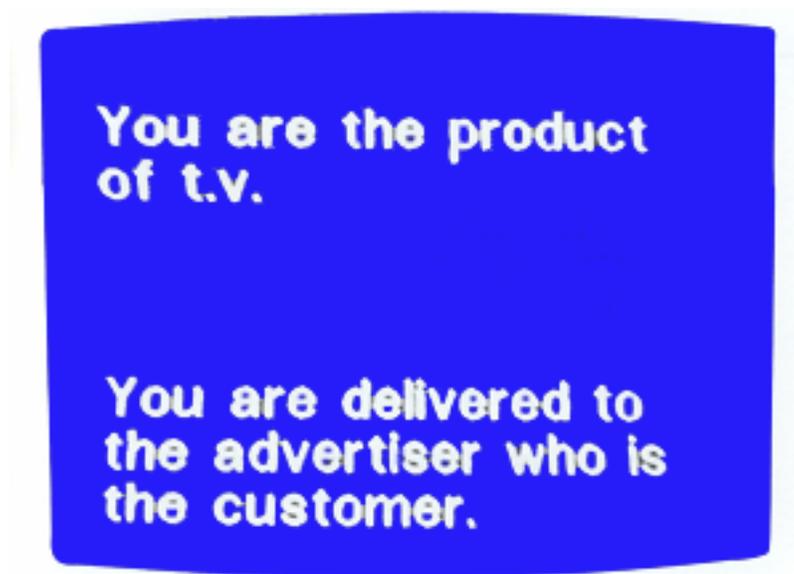


Figure 24. Richard Serra, *Television Delivers People*, 1973, video frame, (Krauss, "A Voyage on the North Sea," pl. 27.).

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## BIOGRAPHICAL SKETCH

Jeremy Culler received his Masters of Arts from the University of Florida in the spring of 2004 with an emphasis in Modern and Contemporary Art. He will begin a PhD program in the fall, where he will continue his studies concerning post-war American and European art, focusing on the transition from the modernist program—tracing figuration to abstraction in painting and sculpture—to post-modern shifts in art practices. In addition, he plans to continue researching the emergence of video art and the establishment of new media as categories of art history.