Title:
Videology: A journey into the archive of obsolete video through media archaeology

Abstract:
This research project stems from my interest in obsolete consumer video cameras and explores what new, empirical, and theoretical, knowledge can be created with these outdated media devices through the practical application of media archaeological approaches. Much like traditional archaeology digs through ancient ruins, media archaeology rummages through the audio-visual artifacts that make up the material archive of culture (Huhtamo and Parikka 2011, 3). However, currently, media archaeology is a series of stratified approaches with no established methodology. It is not the intention of this research project to propose a unified methodology for media archaeology but instead take existing approaches by key figures in the field and allow them to work together in the examination of an obsolete media device, specifically obsolete consumer video cameras. I propose a practical collaborative framework, consisting of several heterogenous media archaeological approaches, applied to each obsolete consumer video camera examined for this research project.

This research project forms two interweaving lines of enquiry. The first is concerned with the apparatus itself, the obsolete consumer video camera, and the historical and cultural context that surrounds each device. Along with historical context and cultural impact, user interaction, through hands-on engagement and media created, will also be explored to provide a complete analysis of each obsolete consumer video camera. The second line of inquiry of this research project takes place in the form of my practice-based short film *Videology*, a structuralist film that visually explores the technological conflict found within each of the three obsolete consumer video cameras. The content of *Videology* is self-reflexive and concerned with showing the technology used in its own creation. With no traditional narrative, the audience engages in reading the technology of the film.

VIDEOLOGY

A journey into the archive of obsolete video through media archaeology
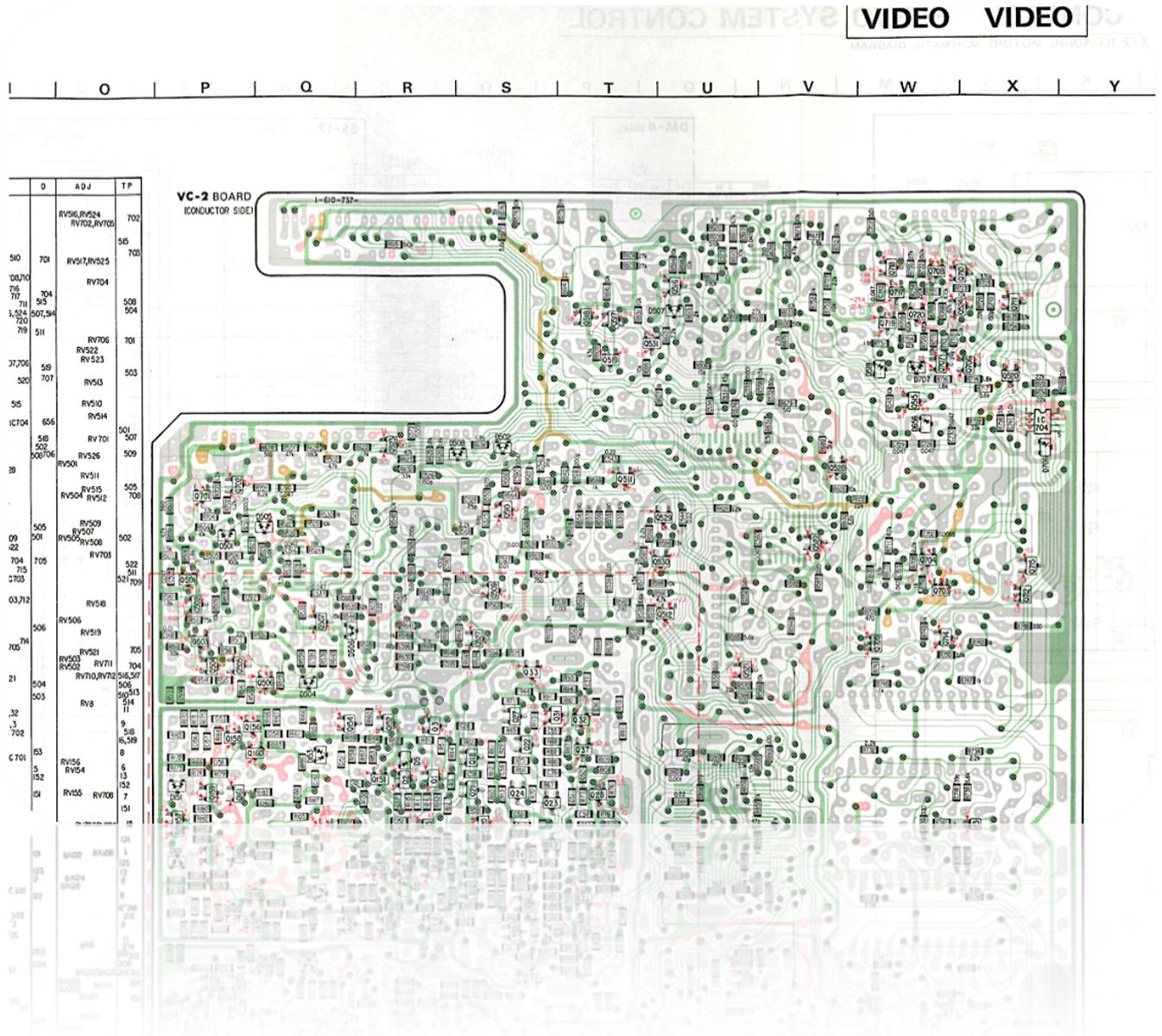

Fig. 1. Diagram from Sony Betamovie manual (Sony 1983)

David Brauns

Submitted in accordance with the requirements for a degree of Doctor of Philosophy.

The University of Kent

School of Arts 2023

The author confirms that the work submitted is his own and that credit has been given where

reference to the work of others has been made.

Abstract

This research project stems from my interest in obsolete consumer video cameras and explores what new, empirical, and theoretical, knowledge can be created with these outdated media devices through the practical application of media archaeological approaches. Much like traditional archaeology digs through ancient ruins, media archaeology rummages through the audio-visual artifacts that make up the material archive of culture (Huhtamo and Parikka 2011, 3). However, currently, media archaeology is a series of stratified approaches with no established methodology. It is not the intention of this research project to propose a unified methodology for media archaeology but instead take existing approaches by key figures in the field and allow them to work together in the examination of an obsolete media device, specifically obsolete consumer video cameras. I propose a practical collaborative framework, consisting of several heterogenous media archaeological approaches, applied to each obsolete consumer video camera examined for this research project.

Like media archaeology, this research project is interested in examining obsolete consumer video cameras through the unique failures, not the successes. The points of interest are concepts, ideas and designs that did not work. Between the late 1960's and the early 2000's, camera manufactures engaged in an economically fueled race to produce the best-selling consumer video camera. This competition resulted in laboratory like technological experimentation. New and innovative ideas lead to odd and short-lived combinations of cameras in direct technological conflict with themselves. This research project examines three such technologically conflicted cameras: the Sony Mavica, Tyco VideoCam and Sony Betamovie.

This research project forms two interweaving lines of enquiry. The first is concerned with the apparatus itself, the obsolete consumer video camera, and the historical and cultural context that surrounds each device. To prevent media archaeology from becoming, as Timothy Druckrey warns, 'the mere rediscovery of the forgotten, the establishment of oddball paleontologies, of idiosyncratic genealogies, uncertain lineages, the excavation of antique technologies or images' (Druckrey 2006, ix), it is important to establish why an obsolete media device is worth examining. Along with historical context and cultural impact, user interaction, through hands-on engagement and media created, will also be explored to provide a complete analysis of each obsolete consumer video camera.

The second line of inquiry of this research project takes place in the form of my practice-based short film *Videology*. *Videology*, is a structuralist film that visually explores the technological conflict found within each of the three obsolete consumer video cameras. The content of *Videology* is self-reflexive and concerned with showing the technology used in its own creation. With no traditional narrative, the audience engages in reading the technology of the film. The short film is divided into three parts of visually expressed technological conflict. Part one: 'Stillness' (Sony Mavica), is the deconstruction of the three visual elements found in both still and moving images: recording medium, light, and composition. Part two: 'Watching' (Tyco VideoCam), examines both sides of the ubiquitous nature of video surveillance, with the audience moving from viewer to subject. Part three: 'Pure Video' (Sony Betamovie), is the exploration of video that exists independent of recording and playback. Each of the three parts of *Videology* work in collaboration with a chapter of the written portion of the research project.
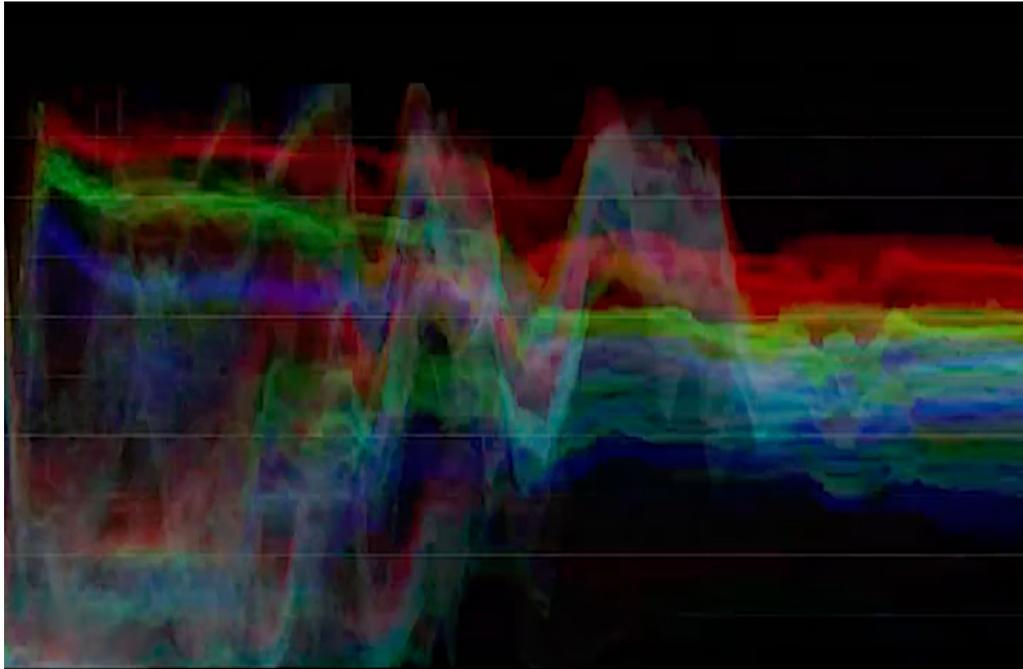
Videology

Fig. 2. Screengrab from *Videology* (Brauns 2023)

Running time: 25 minutes and 59 seconds

Password: PhD

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Introduction

This research project stems from my interest in obsolete consumer video cameras and explores what new, empirical, and theoretical, knowledge can be created with these outdated media devices through the practical application of media archaeological approaches. Much like traditional archaeology digs through ancient ruins, media archaeology rummages through the audio-visual artifacts that make up the material archive of culture. The applicable scope of media archaeology extends to all media (Huhtamo and Parikka 2011, 3). However, currently, media archaeology is a series of stratified approaches with no established methodology. It is not the intention of this research project to propose a unified methodology for media archaeology but instead take existing approaches by key figures in the field and allow them to work together in the examination of an obsolete media device, specifically obsolete consumer video cameras. I propose a practical collaborative framework consisting of several heterogenous media archaeological approaches applied to the Sony Mavica, Tyco VideoCam and Sony Betamovie, with each approach working together.

Like media archaeology, this research project is interested in examining obsolete consumer video cameras through the unique failures, not the successes. The points of interest are concepts, ideas and designs that did not work. Between the late 1960's and the early 2000's, camera manufactures engaged in an economically fueled race to produce the best-selling consumer video camera. Being the first to introduce something new meant a manufacturer controlled the market share. This was usually achieved with small technological leaps or the addition of new physical traits such as the introduction of the viewfinder or LCD screen. In the current media landscape, software updates take place internally but with consumer video cameras of the 1980s and 1990s, physical design changes of the camera body itself were

often used to answer technical problems and issues with user interaction. The competition between camera manufacturers resulted in laboratory like technological experimentation. A person interested in purchasing a new consumer video camera at the time would be assaulted with the sheer amount of choice. The vast differences in physical design of each camera, make it difficult to believe they all do the same thing. New and innovative ideas lead to odd and short-lived combinations of cameras in direct technological conflict with themselves. This research project examines three such technologically conflicted cameras: the Sony Mavica, Tyco VideoCam and Sony Betamovie.

Today the word 'video camera' has become a generalized term to casually reference several types of cameras spanning multiple decades. A video camera is technically defined as a recording device with a sensor, lens and operating controls attached to a video tape recorder (VTR). The Sony Portapak, released in 1967 is the world's first video camera. What most people think of when they think of a video camera is really a 'camcorder', with an internal recording mechanism. The term camcorder is a blended word that combines camera and recorder in one phrase. In 1983, the Sony Betamovie is released, which incorporated the VTR inside of the camera, and is the world's first camcorder. Because of this engrained common misconception, and to avoid unnecessary confusion regarding forgotten and obsolete technology, this research project has chosen to use the term 'consumer video camera', which encompasses both video cameras and camcorders, when referring to the overall idea of the competition between camera manufacturers, and not discussing a specific camera.

People engage in some form of media archaeological practice on a regular basis, most likely without realizing it or that a field of study called media archaeology even exists. This engagement usually begins by simply coming across an obsolete media device. Whether

finding an old cellphone in the kitchen junk draw, discovering an old camera in the basement of a relative's house, or rummaging through a pile of electronics at a thrift store, old media devices seem to have a way of lingering. The archive that makes up media archaeology is all around us and constantly growing. I was reminded of this fact after I came across a box of VHS tapes someone had thrown out on my street. I decided to drag the box home and search through the tapes. My interest in media archaeology also began before I was aware such a field of study existed. I became fascinated with consumer video cameras as an adolescent. Growing up in the 1990s, I witnessed the excitement around the release of new video camera models and video formats, with them eventually falling into obsolescence.

This research project forms two interweaving lines of inquiry. The first is concerned with the apparatus itself, the obsolete consumer video camera, and the historical and cultural context that surrounds each device. Timothy Druckrey warns of the danger of media archaeology becoming a self-congratulating curiosity cabinet of quirky discoveries (Parikka 2012, 162). For some in the media, "archaeology" has come to supplant basic history and replace it with a form of material retrieval, as if the preservation of materiality is tantamount to preserving history itself. This has led to an archaeology of the apparatus itself, rather than an investigation of the scenes in which the apparatus found itself into the spheres of research and experience (Druckrey 2006, viii).

> The mere rediscovery of the forgotten, the establishment of oddball paleontologies, of idiosyncratic genealogies, uncertain lineages, the excavation of antique technologies or images, the account of erratic technical developments, are, in themselves, insufficient to the building of a coherent discursive methodology (Druckrey 2006, ix).

Druckrey believes that a broad accounting of the evolution of the apparatus, of the media image, of the history of the media effect, of excavating the embedded intellectual history, and so on, is the precursor of what will be an invaluable reconfiguration of a history largely

focused on the device and its illusory images. Similarly, the rediscovery of uncommon or singular apparatuses is neither decisive nor fully adequate to formulate an inclusive approach that distinguishes it from connoisseurship (Druckrey 2006, ix). Similar to Druckrey, this research project is interested in all the context and information that surrounds each obsolete consumer video camera.

Along with examining the historical context and cultural impact of each obsolete consumer video camera, user interaction through hands-on engagement and media created will also be explored to provide a complete analysis of each obsolete consumer video camera. If media archaeology is, in part, the study of objects that comprise the archive then it stands to reason that empirical engagement would allow for a much greater understanding of the archive. Hands-on experience with obsolete technological media removes the apparatus from the context of the past and places it in the present allowing for the creation of new empirical knowledge. Wolfgang Ernst uses the example of a radio being plugged in at a museum to show how an obsolete media apparatus can be brought into the present. "If a radio from a museum collection is reactivated to play broadcast channels of the present, it changes its status: it is not a historical object anymore but actively generates sensual and informational presence" (Ernst 2011, 241).

While Ernst's example of simply turning on an old radio transports it from the past to the present, obsolete consumer video cameras, like many media devices, are designed by manufacturers to be physically engaged with by the user. This intended use dictates the need for physical empirical engagement to fully explore each obsolete consumer video camera as part of this research project. Along with physical interaction with each camera, the media created will also be considered. A lot of the media devices examined in the context of media

archaeology are meant for consuming media, either through direct visual engagement with the user or through playback. In some instances, the media device itself is the media being consumed such as in the case of Erkki Huhtamo's, exploration of panoramas. This research project is interested in both the apparatus, obsolete consumer video camera, and the media created.

To fully examine the obsolete consumer video cameras explored in this research project and not have them become, as Druckrey warns, a 'curiosity cabinet', this research project will attempt to take the heterogenous approaches of media archaeology and create a framework allowing for the media archaeological exploration of each obsolete consumer video camera. First, the peripheral data of the obsolete consumer video camera will be examined including the box, manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's first definition of presence, operative presence, will be applied and bring the obsolete consumer video camera out of the past and into the present. Once transported to the here and now and in the hands of the user, this research projects advocates the need to explore images created by the camera, visual aesthetic, as a natural continuation of Sobchack's first definition of presence. This will then allow for the application of Sobchack's second definition of presence, presence effect, to be applied in which current media hierarchies are challenged by the obsolete consumer video camera simply by being "in the here and now". Finally, this challenging of media hierarchies will allow for the natural de-familiarization of current media devices proposed by Tom Gunning. This framework of heterogenous media archaeological approaches will be elaborated on in greater detail later in the introduction.

The second line of inquiry of this research project takes place in the form of my practice-based short film *Videology*. Practice as Research involves a research project in which practice is a key method of inquiry and where, in respect to the arts, a practice such as creative writing, dance, musical score/performance, theatre/performance, visual exhibition, film or other cultural practice is submitted as substantial evidence of a research inquiry (Nelson 2013 8-9). *Videology* is a structuralist film that visually explores the technological conflict found within each of the three obsolete consumer video cameras examined for this research project. Structural film is generally defined as an exploration of the visual and cognitive ideas of structure, process and chance, with viewing a film as an act of reading it. In structural film, form is the content (Rees 2011, 79). The content of *Videology* is self-reflexive and concerned with showing the technology used in its creation: obsolete consumer video cameras and other outdated video equipment. With no traditional narrative, the audience engages in reading the technology of the film. The short film is divided into three parts of visually expressed technological conflict. Part one: 'Stillness' (Sony Mavica), is the deconstruction of the three visual elements found in both still and moving images: recording medium, light, and composition. Part two: 'Watching' (Tyco VideoCam) examines both sides of the ubiquitous nature of video surveillance with the audience moving from viewer to subject. Part three: 'Pure Video' (Sony Betamovie) is the exploration of video that exists independent of recording and playback. Each of the three parts, works with, and supports a chapter of the written portion of the research project.

Structural film proposes that shaping the film's materials such as light, time and process create a new form of aesthetic free of symbolism or narrative. It combines the predetermined elements such as camera position, frame rate, repetition of shots with the chance of unpredictable events that occur at the moment of filming (Rees 2011, 81). *Videology*

combines the element of chance of structural film with Robin Nelson's multi-modal practice as research methodology in which he advocates for starting out with a 'research inquiry' instead of a set of questions which implies a definitive answer to be found. He states, "In my experience, PaR typically affords substantial insights rather than coming to such definite conclusions as to constitute 'answers'" (Nelson 2013, 30). The research inquiry for each camera correlates with the theme of their respective chapter and was used as a guide during filming. This combination of chance and research inquiries allowed for free experimentation in an effort to capture the 'unpredictable events during filming' which show the technology of the film.

Created by multiple obsolete consumer video cameras, and other outdated video equipment, spanning several decades, the diverse images in *Videology* are unified by Jussi Parikka's notion of technology existing in sedimented layers. Parikka suggests that "media archaeology sees media cultures as sedimented and layered, a fold of time and materiality where the past might be suddenly discovered anew, and the new technologies grow obsolete increasingly fast" (Parikka 2012, 3). Parikka's concept removes the periodization that normally separates media apparatuses and allows the archive to interact and create connections in ways not possible in linear histories. Examining obsolete media through the lens of remediation places all media within a connected timeline. Often this interaction of media apparatuses takes places on a theoretical level due to the fact that the majority of obsolete media apparatuses, for multiple reasons, either don't exist anymore or are destroyed. However, in the case of *Videology*, the multiple obsolete consumer video cameras used are still functioning and can make actual physical connections.

While Parikka's notion of technology existing in sedimented layers allows the obsolete

consumer video cameras used in the creation of *Videology* to interact, in order to fully express

their technological diversity, a modern control camera is needed. A control camera is able to

ground the obsolete consumer video cameras in the present by having a visual comparison

the viewer is accustomed to. The iPhone, standing in for all smart phones, is the obvious

choice because it is the modern-day equivalent of the consumer video camera. It can even be

argued that the iPhone is more prevalent than consumer video cameras ever were because of

size and ease of portability. Almost everyone has some kind of phone in their pocket with the

ability to take photos and video.

Practical Framework of Approaches

This research project will attempt to take proposed heterogenous approaches of media

archaeology by key figures in the field and create a framework allowing for the media

archaeological exploration of three specific obsolete consumer video cameras. First, the

peripheral data of the obsolete consumer video camera will be examined including the box,

manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's

first definition of presence, operative presence, will be applied and bring the obsolete

consumer video camera out of the past and into the present. Once transported to the here and

now and in the hands of the user, this research projects advocates the need to explore images

created by the camera, visual aesthetic, as a natural continuation of Sobchack's first definition

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presence, presence effect, to be applied in which current media hierarchies are challenged by

the obsolete consumer video camera simply by being "in the here and now". Finally, this

challenging of media hierarchies will allow for the natural de-familiarization of current media devices proposed by Tom Gunning.

Peripheral data, a term coined for this research project, is any external material that accompanies the obsolete consumer video cameras being examined. This includes the box, packaging, manual, contemporary reviews, marketing materials and commercials. Of course, this approach is not unique to this research project, and when available, these external materials help provide context to obsolete media devices during media archaeological research. An example of this is Machiko Kusahara's exploration of a 1930's Japanese optical toy named Baby Talkie; a version of the zoetrope meant to be placed on the gramophone turntable for the purpose of enjoying animations set to music. The description on the box says "[With this device] records you have got tired of will be fun again" (Kusahara 2011, 123). This simple description provides initial evidence of how the device works.

The illustration on the label of the Baby Talkie box depicts a family: father, mother, grandmother, teenage boy and girl and their young brother in his mother's arms, sitting on armchairs at a round table, on which a gramophone with a Baby Talkie has been placed. Having a *yo-ma* (western style room) as depicted in the illustration, was itself a symbol of a modern family. A round table and big chairs or sofa were essential items of a *yo-ma*, used to entertain guests and for after-dinner family gatherings. The scene shows an ideally democratic family relationship, with the parents offering the best seats to the children and the grandmother to enjoy the animation.

> The image suggests that this device offers ideal entertainment for such a "modernized" family. It is neither a cheap toy that children could buy from a little corner shop nor a onetime entertainment that would be abandoned soon. At least that is the message from the manufacturer (Kusahara 2011, 131).

The clothes worn by the family depicted in the illustration also provide cultural insight into the era the Baby Talkie was introduced. The mother and grandmother are wearing traditional kimonos, while the children have been dressed up in western-style garments and the father even wears a necktie. The children in western clothes immediately indicates they are from a well off family. The use of these cultural codes to project an image of a modern progressive, but still stable family reveals how traditional western cultures, each representing a specific value system, were combined in daily life.

The happy modern family, depicted in the illustration of the Baby Talkie, enjoying the newest media device is an example, as defined by Erkki Huhtamo, of topos. This scene of familial bliss is common in marketing materials and commercials from before the Baby Talkie until the present day. Topos is a stereotypical formula evoked repeatedly in different guises and for varying purposes. Such topoi accompany and influence the development of media culture. Derived from the memory banks of tradition, topoi mold the meanings of cultural objects. As discursive meaning processors, topoi not only express beliefs but can also serve rhetorical and persuasive goals, as evidenced in the field of advertising. New products are promoted by being packaged into formulas that are meant to strike the observer as novel, although they have been put together from ingredients retrieved from cultural archives (Huhtamo 2011, 28).

The use of topoi in promotional strategies exploits their attraction value but also their non-attraction value. Topoi are used to attract the eye in accordance with the long tradition of the culture of attractions. They provide a striking sight or textual formula that intrigues the observer. In commercial media culture they provide a product with a certain historical and cultural surplus value acknowledged by the observer. A particular topos can also have an effect by its invisibility, by its unremarkable and commonplace character. In such cases it is

used to provide a mold for content that pretends to be something unprecedented, cut off from the past. In both instances, topoi provide advertisers with tried-and-tested formulas that are used to introduce new products by embedding them within molds the consumer already knows. This formula presents a paradox: the newest of the new is packaged in the oldest of the old (Huhtamo 2011, 39). The image of the happy family in advertising is so commonplace that it has almost become invisible. However, within the image, just like with the Baby Talkie, historical and cultural context is present. Just as the family depicted on the label of the Baby Talkie box revealed historical and cultural context of the era in which it existed, the same can be done with peripheral data of obsolete consumer video cameras.

After the 'peripheral data' of the obsolete consumer video camera has been examined for historical, cultural, and intended use, Vivian Sobchack's first definition of presence, operative presence, will be applied. Sobchack believes that 'presence' and its particular concern with the past and the conditions under which it can be re-presenced are central to media archaeology. At one extreme, presence is defined as the literal transhistorical transference or relay of metonymic and material fragments or traces of the past through time to the here and now, where these can be activated and thus realized once again through practical, operative and sensual engagement. This sense of presence emerges from the epistemological and sensual specifics that are entailed not in theoretical or interpretive discourse but in operative practice and knowledge. This view of presence informs much of media archaeology with research carried out concerned with not only the recovery and description of forgotten media artifacts but also with the techno-historical event that each of these artifacts inaugurates through a transhistorical operative practice. This literal as well as philosophical view of the presence of the past in the here and now connects what appear as quite disparate media archaeological projects (Sobchack 2011, 323-324).

As previously mentioned, Wolfgang Ernst uses the example of a radio being plugged in at a museum to show how an obsolete media apparatus can be brought into the present. While a Greek vase can be interpreted by simply being looked at, a radio does not reveal its essence by just being there but only when being processed by electromagnetic waves. What separates an archaeological object from a technical artifact is that the latter discloses its essence only when operating (Ernst 2011, 241). For the obsolete consumer video cameras examined as part of this research project, part of the, as Sobchack describes, practical, operative and sensual engagement with these forgotten media devices requires them to be turned on and used, with the images they produce being taken into consideration as part of their presence. Just as it takes Ernst's radio being turned on and processed by electromagnetic waves to generate its presence, the obsolete consumer video cameras examined for this research project also need to be turned on to travel through time to the here and now. However, unlike Ernst's radio, which just by turning it on brings it to the present, the same is not true for obsolete consumer video cameras. To fully generate their presence the footage recorded by the cameras needs to be examined.

The visual aesthetic, a term coined for this research project, defined by the link between the obsolete consumer video cameras and the visuals they create through empirical use, will be examined. The missing part of the story in any film apparatus collection concerns the films that were made with such cameras. Similarly, the films on the shelves in a film archive or shown on cinematheque screens are hardly ever employed to comment on the technologies used to create them. In public institutions that collect both apparatus and film material, there is often little connection made between the two artifacts. Even among passionately motivated private collectors, there is a strong divide between collectors of film and collectors of film

technology. Guy Edmonds argues that a hands-on approach in combination with interpretive

analysis, can breathe new life into collections of obsolete apparatuses (Edmonds 2016, 92-

93). Edmonds puts this experimental media archaeology approach into practice in his

examination of the 1931 Vitascop Movie-Maker.

In 2006, Edmonds sourced a Movie-Maker for a personal project that called for some footage

that would appear to have been shot in the 1920s and it seemed logical that an old camera

might produce the desired visual effect. Looking at the Movie-Maker, one can easily see that

it was cheaply constructed. Basically, it is just a pressed steel biscuit tin with an intermittent

mechanism and a tiny lens with fixed focus and aperture. The tiny lens is not interchangeable

as with more advanced cameras of the time. A small waist-level viewfinder gives some idea

of the field of view of the lens. The only control available to the filmmaker is found in the

pointing and shooting and in the rate at which the hand crank is turned. The camera's design

and construction parameters, its lightness, and its portability all have a distinct effect on the

images produced (Edmonds 2016, 88).

> The shots I made with the Move-Maker surpassed expectations. The camera had
> spectacularly affected the look of scenes and imparted a sense of extreme antiquity.
> The film bore a number of curious effects – from jumping of the frame and vertical
> streaking of the image due to lost loops, to a slightly squarer aspect ratio then
> standard 16mm – a probable attempt by the designers to mask the inefficiencies of the
> lens, which would become more visible at the edges of the picture. Critically
> assessing the definition of the resulting images suggested that the image quality was
> more comparable to an 8mm frame then that of a frame produced by a highly
> specified 16mm camera, although the softness of the produced images – again most
> likely due to the quality of the lens – did have a certain appeal (Edmonds 2016, 89).

An analysis of the films produced by the Movie-Maker can trace the effects of the design and

manufacturing parameters, and once this link is established, Edmonds believes, it can be

extrapolated to interpret both effects seen in other films and produced by other film

technologies. Comparisons can be made with modern trends in budget analog filmmaking, as

well as popular digital technologies, in order to highlight the often neglected topic of technology's influence on aesthetics (Edmonds 2016, 93).

With the obsolete consumer video camera brought into the "here and now", through operative presence, and the visuals created by the camera examined, Sobchack's second definition of presence, presence effect, can be applied. As previously stated, operative presence is defined as the literal transhistorical transference or relay of metonymic and material fragments or traces of the past through time to the here and now, where these can be activated and thus realized once again through practical, operative and sensual engagement. At the other extreme, presence, is also defined as a consequential but illusory effect. The material fragments or traces of the past pierce a hole in quotidian temporality not only by "being here", as defined in the first definition of presence, by virtue of being noticed but also, upon inspection, by radically and retrospectively challenging and changing the accepted order of things. In media archaeology, a forgotten media artifact seems at once both familiar and strange. The media device suddenly "being here", and all along having "been here", produces a presence effect that is capable of overturning the premises and comprehension of established media hierarchies and media histories (Sobchack 2011, 324).

Along with forgotten media artifacts, present day media devices can also illicit a sense of strangeness in the familiar. Russian literary theorist Viktor Shklovsky's concept of 'ostranenie' was first introduced in his 1917 essay "Art as Technique" as a way to explain mechanisms of perception as well as the function of art in relation to everyday experience. Shklovsky believes the purpose of art is "to impart the sensation of things as they are perceived and not as they are known" by making objects "unfamiliar." Over the course of time the things around us grow so familiar that our perception of them is automatized and

they essentially become invisible (Shklovsky, 1965, cited in Kessler 2010, 61). When viewing an obsolete media apparatus for the first time, through a media archaeological lens, very similar to the notion of ostranenie, the act of de-familiarization helps to strip away perceived knowledge and allows for the creation of new insight and thought. Film Theorist Tom Gunning advocates for the de-familiarization of everyday electronic devices to renew the excitement they once invoked. Gunning believes that "looking at old technologies as devices or media from the viewpoint of their once having been experienced as novelties is indeed an important methodological choice. It means looking at their potentialities not in retrospect, from a position where their future has already been realized, but as a set of promises, or potentialities, which the contemporaries projected into them" (Kessler 2010, 74).

An example of an obsolete media device both suddenly "being here" and having always "been there" that challenges the accepted order of things is Daniel Szollosi's UNTITLED. Created for the EYE Filmmuseum 2012 celluloid remix competition in Amsterdam, UNTITLED is a filmed art installation which draws from the silent archive footage preserved in the Institutes collection (Beugnet 2016, 57). UNTITLED is a simple concept, just three iPhones placed lengthwise, side by side, on a white surface. They are turned on and begin to play footage shot on an early 1900's Debrie film camera. In relation to the history of film, its technological and cultural evolution, the Debrie camera and iPhone belong to opposite ends of the spectrum. It is not merely that the Debrie camera is associated with the beginnings of cinema and represents an inventive yet largely obsolete technology, while the iPhone is a current, regularly upgraded product representative of a 21st century drive towards technological and media convergence. They are also emblematic of different antithetic and complementary vocations of the medium of the moving image (Beugnet 2016, 58).

Gunning argues, artistic strategies of de-familiarization can reawaken the sense of wonder inherent to technologies that once challenged our perception of the world. In UNTITLED, this renewal happens through the unexpected meeting of the old and the new that plays on our perception of scale. It is both the everyday object, in the form of the iPhone, with its ability to play images shot well before it was invented, and the images themselves, at once banal and extraordinary, that are brought back to our attention and capacity for wonder. Rather then a sense of nostalgia that normally enfolds the obsolete, what emerges from the perfectly rendered image of a Debrie camera that replicates from iPhone screen to iPhone screen is the sense of strangeness and marvel inherent to the evolution, practice and perception of moving image technology (Beugnet 2016, 63). UNTITLED removes the inherent invisibility of the iPhone and forces the viewer to consider the history of the device they are watching. The iPhone is part of the installation, not just a means to view it.

Layout of Chapters

In 1989, author and professor, Mark Levy and two colleagues submitted an article about home video recorders (VCR's) to a major communications journal. The response from the editor of the publication was to revise and resubmit the article with an emphasis on the following comment:

> A path of VCR studies could be important. Yet you have the obligation to establish what type of "important role" the VCR plays and why it is significant to study. Is it only significant because of widespread diffusion (i.e. because it's there) That could lead to a rash of studies of electric toasters…

To Levy, the importance of studying the VCR was obvious. At the time, no other communication technology, since television, had achieved comparable levels of home

penetration. However, to an outsider the answer was not so clear (Levy 1989, 9). This question of "why" study something also persists in the field of media archaeology, which seeks to examine the present-day media landscape by excavating quirky, failed, dead-end, discontinued and long forgotten media technologies (Parikka 2012, 2).

In media archaeology, the 'archive' is not just a collection of obsolete hardware and software but itself a condition of knowledge. The archive allows for both physical and more theoretical approaches of engagement with obsolete media. The collection of obsolete media apparatus takes place in a variety of places, from dusty warehouses, vintage video shops, personal collections, academic institutions and online (Sobchack 2011, 324). However, as previously mentioned, Druckrey warns of the danger of media archaeology becoming "a curiosity cabinet way of just being enthusiastic and embracive of quirky discoveries" (Druckrey, 2006, cited in Parikka 2012, 162). There is an ongoing attempt in media archaeology, through the defining of methodologies, to answer this question of "why" old and forgotten media devices are more important to study than electric toasters. Just as Levy believed that the importance of studying the VCR is obvious, I also believe that the importance of studying the three obsolete consumer video cameras selected for this research project is also obvious and will prove that in the three chapters that explore each camera.

Chapter one will act as a guide and provide a base of knowledge of media archaeology for the following three chapters. The problem in this research project will be explored in detail through a literature review of the discourse taking place in media archaeology. Media archaeology is currently a series of heterogenous approaches and theories with a need for a methodology. Much of the writing surrounding media archaeology has been an attempt to define it. This section will present an overview of the diversity which exists in the field. This

will be achieved through the exploration of heterogenous approaches by key figures. The question of defining a methodology remains a key topic of discussion for media archaeologist. Part of defining media archaeology is establishing the relationship between media archaeology and the archive. Michel Foucault's excavation of knowledge will be briefly discussed through the lens of notable media archaeologists. The archive of obsolete media devices is the base of knowledge for media archaeology. Foucault's excavation of knowledge will lead into defining, and working within, the archive in relation to media archaeology. Engagement with the archive through hands-on empirical use will be explored through the experimental media archaeology of Andreas Fickers and Annie Van Den Oever along with Wanda Strauven's hands on approach.

Chapter two will examine the Sony Mavica, a camera that embodies the conflict between still and moving images. This conflict is traditionally associated with film and still photography but made the transition to the digital age with the Sony Mavica. Two models of the camera exist with the first being released in the early 1980s as a revolutionary way to take and store electronic pictures. The family photo album could now be stored electronically on the brand new Mavipak video floppy disk. Although, the visuals produced by the camera appears to be a still image, it is actually 50 frames of frozen video giving the illusion of a still photo. The second, digital, model of the Sony Mavica was released in the mid 1990s and recorded to the readily available floppy disk. The digital Mavica offered the ability to record video along with still images. The separate, and sometimes conflicting, disciplines of photography and motion pictures exist together in the single apparatus of the digital Sony Mavica. The technological conflict found within the digital Sony Mavica will be explored using the first section of *Videology*, 'Stillness', as a guide while it deconstructs the three elements found in both still and moving images: recording medium, light and composition.

Chapter three will look at the Tyco VideoCam which repackaged video surveillance as home entertainment for children. Released in 1995, the Tyco VideoCam is one of the first video cameras to use the small CMOS sensor typically found in CCTV cameras. The camera is the outcome of the marriage between experimental surveillance technology and commerce. Typically, in the creation of an object, there are various economic, technological, and social variables that affect the end result (Bijker, Hughes and Pinch, 1987 cited in Archer and Bassett 2017, 2). The end result of the Tyco VideoCam is a children's video camera with the internal components used in video surveillance. Outside their political and social context, video surveillance and home movies share similar characteristics. They both capture extended segments of everyday life on relatively inexpensive cameras. Their recorded footage, in its unedited form, is spatiotemporally continuous and does not depend on editing. The subjects being recorded are real people and the locations are true to life and never meant to be screened publicly. The technological conflict found within the Tyco VideoCam will be explored using the second section of my short film *Videology*, 'Watching', as a guide while it examines the two common elements found in both video surveillance and home movies: space and time.

Chapter four will examine the Sony Betamovie. Released in 1983, The Sony Betamovie brings together the components of a video camera and video tape recorder in one convenient device: a camcorder. However, despite this convenience, the camera is not able to playback the images it records. Without the ability of playback during filming, the images captured by the Sony Betamovie exist within the inner world of video, between recording and playback. The technological conflict found within the Sony Betamovie will be examined through Wolfgang Ernst's notion of non-human media archaeology. To Ernst, media archaeology is

less about telling stories or even counter-histories and more about how stories are recorded, in what kind of physical media, what kind of processes and durations, and as such, its focus is on the archaeology of the apparatus that conveys the past as fact not just as a story (Parikka 2013, 7). Taking inspiration from Ernst, the third part of *Videology*, 'Pure Video', is comprised of moments when "media themselves, not exclusively humans, become active archaeologists of knowledge" (Ernst 2013, 55-56). 'Pure Video', goes inside the inner world of video of the obsolete consumer video cameras and forgotten media devices used to create *Videology*, and examines video which exists independently.

Chapter One: Against The Grain

The intellectual sources on which media archaeology is based are widespread, with various streams of thought that have reinvigorated notions of history and temporality in a media cultural context. Media archaeology is an approach to media studies which borrows from Michel Foucault, Walter Benjamin and Friedrich Kittler, but also diverges from all these theorists to form a unique set of tools and practices. Not a school of thought or specific technique, media archaeology is an emerging attitude and cluster of tactics in contemporary media theory, characterized by the desire to uncover neglected and forgotten media approaches and technologies. It is interested in mobilizing histories and devices that have been lost during the construction of histories of forms of communication including the histories of film, television, and new media. The lost traces of media technologies are deemed important to be excavated and studied; dead media technologies reveal important themes, structures, and links in the history of communication, which include irregular developments and unconventional genealogies of present-day communication technologies. Media archaeology believes that the most interesting media technological developments often happen in the neglected margins of history (Hertz and Parikka, 2010).

Despite the discourse surrounding media archaeology, most media archaeologists are unified by a shared discontent with the historicist approach of media history. An evolutionary model that dominates media studies and "often retrieves a technological past already incorporated into the staging of the contemporary as the mere outcome of history" (Druckrey 2006, vii). Geert Lovink views media archaeology as a discipline of reading against the grain. To Lovink, media archaeology is a hermeneutic reading of the 'new' against the grain of the past, rather than telling of the histories of technologies from past to present (Huhtamo and

Parikka 2011, 3). Media archaeology can be read as an alternative to the unitary narrative of progress of media history with the belief that the course of technological development in and of itself equals progress. This mindset greatly marginalizes the significance of failed media apparatuses (Kluitenberg 2011, 51). This oversimplification completely throws out the failures that have made success possible. "History is, after all, not merely the accumulation of fact, but an active re-visioning, a necessary corrective discourse, and fundamentally an act of interrogation – not just of the facts, but of the displaced, the forgotten, the disregarded" (Druckrey 2006, viii).

Just as media archaeology is a field of study that goes against the teleological grain of conventional media history, the three obsolete consumer video cameras examined for this research project also go against the grain. Even during an era of extreme technological innovation, the Sony Mavica, Tyco VideoCam and Sony Betamovie cut their own path. Like media archaeology, which, in an effort to define itself, is pulled in multiple directions at once, the same is true for each of the obsolete consumer video cameras examined. The technological conflict found within each camera will be examined using the varied and heterogenous approaches which make up media archaeology. The three obsolete consumer video cameras, existing on the neglected margins of history, create the archive for this research project.

Jussi Parikka suggests that to truly begin to define media archaeology we must start in the middle by looking at the "entanglement of past and present" (Parikka 2012, 5). The archive of media archaeology is the physical and theoretical site where this entanglement of past and present takes place. Media archaeology starts with the archive, the implicit starting point for so much historical research that itself, as a place and media form, has been neglected and

become almost invisible (Bolter and Grusin, 1999, cited in Parikka 2012, 113). The archive

of media archaeology is all around us, tucked away in junk draws and hidden in basements

and attics. However, as mentioned in the introduction, Timothy Druckrey warns that

archaeology of the apparatus alone, in the form of material cataloging, does not substitute

historical and cultural investigation. An inclusive approach is necessary that takes into

account the evolution, media effect, and intellectual history of a particular media apparatus

that also accompanies the archive. Media archaeology needs to ask the question of why a

particular technology is important and define the argument supporting the research (Druckrey

2006, ix).

Michel Foucault and his writings on the excavation of knowledge, in particular his book *The

Archaeology of Knowledge,* has been a source of inspiration for media archaeologists. The

centrality of the archive for media archaeology is to a large extent a follow up to Foucault's

expansion of the concept from the concrete physical places of storage of cultural data to the

discourses that govern modes of thinking, acting and expression (Røssaak, 2010, cited in

Parikka 2012, 113).

> Foucault's contribution to the archaeology of knowledge and culture was to
> emphasize it as a methodology for excavating conditions of existence. Archaeology
> here means digging into the background reasons why a certain object, statement,
> discourse, or…media apparatus or use habit is able to be born and picked up and
> sustain itself in a cultural situation (Parikka 2012, 6).

Foucault's excavation of conditions of existence, how an object is able to sustain itself in a

cultural situation, is similar to Druckrey's call to establish why a particular media technology

is important to examine.

In the first section of this chapter, the problem in this research project will be explored in more detail through a literature review of the discourse taking place in media archaeology by key figures in the field. Michel Foucault's archaeology of knowledge will be discussed through the lens of notable media archaeologist in the second part of this chapter followed by examples of the changing notion of the archive. Once the archive in relation to media archaeology is established, hands-on experimental engagement with the archive will be explored. The final section of this chapter will examine engagement with the archive through experimental media archaeology. Guy Edmonds hands-on engagement with the 1930's Vitascope Movie-Maker camera mentioned in the introduction of this research project is an example of experimental media archaeology. The work of Andreas Fickers and Annie Van Den Oever and their experimental media archaeology will be explored.

1.1 Temporalities of Objects

Media archaeology is always, implicitly, or explicitly, about the present, examining our present moment in its objects, discourses, and practices with an emphasis on how it came to be a reality (Parikka 2012, 10). This is often achieved by examining the present through the lens of an obsolete media device. Wanda Strauven has identified four dominant media archaeological approaches that rethink temporalities, linking the present to the past. These four, often opposing approaches, adopted by key figures in the field include: 1) the old in the new; 2) the new in the old; 3) recurring topoi; and 4) ruptures and discontinuities (Strauven 2013, 68). Seeking 'the old in the new' is directly inherited from Marshall McLuhan and his law of obsolescence, according to which old media become the content of newer media and lose their initial novelty and effectiveness, without being eliminated. As formulated in McLuhan's book *Understanding Media*: "the 'content' of any medium is always another

medium. The content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph" (McLuhan, 1964, cited in Strauven 2013, 69). This quote also appears in Jay David Bolter and Richard Grusin's book *Remediation: Understanding New Media*. Although not overtly promoted as a media archaeological concept, the principle of remediation is often taken for granted in media historical research. According to Bolter and Grusin's definition, the notion of remediation refers to the "formal logic by which new media refashion prior media forms (Bolter and Grusin, 2000, cited in Strauven 2013, 69).

This research project is interested in the approach of viewing 'the old in the new' in relation to, the three obsolete consumer video cameras being examined: the Sony Mavica, Tyco VideoCam and Sony Betamovie. This will be achieved through a combination of Gunning's concept of de-familiarization and Parikka's idea of sedimented layers of technology. De-familiarization begins where Marshall McLuhan's law of obsolescence ends, by taking old media devices and restoring their initial novelty. As mentioned in the introduction, Tom Gunning advocates for the de-familiarization of everyday electronic devices to renew the excitement they once invoked. "Looking at old technologies as devices or media from the viewpoint of their once having been experienced as novelties is indeed an important methodological choice. It means looking at their potentialities not in retrospect, from a position where their future has already been realized, but as a set of promises, or potentialities, which the contemporaries projected into them" (Kessler 2010, 74).

De-familiarization of the three obsolete consumer video cameras is achieved through hands-on engagement. Through user interaction, the technological potentialities that made each of these forgotten machines exciting will be experienced and compared to present day media devices. The 'old in the new' is achieved by relating old technological traits also found in

present day media devices. The current equivalent of the consumer video camera is the smartphone, represented here by the iPhone acting as a control. While remediation allows the user to see certain old technological traits in the new, this research project reads Parikka's idea of technology existing in sedimented layers slightly different from the notion of remediation. Although similar, remediation sees one technology leading to and becoming another, while Parikka's approach removes the temporality separating obsolete media devices and allows them to exist at once. The obsolete consumer video cameras examined for this project, along with the iPhone acting as a control representing the present, although separated by decades of time, exist all at once and interact with each other to reveal connections. This removal of technological periodization, through Parikka's notion of technology existing in sedimented layers, is visually expressed in the short film *Videology*.

The relativity of the new is taken as the starting point in works by two influential media archaeologists, with each arriving at the concept from slightly different angles. Erkki Huhtamo and Siegfried Zielinski's works have been emblematic in the formation of media archaeology, and both have been important in rethinking the temporal structure of newness through incorporating historical knowledge into thinking about current and future media (Parikka 2012, 11). Strauven's mention of 'recurring topoi', is the cyclical view proposed by Erkki Huhtamo. This method is inspired by the work of literary scholar Ernst Robert Curtius who in his 1948 book *Europäische Literatur und lateinisches Mittelalter* attempted to explain the internal life of literary traditions by means of the concept of topos. Deriving from the Greek word for place, a topos is a (literary) convention or commonplace. Media archaeology becomes in Huhtamo's words a "way of studying the typical and commonplace in media history – the phenomena that (re)appear and disappear and reappear over and over again and somehow transcend specific historical context" (Huhtamo, 1996, cited in Strauven 2013, 71).

The result of such an approach is media history as succession of media clichés or commonplace views concerning (new) media, technology, and their uses (Strauven 2013, 71).

Siegfried Zielinski views media archaeology as a rupture within contemporary media theories and history rather than the classification of a new discipline (Goddard 2015, 1762). Siegfried Zielinski calls for an (an)archaeological approach to media archaeology in which we must look for something 'new in the old'. Human history is typically perceived as a chronological march towards progress with the past serving to perfect the future. Zielinski calls for a reversal of this mindset and argues for a 'Varantology' approach of resistance against economically driven, narrow appropriations of media technologies for utilitarian ends (Parikka 2012, 51). Zielinski literally digs into the "deep time" of the media, a notion borrowed from the vulcanist James Hutton, referring to geological time and its measurement by analyzing strata of different rock formations. What is crucial in Zielinski's conception of media archaeology is that these strata do not form perfect horizontal layers but instead present intrusions and changes of direction. Zielinski's media archaeological approach is inspired by the science of paleontology, which teaches us that the "notion of continuous progress from lower to higher, from simple to complex, must be abandoned, together with all the images, metaphors and iconography that have been used to describe progress" (Zielinski 2006, 5). According to Zielinski, the "history of media is not the product of a predictable and necessary advance from primitive to complex apparatus," which he believes means that "the current state of the art does not necessarily represent the best possible state" (Zielinski 2006, 7).

As previously established, media archaeology is interested in the quirky, oddball media devices and apparatuses that have been cast aside or neglected, which exist, as Parikka puts

it, in the forgotten margins of history. Strauven's final identified approach, takes into account these 'ruptures and discontinuities' in relation to the legacy of Foucalt. To Thomas Elsaesser, a media archaeological approach means that we must constantly revise our "historiographic premises, by taking in the discontinuities the so-called dead-ends, and by taking seriously the possibility of the astonishing otherness of the past" (Elsaesser, 2005, cited in Strauven 2013, 73). This is the idea behind Elsaesser's notion of "hermeneutics of astonishment" as a way of interpreting the past while being astonished by its otherness, instead of looking at it with some preformed ideas of the present-day. To Elssaeser the past does not exist; it is always a construct, a selection among many pasts that actually existed or might have existed. "History as archaeology…knows and acknowledges that only a presumption of discontinuity (in Foucault's terms, the positing of epistemic breaks) and of fragmentation (the rhetorical figure of the synecdoche or the *pars pro toto*) can give the present access to the past, which is always no more than a past (among many actual or possible ones), since for the archaeologist, the past can be present to the present with not more that its relics" (Elsaesser, 2004, cited in Strauven 2013, 73). In the case of media archaeology, the relics mentioned by Elsaesser are the forgotten obsolete media apparatuses that make up the archive of media archaeology.

Both Zielisnki and Elssaeser oppose the teleological narrative of media history. Similar to Strauven's final identified approach of 'ruptures and discontinuities', Sobchacks second definition of presence, presence effect, upsets media histories and media hierarchies by an obsolete media device suddenly being there. Sobchack's first definition of presence, operative presence, is defined as the literal transhistorical transference or relay of metonymic and material fragments or traces of the past through time to the here and now, where these can be activated and thus realized once again through practical, operative and sensual engagement. At the other extreme, presence, is also defined as a consequential but illusory effect. The

material fragments or traces of the past pierce a hole in quotidian temporality not only by "being here", as defined in the first definition of presence, by virtue of being noticed but also, upon inspection, by radically and retrospectively challenging and changing the accepted order of things. In media archaeology, a forgotten media artifact seems at once both familiar and strange. The media device suddenly "being here", and all along having "been here", produces a presence effect that is capable of overturning the premises and comprehension of established media hierarchies and media histories (Sobchack 2011, 324). This upsetting of media hierarches often leads to alternative histories and the creation of imaginary media, both of which will be discussed in the next section.

Whereas Elsaesser's media archaeology can be seen as a general critique of film history as linear development, Wolfgang Ernst sees media archaeology as "a critique of media history in the narrative mode" (Lovink, 2003). Ernst believes that media archaeology is less about telling stories or even counter-histories. To Ernst, media archaeology is more about how stories are recorded, in what kind of physical media, what kind of processes and durations, and as such, its focus is on the archaeology of the apparatus that convey the past as fact not just as a story (Parikka 2013, 7). Ernst's media archaeological method is meant as an epistemologically alternative approach to the supremacy of media historical narratives (Ernst 2013, 55). Ernst believes that the ruptures and discontinuities which occur in the archive take place on a machinic level.

Ernst's non-human notion of media archaeology is a kind of epistemological reverse engineering, an awareness of moments when media themselves, not exclusively humans, become active archaeologist of knowledge. This means that when media archaeology deals with prehistories of mass media, the "pre", in prehistories, is less about temporal antecedence

then about the techno-epistemological configurations underlying the discursive surface of mass media. Ernst believes that media archaeology, understood as an analysis of epistemological configurations, both machinic and logic, does not simply seek a redemption of forgotten media of that past, nor is it confined to a reconstruction of the prehistories of technical media. Rather than being a nostalgic collection of forgotten media, assembled in a curiosity cabinet, Ernst sees media archaeology as an analytical tool, a method of analyzing and presenting aspects of media that would otherwise be lost in the discourse of cultural history (Ernst 2013, 55-56). Taking inspiration from Ernst, the practice-based short film *Videology* is comprised of moments when "media themselves, not exclusively humans, become active archaeologist of knowledge." Just like Ernst, *Videology* is interested in exploring the non-human aspects of the obsolete consumer video cameras examined for this research project. The cameras themselves become "active archaeologist" in the creation of the film, with the narrative structure dictated by the technological conflict found within each camera.

1.2 Key Themes and Context

Despite the heterogenous nature of media archaeology, and even Zielinski's resistance to any kind of uniformity, Jussi Parikka has identified four key themes and context that exist in the field: modernity, cinema, histories of the present, and alternative histories (Parikka 2012, 7). Modernity, itself as a process of technological, social, and economic components has proved to be a key turning point in various media archaeological theories. These included, among others, Walter Benjamin's early twentieth-century investigations into new forms of sensation emerging from modern urban settings and media technologies such as cinema, photography, and the telephone. Various studies raised the question of what it means to be modern, and

how new scientific and technological innovations contribute to the changing cultural landscape and even our basic ways of being in the world: seeing, hearing, thinking, and feeling. The nineteenth and early twentieth centuries have become key media archaeological excavation grounds for analyses, which aim to establish the centrality of modernity for the grounding of contemporary media experiences and industries (Parikka 2012, 7).

> Media archaeology is interested in the anomalous, the non-mainstream in media cultures. An important precursor for such media analysis of and from the ruins includes Walter Benjamin's cultural historical method which itself takes waste, rubble and ruins as its starting points for a multi-layered excavation of the slow emergence of modernity. For example, his unfinished Arcades project, which itself remains a collection of fragments, is emblematic of this multi-layered approach to the natural history of commodity objects (Gabrys, 2011, cited in Parikka 2012, 90).

Methodologically, it picks up on the theme of the fragments when writing about the ruins of modernity, mass culture, emergence of media cultures, and capitalism which surrounds us (Parikka 2011, 90).

Walter Benjamin, along with Michel Foucault who will be discussed later in relation to the archive of media archaeology, is one of the most prominent forerunners of media archaeological modes of cultural analysis and a major influence for cultural studies. His unfinished *Arcades Project* exemplifies the kinds of issues media archaeology explores (Huhtamo and Parikka 2011, 6). The *Arcades Project* represents research Benjamin carried out over a thirteen-year period, on the subject of Parisian arcades, a series of interconnected shops under one roof. Benjamin considered the Paris arcade to be the most important architectural form of the nineteenth century and linked with several phenomena characteristics of the century's preoccupations. It was not the events of traditional historiography that interested Benjamin but rather the debris and ruins of daily life (Benjamin 2002, ix).

Benjamin's reconstruction of nineteenth-century culture, with Paris as its capital, relied on a multitude of sources, including texts, illustrations, urban environments, architecture, public spectacles like the panorama and the diorama, and objects deemed to be emblematic of the era. The approach was remarkably open, shifting, and layered and took political and economic but also collective psychological factors into consideration (Huhtamo and Parikka 2011, 6).

Benjamin refused to group the evidence he gathered on the Parisian arcades under a single symbol that could be deemed characteristic of the era. Because of this, the work remains unfinished; readers are left with a collection of notes, images and ideas that constitute a database rather than a preorganized narrative. The concept of allegory, which he had already developed in earlier work, referred to alternative ways of seeing temporality not as an organic succession but through the figures of ruin and decay (Huhtamo and Parikka 2011, 6). Just like Benjamin, this research project digs through the fragments and ruins of obsolete consumer video cameras. This is achieved through careful examination of peripheral data in the form of technical manuals and other literature included with the cameras, print advertisements, contemporary journal articles and television commercials. These left-over artifacts help provide context for the social, political, and economic environment which led to the creation of each camera.

Where Benjamin investigated the idea of modernity through photography, cinema, and the telephone: today these separate entities can be found in a single media device, the smartphone. This convergence of modernity, through the suddenness of digital media's appearance in many areas of daily life, exemplified here by the smartphone, helped to favor the popularity of media archaeology. Many media scholars questioned how could so many different technologies, practices, and media histories converge so quickly into one all embracing 'digital machine' that swept away everything before it. As a result, the idea of media archaeology, seemed more plausible than linear histories and mono-causality. The

cause-and-effect logic of conventional media histories did not explain how many of these media technologies and apparatuses, with different characteristics and origins, could suddenly come together (Elsaesser 2016, 39-40).

As a key technology of modernity, cinema has been at the core of media archaeological theories. Much of the modern theorization started off from the New Film History movement of film studies in the 1970s and, especially, the 1980s. It established new perspectives on early cinema and the development of related screen and viewing technologies and practices (Parikka 2012, 8-9). The New Film History movement began at the 1978 FIAF conference which took place in Brighton, England. Part of this now legendary conference was the symposium "Cinema 1900-1906" which was prepared by an archival project known as the Brighton Project; interested in re-examining surviving examples of pre-1906 cinema. The Brighton Project led to the discovery of early cinema as an "other" cinema, that is, not an immature form of narrative cinema, but as a cinema with its own intrinsic values and tropes, such as frontality, acknowledgment of the camera's presence, overlapping editing or repetition of the key action, etc.

The ontological agenda of early cinema scholars, associated with New Film History, implies a rupture between early cinema and narrative cinema. At the same time this means a questioning of the rupture between "pre-cinema" and "cinema" as established by traditional film history, because early cinema belongs to what is called pre-cinema rather than cinema. Today, New Film History is still a valuable and applicable model not only for the study of early cinema but also for other periods in film history and other forms of media. It inspired early film scholars to question the dominance of the visual in film studies and explore untouched and underexplored domains. New Film History pioneered media archaeological

approaches ranging from questioning what is taken for granted or accepted as truth, to excavating forgotten filmmakers, lost films and other neglected materials. Perhaps, most significant, is New Films Histories contribution to historical methodology through challenging the methods of traditional historiography such as chronology, genealogy, and teleology (Strauven 2013, 61-63).

Just as the New Film History movement provided new perspectives on early cinema and established it not merely as an immature form of narrative cinema, this research project is interested in establishing new perspectives on consumer video cameras of the 1980s and 1990s. Similar to the Brighton Project, this research project sees obsolete consumer video cameras as an "other" form of video technology, not just an immature teleological version of the present media landscape, but with their own unique technological qualities and innovations. Just as early cinema has its own intrinsic values and tropes, discovered by the Brighton Project, consumer video cameras also follow a set of rules defined as 'home mode'. Initially coined after WW2, Richard Chalfen's notion of home mode was meant to categorize amateur representations of family life through access to automatic technologies such as snapshot photography and the home movie camera. Chalfen advocated that the personal themes of home mode be studied with the rigor of other media artifacts. This allowed for the re-examination of faded photo albums, boxes of home movies and other archives of amateur images gathering dust in closets and basements (Moran 2002, 36).

Within Chalfen's model of home mode, the user is not primarily interested in the image making process itself but with the content they record (Buckingham, Willett and Pini 2011, 2). The content being recorded is the pattern of interpersonal communication centered on everyday domestic life. Chalfen limits the subjects to immediate family members, relatives,

friends and neighbors. Themes include rites of passage, monumental events, new physiological changes, new spiritual identity, new social status, moments of accomplishment, landmark accumulation of goods and gift giving (Moran 2002, 36-37). Chalfen's model of home mode is used as a guide during the production of the short film *Videology*, with locations selected that would easily be found in home movies and reflect the anticipated use of the obsolete consumer video cameras used in the film's creation. Even during Chalfen's time, the portability of photography and film home movie cameras extended the images of domestic life past the boundaries of the home in home mode. This portability is reflected in the filming locations chosen for the short film *Videology*.

'Alternative histories' arise from the discontent of media archaeology with the mainstream historic approach of media history. Along with rummaging through obsolete media archives, media archaeologists also explore alternative histories and their resulting 'imaginary media'. Film theorist Noël Burch's idea of 'it could have been otherwise' (Elsaesser 2004, 81) allows for re-examining the possibilities of established media technologies. Alternative Histories view the current media landscape as just one strand of several possible outcomes and imagines what might have happened if media history was written differently (Parikka 2012, 13). Based on their discoveries, media archaeologists often construct alternate histories of neglected and forgotten media that do not point teleologically to the present media-cultural condition. These dead ends, losers and inventions that never materialized have important stories to tell (Huhtamo and Parikka 2011, 3). Within media archaeology, alternative histories act as a resource for understanding assumptions concerning media technological innovations. It allows for examination of why certain designs, technological solutions and assumptions concerning medias use persist and others are forgotten (Parikka 2012, 43).

Alternative histories often lead to the creation of imaginary media; conceptualizing the impossible, the unviable pieces of alternative media histories (Parikka 2012, 43-44). Imaginary media is a term used to describe the technological fantasies created by contemplating alternative histories, the machines and contraptions that exist only in theory. Existing somewhere between a mathematician's drawing board and science fiction, imaginary media studies create impossible machines that would seem to be entirely fictional creations (Parikka 2012, 51). Central to imaginary media are not the machines, but the human aspirations left unresolved by the machines they produce. It deals not so much with realized media as it does with potential or possible media, visions of how communications can be reshaped by means of machines. Imaginary media, in its purest form, are pataphysical constructs, belonging to the realm of imaginary solutions. However, imaginary media are more than a metaphor. They weave in and out of the lineages of actual media with media that were once imaginary at some point becoming true (Kluitenberg 2006, 8-10). Siegfried Zielinski distinguishes three categories of imaginary media. First are untimely media/apparatus/machines: media devised and designed either much too late or much too early, realized in technical and media practices either centuries before or centuries after being invented. Second are conceptual media/apparatus/machines: artifacts that were only ever sketched as models or drafted as ideas on paper, but never actually built. Third are impossible media/apparatus/machines: machines that signify something, but where the initial design or sketch makes clear that they cannot actually be built, and whose implied meaning nonetheless have an impact on the world of media (Zielinski 2006, 30).

The technological conflict found within each of the obsolete consumer video cameras examined for this research project allows for the theoretical creation of imaginary media. The disconnect between the two conflicting elements found within each camera provides space

for Noël Burch's idea of 'it could have been otherwise'. This space for Burch's idea is due in part to the economically fueled race between camera manufactures to produce the best-selling consumer video camera, which resulted in technological experimentation. In the case of the Sony Mavica, the two separate disciplines of photography and moving images were combined in one device. The Tyco VideoCam placed technology meant for surveillance into the domestic setting of the home. The Sony Betamovie separated the co-dependent elements of recording and playback in the name of portability. Imaginary media is created simply by questioning what other technological combinations could have been attempted and what the resulting cameras may have been. While it is not the intention of this research project to create imaginary media with the obsolete consumer video cameras being examined, but hopefully they will inspire the reader will imagine other technological combinations that could have been tried, resulting in imaginary media.

1.3 The Archive

Fig. 3. *Dawson City: Frozen Time* (Morrison 2016)

The image of nitrate film being shoveled out of the dirt is from Bill Morrison's film *Dawson City: Frozen Time*. In 1978 a construction crew was building a new recreation center in Dawson City, part of the Yukon Territory, in Northwest Canada (Newland 2017). Frank Barrett, a local Pentecostal preacher and city alderman, was operating a backhoe when he unearthed reels of nitrate motion picture film (Weschler 2016). Local kids playing in the area had long reported strips of film growing from the ground (Bradshaw 2020). Construction was halted until the site could be investigated. Michael Gates, curator of collections for Parks Canada's operation at Klondike national historic sites in Dawson City was notified of the find. After some investigation, Gates discovered how the films ended up in the ground (Weschler 2016).

Dawson City had been a gold mining boomtown in the late 1800's, with three movie theatres. Located at the end of the Pacific costal film distribution line, distributors considered it too costly to send the prints back (Bradshaw 2020). These abandoned films were stored in the basement of the town's library, but eventually began to overflow. To solve this issue, the film prints were buried in the swimming pool under the local indoor ice-skating rink. The other alternative was to throw the films into the Yukon River (Ronson 2013). Ultimately, used as swimming pool filler, these early silent films were forgotten.

1,500 reels were originally extracted from the site, with some 522 deemed in good enough condition to save. These reels held about 500,000 feet of film (Weschler 2016). The silent films recovered included newsreels and features dating from the 1910s to 1920s. Most of the films unearthed were previously unknown to film scholars or thought to have been lost. The inhospitable cold of the Yukon landscape had safely protected the films for 49 years. Nearly all the reels suffered water damage and films from the Dawson City Film Find are easily

recognizable from their distinctive markings, known by some archivist as the "Dawson flutter" (Newland 2017).

As previously mentioned in the beginning of this chapter, media archaeology starts with the 'archive' (Parikka 2012, 113). The term archive is frequently used to describe all collections of storing. However, an archive is not just an arbitrary quantity and not just any collection of things can be an archive. Without an active regime of ordering, archives run the risk of dissolving into just a collection of objects (Ernst 2013, 129). Just as the nitrate films in the Dawson Film Find were literally thrown together, the forgotten media devices that create the archive of media archaeology are equally as varied. The archive of media archaeology is made up of textual, visual, and auditory archives as well as collections of artifacts, emphasizing both the discursive and material manifestations of culture (Huhtamo and Parikka 2011, 3). Hidden in plain sight, in junk draws, attics and basements, the archive of media archaeology is all around us. Over the course of time the things around us grow so familiar that our perception of them is automatized and they essentially become invisible (Kessler 2010, 61-62). Media archaeology needs to ask the question of why a particular technology is important and define the argument supporting the research (Druckrey 2006, ix).

Media archaeology is generally associated with the rediscovery of cultural and technological layers of forgotten media. However, Ernst warns of the danger of some authors who take the term media archaeology at face value. This almost metaphorical interpretation views media archaeology as the digging out of a forgotten technological past, alternative media, media that never materialized or simply forgotten today. This archaeological metaphor can be difficult to resist and has sometimes led to a misunderstanding of Foucault's notion of an archaeology of knowledge (Ernst 2013, 55). While the image of nitrate film being excavated from the ground

in Bill Morrison's film *Dawson City: Frozen Time* is a tempting visual symbol of media archaeology, it should not be taken at face value, as warned by Ernst, as a representation of media archaeology. Just as with the majority of the discourse surrounding media archaeology, the use of Foucauldian archaeology is by no means homogeneous one, and most media archaeologists insist on the need for the term to be reinvented, or at least extended beyond the written archive that forms the basis of Foucault's analyses (Goddard 2015, 1766).

Media archaeology is greatly influenced by Michel Foucault's *The Archaeology of Knowledge*, which deals with discontinuities, gaps and absences, silence and ruptures, in opposition to a traditional historical discourse, which privileges the notion of continuity (Lovink, 2003). Media archaeology and Foucault both agree that the search for true origins is a wasted effort, that the construction of linear histories runs the risk of leaving important statements, objects, and networks of power in neglected margins (Parikka and Hertz, 2010). When classifications of media archaeology have been attempted, a division has usually been drawn between the socially and culturally oriented Anglo-American studies and the techno-hardware approach of German scholars, who have taken their cue from Friedrich Kittler's synthesis of Foucault, information theory, media history, and McLuhan's emphasis on the medium as the message. The German tradition has been claimed to emphasize the importance of the role of technology, which has led to accusations of technological determinism, whereas Anglo-American scholars often assume that technology gets its meanings from pre-existing discursive context within which it is introduced.

> One way of explaining this division is to see it as a consequence of different reading of Foucault. The Anglo-American tradition has valorized Foucault as a thinker who emphasized the role of discourses as the loci where knowledge is tied with cultural and social power. Material bodies, events, and institutions are all conditioned by discursive formations. The effects of "hard" technology are considered secondary to immaterial forces that differentiate and mediate their uses (Huhtamo and Parikka 2011, 8).

The key limitations to Foucault's analyses, according to Kittler, is that while based entirely on the written archive stored in libraries and other repositories, they do not acknowledge that writing is just one technical medium among others and one that had already lost many of its privileges at the time of Foucault's writing (Goddard 2015, 1766). Friedrich Kittler builds on Foucault's ideas and has demanded a more technological understanding of such archaeological work. Kittler wanted to look at technical media in the way Foucault was reading archives of books and written documents (Parikka 2012, 6).

> Kittler argued for the need to adjust Foucault's emphasis on the predominance of words and libraries to more media-specific ways of understanding culture…To be able to understand media technologies from the typewriter to the cinema and on to digital networks and coding paradigms, one must take their particular material nature into consideration…(Huhtamo and Parikka 2011, 8).

Despite this, Foucauldian archaeology remains an essential inspiration for media archaeologist since, despite these limitations, it provides a range of key principles for a non-linear account of diverse media, their various crossings and contingent assemblages. Thomas Elsaesser believes what is most useful in Foucault's project is what he calls the 'archaeological agenda' which calls for an abandonment of the search for origins, questioning the already stated and discourse as practice. A media archaeological perspective then is necessarily a non-linear one and one that disputes the already stated distribution of winners and loser in teleological medium narratives (Goddard 2015, 1766).

With wide implications for media archaeological methodology, the archive is increasingly being rethought not as a spatial place of history, but as a contemporary technological circuit that redistributes temporality. This approach to the archive is how Wolfgang Ernst sees media archaeology, not only as an excavation of the past, but an intensive gaze on the micro-

temporal modulations that take place in the circuits of technology. This alternative sense of technological temporality is closer to engineering diagrams then to historians hermeneutic interpretation of documents. By technological temporality we understand how technology itself is not only of time, but itself has its own time in which it functions. Drawing directly from Foucault, media archaeology for Ernst is monumental not narrative, focusing more on the real technological conditions of expressions then on the content of media. Ernst is interested in concrete devices through which media archaeology can understand the nature of temporality in contemporary electronics and digital culture. For Ernst, media archaeology starts with a device that is operational (Hertz and Parikka 2012, 427). Ernst's idea of media archaeology is equally close to disciplines that analyze hardware culture and to the Foucauldian notion of the archive as the set of rules governing the range of what can be verbally, audio-visually, or alphanumerically expressed. Ernst believes that media archaeology is both a method and an aesthetics of practicing media criticism, a kind of epistemological reverse engineering with an awareness of moments when media themselves, not exclusively humans anymore, became active "archaeologist of knowledge" (Ernst 2011, 239).

1.4 Accessible Archives

Traditionally, archives are thought of as slightly obsolete and abandoned places where the archivist or caretaker is swallowed up in the dusty corridors of bureaucracy, information management, and organizational logic that makes the archive a system. What usually characterizes such systems is that they are not always accessible to an outsider. Someone accessing an archive for the first time would need to be introduced to the whole system of how the archive is organized. However, today, archives are popping up everywhere. People,

themselves are becoming mini-archivist by documenting their personal lives through photographs, sound files, videos and other documents (Parikka 2013, 1-2). Archives are as varied as the devices and apparatuses that constitute them. This next section will examine several examples of media-based archives that are accessible either through shared cultural experience or experimental use.

Jason Curtis, a medical librarian from Shropshire, England has amassed a collection of over 750 obsolete media formats under the name Museum of Obsolete Media. The collection, started in 2006, initially as a way for Curtis to have tangible examples of the media formats he grew up with, is home to unique media formats covering audio, video, data and film. In 2013, the museums website was launched as a unique virtual experience. Some of the formats in the collection are not obsolete yet, however, it was felt to be important to try to identify, collect and catalog as many physical media formats as possible. Along with descriptions and photographs of all media formats in the collection, the museum provides timelines of developments in storage media. As a librarian by trade, Curtis wanted to document the collection and organize it in a discoverable way.

> When I first started collecting examples of obsolete (or soon to be obsolete) formats, it was mainly as a way of having tangible examples of formats that I had known and used. Many of the formats I had grown up with, such as video tapes, music cassettes and floppy disks were quickly disappearing, sometimes to be replaced by other formats, but increasingly with no physical format at all, as content is increasingly delivered over the Internet (Museum of Obsolete Media, 2023).

Artist Rutherford Chang has purchased 3,040 copies of The Beatles 1968 White Album (Chang, 2022). Chang, an artist born in Houston and grew up in California is fascinated with the White Album, particularly with first edition copies. The original release of the album contained an embossed title, and each copy carried a serial number. About three million numbered copies were printed in the United States before EMI stopped numbering them in

1970 (Kozinn, 2013). Beginning in 2006, Chang began collecting the White Album after becoming fascinated with the way owners often customized them with everything from doodles and scribbles to stickers, signatures and even love letters. Chang is interested in the White Album as a cultural phenomenon (Mullen, 2014).

> I was interested in the different ways that the covers aged. Being an all-white cover, the changes are apparent. The serial numbers made collecting them seem natural, and the more I go, the more interesting it became. As you see, many of them are written on, and each has a story (Kozinn, 2013).

In January of 2017, iam8bit Gallery, located in Los Angeles, hosted an exhibit in the form of a videotape rental store with nothing but 14,000 VHS copies of the 1996 Tom Cruise film *Jerry Maguire*. The exhibit, created by Everything is Terrible!, an absurdist performance art collective had been collecting copies of the film for seven years. The arts collective was founded with the purpose of taking old video waste and manipulating it into "a new comedic, psychedelic experience." The collective's obsession with *Jerry Maguire*, which was released on VHS in 1997, the same year that DVD players began to arrive in American homes, is a product of the ubiquity of the VHS version of the film, as well as its status as a somewhat useless object. The collective felt *Jerry Maguire* had been reduced in many people's minds to a series of catchphrases, cultural detritus that mirrors the real-life VHS leftovers, Everything is Terrible wanted to give new life (Bromwich, 2016).

> It is about a world that is literally drowning in its own waste. So why not collect the waste and reorganize into something insane and beautiful? It is a way for us to make sense of a very senseless world (Boyette, 2016).

The University of Colorado at Boulder's Media Archaeology Lab (MAL) is designed for hands-on, cross-disciplinary experimental research, teaching and artistic practice using still-functioning but obsolete tools, software, hardware, platforms from the late nineteenth century through the twenty first century. The largest of its kind in North America, MAL has a

collection of 35 portables/laptops, 73 desktop computers, 22 handheld devices, 8 other

computing devices, and 10 game consoles. Jussi Parikka proposes the need for 'concept labs'

as a space for a tinkering and experimentation with electronic media devices. He sees the

archive as a natural location for this meeting of practice and theory (Parikka 2012, 14).

> Founded in 2009 by Dr. Lori Emerson, the Media Archaeology Lab is a place for cross-disciplinary, experimental research, teaching, and creative practice using one of the largest collections in the world of still functioning media. Researchers, students, teachers, artists and members of the public are encouraged to turn on, open up, play and create with items from the collection that include phonograph players; magic lanterns; historic personal computers, handheld devices and game consoles including the Altair 8800b, Commodore 64, Apple IIe, Vectrex, and Imagination Machine I and II created by African-American video game pioneer Ed Smith (The Media Archaeology Lab, 2023).

The Operational Media Archive (Fundus) located in the basement of Humboldt University for

Media Studies in Berlin, hosted by Wolfgang Ernst, is somewhere between an engineering

lab and a repository for old media technology. The collection houses a variety of obsolete

devices that are in working order. It is intended to push media archaeology from textual

methodology into a more operational engineering analysis of obsolete technical media.

Referred to as an archive of media-epistemological toys, the mission is to achieve a hands-on

approach of investigating non-linguistic modes of media objects and explore how hardware is

coupled with discourse (Parikka 2012, 130-131).

The Fundus embodies the principles Wolfgang Ernst has assigned to the archive. The

obsolete media objects are monuments of the past. Following Foucault, Ernst suggests that

these media monuments serve as artifacts from a past media culture and carry with them

inscriptions in the form of indexical and textual value but also operational technological

principles. The obsolete machines that comprise the Fundus are not a textual description of

past technology but concrete examples of past media in action. This operational archive

enables Media Archaeologist to think about the processual nature of technical media (Parikka 2012, 132).

> The Media Archaeological Fundus (MAF) is a collection of various electromechanical and mechanical artefacts as they developed throughout time. Its aim is to provide a perspective that may inspire modern thinking about technology and media within its epistemological implications beyond bare historiography. Students, researchers and interested people are welcome to visit but also examine the so called Dead Media technologies (Humboldt University of Berlin, 2022).

An archive can also be concerned with physical objects and not actually contain any. This is true in the case of *The Dead Media Project* created by Bruce Sterling. Initially started in 1995 when Sterling issued a challenge for someone to write and publish The Dead Media Handbook, with their reward being a "crisp 50 dollar bill". Sterling appealed for help collecting stories and notes about dead media and over the next five years, notes and suggestions accumulated at deadmedia.org. Ultimately, the book never happened but the website survives (Whitwell, 2015). *The Dead Media Project* consist of a database of field notes written and researched by members of the project's mailing list (Jennings, 2023). Dead media, as commemorated in Bruce Sterling's *The Dead Media Project* have been documented as a testimony to the mortal character of media apparatuses (Kluitenberg 2011, 64). Among the contributions are notes on a voice-activated typewriter, electric writing pens, a pipe organ that emits smells, forgotten computer languages, obsolete synthesizers and other dead media devices.

> What we need is a somber, thoughtful, thorough, hype-free, even lugubrious book that honors the dead and resuscitates the spiritual ancestors of today's mediated frenzy. A book to give its readership a deeper, paleontological perspective right in the dizzy midst of the digital revolution. We need a book about the failures of media, the collapses of media, the supercessions of media, the strangulations of media, a book detailing all the freakish and hideous media mistakes that we should know enough now not to repeat, a book about media that have died on the barbed wire of technological advance, media that didn't make it, martyred media, dead media (Sterling, 2015).

Obsolete consumer video cameras, the archive for this research project, are accessible to everyone. This universality is by design, through the intended use of the cameras themselves. If someone is asked to imagine a consumer video camera, the result will likely depend on a person's age. If someone grew up in the 1980s, then their mental image of a video camera might be VHS or 8mm video. If someone was a child in the 1990s then their idea of a video camera may be MiniDV. For kids today, recording their daily lives have become as simple as pulling out their smartphone. In the early twentieth century, Walter Benjamin investigated new forms of sensation emerging from modern urban settings and media technologies such as cinema, photography, and the telephone (Parikka 2012, 7). Today, these three separate media technologies in Benjamin's time can be found in one single device that fits in your pocket. In the current media landscape, there is not separation between video cameras and people's daily lives.

According to Marshall McLuhan's law of obsolescence, old media become the content of newer media and lose their initial novelty and effectiveness, without being eliminated (McLuhan, 1964, cited in Strauven 2013, 69). As previously stated in this research project, obsolete consumer video cameras still exist, have not been eliminated, and still contain the technological elements, which were once exciting, only the world around them has changed. Today, obsolete consumer video cameras, with their abundance, affordability, and ease of use, are being picked up by people who were not alive during the era in which they were introduced. With no personal connection to them, they are being used for their unique visual aesthetics, their initial novelty, in the creation of video art, short films, music videos and other creative endeavors. Their visuals carry an aura of authenticity that cannot be duplicated.

1.5 Experimental Media Archaeology

With their 2013 article 'Experimental Media Archaeology: A Plea for New Directions', Andreas Fickers and Annie van den Oever stress the need for an experimental approach to media archaeology. The following section will outline their argument that "materiality of media technologies and the practice of use need more attention" (Fickers and Van den Oever 2013, 272). Fickers and Van den Oever's chapter in the book *Exposing the Film Apparatus. The Film Archive as a Research Lab*, titled 'Doing Experimental Media Archaeology: Epistemological and Methodological Reflections on Experiments with Historical Objects of Media Technologies', a follow up to their 2013 article will also be cited to support their argument. As previously mentioned in the introduction, Guy Edmonds hands-on exploration of the connection between the Vitascope Movie-Maker and visuals created by the camera is an example of experimental media archaeology. Similar to Edmonds research with the Movie-Maker, this research project is interested in applying Fickers and Van de Oever's experimental media archaeology approach to the obsolete consumer video cameras being examined. Experimental media archaeology allows for the total presence of the obsolete consumer video cameras to be generated, as their intended use dictates the need for hands-on engagement and consideration of the visuals created by each camera.

The history of media archaeology is a history of discourse-oriented analysis. Friedrich Kittler inspired a focus on the materiality of the medium from the early 1980s onwards to lay bare the epistemological structures underpinning studies in the humanities. While this tradition has produced interesting studies focusing on the discursive construction and symbolic meaning of different media technologies, Fickers and Van den Oever believe the materiality of media technologies and the practices of use need more attention. Media are important in the

formation of knowledge, cultures, and our media-saturated every-day life and in urgent need of further study. While media archaeology has helped to constitute the field of media studies and contributed to the broader awareness of how important media are and have been in the past, Fickers and Van den Oever feel that a step further is needed in terms of studying the materiality of the medium. Experimental media archaeology is inspired by the idea of historical re-enactment, acknowledging the historian's (experimenter's) role as co-constructor of the epistemic object. Experimental media archaeology is driven by the desire to produce experimental knowledge regarding past media usage, developments, and practices (Fickers and Van den Oever 2013, 272).

Experimental media archaeology is inspired by the idea of historical re-enactment as a heuristic methodology, well established in the field of experimental archaeology and in the history of science. The idea of re-enactment as a heuristic concept of historical understanding was introduced by the historian and philosopher of history, R. Collingwood in his study "The Idea of History". Acknowledging the informative role of re-enactments in the historian's mind in the construction of historical imagination, Fickers and Van de Oever propose to expand Collingwood's idea of "experiencing history" in doing historical re-enactments in practice not only in theory (Collingwood, 1946, cited in Fickers and Van den Oever 2013, 273). By engaging with historical artifacts, they aim at stimulating our sensorial appropriation of the past and critically reflecting the, hidden or non-verbalized, tacit knowledge that informs our engagement with media technologies. In doing experimental media archaeology, Fickers and Van de Oever plead for a "hands-on, ears-on", sensual approach towards media technologies (Fickers and Van den Oever 2013, 273).

Experimental media archaeology has an archival drive as it aspires to use the immense collections of media apparatuses waiting in film and other archives for further research (Fickers and Van den Oever 2013, 272-273). Working with apparatus collections in technology museums and media archives may create a growing awareness of the epistemological and methodological challenges facing researchers in the fields of technology and media history. Paradoxically, the acute awareness of the historical gap between past and present is clearly deepened by the material presence of the "leftovers" of past media practices: magic lanterns, cameras and projectors, radio sets, video recorders, and television sets with old manuals taped to the back. Sensual engagement with these historical artifacts stimulates the imagination of the past: to reflect critically on the hidden or non-verbalized, sensorial, corporal and tacit knowledge that informs engagement with media technologies (Fickers and Van den Oever 2019, 46).

Fickers and Van de Oever believe that doing historical re-enactments with old media artifacts is a heuristic approach and will offer new sensorial experiences and reflexive insight into the complex meanings and functionalities of past media technologies and practices. By creating a space for creative exploration with either original media artifacts or replicas, the researcher will gain first-hand experience of the heuristic difference between studying textual and visual representations of past media technologies and experience their performative qualities through interaction. Fickers and Van de Oever argue the heuristic value of doing historical re-enactments lies not in the impossible reconstruction of an "authentic" historical experience but in creating a sensorial and intellectual experiment that demonstrates the difference between textual, visual and performative approaches to the past. Fickers and Van de Oever believe this hands-on approach might help solve the, "observers dilemma as defined by

Jonathan Crary, of classical media archaeology and hopefully create new forms of collaborations between archives, museums, media artist and media scholars.

> As media historians, media archaeologists, or media scholars in general we need the material traces of analog and digital memory technologies not only as physical "witnesses" or "proof" of a period gone by, but as objects that can enlighten and educate our own analytical skills when it comes to the study of past usages of media technologies. A pure focus on "mediated memories" (or media texts) bears the danger of a reductionist perspective on media technologies, reducing the historical evidence of things to their textual tradition. Of course we are aware of the fact that the display of physical objects in a museum does not offer a "direct" or "unmediated" access to things. The objects in museums are staged artifacts. The visual gaze offered to a visitor of a museum is often that of a highly aestheticized view, and "things" or "objects" are staged as "master pieces" – even in museums of science and technology. Yet the "aura of the original", which museums and archives try to stage, is of course a faked one. The "aura" – at least in the sense of Walter Benjamin – is destroyed from the very moment an object is detached from its original environment…Experimental media archaeology aims at opening the black boxes and turning museums and archives into laboratories for experimental research. In order to do so, the apparatuses ("artifacts") have to be taken out of the aestheticized and glass-cased exhibition environments of museums and archives and transferred into the exploratory space of a media-archaeology laboratory (Fickers and Van den Oever 2013, 276).

During a trip to the Science Museum in London I experienced the aestheticized view mentioned above. During my visit, I noticed a small exhibit on the history of the mobile phone. Neatly encased behind glass and far away from reach were several obsolete mobile phones that spanned the chronological history of the device. Visitors walked past the glass and marveled at how the size of the phones decreased as the years went on. As I made my way through the museum I came to the end where there was a table full of technological gadgets. One of the devices was an early cell phone that had been on display behind the glass. Visitors were able to touch and physically interact with the phone. This physical interaction instantly connected the visitors of the museum with the device in a way no visual display could. We access media not only with our eyes and ears but also with our hands.

A large majority of the obsolete apparatuses investigated by media archaeology are devices used to consume media. The simple act of turning them on, such as in the previously mentioned case of Ernst's radio, generates their presence. However, this research project is interested in what happens when Ernst's radio is turned off again? When no longer transmitting a modern signal, does it lose its present-day connection and slip back into the past? Is the ability of an obsolete media device to have presence as tangible as an on off switch? This research project believes that simply turning on one of the obsolete consumer video cameras being examined, does not display their full presence; Sobchack's sensory notion of 'operative practice' needs to be applied by picking up the camera and filming with it to achieve this. Unlike a radio, that once turned on no longer requires humans to function, consumer video cameras were built for user interaction.

Along with a call to remove technological artifacts out of the aestheticized exhibition environments of museums and archives and be transferred into a media archaeological laboratory space, Fickers and Van den Oever also see the home as a site of experimentation. If laboratories or workshops are seen as spaces of action, where different actors and actants engage in a complex interaction, the question Fickers and Van den Oever ask is how this space is to be designed for media archaeological experiments in which the focus of attention is, apart from the technical devices themselves, the place where these devices are appropriated and used. Since the home can be considered as the privileged location for the appropriation and use of communication and media technologies, the arrangement of a domestic environment seems entirely appropriate for conducting media archaeological experiments (Fickers and Van den Oever 2019, 59).

Just like Fickers and Van den Oever, this research project also views the home as a site of media archaeological experimentation. The obsolete consumer video cameras being examined are designed to record and document daily life. Where as Chalfen's model of 'home mode', previously mentioned in this chapter, is concerned with the "re-examination of faded photo albums, boxes of home movies and other archives of amateur images gathering dust in closets and basements (Moran 2002, 36), Fickers and Van den Oever are interested in using the home as a site of experimentation. This research project is interested in combining the two approaches: the locations and iconography of home mode, with the experimentation of Fickers and Van den Oever's approach, through the active use and engagement of obsolete consumer video cameras to create new media archaeological knowledge. Conducting media archaeology research in the home is a key principle for both the examination of the obsolete consumer video cameras explored for this research project and the production of my short film *Videology*. The short film *Videology* follows the model of home mode as a guide during filming with the experimentation of Fickers and Van den Oever.

Chapter Two: Still v. Moving Images
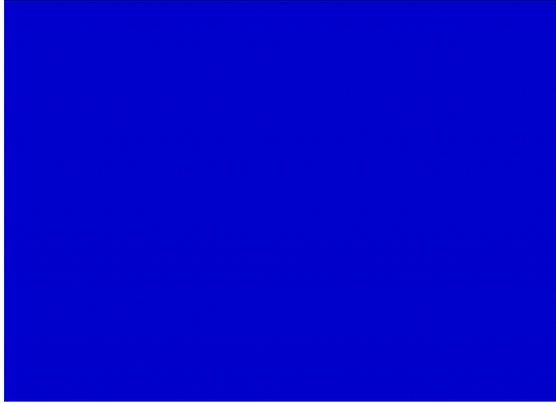
Fig. 4. Blue video screen, *Videology* (Brauns 2023)

The very first image, in the first part of *Videology*, 'Stillness', is a blue screen which indicates no video signal present. The film equivalent would be a blank projection screen. This default negative space represents the absence of a recording medium. There is no physical movement in the image, no temporal activity, no sense of anything. The only notion of the passing of time is the accompanying audio test tone. However, even in the blue void there is a type of movement. This is not uncommon under conditions of visual deficiency. Undifferentiated fields such as fog or blue sky are given differentiation by the eye which projects images. Irregular movements of the eye produce a sense of irregularities in the perceived field which are perceived as images (Schwenger 1996, 420). This search for visual meaning is also present in Derek Jarman's 1993 film *Blue*; consisting of a single static shot of the color blue with a voiceover. In both the first image of 'Stillness' and Jarman's *Blue*, movement is projected onto the image through irregular movements of the human eye.

The static blue screen dissolves into white video noise, sometimes fittingly referred to as video snow. Video noise or "snow" is also a technological placeholder for when there is no video signal. However, unlike the static blue screen there is definite visible movement in the form of pixels. Unlike the filmstrip, the electronic video image is not one with itself, with no visible presence without the aid of a display. With motion pictures, the physicality of the film stock is apparent. A person can hold a strip of film up to the light and view the images. Film requires a screen to receive a projected image, yet it is also perceptible as an independent object. 16mm and 35mm film prints are viewable to the naked eye whereas video, and the electronic image created, require a screen (Rodowick 2007, 135). The physicality of video is quite different. Both blank and filmed video tape appear black to the eye and need to be viewed through a playback device. Although not visible to the naked eye, much like film grain, pixels represent the materiality of video. The tactile materiality of the filmstrip and the invisible nature of videotape to the human eye is similar to the relationship between still and moving images.

Traditionally, the relationship between still and moving images has been governed by the antithetical relationship between film and photography. Within the analog world of film stock, the relationship between the still and moving image was often looked upon as a way of foregrounding the material basis of the filmstrip, the relationship between the tacit frames and the act of projection (Røssaak 2011, 187). The motion in motion pictures is a paradox. Materially, film is comprised of single still images that when projected at 24 frames per second simulate movement (Gunning 2011, 27). With the introduction of video and digital filmmaking the discourse between still and moving images shifts from materiality to data input. Film cameras, both still and moving, register a photochemical image that leaves a trace

of whatever traverses the lens. While the image created may reflect or inflect the human imagination, the recording medium remains detached from the human eye and indifferent. With the introduction of digital film and photography, photographic reproduction of reality came to an end. The conversion of recorded information into a numerical system broke the material connection between object and image (Mulvey 2006, 19). In his book *The Virtual Life of Film*, David Rodowick discusses the difference between analog and digital as two distinct ontologies. The analog photochemical process is based on the continuity between input and output while the information processing of the digital image is based on a discontinuity between input and output. It is this discontinuity that produces a new space for creativity and chance and control (Røssaak 2011, 190).

Despite the antithetical relationship between still and moving images, which spans both analog and digital formats, this chapter is interested in exploring the commonality between the two separate disciplines. This chapter will examine the relationship between still and moving images both in terms of apparatus and visuals. The separate, and sometimes conflicting, disciplines of photography and motion pictures exist together in the single apparatus of the digital Sony Mavica. The technological conflict found within the digital Sony Mavica will be explored using the first section of *Videology*, 'Stillness', as a guide while it deconstructs the three elements found in both still and moving images: recording medium, light and composition. While composition occurs naturally in both disciplines, it will be examined regarding how the camera interprets and shapes the image. Established media archaeological methodologies will be used in the creation of 'Stillness' and the examination of the digital Mavica.

First, the peripheral data of the Sony Mavica will be examined including the box, manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's first definition of presence, operative presence, will be applied and bring the Sony Mavica out of the past and into the present. Once transported to the here and now and in the hands of the user, this research projects advocates the need to explore images created by the camera, visual aesthetic, as a natural continuation of Sobchack's first definition of presence. This will then allow for the application of Sobchack's second definition of presence, presence effect, to be applied in which current media hierarchies are challenged by the obsolete consumer video camera simply by being "in the here and now". Finally, this challenging of media hierarchies will allow for the natural de-familiarization of current media devices proposed by Tom Gunning.

Fig. 5. Video noise from ISO test, *Videology* (Brauns 2023)

The first intentionally created images, of 'Stillness', appear when the static transitions into the video grain of the Sony Mavica, Tyco VideoCam, Sony Betamovie and iPhone. The next sequence is a series of noise tests conducted with each obsolete consumer video camera used to create 'Stillness'. This technical test is achieved by placing a lens cap over the lens and

recording various ISO's to judge the level of acceptable noise created. However, obsolete consumer video cameras generally lack this level of control and the lens cap is simply placed on each camera and video is recorded. In some instances, if the video noise is not visible the camera is filmed in a dark room or against a flat surface. Once the video is recorded, the gamma is raised significantly in post-production so the video noise becomes easy to see.

These noise tests represent each camera's unique visual fingerprint at the most basic level. Extremely small differences in pixel size, grouping, patterns and color gamut create individual technological signatures. This is the result of both pre-determined factory specifications and also potential physical changes sustained over time. Minor changes through use come in the form of dead pixels and other visual artifacts or deterioration. In his definition of aura Benjamin discusses the physicality of works of art unique to themselves not reproducible in a copy. "This includes the changes which it may have suffered in physical condition over the years as well as the various changes in its ownership" (Arendt 1969, 220). The life of each obsolete consumer video camera is unique to itself.

2.1 Selling Simplicity

In this section the peripheral data of the Sony Mavica, defined as any accompanying external materials, will be examined, including both analog and digital versions of the camera. Before the digital Mavica is explored, it is important to first look at the analog iteration of the camera and its relationship with still and moving images. Despite being a stills video camera, the analog Mavica relates to the discourse of movement between film and photography. The first Sony Mavica is a single-lens reflexive, battery powered electronic camera. It comes standard with three bayonet-mounted lenses: 25mm f/2, 50mm f/1.4 and 16-65mm f/1.4

zoom. It has a CCD sensor that produces an analogue signal of 570 x 490 pixels on a 10mm x 12mm chip. Its native ISO is 200 and has a permanent shutter of 1/60th of a second.

On August 25th 1981, during an hour-long news conference and demonstration in Tokyo, Sony co-founder and chairman Akio Morita debuted a new prototype camera for the consumer market that had the ability to take still pictures without the use of photographic film. Morita stressed that this new camera was not meant to replace film but "provide a new type of video service." He compared it to the videotape recorder, which records movies and television for later viewing but is not a replacement for television. "This is a revolutionary moment in photographic history" said Morita and believed this product would open up a new market. Sony's new filmless camera was about the same size and weight of a 35mm single-lens reflexive film camera. However, rather then recording pictures onto film, an image comes through the lens, is converted into a video signal and then recorded onto a magnetic disk. The images can be viewed instantly on a home television connected to a viewing device, printed and even transmitted over the telephone (Lohr, 1981). Sony called its new filmless camera the Mavica, short for **MA**gnetic **VI**deo **CA**mera, the world's first still video camera.

Fig. 6. Akio Morita with Tom Brokaw on *The Today Show* in 1980

https://www.youtube.com/watch?v=EhypAw76gcc&t=144s

To promote the new filmless camera, Morita appeared on *The Today Show* to demonstrate, what host Tom Brokaw described as, "the latest in camera technology." At the beginning of the segment Brokaw proclaimed that "Sony has done it again" and holds up the Sony Mavica prototype for the television audience. Morita describes the Mavica as being the same as a television camera but instead of recording to videotape it records to a magnetic 'video floppy' disk that can hold 50 "instant" pictures. The individual magnetic disks will be priced at three dollars each or as Morita puts it "just three dollars for 50 pictures." Once the pictures are on the magnetic disk you can either store them for future viewing or erase them and record new images. When Morita refers to the Mavica's ability to record 50 pictures, he technically means 50 frames of single field video. Tom Brokaw equated the ability to store images on the video floppy "as you might keep a whole slide file." Morita claims that since it's a magnetic recording the color of the images will not change or degrade over time. He also stressed that the image recorded onto the video floppy disk is not a picture but an electronic signal. This electronic signal can be sent over a telephone line and used the example of a reporter in the field sending photographs back to the newsroom. Brokaw asks about the ability to print photographs from the electronic signals sent over the telephone and Morita responds that Sony is working on a printing machine.

Morita shows Brokaw, and the audience, some test photos he took on a recent trip to Hawaii. The images are cycled through like 35mm slides with a slight flicker of video distortion between images. For a split second, after each transition, there is a distorted frame that

appears to scan up from the bottom of the television screen. Since the system projects still video images on to a TV screen, the picture quality can be no better than television technology permits. Projected onto a television set, the video system has a resolution of 350 lines, compared to that of about 525 lines of an American commercial television program from that time (Lohr, 1981). Brokaw mentions, "there is some little break up because of the television transmission" but then states that overall the pictures are very clear.

To demonstrate the Mavica's ability to create an "instant" photograph, Morita's assistant takes a picture of Tom Brokaw, inserts a Mavipak disk into the viewing device and after several long moments, Brokaw's picture flashes onto the television screen. His picture erupts in a white flash that slowly settles into a color photograph. There is an audible gasp and excitement from both Tom Brokaw and The Today Show crew from off screen. The same way that Morita impressed Tom Brokaw and the audience of *The Today Show*, early film exhibitors, the Lumiére Brothers would astonish audiences by bringing a projected still image to life with their cinématographe. The technological irony is that while the Lumiére Brothers would create motion from stillness, the analog Mavica repackaged movement as stillness.

Once motion pictures were able to create seamless sense of motion, the attention focused on how to control it. One of the most striking features in cinema practices in movie theaters, art galleries, and new media platforms is the frequent use of slow motion and other techniques of temporal delay. It is as if the moving image has become increasingly refashioned in the direction of demonstrating its ability to remain motionless, or to move in ways which are barely visible (Rossask 2011, 12). The video floppy, called a 'Mavipak', is an analog storage medium used to hold still frames of composite video on a magnetic disk. A Mavipak could store 25 frames of NTSC or PAL video, with each frame containing two fields of interlaced

video, or 50 frames of video with each frame only containing one field of video information (Museum of Obsolete Media, 2023). The analog Mavica is video disguised as a picture. Despite Akio Morita's enthusiasm for the new Sony Mavica, Wall Street analysts were not impressed and questioned its price and dependence on television picture quality. The concern was that the image resolution might not be sharp enough to attract serious photographers. Analyst James Chung, who followed camera companies for Merrill Lynch & Co., said that he did not see the new electronic camera as a threat to traditional film products. Chung also said that while Sony was first to unveil an electronic filmless camera, traditional camera companies were also in development of similar technology. George Elling, of Bear Stearns, believed the Sony Mavica was very likely to garner some novelty interest but agreed that conventional film products would not be threatened (Chicago Tribune 1981, C9).

Digital cameras began to appear on the consumer market around 1995 (Bungey 1997, 5). They were versatile and did not require film to take pictures but the image quality they produced was not as good as traditional film cameras. Despite the lower image quality, the immediacy of being able to view your pictures on a computer was a selling point for many consumers. Due to their dependence on connecting to a computer, digital cameras were still considered a computer accessory. There was really little point to own one if you did not have a computer and ideally a color printer (Hellaby 1997, 88). According to the United States Census in 1997 36.6 % of households had a home computer, in 1998 that number rose to 42.1% and by 2000 the number of American homes with a computer was 51% (U.S. Department of Commerce, 2001). However, despite this rapid growth, in 1997, Steve Jobs declared the floppy disk dead. That same year, despite Job's prediction, Sony released the digital Mavica (Hellaby 2000, C04). The new digital Mavica was meant to be a camera of convergence, the perfect blend of camcorder and computer device (Canberra Times 1997,

30). Colin Lippiatt, in charge of publicity for Sony, described the camera as "a unique product that will revolutionize the way we do business and record those special family moments" (Canberra Times 1997, 30).

In an article titled "Yute Wants to Know", from the June 1999 issue of *Stereo Review's* Sound & Vision, Michael Antonoff pondered 30 questions about consumer electronics. Number 9 on the list was "Why did Sony retain the name of its 17-year-old electronic still camera, the Mavica (Ma-vee-ca), for its latest digital still cameras but change the pronunciation to Mav-i-ca?" (Antonoff 1999, 140). This humorous observation highlights the transition of the Sony Mavica from analog to digital. Despite the change in pronunciation, and replacing the recording medium, from analog video floppy disks to standard 3.5 floppy's, the overall function of the camera remained the same. The first two models of the digital Sony Mavica, released in 1997, were the FD5 and more technically sophisticated FD7.

The FD5 and FD7 were very similar in appearance, both took 24bit color photos at 640x480 pixels, had built in flash capability and a 2.5" color liquid crystal display screen (Wright 1997, J4). The FD5 weighed 1.1 pounds and the FD7 1.3 pounds (Canberra Times 1997, 30). Both models were slightly bulkier then other digital cameras because of the built in 3.5" floppy disk drive (Blasina 1997, S07). The FD5 was intended to be a fully automated point and shoot camera with automatic focus, exposure, and other settings. The FD7 was more equipped for semi-professional use and allowed for the manual adjustment of camera settings. The FD7 also came with a 10x zoom and five pre-programmed exposure settings for portraits, bright sun, dusk, landscape and highspeed photography. Both models came with an index picture playback feature that allowed the user to view six pictures at a time and delete any they weren't happy with (Hellaby 1997, 69). This was done through a small and intuitive

internal menu controlled by a pointing device. One reviewer of the Mavica FD7 commented on the simplicity of the menu: "I handed the camera to my seven-year-old daughter and she had the system mastered in minutes" (Bungey 1997, 5).

Fig. 7. Screengrab from digital Sony Mavica commercial

https://www.youtube.com/watch?v=fqw_azL5uGY

The cameras simplicity was exactly what set the new digital Mavica apart from the competition. The Mavica was the first digital camera to record directly onto standard 3.5, 1.44mb, floppy disks, a medium universally acceptable and almost as ubiquitous as film at the time. The average cost of a floppy disk was 80 cents and could be purchased virtually anywhere in the world (Blasina 1997, S07). "Everyone who has a computer has disks lying around, so if you run out of 'film', you can always find more without a problem" (Pegoraro 1998, N41). A standard floppy disk could record up to 40 low-resolution JPEG images or 20 high-resolution JPEG's. Once the pictures had been taken, the floppy disk was ejected from the Mavica and placed into the floppy drive of almost any computer. No special software was needed to open the JPEG files and could be viewed with any image-capable applications. They could also be taken straight from the disk and imported into a Word Processor or

Microsoft Office. The Mavica was compatible with both IBM and Macintosh formatted discs and allowed for formatting on the run (Hellaby 1997, 69). "For the non computer-savy, there's no intimidation" said Gregg Nole from Sony who also added "Who's afraid of a floppy disk?" (Snider 1997, 3D).

Typically, in the creation of an object, there are various economic, technological, and social variables that affect the end result (Bijker, Hughes and Pinch, 1987 cited in Archer and Bassett 2017, 2). Often times the designers intended use of a technology is subject to theory-induced blindness in regards to user engagement (Fickers and Van Den Oever 2019, 51). While other digital camera manufacturers tried to create a new technology, Sony released the user friendly Mavica that took advantage of an already well-established recording medium. The end result of the Mavica and other digital cameras on the market was the same with pictures uploaded and viewed on a computer. However, with most digital cameras special software had to be installed and clumsy wires needed to be connected from the camera to the computer. With the Sony Mavica it was easy as ejecting the floppy disc from the camera and inserting it into your computer. A Forbes article from 1999 describes the main selling point of the digital Mavica line of cameras: "They aren't the smallest, the lightest or the best at image quality, but they've become the most popular models sold. The reason? Sheer ease of use. Other digital units make transferring images from camera to computer a nuisance involving cables or other special adapters. The Mavicas simply store their images on floppy disks. Pop the disk out of the camera and into the computer, and you're done" (Manes 1999, 138).

To promote the simplicity of the digital Mavica, Sony launched a series of print advertisements and television commercials that heavily focused on the camera's user-friendly appeal and ability to quickly view images. The advertisements are clearly meant to appeal to

a younger consumer demographic. Marketing materials are a cultural snapshot of intended use, and optimistic potential, without the bias of historical outcomes. New technologies are often accompanied by frenzied interest, while people rarely pay attention to obsolete devices mainly because we live in a commercial society and dead technologies are hard to sell (Sterling 2006, 58). The commercial opens with a high school student snapping a picture of his teacher fixing his hair in the bathroom, with the digital Sony Mavica The student goes to a classroom full of computers and other students. He ejects the floppy disk from the digital Mavica and inserts it into a computer. From there he opens the file and then passes the floppy disk to another student. This repeats several times and more and more students copy the floppy disk on to their computers.
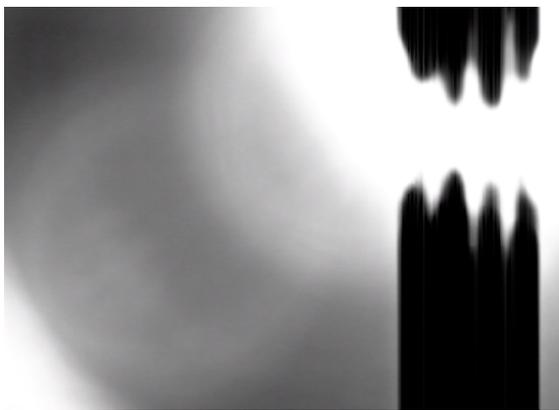
2.2 The Camera's Gaze

Fig. 8. Light overpowering the camera's sensor, *Videology* (Brauns 2023)

Stan Brakhage worked on the assumption that the medium of film is light and the basis of a movie is the movement of light. As the moving light takes shape, it produces recognizable objects after which, as he describes it, "drama begins to come in, or story or picture."

Brakhage believed that cinema is literally light moving in time. The challenge for Brakhage was to make light itself the film's subject, to preserve its luminosity without reducing it to purely abstract shapes. Brakhage used techniques such as extreme soft-focus, over and underexposure, flicker effects, negative and solarized images, flared frames, clear leader, and refractions of light in the lens to produce glimpses of light as a meaningful subject in its own right. Brakhage achieved this with his 1974 film *The Text of Light.* In the film, light flows, pools, falls in streaks, shoots upwards and takes innumerable forms in an ambiguous space that sometimes seems open to infinity and other times appears as flat as the screen itself. The entirety of the film was made by Brakhage filming sunlight refracted by a crystal ashtray with a micro lens so close that it is impossible for the viewer to know how the images were created. The images were recorded one frame at a time as the light changed with the sun's movements and moving the camera slightly between each exposure. The glass from the ashtray gave the light a certain density and materiality like that of physical objects (Wees 1992, 100-103).

Similar to Brakhage, the next section of 'Stillness' is concerned with presenting the movement of light as the subject and begins with obscured luminescence interpreted by each of the obsolete consumer video cameras. The light flickers and moves just off screen as the light source is slowly revealed to be a candle. Initially, the pure light of the candle is the subject but this changes when the flame of the candle takes the form of the diamond image sensor of the Sony Mavica. With this, the subject shifts from the moving light to the technological relationship between light and camera. The camera projects its technical gaze onto the light itself which continues for the rest of the section. The process of filming only light is the process of the camera filming itself. At the most basic level, light reflects the technological nature of the camera back to itself. The images created exist as scattered

moments in the shape of lens flares, diamonds of light and other visual artifacts in what

Brakhage phrased as the materiality of light and the camera.

The candle-light fades into the ambiguous black space that, described by Brakhage, both

seems to stretch on forever and is also as flat as the viewer's screen. Out of this blackness

come fractals of light that stretch across the lens of a camera. The spherical outline of the lens

is gradually revealed as the light passes. The perspective of the image is misleading because

the light moving across the lens is being recorded by the camera itself. The process of the

obsolete consumer video cameras recording their own technological gaze was kept

intentionally simple. Each camera was placed on a locked off tripod and a flashlight was

shined into the lens. When creating *The Text of Light*, Brakhage noted how light gained a

materiality when passing through the glass ashtray. This materiality of light is also present

when light is shined into the lens of the obsolete consumer video cameras. The light is

captured in the lens and reflects the camera's technological gaze back to itself. The image

created is both the cameras perception of the light and also the reflection of itself. This self-

reflexive technological gaze is simply the reflection of the light off of the lens and bouncing

back to record itself.

As the sequence progresses the viewer is drawn into the microscopic world happening inside

the lens of the camera. Any drama or sense of narrative story, discussed by Brakhage, has

been stripped away and the images created are the pure interaction between light and camera.

As with the blue video signal, the human eye instinctually tries to give meaning to the

obscure moving shapes. The black and white images created by the Tyco VideoCam almost

resemble cells, life at the most basic level. There is an otherworldly feeling to the images, as

if they are stranded in space. Brakhage took inspiration from Ezra Pounds translation of

ninth-century philosopher Johannes Scotus Eringen who is quoted from his writing as stating "all things that are are light" (Wees 100, 1992). However, the relationship between light and camera is not always harmonious, with the light sometimes overpowering the cameras sensor and creating conflicting visual artifacts. Lights physical over-application to the camera's sensor creates a "glitch" aesthetic. Another external physical manipulation of aesthetic effect will be discussed later in the chapter, in the form of heat. The second to last part of the section is a physical dance between light and the technology of the digital Mavica. The diamond shaped image that signified the shift of the subject from light to the relationship between light and camera, returns in the form of multiple glowing diamonds. The image the viewer is seeing is both the image being created and the creation of the image itself. The diamond shape is the image sensor of the digital Mavica reflecting the light that was used to create the image.

The final images of this section return to Brakhage's belief that cinema is light moving in time. Just like Brakhage's use of an ashtray in the creation of his film, *The Text of Light*, the final images, of this section of 'Stillness', were created by filming light through a frosted window. The frosted window gave the light from a nearby building, like Brakhage's film, a certain density and materiality (Wees 1992, 100-103). While Brakhage used a micro lens, the images for this section were recorded with an iPhone pressed up against the frosted glass. The resulting images are of structured light moving in time.

2.3 Visual Ostranenie

Fig. 9. 160 x 112 video created by digital Sony Mavica (Brauns 2023)

https://vimeo.com/352246681
Password: PhD

In this section, the visual aesthetic of the Sony Mavica, defined as the link between the

obsolete consumer video cameras and the visuals they create, will be examined. As with all

cameras, the digital Mavica interprets light in its own way. This unique interpretation of light

is exemplified in 1998, when *The New York Times* asked photographer Marianne Engber to

try out a new point-and-shoot digital camera. Engber takes black-and-white pictures using

primitive pinhole cameras constructed from Quaker Oats boxes and black masking tape. The

speed of her homemade pinhole cameras is so slow that an exposure time between 7 to 90

minutes is not out of the ordinary. Engber learned photography in her native Copenhagen

without the use of light meters and to make her own emulsions in the darkroom. She was

given the Sony Mavica FD5, the world's first digital still camera to use standard 3.5 floppy

discs to record an image, the polar opposite of her technologically primitive pinhole cameras.

It was a sunny spring day and Engber wondered why Sony had not provided a hood for the

LCD screen, in bright sunlight it was difficult to view. Engber marveled at the ease and speed of picture taking along with the reassuring ability to playback images. "I like being able to see instantly what I shot," she said. Engber remembered that she could lighten or darken her exposures. "With a regular camera", she said, "you make a photograph lighter or darker, but you do it in your head. You don't see it. Here, I could actually see it by pressing a button." When time came to eject the floppy disc, Engber asked if she should "go to someplace dark, as with a regular camera." She was reminded that there was no film in the camera and laughed. Engber was initially distracted by not being able to control the f-stop or choose the shutter speed. However, she quickly realized there was something familiar in this inflexibility. "It's like using a pinhole," she said. Engber also realized that like the pinhole camera, the Sony Mavica offers infinite depth of field.

When Engber viewed the floppy disk files she shot for *The New York Times*, a few visual features became apparent. First, the Mavica seemed unable to cope with sharp contrasts in light and dark in indoor shots with bright sections being reduced to white patches. The camera also found it difficult to deal with complex compositions that appeared perfectly wonderful on the LCD screen when the images were taken. The initial images before Engber adjusted the exposure were on the anemic side. With this adjustment the images became sharper and Engber was impressed by the unusually rich tones of images taken in direct sunlight. She noted that the colors appeared to be different then a normal camera and noted that "the greens are greener and the yellows are yellower." She liked this impact of color. When Engber photographed an image silhouetted by the sun she was not sure what the outcome would be. With a film camera the rays of the sun would appear white but the Mavica caught a lovely shower of green, red and yellow (Loke 1998, 7). Even when first released, the digital Mavica created a sense of visual strangeness.

Russian literary theorist Viktor Shklovsky's concept of 'ostranenie' was first introduced in his 1917 essay "Art as Technique" as a way to explain mechanisms of perception as well as the function of art in relation to everyday experience. Shklovsky believes the purpose of art is "to impart the sensation of things as they are perceived and not as they are known" by making objects "unfamiliar." Over the course of time the things around us grow so familiar that our perception of them is automatized and they essentially become invisible (Kessler 2010, 61-62). Ordinary scenes of everyday life captured through the lens of obsolete consumer video cameras create a visual ostranenie for present-day viewers. It is very difficult to view an image in a technological vacuum and not compare it to current visual standards. This temporal contrast creates strangeness, or ostranenie, in video created by the digital Mavica. The revolutionary aspect of both the analog and digital Mavica was its convenience to quickly playback the image. The visual look of the digital Mavica is a by-product of this convenience and is dependent on the recording capabilities of the 3.5 floppy disk. In Movie record mode, the digital Mavica has the option to capture video in either 160x112 or 320x240 image sizes.

Video created using the 160x112 file size is noticeably soft focused and blotchy. The giant pixels that make up the image seem to almost gently sway back and forth creating a sense of movement. At this resolution the viewer is confronted with the technology responsible for the image before being able to process the image itself. This visible construction creates an initial filter between the viewer and the image allows for the contemplation of the technology used to create it. The video created with the 320x240 file size is still pixelated but not to the degree that the image is abstracted. The ordinary house-lined street is clearly visible with just a hint of distortion. This level of clarity allows for the connection to the everyday image and allows

for the strangeness of viewing it in the present day.

2.4 Operative Presence

Fig. 10. Demonstrating disk writing time of the digital Sony Mavica (Brauns 2023)

https://vimeo.com/352044174
Password: PhD

In this section, Vivian Sobchack's first definition of presence, operative presence, defined as

the transference of an obsolete media apparatus across time to the "here and now" through

practical engagement (Sobchack 2011, 324) will be applied to the Sony Mavica by hands on

empirical use of the camera. When you pick up the digital version of the Sony Mavica the

weight and build feels good in your hands. The camera's smooth plastic body is pleasing to

the touch and allows for easy grip. When the Sony Mavica is turned on, the user is greeted

with a warm digital bell tone and the name Sony Mavica flashes across the screen. At first

this digital bell noise is a bit jarring since we have become accustomed to modern cameras

being silent. In the 1980s and 1990s this built-in personality trait was common for video

camcorders. It felt as if the user and the camcorder were working together. A menu choice or button being pressed was followed by a pleasantly affirming beep or tone.

To properly operate the digital Mavica requires two hands. The right hand acts as the main support and grabs the side of the body aided by a grip on the front of the camera. The battery case is used to create a handle, which is an inventive use of space and function. The thumb on the right hand operates the zoom toggle and the index finger presses the record button. The left hand is free to control the focus ring if the camera is set on manual. This general set up is similar to most digital cameras and is second nature to use. However, the digital Mavica seems like it cannot decide whether it is a digital stills camera that also shoots video or a video camera with the added benefit of being able to take stills.

The camera body looks and feels like a cross between a digital camera and a camcorder. The LCD screen in place of a traditional eyepiece lends itself better to the movement of video then composing a still image. The user has to hold the camera in front of them to view the non-articulating LCD screen, which creates camera shake. Typically a photographer can use the eyepiece against their eye to steady their shots, especially when zoomed in. Holding the camera a couple feet in front of your face does not lend itself to composing fine details of the image. The LCD screen allows for general shot composition and not the specific detail that an eyepiece provides.

One a sunny day, I took my digital Mavica to the local park. Along with the camera I brought a tripod and my iPhone, which is always in my pocket. My intention was to document what the Mavica misses while recording is taking place. The revolutionary aspect of the digital

Mavica is its ability to easily record and view pictures and video. However, the recording medium requires a lengthy gestation period.

Using the digital Mavica is an exercise in patience and accepting uncertainty. The digital Mavica is able to process a still digital photograph quickly while recording video is more about what is lost then what is gained. The 1.44MB floppy disk can hold about one minute of footage. However, filming for an entire minute usually brings on the risk of disk failure. It seems better to shoot short bursts and divide the one-minute of total footage into smaller clips. Using the camera is also an exercise in judging your moments. Committing to recording an image on the digital Mavica guarantees that you will miss out on the next 30 seconds of life happening around you. The user is frozen as they wait for the recording process to take place. So, it is imperative that you pick and choose your shots wisely because there is a pause between recording and being able to record again.

2.5 Mediation as Composition

Fig. 11. Multiple layers of cloud formations, *Videology* (Brauns 2023)

James Benning's 16mm films, such as *El Valley Centro* (2000), *Los* (2001), *Sogobi* (2001), *13 Lakes* (2004), *Ten Skies* (2004), and *RR* (2007), explore a variety of industrial and natural landscapes and their relationship to human subjectivity and civilization, exemplifying a minimalist tendency of experimental documentary (Kim 2018, 106). Experimental documentary is a term which encompasses a wide range of moving image works, dispersed across the different genres of documentary, avant-garde film, essay film and video art, and derives from the intersection of documentary and experimental practices. The definition of experimental documentary is vague given the wide variety of the works, which are all different in their medium, genre and rhetoric. However, all the works which fall under the rubric of experimental documentary maintain documentary's engagement with the realities of history, culture, and experience. Central to experimental documentary is its drive to break from a realist and objective tradition of nonfiction filmmaking where authenticity and analogy, indexicality and abstraction become symbiotic rather than oppositional principles (Kim 2018, 104-105).

In the context of experimental documentary, the issue of time measurement becomes linked to a meta-cinematography of filmic representation. *El Valley Centro* (2000), *Los* (2001), and *Sogobi* (2002) are 16mm films that exemplify the literal sense of time measurement in cinema with each shot deliberately made to match the metric logic of thirty-five shots per film, each of two minutes and thirty seconds in length. Aside from the arithmetical principle of the takes, duration in the qualitative sense of lived time is crucial in Benning's films. In this context, lived time is not primarily a matter of recording the gestures of man but to document various traces of social life and capitalistic society in a mode that posits the very act of looking at, and responding to, different physical and mental landscapes.

Although narrative time is a subordinate issue, the poetic and symbolic potential of cinematic duration in Benning's work should not be overlooked. The filmed motifs have been organized thematically according to the ascribed landscapes of each film: rural views from El Valley Centro, urban sites in Los Angeles, and images of the California wilderness. Each static shot extends into a slice of time demarcated by black frames, and the scenes rarely coincide with a filmed event. Rather, Benning's views posit the motif through a structural play of long duration takes and the monocular view of the camera. The image composition is at once the result of mathematical precision and the effect of chance, with an insect suddenly passing the camera, or the unexpected formation of a cloud representing the major attraction of the image. In Benning's 16mm films, the long take offers a meta-cinematic gesture that critically conceptualizes the relationship between the filmic recording of a landscape and the mediating process through which reality is transformed. The effect of real-time approximation is less bound to narrative and symbolic functions then to a mode of critical contemplation, where the viewer is invited to reflect upon the different meanings and associations the filmed motif may invoke (Wahlberg 2008, 94-95).

Benning defies the transparent representation of reality that has commonly been associated with the long take by drawing the viewer's attention to the sensation of the passing of time during film viewing, as well as to the relationship between the filmic recording of a landscape and the mediating process through which reality is transformed (Kim 2018, 106). In both still and moving images, composition occurs automatically, is often invisible, and typically when shot composition is discussed it is in relation to the subject being recorded. Benning's emphasis on composition through the long duration directs the viewer's attention to how the landscape being recorded is shaped by the camera during mediation. Composition is the location where the relationship between filmic recording and the mediating process

intersect. Similar to Benning, the next section of 'Stillness' is concerned with presenting composition as the subject.

As the abstract light of the previous section fades to black, the final section of 'Stillness' begins with a gentle fade-in of clouds. The cloud formations slowly begin to dissolve into each other, with each one recorded with a different obsolete consumer video camera. The clouds recorded are reminiscent of Benning's film *Ten Skies*. *Ten Skies* employs a basic structure: ten skies, ten minutes per sky – each a stationary viewpoint, no camera movement, no voice-over. Whatever happens, the motion of clouds, smoke, light, shifting colors, the occasional bird, happens in the frame. The soundtrack is composed of various sounds and noises and reinstates the horizon in images that otherwise verge on kinetic abstraction (Klimek 2014, 1). The abstract nature of the clouds recorded for the beginning of the final section of 'Stillness', obscure the visual differences between each of the obsolete consumer video cameras used to record them.

The next visuals of this section are of the same location in Hampstead Heath, London filmed with multiple obsolete consumer video cameras. Just as Benning followed a set structure of filming during the recording process of 10 Skies, the landscapes at Hampstead Heath were captured in a similar fashion. While Benning incorporated a stationary viewpoint with no camera movement, the cameras for this section were handheld to project a sense of the cameras intended use of capturing personal moments, which were very often achieved handheld. The element of chance incorporated into the filming of *10 Skies* was also present in the recording of the images at Hampstead Heath. The handheld cameras simply recorded the events of life which were happening around them. Whereas the abstract imagery of the previous clouds obscured the changing of the different video formats, the view from

Hampstead Heath clearly shows the aesthetic change. Similar to Benning's long duration

takes, which emphasize composition, this sequence also draws the viewer's attention to the

filmic recording of the landscape and the mediating process through which reality is

transformed through the lens of the multiple obsolete consumer video cameras.

Fig. 12. Video-Noise-Skies, *Videology* (Brauns 2023)

Benning's skies have a history steeped in the dance between technology and light that

characterized nineteenth century photography. The sky was a problem for early

photographers. The ground and the sky in any landscape required different exposures. If the

photographer exposed for the ground, the sky became washed out. Similarly, if the

photographer exposed for the sky, the ground would become a vast shadow. The limitations

of early film emulsions interfered with the ostensible realism of the image. The landscape on

a photographic plate was half a landscape. Combination prints, an early special effect

sometimes used as a solution, allowed a photographer to create more realistic landscapes.

With this method, clouds were supported by equally detailed grounds which harmonized to

resemble actual scenes. The use of combination prints made it possible to displace individual

elements of a landscape and to reassemble them in various combinations. Yet even in instances that attempted to remain true to a particular scene, a discrepancy was inevitable. The requirement that a photographer needed to make two images of the same scene meant that a temporal disjunction, however minute was built into the process (Klimek 2014, 1-2). Just as early 19th century photographs, to properly expose for both the sky and ground, were composed of two different temporal images, the next section of 'Stillness' is interested in exploring the invisible non-human temporality which exists simultaneously along with the recorded event. Where as the images being recorded by the camera exist in linear time, there is also non-human technological temporality which exists inside of the camera. This non-human temporality is composed of the recording medium and internal time marked by timecode. While Benning defies the transparent representation of reality associated with the long take by drawing the viewer's attention to the sensation of the passing of time, the next set of images attempt to draw the viewer's attention to the technological passing of time found in the process of creating an image.

As previously mentioned, Ernst believes that media archaeology is less about telling stories, and more about what kind of physical media, and what kind of processes and durations, are used to record those stories. For Ernst, the focus of media archaeology is on the archaeology of the apparatus that conveys the past as fact, not just as a story (Parikka 2013, 7). Instead of the washed-out skies of 19th century photography, the skies in the next set of images are replaced with the visual fingerprints of the obsolete consumer video cameras used in the creation of *Videology*. The video-noise-skies are meant to represent the temporal disconnect between the filmic recording of an image and the mediating process through which reality is transformed through the camera. Ernst's notion of non-human media archaeology will be explored in greater detail in the fourth chapter, exploring the Sony Betamovie.

Just as the recording of the previous images, the images for this sequence were also recorded, in the same structured manor as Benning, to allow for the element of chance. The camera was placed in a static position and life was allowed to unfold around it. After the landscapes were recorded, the footage was upload into an editing program and the real skies were replaced. The sequence starts off with a black and white landscape of trees set against a color sky. The juxtaposition of black and white against color instantly suggests that the images were not recorded at the same time. Despite this, the two temporally divided images work in unison to create the scene. The black and white landscape of trees remains but the blue and white sky is replaced with video noise and static. The black and white landscape changes to a color landscape with the same video noise skies. While the combination plates of 19th century photography strived for a sense of realism, the images in this sequence are intentionally surreal, and like Benning's long duration takes, invite the viewer to reflect upon the meaning of the filmed motif.
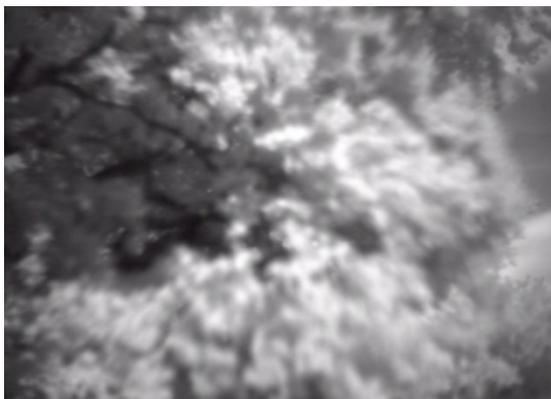

Fig. 13. Tree recorded by Tyco VideoCam, *Videology* (Brauns 2023)

While the previous visuals were concerned with showing the dual temporalities that exist within a single image, the final section of 'Stillness' is interested in exploring how still and moving images can work together in the same composition. Chris Marker's famous 1964 film *La Jetèe* was a source of inspiration. Set in the future, during the aftermath of World War III, in a post-apocalyptic Paris, *La Jetèe* is a time travel film in which a man is forced to travel through his own memories. The most remarkable feature of *La Jetèe* is its composition from still photographic images, which create a film by breaking its most fundamental rule: the projection of images at a speed that reproduces the impression of movement. The stills used in *La Jetèe* are often assumed to be individual frame enlargements extracted from a film shot in the conventional way, but they are actually photographs, taken with a Pentax camera. However, to call *La Jetèe* a film made up of photographs, or production stills or frame enlargements, misses what is so cinematic about the fixed images. Like shots in a conventional film, the photographs are separated by traditional film editing techniques: straight cuts, fades and dissolves of varying duration. Individual sequences are broken down into the recognizable patterns of classical narrative cinema, with establishing shots, eyeline matches, shot-countershot, close-ups, creating a sense of narrative coherence and momentum (Lupton 2005, 90-91).

La Jetèe is composed almost entirely on black and white still photographs edited together on 35mm film. The soundtrack offers an overarching commentary as well as various diegetic background noises (Alter 2006, 92). The still images which make up *La Jetèe* are produced by the continuous movement of the 35mm filmstrip they are printed on. Although, they are still-images, the technological process of creating their stillness requires movement. The

same is true for the analog version of the Sony Mavica, which produces a still image created by a continuous video feed.

Similar to *La Jetèe*, in 1991, during pre-production for his film *Dracula*, director Francis Ford Coppola used the analog Mavica to create what he called electronic storyboards. Coppola assembled 10 actors for a table read of the script and recorded the audio. "We recorded it so we'd have a soundtrack, and we put that soundtrack on videotape so we had a movie without pictures. Then we took hundreds and hundreds of paintings and pictures that summed up the feeling of the story and using the Sony Mavica we put the images onto the videotape (and) immediately began editing, though we weren't going to start shooting for another month" (Parisi 1991, 71-72). Coppola took advantage of the Mavica's ability to capture and playback images to create a video storyboard version of the film he could use to collaborate with his director of photography. "We already have something that I can look at, that I can show my cinematographer (Michael Ballhaus, ASC) and that I can use to gather ideas, changing it every week" (Parisi 1991, 72).

A brief fragment of movement does exist in *La Jetèe*. It begins with the close-up of a woman's face asleep in bed. The dissolves from one still image to another gradually quickens and the intervals between them gradually reduce. For a few seconds, normal film duration is established: the woman opens her eyes to look into the camera and smiles (Lupton 2005, 93). Similar to *La Jetèe*, the final visuals of 'Stillness' is also an attempt to have the conflicting disciplines of still and moving images work together. The use of still and moving images, from different obsolete consumer video cameras, is used to create the composition of a single landscape. The next image is a close-up of a black and white tree recorded by the Tyco VideoCam. The static shot of the tree slowly starts to dissolve into the still image, taken by

the Sony Mavica, of the branches of a dead tree. During the slow fade the two images, one still and one moving, work together in the transition of the tree from living to dead. This small sequence uses the elements of still and moving to tell a single story.

2.6 Eiffel Tower Drive Error

Fig. 14. Glitch image of Eiffel Tower (Brauns 2023)

https://vimeo.com/351050232
Password: PhD

In 1999 journalist Andrew Schwartz took the Sony Mavica FD-81 and his laptop on an out of town road test during the holidays for USA Today. He took photos of his whole extended family to document the trip. "As I shot a disk, I'd pull it out and pop it right into the laptop: Even the great-grandparents could see the large, clear images on the computer screen. Then I'd simply transfer the files to a folder on my laptop for safekeeping, clear the disks and be ready to shoot more." The Mavica became a travelling picture show of sorts (Schwartz 1999, 7D). Schwartz's experience using the digital Mavica FD-81 in 1999 was very similar to Akio Morita's demonstration of his trip to Hawaii on the Today Show in 1980. Although, the

technology had improved, upgrading from analog to digital, the overall user experience was similar.

Almost 20 years later, in June of 2019, much as Schwartz had done, I brought my digital Sony Mavica with me on vacation to Paris. This section examines Sobchack's second definition of presence, presence effect, in relation to my experience using the camera during my trip and how the Sony Mavica, by suddenly "being here", can overturn established media hierarchies and media histories (Sobchack 2011, 324). Fickers and Van de Oever's approach of experimental media archaeology is used to provide a space for creative exploration and to create a sensorial and intellectual experiment that demonstrates the difference between textual, visual and performative approaches to the past (Fickers and Van den Oever 2013, 276). For this experiment, the space provided for creative exploration is my trip to Paris. Just as Fickers and Van de Oever's experimental media archaeology is not an attempt to create an "authentic" historical experience, bringing the Sony Mavica to Paris was not an attempt to recreate the past, but gain first-hand experience using the obsolete camera juxtaposed with the technological present.

In preparation for my trip, I packed clothes, personal items and my Mavica FD-83 with 20 floppy disks in my travel bag. There was no rationale behind choosing 20 floppy disks other than the amount of space they took up. One single floppy disk is not a problem but any more then 20 seemed like it would be a hassle. The first issue to arise was how to successfully transport 20 floppy disks. In the present day, media storage is almost invisible. Either photos are stored directly on your iPhone or a tiny sd card inside of a digital camera. The experience of handling the recording medium has been lost on the general public since 35mm film was replaced by digital. At first, I considered a rubber band to bundle them together. Eventually, I

placed them loose in my luggage and hoped for the best. The camera itself was easy to fit into my bag.

The apartment I was staying at in Paris had a balcony and I set about filming some test footage. The movement and flow of life in a large city has always been intriguing to me. The balcony far above the hectic street provided two things of interest while using the digital Mavica. First, it allowed for easy access to floppy disks instead of having to keep pulling them out of my back pocket. Second, the high vantage point allowed me to test out the zoom lens. From far away the images produced by the digital Mavica are pixelated and blotchy but when zoomed in the camera creates a surprisingly detailed image. When zoomed all the way in on pedestrians walking, there is an interesting pixelated halo effect that is created.

On a particularly hot day, I set off towards Trocadéro Square overlooking the Eiffel Tower, to capture some footage. I walked from the apartment where I was staying with the digital Mavica hung around my neck. Having become used to taking photos and video with my iPhone the weight of the Mavica resting on my chest was a new and yet familiar sensation. I chose Trocadéro Square as a test location because of the iconic view of the Eiffel Tower and the amount of tourist that congregated there. The square was packed with people, and I began to record video of the scene.

Almost right away the heat became an issue, and I could feel the plastic body of the camera becoming hot. For a while the Mavica was performing fine, and I was able to capture some interesting moments. However, the camera began to overheat, accompanied by a 'driver error' message flashing on the screen, indicating a failure to record. Every time I would try to film, there was a very good chance that, due to the heat, it would not write the image on the

disk. I went to a nearby museum to let the Mavica cool down and then recorded a few more floppy disks.

Sometimes however, even when the 'drive error' warning appears, a glitch visual is accidently created with distorted artifacts recorded on the image. I became interested in the idea of controlled overheating for aesthetic effect. This controlled manipulation is similar to Guy Edmonds experiments with the 16mm Vitascope Movie-Maker. While Edmonds used physical tools to bend the soft metal sprockets inside of the camera to affect the image, I used the external factor of heat to similar effect. The aim was to create visual distortion and artifacts on the image created by the digital Mavica by pushing the physical limitations of the recording device.

The resulting glitch images created by intentionally overheating the Sony Mavica, resulting in "drive error" highlights Sobchack's second definition of presence, presence effect by disrupting the invisible relationship between screen and image. Erkki Huhtamo has called for the need to study the widespread use of screens found almost everywhere today. Smartphones and screens are part of the practice of everyday life and have a tendency to become invisible. People do not stare at the screen itself; they gaze at what it transmits (Huhtamo 2012, 145). The, intentionally created, glitch images of this section attempt to disrupt the viewers gaze at the screen, as described by Huhtamo, by revealing an error in the technical process behind the invisible screen. This potential for an error, resulting in a glitch image, is present every time a floppy disk is inserted into the Sony Mavica.

2.7 Zombie Floppies

Fig. 15. 20th Century Fox logo on floppy disk (Brauns 2023)

In 1980, the Mavipak video floppy disk was designed specifically for the analog version of the Mavica. However, the digital version of the Mavica was built around the already ubiquitous 3.5 floppy disk. In both instances, the revolutionary aspect of the Mavica was not the camera itself but the recording mediums convenience of use. Images created by both versions of the camera were not as good as conventional film cameras of the time, but this lack of quality was forgiven by the ability to quickly playback images. The 3.5 floppy disk is essentially a 1.4mb hard drive that was forced into obsolescence because of the death of apparatuses associated with it. Although, the 3.5 floppy disk still works today there is no way to sell it. "Dead technologies have fallen out of the revenue stream and they lie beached on the deserted shores of obsolescence. It's hard to promote and sell a technology that no longer exists. Except for the occasional hobbyist or intellectual eccentric, no one wants to retail the

defunct" (Sterling 2006, 57). The 3.5 floppy disk exists in the realm of zombie media; it still works but has no use or function. This section will examine the 3.5 floppy disk through Gunning's theory of de-familiarization, which allows for new insight and thought regarding the familiar device that currently exists in the technological afterlife.

In media archaeology, media never dies: it decays, rots, reforms, remixes, and gets historicized, reinterpreted and collected (Hertz and Parikka 2012, 430). Part of this technological afterlife is the existence of zombie media. Zombie media is concerned with media that is not only obsolete but resurrected for new uses and contexts and adaptations (Hertz and Parikka 2012, 429). For many consumer media devices planned obsolescence is the catalyst for the transformation into zombie media. In terms of contemporary consumer media devices, planned obsolescence takes many forms. It is not only an ideology, or a discourse, but more accurately it takes place on a practical design level: difficult to replace batteries, proprietary cables and chargers only manufactured for a limited amount of time, discontinued customer service and plastic coverings which easily break if tampered with. Most modern-day media devices are technological black boxes, not engineered to be fixable with no user-serviceable parts inside (Hertz and Parikka 2012, 425-426).

Once developed and deployed widely, technical components are understood by consumers as objects that serve a particular function. For example, an electronic toy makes a sound when a button is pressed, a telephone makes a telephone call, a computer prints a document when requested. The inner workings of the device are unknown to the consumer, with the circuitry of the device existing in a black box that is largely irrelevant to using it. It is only an object with a particular input which results in a specific output; its mechanism is invisible. From a design perspective, technology is intentionally created to render the mechanism invisible and

usable as a single, punctualized object (Hertz and Parikka 2012, 427 - 428). A black box is a system that is not technically understood or able to be accessed, and as a result these technologies are often completely unusable when they become broken or obsolete. Once the input/output or the desired functionality of the device stops working, it is often unfixable and inaccessible for modification by the average consumer (Hertz and Parikka 2012, 428). In the case of the 3.5 floppy disk, its input/output abilities still work but the desired functionality no longer exists. This working-but-no-longer-used existence has relegated the floppy disk into a zombie media existence.

To highlight the afterlife of floppy disks: as of 2016, the Pentagon was still using 1970s-era 8-inch floppy disks to coordinate intercontinental ballistic missiles, nuclear bombers, and tanker support aircraft (Griffiths, 2016). The floppy disks helped to run the Strategic Automated Command and Control System used by the Pentagon to send launch orders and share intelligence. In order to use the 8-inch floppy disks, the military also maintained a collection of IBM Series/1 computers. It was estimated that the US Government spent $60 billion dollars a year to operate and maintain out of date technologies. The rational of using obsolete technologies such as the 8-inch floppy disk was that sometimes low-tech is just safer. America's nuclear arsenal being disconnected from digital networks acted as a buffer from potential hacking (Fung, 2016). This military zombie afterlife of the 8-inch floppy disk was brought about because of the very fact that it is obsolete. The 8-inch floppy disks lack of functionality in the modern world is used as a safeguard to protect extremely valuable information.

When beginning to think about the 3.5 floppy disk in terms of de-familiarization the first step is to wipe away the temporal slate of experience and cultural awareness of the device. In

doing so the defining technical aspect that remains is the 1.44mb of recording space

available. Using this as a guide I began to experiment with what was possible to fit on the

limited space of the floppy disk. Using a floppy disk with a modern computer requires the

purchase of an external floppy disk drive, which connects through a USB port. I wanted

something that could tell a complete story, even if it is a very short one, and decided to try

and fit the animated logo for a film company on the limited space. After experimenting with

various codecs and compression the result is a floppy disk which contains the opening logo

for 20th Century Fox. While fitting the animated sequence on to the floppy disk was exciting,

the surprising part was the picture quality. The floppy disk was able to playback the animated

logo for 20th Century Fox in 1080p high-definition video. This ability shows that 3.5 floppy

disk is simply a 1.44mb blank recording space, able to hold current recording formats.

As is the end result of much media archaeological research, the experiment with the 3.5

floppy disk opens up room for the creation of imaginary media. Film theorist Noël Burch's

idea of 'it could have been otherwise' allows for re-examining the possibilities of established

media technologies. Alternative Histories view the current media landscape as just one strand

of several possible outcomes and imagines what might have happened if media history was

written differently (Parikka 2012, 13). Alternative histories often lead to the creation of

imaginary media; conceptualizing the impossible, the unviable pieces of alternative media

histories (Parikka 2012, 43-44). Imaginary media is a term used to describe the technological

fantasies created by contemplating alternative histories, the machines and contraptions that

exist only in theory (Parikka 2012, 51). After inserting the floppy disk and having the 20th

Century Fox logo begin to play, it is not hard to imagine an alternate technological reality

where feature films were distributed on floppy disks after VHS. Given the massive popularity

of home computers in the 1990s, Burch's idea of 'it could have been otherwise' allows for the contemplation of the unrealized potential of the 3.5 floppy disk.

Chapter Three: Surveillance as Home Entertainment

Fig. 16. Kitchen sink recorded with Tyco VideoCam, *Videology* (Brauns 2023)

The very first image of the 'Watching' section of my short film is a close-up of a dripping kitchen sink. This 15 second shot is intentionally devoid of contextual information and visual symbols that traditionally guide the viewer of both video surveillance and personal home videos. The dripping sink exists in a blank representational space with only the passing of time marked by each drop of water. The effect is evocative of Andy Warhol's 1964 film *Empire*, which consists of ten shots of equal duration and identical framing of the Empire State Building in New York City, with each shot running the full length of a 1,000-foot roll of film (Coldiron, 45). The experience of time is perhaps the most consistent feature of Warhol's cinema (Crimp 2012, 142). *Empire* has been described as a film "where nothing happens", however in the 8-hour running time there are three distinct chapters. *Empire* uses the lack of story to challenge the relationship between spectator and image with the spectacle of viewing the film being part of the film itself (Arthur, 6).

Similar to *Empire*, the act of watching both video surveillance and personal home videos is part of the experience itself. Both mediums require a certain level of visual de-coding to engage with the footage. The opening 15 second shot of part two of *Videology*, 'Watching', challenges the viewer's perception of video surveillance and personal home videos through intentionally limiting available contextual information and visual symbols. Part of the fascination of the all-seeing surveillance camera depends on the limitation of its gaze. Where the conventions of film carefully use a sequence of shots to create a sense of a whole place, the surveillance camera displays the limits of its relation to the real place it is recording (McGrath 2004, 78). Like the conventions of film, personal home videos also create a sense of place using the inherently mobile camcorder, or more recently, smartphone. In the opening 15 second shot of part two, the kitchen sink, traditionally captured in relation to the whole domestic setting is isolated through the controlled viewpoint of video surveillance. This limitation and placement in the domestic setting with no visual context blurs the divide between the two mediums. The viewer searches for visual contextualization but is restricted to a single image that is both domestic and impersonal. Without contextual visual information, the dripping sink exists in both the realm of video surveillance and home movies simultaneously.

This blurred juxtaposition of the domestic and surveillance, found in the first shot of 'Watching', evokes the technical characteristics of the Tyco VideoCam. The camera, itself, is an outcome of the marriage between experimental surveillance technology and commerce. Typically, in the creation of an object, there are various economic, technological, and social variables that affect the end result (Bijker, Hughes and Pinch, 1987 cited in Archer and Bassett 2017, 2). The end result of the Tyco VideoCam is a children's video camera with the

internal components used in video surveillance. Outside their political and social context, video surveillance and home movies share similar characteristics. They both capture extended segments of everyday life on relatively inexpensive cameras. Their recorded footage, in its unedited form, is spatiotemporally continuous and does not depend on editing. The subjects being recorded are real people and the locations are true to life and never meant to be screened publicly. The technological conflict found within the Tyco VideoCam will be explored using the second section of my short film *Videology*, 'Watching', as a guide while it examines the two common elements found in both video surveillance and home movies: space and time.

The 'space' captured by both video surveillance and personal home videos is Henri Lefebvre's definition of 'representational space'. Lefebvre defined the production of space in three strands. First, spatial practice: the structures, behaviors and relationships that constitute a society's spatial organization. Second, representations of space: the idea of space that we conceptualize. Third, representational space: 'space as directly lived through its associated images and symbols' (Mcgrath 2004, 141). To help fully understand the experience of lived space, Lefebvre takes the reader inside the human body. "The heart as lived is strangely different from the heart as thought and perceived" (Lefebrve, 1991 cited in Mcgrath 2004, 143). This is to say, the representational space of the heart is lived as a mixture of emotions, traditions and associations which do not equate with the conceptual realm of medical knowledge or the social perception of the heart as the engine which powers the human body (Mcgrath 2004, 143). Lefebvre's example of the duality of the human heart, both as perceived and conceptual, embodies how video surveillance and home movies capture the same space. Where video surveillance is defined by its search for presenting the perceived depiction of

reality, home movies present a conceptual presentation where people and things hold visual meaning.

The 'time' captured by both mediums exists within Malcolm Le Grice's notion of the 'projection event'. Le Grice believes that the reality of a film is only related to the viewer by the point of access of the projection event. The real time/space event at projection, which is the current, tangible point of access for the viewer, is to be considered as the experiential base through which any retrospective record, reference or process is to be dealt with by the viewer (Le Grice 2001, 155-156). The history of commercial cinema has been dominated by films that aim to create a convincing illusion of spatiotemporal continuity by eliminating all traces of the actual physical process of filming, from scripting through shooting, editing, printing, promotion to projection. The techniques of film have been developed to manipulate a recorded reality into structures and events, while presenting the result as a representation of reality (Le Grice 2001, 155-156). The viewer is an active part of this process, a marriage of humanity and technology, taking in visual information and assigning context to the convincing illusion of reality found within the images. In terms of video surveillance and personal home videos, the projection event allows the viewer to create the reality of the footage by assigning meaning to the unedited images. Lefebvre's notion of representational lived-in space is recorded by both mediums and is contextualized by the viewer in search of meaning through its images and symbols.

As with the previous chapter, the Tyco VideoCam will be examined through the same framework of media archaeological methodologies. The peripheral data of the Tyco VideoCam will be examined including the box, manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's first definition of presence, operative

presence, will be applied and bring the Tyco VideoCam out of the past and into the present.

Once transported to the here and now and in the hands of the user, this research projects

advocates the need to explore images created by the camera, visual aesthetic, as a natural

continuation of Sobchack's first definition of presence. This will then allow for the

application of Sobchack's second definition of presence, presence effect, to be applied in

which current media hierarchies are challenged by the Tyco VideoCam simply by being "in

the here and now". Finally, this challenging of media hierarchies will allow for the natural de-

familiarization of current media devices proposed by Tom Gunning.

3.1 Defamiliarizing Home Mode

Fig. 17. Tyco VideoCam box

This section will first examine the peripheral data of the Tyco VideoCam to help provide a

more complete picture of the cultural, and technological environment of when the camera

was initially released. The Tyco VideoCam is a result of the search for the technological

potential of the world's first CMOS video camera, created by Peter Denyer. In 1989, Denyer,

along with colleagues at The University of Edinburgh, published a paper reporting work started in 1986 on CMOS image sensing that culminated in the design and demonstration of the world's first single chip CMOS video camera. Light passes through the lens of a video camera and is captured onto an imagining sensor chip. From there these signals are processed further inside the camera and ultimately the image is recorded onto the camera's storage medium. There are two types of imagining sensors found in most video cameras, CCD or CMOS. CCD stands for charge-coupled device and utilize an image processor that is separate from the light capturing sensor. CMOS stands for complimentary metal-oxide semiconductor and bundles both an image sensor and image processor into a single chip. Cameras with multiple imagining sensors, such as 3CCD, use one chip per light primary color (red, green, blue) and utilize a separate image processor to combine the three signals into a color video image. CMOS chips are manufactured much like traditional microchips and are cheaper to produce, while CCD requires its own propriety manufacturing process (Driscoll Jr., 2009). The bundling of the sensor and image processor of the CMOS chip allows for it to be smaller than CCD chips.

In 1990, with The University of Edinburgh, and venture capitalist backing, Denyer and his colleagues set up VLSI Vision (VVL) to sell the single chip video camera and develop other novel imaging devices based on this technology. Initially, starting with just one employee, the company grew to over 100 in 1995 (The University of Edinburgh, 2017). VLSI Vision's success in the electronic imagine market was based on their silicon chip-based stamp-sized video camera that used CMOS technology which allowed a chip to combine image sensing and processing on one silicon fragment. VLSI Vision developed a unified technology for making video sensors smaller and at lower cost which allowed for them to be fitted into security systems, TV phones, children's video cameras and various other devices. First, the

small inexpensive sensors were used by security companies in the creation of cheap cameras, that could be linked to televisions, allowing families to monitor their home or babies. This led to toys such as The Tyco VideoCam and Fisher Price Creative Effects Camera (McKie 1996, A11).

The Tyco VideoCam debuted in 1996 with a £4 million marketing campaign behind it. The camera represented Tyco's move past products such as matchbox cars and the View-Master into the high-end toy market to compete with Sega, Sony and Tiger Electronics (Benezra 1996, 2). Next to a picture of a girl hanging upside down filming with the Tyco VideoCam, a write up of the camera in the Chicago Tribune from 1996 described the camera: "Lights, Camera, Action: Make black-and-white movies with the Tyco VideoCam ($100), a real video camera that's super lightweight and easy to use. No complicated directions to follow: just attach it to the VCR (a cable connection is included), push a button and start shooting (it records action and sound). Go to a toy store and gawk at one!" (Skolnik 1996, 2). The advertisement failed to mention the camera's revolutionary CMOS sensor, initially found in security cameras, which is not surprising since the Tyco VideoCam is meant to be used by children.

The initial layer of peripheral data for most obsolete consumer video cameras is the box. For manufacturers, the box represents the first opportunity to grab a potential buyer's attention and present intended use of the camera. The Tyco VideoCam comes in a bright red cardboard box with a large picture of a child holding the camera up to their eye. Next to this are two mockups of televisions displaying black and white images created by the camera. In the small televisions are pictures of the usual cast of characters and locations found in home mode. There is group of kids blowing out a birthday cake and a dad holding a mixing bowl with

surprised look on his face. The look of surprise on the dad's face indicates the camera's

ability to sneak up on people in a form of playful surveillance. While the box of an obsolete

consumer video camera allows an initial glimpse of the media device inside, through text and

pictures, television commercials can provide visual context regarding operating techniques

and user experience.

Fig. 18. Screengrab from Tyco VideoCam commercial

https://www.youtube.com/watch?v=FWs1zLhlqeM

The television commercial for the Tyco VideoCam starts off with a young boy in, what

appears to be, his living room. He presents the Tyco VideoCam to the audience and proclaims

several times that the camera is his and not his parents. The father leans down into frame as if

inspecting his son's camera and states, in amazement, "That's a real video cam!" The son

retorts by saying "For making real videos!" Initially, the commercial is in color but as the

young boy demonstrates how to use the camera, the audience adopts the point of view of the

Tyco VideoCam, with the domestic setting presented in black and white. In the commercial,

the subjects recorded by the young boy are typical interpersonal relationships: his friends, the

family dog, and his parents which exist within Richard Chalfen's model of home mode. In no part of the commercial for the Tyco VideoCam, is the black and white imagery created by the camera mentioned.

Owning a video camera was, and still is, an opportunity to record important events such as birthdays, holidays, family gatherings and other special occasions. As previously mentioned, Chalfen referred to this type of usage as 'home mode', in which the user is not primarily interested in the image making process itself but with the content they record (Buckingham, Willett and Pini 2011, 2). However, as demonstrated in the commercial for the Tyco VideoCam, the black and white visual aesthetic created by the camera, greatly affects the content being recorded. It is very difficult to view an image in a technological vacuum and not compare it to current visual standards. This temporal contrast can create strangeness, or ostranenie, in the images created by obsolete consumer video cameras. However, in the case of the Tyco VideoCam, compared to camcorders of the time, the black and white images of the domestic setting would have also created a sense of visual ostranenie even then.

The visual aesthetic of the Tyco VideoCam in the domestic setting are noisy images with a shallow depth of field. The lived-in space is captured in a hazy, slightly out of focus black and white. The camera performs best in a bright, evenly lit environment, with the tendency for over exposure in dimly lit rooms with a single light source. With ample light, the images created are full of contrast. In low light environments, the image becomes flat and hazy. The wide-angle lens of the camera creates a gentle bending of the image at the corners of the frame. The effect of this is that rooms in the domestic setting have a slight warped feel, with doorways and walls slightly curving.

Fig. 19. Tree recorded with Tyco VideoCam, *Videology* (Brauns 2023)

https://vimeo.com/421454270
Password: PhD

When the Tyco VideoCam is removed from the domestic setting, and used outside, the

images take on an infrared quality. There is a glowing haze that outlines the images. The

depth of field of the camera drops off quickly and creates dream-like scenes. After a short

distance people appear hazy and out of focus, becoming a moving part of the landscape.

Although, most of the frame is slightly blurry past a certain depth of field, there is a pinpoint

of focus, which draws the viewer's eye. This point of focus is more noticeable when using the

Tyco VideoCam outside, rather than in the domestic setting.

As the commercial for the Tyco VideoCam progresses, the young boy demonstrates the

cameras ease of use. "Just plug it into the VCR, then point and shoot." Most people are either

too young to have used the Tyco VideoCam, or if they did, it was a long time ago. The

process of de-familiarization, in most instances, has already been achieved through the

passage of time. The temporal slate of experience and cultural awareness has been wiped clean. However, almost everyone is familiar with the idea of the VCR and the recording device's traditional location in the home. In this instance, Tom Gunning's notion of de-familiarization is applicable to the greater idea of the home, through the Tyco VideoCams dependence on the recording device.

The Tyco VideoCams dependence on the recording medium of the VCR places it squarely within the confines of the domestic setting and also within Chalfen's model of home mode. The advent of the VCR in the 1970s promised the freedom of choice and reduced dependence on broadcast sources (Levy 1989, 211). The VCR brought with it a revolution in terms of how television could be used. It allowed the viewer to control when, where and what they watched. For most consumers, their first exposure to video was the introduction of the VCR in the home. The VCR has three basic uses. First, as a device to record television programs for later viewing, known as time-shifting. Second, to build a home library of videotapes. And third, to view purchased or rented movies and other recordings (Levy and Gunter 1988, 2). The VCR offered consumers the freedom of choice from the comfort of their own living rooms.

Despite this new convenience, Roland Barthes argued that televised film elicits the opposite effect of the movie going experience because its familiar domestic setting removes the mystique of watching a film in the hushed glow of a darkened theatre. The typical living room provided "nothing, no fascination; the darkness is dissolved, the anonymity re-pressed, the space is familiar, organized (by furniture and familiar objects)" (Elcott 2020, 296). This familiarity of the living room, which Barth argued disrupted the mystic of televised film consumed at home is stripped away in the visuals created by the Tyco VideoCam. The duality

of internal surveillance technology and personal interaction with camera creates a type of self-surveillance. The VCR, traditionally used for watching pre-recorded television programs and films is now recording the viewer's surroundings. The images created by the Tyco VideoCam removes the comfortable atmosphere of the living room and replaces it with a sense of visual strangeness. The very same familiar furniture which Barthes claimed destroyed the mystic of the filmgoing experience now appears strange through the lens of the Tyco VideoCam.

3.2 Lived In Surveillance Space

Fig. 20. Domestic setting recorded with Tyco VideoCam, *Videology* (Brauns 2023)

After the initial 15 second shot of the dripping sink, the entire kitchen is revealed as the camera begins to move through the home. Where previously, the viewer was intentionally starved for context and information with the close-up of the kitchen sink, the following sequence of wide shots are full of visual symbols in the form of the objects and furniture that

make up the domestic setting. As previously mentioned, to help fully understand the experience of lived space, Lefebvre takes the reader inside the human body. Lefebvre's example of the duality of the human heart, both as perceived and conceptual, also applies to the experience of the domestic setting in this sequence. The rooms and furniture of the home are both defined by their physical perception, along with their conceptual meaning. Similarly, whereas video surveillance is defined by its search for presenting the perceived depiction of reality, home videos present a conceptual presentation, where people and things hold visual meaning.

Lefebvre argues that the space in which we live is always produced. This is to say, our lived-in space is the result of social relations, ideological concepts, and our imaginings (Mcgrath 2004, 133-134). In terms of video surveillance and home video, Lefebvre's notion of produced space is interpreted during the projection event. The type of lived-in space presented to the viewer during the projection event of home movies expanded with the introduction of video. In Chalfen's definition of home mode, the home movie apparatus generally consists of a camera lacking sound recording capabilities, projector, screen, lights for indoor photography, and reels of film limited to three minutes of shooting. The celluloid recording medium is relatively costly, cannot be reused and requires high levels of light and lab processing for proper exposure and printing. In contrast, the home video apparatus generally consists of a camcorder with built-in synchronous sound recording capabilities, VCR, domestic television monitor, optional lights, and videocassettes able to record up to eight hours. The electromagnetic recording medium is relatively inexpensive, can be reused, operates in low light levels, and does not require lab processing. These basic differences of operation between home movies and home video precipitate differences of production and

reception, which in turn extend home videos range of content and space for interpretation beyond the limitations of home movies.

Since it can be left running for hours on a tripod and ultimately forgotten about, the camcorder fits easily into everyday life without intervening in routines, selecting content, or posing subjects. This seeming transparency of home video tends to relax some of the artificial conventions imposed by home movies. With this, home video is able to capture the initial event of the birthday party itself but also the baking of the cake and wrapping of presents. The camcorder does not only capture smiling faces directed to say "cheese" as they blow out the cake but also tears, boredom, or anger when subjects forget they are on camera. While some home videomakers may choose to erase or record over footage that does not portray their families and friends in a positive light, just as many will cherish moments of embarrassment, distress, or defeat for their candid humor or truth. Video, in the model of home mode, realizes a broader range of intentions than Chalfen's formal reading of home movies would indicate (Moran 2002, 42).

In contrast to film, video's low cost, extended recording time and capacity to be reused, substantially increased the potential range and volume of events and behaviors recorded during home mode production. With the inexpensive nature of the videocassette and the ability to record for hours at a time, users may be less selective in advance of shooting. Synchronous sound recording, standard on all video equipment, introduced the technique of on camera narration, missing in home movies which lacked the ability to record sound. This prevented the need of visual gestures by the subjects being recorded to express meaning. Synchronous sound recording allowed users to comment on the action, tell stories, and interview subjects, increasing the likelihood of narrative content and interpretation within the

artifact itself, rather than only as an external accompaniment at the site of exhibition (Moran 2002, 39-41).

Like *Empire*, this sequence of 'Watching' uses the lack of story to challenge the relationship between spectator and image with the spectacle of viewing the film being part of the film itself (Arthur, 6). There is a need for the spectator of Warhol's films to leave their role as passive viewers who sit and watch the images pass them by, instead to become active participants in making the film. In this manner, the viewer must participate in the creation of the film through their act of investigating time and meaning into Warhol's seemingly meaningless films. Even though Warhol frames the scene and films it with the mechanical apparatus of the camera, it is up to the viewer of the film to fill it with meaning (Haladyn, 2011). This responsibility of the viewer of the film to "fill it with meaning" is present in this section of 'Watching'. The images presented to the viewer are of the domestic setting but through the lens of video surveillance.

While *Empire* challenges the relationship between spectator and image in the form of long duration takes, the next sequence of 'Watching' challenges the relationship between spectator and image through the blurring of conceptual representation and perceived reality. Like the conventions of film, which carefully use a sequence of shots to create a sense of a whole place (McGrath 2004, 78), this sequence of 'Watching' establishes the whole place of the domestic setting as it travels through Lefebvre's notion of lived-in space. The produced space of the domestic setting, normally captured through the conceptual gaze of home movies is recorded in the sterile perceived reality of video surveillance. The visual aesthetic, and static camera position, project a video surveillance aesthetic, which normally records impersonal

public space, onto the lived-in space of the home. The resulting images are visuals of domestic surveillance.

To further challenge the viewer's perception of the relationship between video surveillance and home movies, the technological conflict found within the Tyco VideoCam was used to establish rules governing the production process of this sequence of 'Watching'. The visual aesthetic of the Tyco VideoCam, directly related to the internal CMOS sensor used in early surveillance cameras, required the camera to be placed on a locked off tripod. To this end, similar to Warhol's production tactics of static camera, long-takes and no editing, (Rees 2011, 75) Le Grice's notion of shallow camera time/space is applied. Shallow camera time / space is expressed when the camera is either static or its movements are limited and formal, the area for filming, frequently a room interior, is directly relatable to the space in which the film is to be seen – shallow time in the basic use of continuous takes where the shooting time can stand as a direct equivalent for the projection time (Le Grice 2001, 157). The intended use of the Tyco VideoCam required that the location of filming take place in the domestic setting of the home. The camera is designed to record images of the domestic setting and present them in real time with continuous long duration takes. Just as Warhol intentionally left in light leaks which signified the end of each film reel in *Empire,* as proof of a continuous shot, the blurry video glitch lines at the bottom of the screen in the first section of 'Watching' technologically marks the unbroken passage of time. The deliberate use of continuous takes with the inclusion of light leaks at the end of reels and background noise allows the series of recorded images to stand as a credible equivalent for the events before and in the camera (Le Grice 2001, 156-157).

While this sequence in 'Watching' presents visuals of domestic surveillance, Manu Luksh also blurs the line between video surveillance and personal home videos by personalizing CCTV footage. With the idea that many street corners are already under surveillance, London-based Austrian filmmaker, Manu Luksch questioned the need to bring in additional cameras when so much private and public space is already covered from numerous angles (Vertigo, 2008). "As a filmmaker, I was really questioning myself – where should I bring in my own camera" (BBC, 2007). Using the 1998 European Data Protection Act as a reference, Luksch created the Manifesto for CCTV Filmmakers, which declares a set of rules, establishes effective procedures, and identifies issues filmmakers using pre-existing CCTV footage in the UK. Under the 1998 European Data Protection Act, "Personal data" is defined as any information relating to an identified or identifiable natural person; an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity (Vertigo, 2008). "I found out that under the Data Protection Act (DPA), one has the right to retrieve data which is held upon oneself. This does not only apply to medical and financial data, but also to CCTV images". Luksch claimed as much CCTV footage of herself as possible, with the faces of everyone else captured blacked out in accordance to the DPA and created the short film *Faceless*, set in the future with her as the only woman with a face (BBC, 2007).

By intentionally inserting herself into the CCTV footage, Luksch personalized the very impersonal notion of video surveillance. This mix of personal and public surveillance space is currently developing in private homes with the introduction of the Ring video doorbell. Ring, owned by Amazon, is an internet-connected video doorbell that allows a homeowner to watch live video of their front porch through a smart phone app or website. Ring cameras come in

various forms, including models that can be mounted outdoors or installed on a door peephole but the most popular version is the doorbell module. In addition to a camera, Ring includes a motion sensor, a microphone and a speaker so that visitors can communicate with the homeowner. Ring video doorbells have generated scrutiny after several security breaches occurred including company employees watching customers videos and hijackers taking control of several families' Ring devices (Chen, 2020).

While these intrusions were isolated events, the relationship between Ring and local law enforcement is intentional. Residential neighborhoods are not usually lined with video surveillance cameras. However, the popularity of devices such as Ring has essentially created private surveillance networks powered by Amazon and promoted by local police departments. Police across the United States have offered free or discounted Ring doorbells to citizens. Ring owners are supposed to have a choice in turning over footage to the police but in some free giveaways of the device, police require recipients to turn over footage when requested. As of 2019 more then 50 local police departments across the United States have partnered with Ring (Ng, 2019). Ring also offers an app for the smartphone called Neighbors, pitched as the "new neighborhood watch." The Neighbors app connects local residents and collectively allows them to find lost pets, view crime alerts in the area and share details of theft and other suspicious activity. Police departments who have partnered with Ring are also able to view posts on the Neighbors app and ask Ring is any users are willing to share video clips of a certain area at a certain time in relation to criminal activity (Wollerton, 2019).

3.3 Apparatus of Co-Dependence

In this section, Vivian Sobchack's first definition of presence, operative presence, will be applied to the Tyco VideoCam through hands on empirical use with the camera. As mentioned in the introduction, there is a technological difference between video cameras and camcorders. In common use, the term 'video camera' has become a catch-all description for both. The Tyco VideoCam falls neatly into the category of video camera defined as a camera body comprising a sensor, lens and operating controls attached to a VTR. CCTV cameras are also technically defined as video cameras. Although, usually perched in obscure and discrete places, they fit the defining technological traits of a video camera and record to a VTR, although usually situated in a far-off control room. In terms of the Tyco VideoCam, the VTR attached to the camera, in most instances, is the home VCR.

There is nothing about the Tyco VideoCam that immediately identifies it as a kid's video camera. Most toy cameras are brightly colored and easily stand out to the eye. The physical build of the Tyco VideoCam is not dissimilar to that of a CCTV camera. If you were to remove the viewfinder, the Tyco VideoCam would not look out of place attached to a building. The body of the Tyco VideoCam is constructed of dark gray plastic with a surface texture that allows for an easy grip. As a handheld camera the Tyco VideoCam is quite pleasing to use and feels like a modern compact camcorder in the hand. The camera has a fixed lens that adjusts for focus and brightness automatically, and with no external user controls, the camera body is essentially just a housing for the CMOS sensor inside. The Tyco VideoCam is powered by 6AA batteries and turned on by a red sliding switch located on the

side. A red indicator light on the back lets the user know the camera is on. The camera comes with a long yellow cable that plugs into the VCR, which then projects the images created by the Tyco VideoCam onto a television. The eye piece juts out on the side of the camera but is not a true representation of the image being recorded.

Filming with the Tyco VideoCam is an experiment in patience with several moving parts that need to line up perfectly. The subject being filmed may not always be in the same room as the VCR which requires moving the camera, and in turn, carefully managing the attached yellow cable which has a tendency of easily becoming snagged on things around the house. There are two ways to operate the camera; either handheld or placed on a small plastic tripod. Because the viewfinder on the camera is not a true representation of what is being recorded, it is easier to compose the composition of a shot by looking at the image on the television. The inclusion of the television in the process of using the Tyco VideoCam adds an element of being observed which is common in surveillance. Whenever the user films with the Tyco VideoCam, they are simultaneously recording and observing their surroundings.

With most consumer video cameras, the user is meant to look through either a viewfinder or screen on the camera while recording. This direct interaction between user and camera is used to, engage with, and capture the world around them. The Tyco VideoCam breaks this connection, with the image being recorded also being displayed on a television screen at the same time. When referencing the television to compose a shot, the user goes from actively interacting with the world happening around them to observing the world happening around them through the context of the televisions flat dimensional space. Filming through a viewfinder, or screen on the camera, creates an invisible relationship between user and camera as part of the interaction with the subject being recorded. The introduction of the

television in the recording process of the Tyco VideoCam creates a distance between the user

and subject with the user going from active participant with the subject to observing how the

subject looks on the television screen.

3.4 Condensed Time of the Projection Event

Fig. 21. Television foregrounding projection event, *Videology* (Brauns 2023)

As the camera moves through the lived-in space of the domestic setting, it follows the same

linear progression of film, with each static shot leading to the next. While similar to film,

which assigns meaning to the projection event in linear progression, video surveillance and

personal home videos are not restricted to films forward momentum and can also assign

meaning to the footage through the process of condensing time, known as 'timeshifting'.

Timeshifting, encompasses the union of television and video, particularly the cultural use of

video molded by television, exemplified with the introduction of the video tape recorder to

reproduce television (Spielmann 2010, 50-51). The notion of timeshifting was first

introduced to the public in 1972 with the first Philips video cassette recorder, a half-inch

cassette machine designed specifically for the domestic market to allow for the recording of

timed broadcast programs and their replay at the viewers convenience (Armes 1988, 84).

While culturally, timeshifting allowed for the watching of broadcast television at the viewers

convenience, on a technical level, timeshifting is also defined through how the flow of the

electronic signals which make up video are constructed and reconstructed and how the half

images are put together while shifting them in time (Spielmann 2010, 50-51). The image

created in relation to video is defined by two interlocked half images with all the information

in the image composed of linear images, even and odds, staggered in time. A frame of video

is the result of two image fields intermeshed with each other which manufacture twice over to

resolve the electronic scan vertically. In North America and Japan, the vertical field is

constructed of 262.5 lines, in the European PAL format, the vertical field consists of 312.5

half lines. The term frame in relation to video refers to an image format, which numbers 525

lines, 30 images per second (60 half-images/second) with 60 hertz in NTSC and 625 lines, 25

images per second (50 half-images/second) with 50 hertz in PAL. The technical need to scan

two fields inside of a frame successively is based on the avoidance of flicker. Through the

two interlocking lines, the image on the display of the screen appears constant (Spielmann

2010, 47). The controlled flow of reconstructing the video image during timeshifting allows

for the projection event of video to occur.

As the camera moves through the domestic setting, the last image of the sequence in

'Watching' is the familiar image of a television situated on a table. The screen of the

television displays the flow of electronic video signals constantly being constructed and

reconstructed in their most basic technological form: video static. Whereas the fixed motion

image of film is tied, at shooting and projection, immovably to the template of a vertical

ordering of the single image frames on a filmstrip, video does not have such demands. In the video image, there exists an electronic flow of images, that like the filmstrip, performs a vertical movement and is equally capable of moving horizontally. The visible impression of a frame arises through information coming in from outside as light, which is transformed by the scanning process into electrical signals, which are transferred into scan lines (Spielmann 2010, 48). Unlike the filmstrip, which can physically exist unto itself without projection, the video image is made up of the flow of reconstructed half-images timeshifted to the present moment, only accessible at the site of the projection event.

In the case of video surveillance, which is defined by the perceived depiction of reality from a controlled vantagepoint, the entirety of the unedited recorded event is timeshifted and reconstructed for the projection event. The all-seeing gaze of video surveillance records everything. The same is true, to a lesser extent, for personal home videos whose low cost, extended recording time and capacity to be reused, substantially increased the potential range and volume of events and behaviors recorded during home mode production. With the inexpensive nature of the videocassette and the ability to record for hours at a time, users may be less selective in advance of shooting (Moran 2002, 41). This inexpensive nature of the videocassette medium lead to production practices which mirrored aspects of video surveillance. Since it can be left running for hours on a tripod and ultimately forgotten about, the camcorder fits easily into everyday life without intervening in routines, selecting content, or posing subjects. This seeming transparency of home video tends to relax some of the artificial conventions imposed by home movies shot on film (Moran 2002, 42).

The video static on the television screen is replaced with timelapse footage of a neighborhood street. The human eye is naturally drawn to the movement happening on the television screen

within the image. While moments before, the video static was just part of the scene, the timelapse footage now creates a dialogue with the viewer. The discourse of television's flow is present in the sense that the viewer can engage in a dialogue with the screen. Yet, as previously established, the broadcast flow is also vanishing, a constant disappearing of what has just been shown. The electron scan builds up two images of each frame shown, with the lines interlacing to form a complete picture (Cubitt 1991, 30).

Like Warhol's *Empire*, the flow of the timelapse footage in 'Watching' uses the lack of story to challenge the relationship between spectator and image with the spectacle of viewing the film being part of the film itself (Arthur, 6). *Empire* consists of ten shots of equal duration and identical framing, with each shot running the full length of a 1,000-foot roll of 16mm film (Coldiron, 45-46). However, while *Empire* presents the illusion of a single take of the Empire State Building, the timelapse footage of 'Watching' stresses the technological involvement of capturing the recorded event in a single shot. Not only is the sensation of movement on screen an optical illusion, brought about by the rapid succession of frames, but each frame itself is radically incomplete with the line before always fading away before the second interlacing scan is complete (Cubitt 1991, 30). Timelapse technology presents the illusion of a single take by recording a single frame from the flow of video and stitching them together.

Empire has been described as a film "where nothing happens", when in fact there are three distinct movements. The first roughly three-quarters of an hour might be called the "sunset" movement. *Empire* begins with untrimmed ends, the flutters, abstract play of light which results from both loading the camera and exposure during processing, which leads into a brief passage of absolute overexposure as the wide-open aperture and pushed processing create a

nearly white frame. As the sun begins to set, the exposure settles into a conventional range, and for some 30 minutes a foggy view of the Empire State Building gradually dims until a light turns on atop the Metropolitan Life building, immediately to the viewers left of the Empire State Building. The Met Life building is something of a co-star, with its light blinking off every quarter-hour of real time and visually "chimming" the time at each hour.

A dozen minutes later, the first of the films two major events occurs, as the floodlights illuminating the upper third of the Empire State Building burst on. This event does not end the "sunset" passage of the film since the lights arrive before night has fully fallen. But once this has occurred, around 20 minutes after the lights have been turned on, the film enters its "floodlights" movement. All that is visible is the upper third of the Empire State Building, floating amidst the nights flattened space. And then, suddenly, the lights go off. The final 70 minutes of Empire transpire in almost total darkness, a near black visual field punctuated by the blinking tip of the Met Life building and the glow of the floodlights with a handful of stray dots of lights scattered throughout the background (Coldiron, 45-46).

While *Empire* is described as a film where "nothing happens" (Arthur, 6), video surveillance is often only viewed when something does happen. Just as *Empire* consists of three distinct movements, the timelapse footage in 'Watching' is also similarly divided into sunset, darkness, and sunrise. The "sunset" movement, of the timelapse footage, begins with a static shot of a residential street. As the light slowly begins to fade, people quickly dart about the screen, with cars coming and going. With only a single field of video being recorded at a time, the people that traverse the street scene appear as flashes of humanity. The major event of the "sunset" movement occurs when a white van parks on the street and then drives away. As the sun sets, the "darkness" movement, a technological transition, begins with the screen

fading to black. There are quick flashes of lights turning on and off in the darkness as the residential street reappears, this time in color. The transition from black and white to color is first noticeable by the yellow light pouring out of the upstairs window of the house across the street. While *Empire* attempts to present the illusion of a single take, the timelapse footage of 'Watching' purposefully tries to destroy it by showing the mechanical process involved.

Both *Empire* and the timelapse footage in 'Watching' present the same thing: the illusion of a single take. Empire achieves this through expanding the footage. The duration of Empire is somewhat regularly extended or shifted to account for more of the day than there actually is. The film covers a period from roughly 8pm to 1am: the additional hours which stretch its running time past eight hours exist only when it is shown at its intended rate of 16 frames per second. This is the case with all Warhol's early silent films from 1963-65. There is decidedly not a sunrise in the film (Coldiron, 45-46). The final movement of the timelapse footage, "sunrise", sees the street scene go from darkness to light as the sun begins to rise. Unlike Empire, there is decidedly a sunrise, or more correctly, a sunrise captured one field of video at a time. The timelapse footage of 'Watching', while continuously records for the duration of the recorded event, is not technically a true single take but, in fact, single fields of video stitched together creating a condensed version of events. *Empire* and the timelapse sequence in 'Watching' attempt the same illusion, through opposite methods.

3.5 Infinite Projection Event

Fig. 22. Mise en abyme of multiple projection events, *Videology* (Brauns 2023)

The timelapse footage of the neighborhood street scene is replaced by a flash of video static which reveals the same television positioned on the table in the domestic setting, also placed in an outdoor field. After a pause, the camera zooms into the color image on the television screen, leaving the black and white setting of the home behind. Once inside the color image, the camera continues to zoom towards the television in the field. As the camera moves closer it reveals, that within the image of the television is another television repeated. The camera continues to zoom and enters the screen of the first television in the loop. This action is repeated four times, with each zoom created by a different obsolete consumer video camera. The result is an infinite loop of multiple projection events.

The camera moves through the last television in the outdoor field and is transported to a bedroom, where the same process repeats. From the bedroom the next location is a domestic kitchen. After the kitchen, the camera continues to zoom into multiple television screens: each with an image of a familiar location found within the domestic setting, divided into four

different visual representations. The infinite loop of projection events creates multiple, simultaneous, realities of the same location. Within the multiple realities, created by the viewer, the associated images, and symbols of Lefebvre's definition of representational space (Mcgrath 2004, 141), are presented differently by each of the obsolete consumer video cameras. Lefebvre's example of the duality of the human heart, both as perceived and conceptual, also applies to the experience of the domestic setting. The rooms and furniture of the home are both defined by their physical perception, along with their conceptual meaning. The space, within the infinite loop, carries a "mixture of emotions, traditions and associations" (Mcgrath 2004, 143), the perception of which changes with each representation by the multiple obsolete consumer video cameras.

This image within an image is similar to Takashi Ito's 1981 short film *Spacy*, which experiments with the concept of mise en abyme, the technique of placing a copy of an image within itself. In *Spacy*, Ito's camera wanders throughout a gymnasium and dives into images of various parts of the space, only to breach the framed threshold and arrive right back where it started. Ito creates an endless loop that navigates the idea of perspective and exploits its propensity for illusions of space and time (Everhart, 2014). *Spacy* consists of 700 continuous still photographs which are re-photographed frame by frame according to a strict rule where movements must go from rectilinear motion to circular and parabola motion, then from horizontal to vertical. The first image in *Spacy* is a wall of windows, a single photograph followed by black film leader. The next shot is a different angle of the same windows, again followed by black. The camera pans around the ceiling in a counter-clockwise motion. The intervals between the photographs shorten, speeding up the frequency that the camera scans the dimension of the space (Schedelbauer, 2011). The single frame, varied and repeated,

creates the illusion of motion. This basic cinematic unit is found throughout Ito's work as he uses the single iterative frame as the artistic element of space-time (Dahan, 2015).

The camera continues a counter-clockwise descent to the floor of the gymnasium, revealing the four walls of a basketball court. Near each wall stands an easel, and upon each easel is an animated image of the same basketball court through which the camera travels through. Ito's camera travels time and again through the reflexive image of itself through the sealed cinematic continuum. As the camera travels from screen to screen, each moving image acts as both a screen and a portal (Dahan 2015, Mubi). *Spacy,* is constructed entirely by using sequential photography, integrating sequences within sequences and capturing images of space within the same space (Schedelbauer, 2011). Similar to *Spacy*, which traverses space and time in a self-reflexive continuum, this sequence of 'Watching' moves through representational space through the time of multiple projection events. While *Spacy* moves through exact copies of the same space, 'Watching' moves through different realities of the same space created by the viewer.

Ito's camera uses multiple easels, set up around the gymnasium, to move through the space. A similar effect is achieved in this sequence of 'Watching' with the use of the television screen. Just like in *Spacy*, each television acts as both a screen and a portal. The definition of a screen has both a broad and narrow meaning. In the strictest sense, the word screen means a rectangular plane surface on which a ray of light, or an electronic image, distributes forms and colors dynamically. It also means the place where these elements come to be perceived and interpreted (Chateau and Moure 2016, 16). The television screens in 'Watching', are both the surface through which the camera travels through, from one projection event to the next, and where each obsolete consumer video camera changes the perception of the

representational space it is traversing. While the mise en abyme of *Spacy* places a copy of the same image within itself, this sequence of 'Watching', moves through different copies of the same image.

Similar to Ito, who followed strict rules regarding movement in the creation of *Spacy*, this section of 'Watching' also followed pre-determined rules for filming. During production, the obsolete consumer video cameras were placed on a locked off tripod. The static camera allowed for the application of a digital zoom to be added in post-production to connect the multiple projection events of the television screens. The static images also added a sense of ambiguity to the shots, a mixture of the locations of the domestic setting recorded in the production value of video surveillance. Locations were selected that fit into Chalfen's model of home mode.

Despite the common personal themes found within Chalfens model of home mode, each family captured in the dusty archive of amateur images is different. The home movie acts as an unstructured and random archive for each specific family. The person documenting their lives captures moments worth filming, subjects that are important, beautiful, interesting and funny (Forgács 2008, 50). Within Chalfen's model of home mode, each individual family is a different copy of the same set of personal themes. While Spacy moves through exact copies of one location, this sequence of 'Watching' moves through the different copies of home mode.

The archive of home movies began with 8mm film, then transitioned to video and now currently is in the form of high-definition smartphone footage (Forgács 2008, 50). Home movies constitute a vast imaginary archive that is never complete, always fragmentary. This

imaginary home movie archive is transnational, a depository of linkages among nations, communities, politics, identities and families. Archives are never inert, as they are always in the process of addition of new arenas and unknown objects, not simply a depository but rather a retrieval machine defined by its revision, expansion, addition and change (Zimmerman 2008, 18-19).

Even when the television moves outside of the domestic setting, it never fully enters the public sphere. The final location of the television, before the infinite loop starts again, is a neighborhood street, the dividing line between public and private space. The intended effect is a blurring between the boundaries of personal home videos and video surveillance but never fully crossing them. Today the public and private sphere have been blurred. Devices such as smartphones and tablets, allows for the removal of the viewing process from the domestic setting entirely. Both spectators and screens are primarily mobile, their movements and interactions almost completely destabilize the fixed position and physical passivity associated with watching cinema or television from a distance and sitting down (Sobchack 2016, 157). We live in a multi-screen world. This means that from the smartphone to IMAX, and all the types in-between, there is now the possibility to transform video content to a number of different formats, to use one type of screen in a wide range of situations or just go from one kind of screen to another. Living in a multi-screen world implies the growth of material and new ways of screening (Chateau and Moure 2016, 13).

Along with rules dictating the filming of this sequence, the speed of the infinite loop of presentation events was also considered. Initially, the camera moves through each location at a slow pace. However, with each cycle of the infinite loops, the speed of travel of the camera

increases. The speed continues to increase until the images are moving at such a pace that the individual projection events disappear, and the result is just a single fluid image. Eventually the speed of the infinite loops become so fast that it is nearly impossible to distinguish the individual projection events. The image and the portal collapse in on itself and become the same entity, with each reality of the projection event, created by the viewer happening all at once.
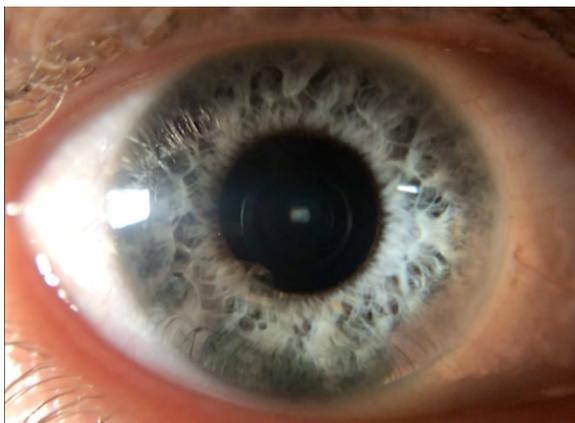
3.6 Returned Gaze

Fig. 23. Human eye returns the gaze of the viewer, *Videology* (Brauns 2023)

In the beginning of George Landow's 1970 short film *Remedial Reading Comprehension* there is a shot of a group of moviegoers waiting for the projection of a film to begin. The crowd is quietly talking as people enter the screen to take their seats. Landow's camera adopts the point-of-view of the film screen, staring out at the audience. This shot accomplishes two functions. It valorizes the audience, and it also directly expresses the gaze of the projection surface, impassively "looking back" at the faces of the spectators. The film

acts upon the viewer, addressing them, viewing them as they view it, until the film itself becomes a gaze, rather than gazed upon (Dixon 1995, 2).

The smash cut to the close-up of the human eye, in the last section of 'Watching', takes the same vantage point as Landow's camera. Just like the audience in *Remedial Reading Comprehension,* the viewer suddenly goes from spectator to subject, with the technological gaze of the film looking back at them. Moments before, the camera had been traveling through sedimented layers of representational space with the projection event of each television blurring the temporal divide between the obsolete consumer video cameras. Suddenly, the multiple spatial dimensions are reduced to the flat video screen projecting the human eye. The eye looking back at the viewer is both the image created by the camera and the apparatus used to create the image itself, present in the form of the camera lens in the center of the pupil. This self-reflexive loop of technology and humanity is presented in the single image of the camera-eye.

The "look back" is an integral function of cinema, whether this responsive "look of the screen" is foregrounded by the work or not. It is not so much the returned gaze of the actors within a film, or the intensity of the subject matter that introduces this phenomenon, but rather the combined, cohesive act of the entire cinematic apparatus in operation: the production, presentation, and ultimate reception of a film. Whether there is a finite background to every shot or even if there is not, there is still a look that is returned by the frame, with the rectangular dimensions of the screen acting as a window, emitting light into the audience (Dixon 1995, 3-7). The camera-eye staring back at the viewer is the entirety of the cinematic apparatus in one image, containing the production, presentation, and reception of the film. The television screen, acting as a window, confronts the viewer.

The camera-eye metaphor, often visualized directly through the superimposition of eye and camera lens, and alluded to indirectly in many other variations, is a metaphor intrinsic to the visual aesthetics of avant-garde film. The superimposed eye in the camera lens in Dziga Vertov's *The Man with a Movie Camera* (1929) and Man Ray's *Emak Bakia* (1926) is a depiction of the implicit equation between cinema and seeing. Less explicit references to the relationship of film and vision occur in many other images of eyes created by various avant-garde filmmakers. The metaphor of the camera-eye is constructed of synecdoche's, meaning the eye and the camera are parts standing for the whole of their respective visual apparatuses. Vision is no more a product of the eye alone then pictures are made by the camera alone. In each case, we, the viewer, see the result of complex processes that only begin in the eye and the camera. They are the outermost extensions of visuals systems whose other structures and functions inside the human skull and inside film labs, editing rooms and projection booths (Wees 1992, 13-21). The meeting point between the two independent visual systems of the camera and the human eye occurs at the site of the projection event.

The returned gaze of the screen has the power to transform our existences, to substantially change our view of our lives, and the world we inhabit. It has often been remarked that films of extreme violence adopt point-of view shots to encourage audiences to identify with either the victim or the tormentor within the narrative structure, particularly at crucial points during the film when scenes of risk or retribution are played out on screen. But these films also possess a gaze that projects out into the audience, a gaze that transfixes and collectivizes individual audience members into a momentarily cohesive group, stunned by the reflection of light thrown by the screen (Dixon 1995, 7). The notion of the returned gaze is not only limited to the apparatus of cinema, today with the ubiquitous nature of smartphones to both

create and consume media, along with the increase of video surveillance in the domestic setting, the return gaze has become more personal.

Similar to the metaphor of the camera-eye, the Tyco VideoCam falls somewhere in between the two independent visual systems, a mixture of technical video surveillance and personal home videos. The "consequential effect of existence" (Sobchack, 2011 324) of the Tyco VideoCam, defined within Sobchack's second definition of presence, presence effect, challenges the accepted order of things by presenting the invisible relationship between video surveillance and personal home videos, in the form of a children's video camera. The merging of the two mediums has become defamiliarized and not often thought about. Devices such as the Ring doorbell, a video surveillance camera in the home nowadays seems logically commonplace. While products like the Ring video doorbell transforms the domestic setting of the home into a space of surveillance, devices intended for creating personal home videos are now being used for surveillance.

The ubiquitous nature of the smartphone, with a built-in video camera, has transformed the device into a modern-day camcorder for most people. Factors such as ease of use, connectivity, accessibility, and low-cost make the smartphone an ideal tool for capturing visual representations of personal experiences (Keep 2014, 15). However, this device, meant to record private moments, has recently been used to watch the police. The recent Black Lives Matter movement saw citizens using their smartphones to record law enforcement during protests. Internet-connected smartphones are increasingly everywhere and offer the ability to capture high quality video that can be shared across the internet immediately (Estes and Morrison, 2020). Just like personal home videos, with the person who filmed them sometimes providing context through narration or commentary (Forgács 2008, 48), protesters

livestreaming the actions of police can provide context through narration or commentary in real time. This self-reflexive loop of technology and humanity, presented in the final image of 'Watching', replays itself over and over with protesters filming the police and the police, in turn filming the protestors.
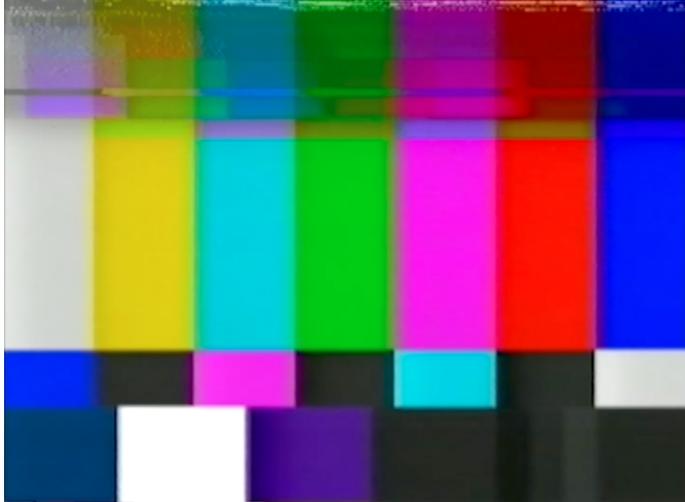
Chapter Four: Pure Video

Fig. 24. SMPTE color bars, *Videology* (Brauns 2023)

The very first image of the 'Pure Video' section of my short film is a static shot of SMPTE

color bars. Color bars provide a consistent color reference, generated either in-camera or

during post-production. Typical uses are in camera encoders, analog VTR output signal

adjustments of gain, saturation and hue, as well as studio color monitors and home receiver

color rendition. Several different color bars signals exist, with many of them application

specific. The color bars signal produces a sequence of vertical bars displayed on the

television screen showing saturated primaries and their complements as well as black and

white. In the case of a signal that uses the full frame, the active line is generally divided in

eight equal parts. The first is occupied by a luminance reference bar, a white bar of a standard

amplitude. The last is a black bar, which is black level only. In between, there are six bars

representing the three primary colors and their complements. They are Yellow, Cyan, Green,

Magenta, Red and Blue. The standard order of presentation has been chosen to give a descending order sequence of luminance values (Robin 2002, 20).

The core of the image of the SMPTE color bars itself is still but motion is created in the form of blurry glitch lines in the upper third of the frame. Similar to the light leaks Warhol intentionally left in his film *Empire*, discussed in the last chapter, which signified the end of each film reel, the video glitch lines, in the opening shot of 'Pure Video', technologically mark the unbroken passage of time. Video is not visible unless it is changing. The unit of video is not the single frame but the movement from frame to frame, the disappearing of one and the appearing of another, so that no single frame is ever complete enough to be recognized as the moment of origin (Cubitt 1993, 34). Without the video glitch lines the visual of the SMPTE color bars would be indistinguishable from a still image.

However, this indistinguishability is only present to the human eye. On a purely technological level, the image, although outwardly appearing motionless, is indeed moving in its own technological temporality. A video image is actually a standing wave pattern of electrical energy, an oscillation system consisting of cascades of frequencies. What the viewer sees on the cathode ray tube is the trace of a single, moving, focused point of light from an electron bundle. There is no such thing as a video still: the source of this stationary movement is the steady stream of electrical impulses coming from the camera or recorder, no matter if the signal is live or recorded. At a media archaeological level, this streaming of images is closer to an electrical current than the concept of the image (Ernst 2016, 154). The video glitch lines in the first shot of 'Pure Video', do not express narrative time like the light leaks in *Empire*, but internal video time.

In an article for Artforum in 1980, MoMA video curator Barbara London situated the uneasy reception of early video in its protracted temporality: "Video, more than any other medium, has been criticized for being tedious and self-indulgent. In the early '70s this was a valid criticism, because the length of many artists'…. works were dictated by standard videotape length – 30 to 60 minutes – which in some cases was much too long." During the same period, Nam June Paik, an early pioneer of electronic arts, made his famous claim: video is time. While this suggests that Paik supported the first generation of video artists, whose work conveyed a sense of extended duration to the viewer, he reproved it for its poor understanding of time. "What Godard says about cinema ('truth 24 times a second') does not hold in video. Because in video, there is no space (delimited frame) there is only time (lines without thickness). To produce color in video one has to translate color in time. Colors in video are millionths of seconds. Video is essentially time" (Ross 2006, 83).

All techniques for reproducing existing worlds and artificially creating new ones are, in a specific sense, time media. Photography froze the time that passed by the camera into a two-dimensional still image. Telegraphy shrank the time needed for information to bridge great distances to an instant. Telephony allowed for vocal exchanges in real time. The phonograph rendered time permanently available in the form of sound recordings. The motion picture camera presented the illusion of motion of the still images captured by photography. In film, time that had passed technically was rendered repeatable at will; the arrow of time of an event could be reversed, stretches of time that had become visual information could be layered, expanded, or sped up. Electromechanical television combined all these concepts in a new medium with electronic television progressing one step further. The cathode ray tube inscribed images dot by dot and line by line. In the electronic camera, a microelement became a unit of time, which could be manipulated. In electromagnetic recordings of image

and sound elements, what can be seen and heard can be stored and processed in the smallest particles or in large packages (Zielinski 2008, 31).

Unlike previous forms of time media, video can and does exist in its own temporality. Video is an electronic medium. This means that its origin depends on the electronic transfer of signals. The simultaneity of recording and reproduction differentiates video from the photo-chemical recording media of photography and film, though video does equally possess optical recording technology. However, the optical recording of light does not represent the only form of realizing video: the video signal, in contrast to the external input, can also be generated internally, in the devices themselves. There exists in video various possibilities for signal input before recording. For example, the signal input of one device can be used as the signal input for another device. However, more importantly, video can simply consist of signal processes, generated in the devices without any recording. This basic form of video demonstrates that there can be no particular place and no fixed dispositive sequence for the generation, transmission, and display of electronic representations of visuality. Video contains multiple audio-visual possibilities for transforming audio and visual signals (Spielmann 2010, 1-2).

While the previous chapter, examining the Tyco VideoCam, explored time in relation to the projection event, with the audience projecting meaning onto the image, this final chapter will concentrate on temporality which exists within the inner world of video, independent of humans. Ernst's non-human notion of media archaeology is a kind of epistemological reverse engineering, an awareness of moments when media themselves, not exclusively humans, become active archaeologist of knowledge (Ernst 2013, 55-56), "a critique of media history in the narrative mode" (Lovink, 2003). To Ernst, media archaeology is less about telling

stories or even counter-histories and more about how stories are recorded, in what kind of physical media, what kind of processes and durations, and as such, its focus is on the archaeology of the apparatus that conveys the past as fact not just as a story (Parikka 2013, 7). Rather than being a nostalgic collection of forgotten media, assembled in a curiosity cabinet, Ernst sees media archaeology as an analytical tool, a method of analyzing and presenting aspects of media that would otherwise be lost in the discourse of cultural history (Ernst 2013, 55-56).

With wide implications for media archaeological methodology, the archive is increasingly being re-thought not as a spatial place of history, but as a contemporary technological circuit that redistributes temporality. This approach to the archive is how Wolfgang Ernst sees media archaeology, not only as an excavation of the past, but an intensive gaze on the micro-temporal modulations that take place in the circuits of technology. This alternative sense of technological temporality is closer to engineering diagrams then to historians hermeneutic interpretation of documents. By technological temporality we understand how technology itself is not only of time, but itself has its own time in which it functions. Drawing directly from Foucault, media archaeology for Ernst is monumental not narrative, focusing more on the real technological conditions of expressions then on the content of media. Ernst is interested in concrete devices through which media archaeology can understand the nature of temporality in contemporary electronics and digital culture. For Ernst, media archaeology starts with a device that is operational (Hertz and Parikka 2012, 427).

For the final chapter of my research project, the operational device being examined is the Sony Betamovie. Released in 1983, the Sony Betamovie is the world's first "camcorder". Today the word 'video camera' has become a generalized term to casually reference several

types of cameras spanning multiple decades. A video camera is technically defined as a recording device with a sensor, lens and operating controls attached to a video tape recorder (VTR). The Sony Portapak, released in 1967 is the world's first video camera. What most people think of when they think of a video camera is really a 'camcorder', with an internal recording mechanism. The term camcorder is a blended word that combines camera and recorder in one phrase. In 1983, the Sony Betamovie is released, which incorporated the VTR inside of the camera, and is the world's first camcorder. Because of this engrained common misconception, and to avoid unnecessary confusion regarding forgotten and obsolete technology, this research project has chosen to use the term 'consumer video camera', which encompasses both video cameras and camcorders, when referring to the overall idea of the competition between camera manufacturers, and not discussing a specific camera. However, when referring specifically to the Sony Betamovie the term camcorder will be used.

The development of the Sony Betamovie is a simple example of punctualization. Punctualization is a concept used to describe bringing components together into a single complex system that can serve as a single object. The camera brings together the components of a video camera and video tape recorder in one device. However, despite this convivence of portability, the camera is a technological black box regarding user interaction. Blackboxing is the development of technological objects to a point where they are simply used and not understood as technical objects by the consumer. A computer system, for example is almost incomprehensible if thought of in terms of its millions of transistors, circuits, mathematical calculations and technical components (Hertz and Parikka 2012, 428). Both the Sony Portapak released in 1967 and the JVC Videomovie, the Betamovie's direct competition at the time, made famous from the film *Back To The Future*, had the ability for instant playback.

Also released in 1983, the JVC Videomovie, recording on standard VHS, is smaller than the Betamovie and replays its own tapes (New Scientist 27 October, 1983).

Without the ability of playback during filming, the images captured by the Sony Betamovie exist in the invisible materiality of video, a kind of technological limbo between recording and playback. The simultaneity of recording and reproduction differentiates video from the photo-chemical recording media of photography and film (Spielmann 2010, 1). However, similar to filming with an 8mm or 16mm movie camera, the images recorded by the Betamovie can only be viewed during the projection event. Unlike the filmstrip though, which is made up of individual film cells, video is invisible to the human eye. The images produced by the Betamovie initially exist within the internal video time of the camera. Ernst's notion of non-human media archaeology is present in the black box construction of the camera.

The technological conflict found within the Sony Betamovie will be explored using the third section of my short film *Videology*, 'Pure Video', as a guide while it examines the inner world of video. Taking inspiration from Wolfgang Ernst, the practice-based short film *Videology* is comprised of moments when "media themselves, not exclusively humans, become active archaeologist of knowledge." Just like Ernst, *Videology* is interested in exploring the non-human aspects of the obsolete consumer video cameras examined for this research project. The cameras themselves become "active archaeologist" in the creation of the film, with the narrative structure dictated by the technological conflict found within each camera. The final part of *Videology*, 'Pure Video', goes inside of the obsolete consumer video cameras and forgotten media devices used to create the short film and examines video which exists independently of human ideals of temporality and narrative.

As with the previous chapter, the Sony Betamovie will be examined through the same framework of media archaeological methodologies. The peripheral data of the Sony Betamovie will be examined including the box, manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's first definition of presence, operative presence, will be applied and bring the Sony Betamovie out of the past and into the present. Once transported to the here and now and in the hands of the user, this research projects advocates the need to explore images created by the camera, visual aesthetic, as a natural continuation of Sobhcak's first definition of presence. This will then allow for the application of Sobchack's second definition of presence, presence effect, to be applied in which current media hierarchies are challenged by the Sony Betamovie simply by being "in the here and now". Finally, this challenging of media hierarchies will allow for the natural de-familiarization of current media devices proposed by Tom Gunning.

4.1 World's First, All-In-One, Camera Video Recorder

In this section, Sobchack's first definition of presence, operative presence, will initially be applied to the Sony Betamovie through hands on empirical use with the camera. The Sony Betamovie is the result of creative engineering, ending in a remarkably compact, completely self-contained camera/recorder or "camcorder" (Popular Photography, 1983). The Sony Betamovie weighs 5 ½ pounds, under 7 pounds when fully equipped to record with a camera battery and cassette tape, and measures 5 x 8 ¾ x 14 inches including the 9 to 54mm f/1.2 macro zoom lens. Despite the cameras size, it loads standard Beta cassette tapes, recording at Beta II's 2 cm/sec, up to three hours and twenty minutes on a single L-830, which can be played in a Beta VCR (Drukker 1983, 71). One reason for the Betamovie's compact size is

that it has only record circuits built in, it has to be played back through a domestic Beta machine (New Scientist, 1982). However, this is only a partial explanation for the camera's relative compactness. A more intriguing reason for the cameras size is the miniaturized recording-head drum found within (Drukker 1983, 71).

Normally reducing the drum size would produce tapes incompatible with existing conventional equipment. A standard VCR's drum uses a pair of heads with each recording one of the two fields that make up a single video frame. In Beta recorders, these two heads are built diametrically opposite each other in a 74.5mm diameter drum, while the Betamovie has only a single double-gap head in a 44.7mm drum (Drukker 1983, 71). The engineers at Sony reduced the size of the Betamovie's video head drum but they preserved compatibility, with a full-size cassette, by wrapping the tape further around the drum, so it still travels the same distance. It is the first time that anyone has managed to reduce the size of the drum while keeping the recorder compatible with existing tapes (New Scientist, 1982). The Sony Betamovie is able to make a standard Beta recording because the camera wraps the tape around it's drum for 300 instead of 180 degrees, and the drum rotates helically 60 times per second, double the standard speed, thus laying down the 30 double frames per second that make up an NTSC TV picture. One gap is angled to lay down one field, the other has different azimuth for distinguishing the second field (Drukker 1983, 71).

In an apparent effort to save space, the Sony Betamovie requires some initial setup before use. Both the hand grip and viewfinder fold up when not in operating position. The hand grip, which seems to favor right-handed users, allows for power zoom control and recording also houses the camera battery. When in use, the hand grip has three articulating angles to provide a comfortable grip position. To insert a charged battery pack, the user must slide the release

switch up and bring down the hand grip. On the front of the hand grip there is a knob to open the lid and insert the camera battery. When the battery is inserted, a loud click can be heard as the camera powers up. However, even after inserting a battery, the Sony Betamovie will not turn on without inserting a tape. The eject button to open the tape compartment is on the back of the camera and when pressed the compartment lid jumps open with a mechanical whining noise. When the tape is inserted and the compartment door shut, there is a series of clicks and the noise of the tape being feed into the camera. Once a cassette tape is inserted, the user is now able to turn the Betamovie on with the camera going into standby mode, ready to record.

There is a physicality involved in using the Sony Betamovie that feels like holding a VCR on your shoulder. A multi-color strap is provided that connects from the back of the camera to the bottom, but it offers little support and would be more useful to catch the camera in the event of dropping, rather than to aid in filming. The only way to accurately record with the Sony Betamovie is with the camera on your shoulder and eye pressed against the viewfinder, which provides a true image down the barrel of the lens. With no external screen or monitor, looking directly into the viewfinder is the only way to determine what you are filming. Using the viewfinder properly requires closing the other eye and fully immersing yourself in the recording process with the camera. Although the camera rests on the user's shoulder, in order to achieve more control, the user's free hand is needed for support on the side of the camera. Two hands are needed to fully control the camera, with the shoulder and right hand acting as a base of support and the left hand making small movements and tiny corrections. One hand / shoulder does the heavy lifting, and the other hand makes the fine adjustments. If you want to move the camera you have to physically move your whole entire body, with the user basically becoming a human tripod.

In terms of user experience and interaction, the camera is a black box of information. Compared to camcorders today, with elaborate internal menus, there is a rudimentary simplicity to the Sony Betamovie. The camera provides limited options for controlling the image, with only a filter switch on the side of the camera to select between tungsten or daylight settings and a button for white balance. Outside of these two simplistic features, there are no other visual controls available to the user. Pressing the record button to start and stop recording is accompanied by a loud click and the hum of the tape moving inside the camera. When you hit record the letter "T" appears in the viewfinder to let you know you're recording. Changing any setting on the camera while recording requires a balancing act of removing your eye from the viewfinder and holding the entire weight of the camera with your right hand as you press one of several buttons on the camera with your left hand. The loud hum of the tape progressing through the camera is the only indication of recording. There is no tape counter which makes it impossible for the user to know how much tape is left.

Fig. 25. Screengrab from Sony Betamovie commercial

https://www.youtube.com/watch?v=dqRq3XI4wNo

The commercial for the Sony Betamovie highlights the compact nature of the completely self-contained camera/recorder or "camcorder". Commercials, and other external materials that accompany obsolete consumer video cameras, are part of the devices peripheral data. The commercial for the Sony Betamovie starts off with a spectator, presumably a parent, in the stands of a little league baseball game filming with the camera. The next shot is of children in baseball uniforms cheering at the sound of a batter scoring a run. The children follow the flight of the baseball with their eyes and then swarm onto the field. While almost all of the children leave the bench, one child remains who's image is then transitioned onto a small television set. The next shot is of a hand pressing the rewind function of Betamax player remote control. The commercial ends showing the full range of Betamax products available to buy, including the Sony Betamovie and Betamax player. It is this last shot of the commercial which demonstrates the technological conflict, found within the Sony Betamovie: separation between recording and playback.

Videotapes low cost, extended recording time, and capacity to be reused substantially increased the potential range and volume of events and behaviours recorded during home mode production (Moran 2002, 41). Despite this new range of potential, without the ability of playback during filming, the images of the baseball game captured by the Sony Betamovie exist in the invisible materiality of video, a kind of technological limbo between recording and playback. The shift of images from recording to playback is demonstrated in the commercial during the transition of the young baseball player sitting in the dugout to the small television. The images produced by the Sony Betamovie initially exist within the black box of the camera and requires a separate playback device.

Fig. 26. Example of Sony Betamovie footage (Brauns 2023)

https://vimeo.com/manage/videos/806314821
Password: PhD

When the images created by the Sony Betamovie are transferred from the black box of the camera and displayed through a separate playback device, there is a sense of familiarity to them. It is very difficult to view an image in a technological vacuum and not compare it to current visual standards. This temporal contrast can create strangeness, or ostranenie, in the images created by obsolete consumer video cameras. While the video images created by the Sony Mavica and Tyco VideoCam are imbued with a strong visual aesthetic unique to both cameras, the visual aesthetic created by the Sony Betamovie resembles the look of the camera's direct competition, VHS. Despite the fierce rivalry, and technological differences, between the two video formats, today, when compared to current visual standards both the Sony Betamovie and VHS look like "old video".

To subtly demonstrate how Beta and VHS are now classified under the umbrella of "old video", both the Sony Betamovie and multiple VHS cameras were used in the creation of

Videology, leaving any distinction between the two mediums up to the viewer. Similar to how early cinema was seen as an immature form of narrative cinema (Strauven 2013, 61-63), today, both Beta and VHS have been grouped together as a precursor to digital video. Just like the New Film History movement, which provided new perspectives on early cinema (Strauven 2013, 61-63), this research project is interested in establishing new perspectives on obsolete consumer video cameras. Taking inspiration from the Brighton Project, part of this new perspective is to establish obsolete consumer video cameras as an "other" form of video. The Brighton Project, part of the 1978 FIAF conference in Brighton, England, where the New Film History Movement began, was interested in re-examining surviving examples of pre-1906 cinema. The Brighton Project led to the discovery of early cinema as an "other" cinema, not an immature form of narrative cinema, but as a cinema with its own intrinsic values and tropes (Strauven 2013, 61-63). Similar to the Brighton Project, this research project sees obsolete consumer video cameras as an "other" form of video technology, not just an immature teleological version of the present media landscape, but with their own unique technological qualities and innovations.

4.2 Inner World of Video

Fig. 27. Internal video menu screen, Videology (Brauns 2023)

As previously mentioned, an archive can be concerned with physical objects and not actually contain any. This is true in the case of *The Dead Media Project* created by Bruce Sterling, which consists of a database of field notes written and researched by members of the projects mailing list (Jennings, 2023). While many of the objects found in Sterling's *The Dead Media Project* might not physically exist anymore due to the ravages of time, some of the dead media on the list only ever functioned in their own "inner world". Despite being dead, obsolete media objects are radically present when they still function, even if their outside world has vanished. Their "inner world" is still operative. What separates an archaeological object from a technical artifact is that the latter discloses its presence only when operating (Ernst 2013, 57-58). Like Ernst's example of the electromagnetic waves of a broadcast signal allowing a radio in a museum to generate presence, the next images of 'Pure Video' are interested in the signals inside a media apparatus.

After the static shot of the SMPTE color bars, the next image of 'Pure Video' is a blue internal menu screen. This blue video menu is an example of the "inner world" of an obsolete consumer video device existing even if the outside world has vanished. Whereas the previous image of SMPTE color bars is an example of a generated signal which can exist in multiple locations, the blue menu screen exists internally inside of the specific obsolete media apparatus. This inner technological world is also prevalent in Sobchack's first definition of presence. As explored in the previous section, in relation to the Sony Betamovie, Sobchack's first definition of presence is the literal transhistorical transference of an obsolete media apparatus across time to the "here and now" through practical, operative and sensual engagement (Sobchack 2011, 324). The scope of this sensual engagement is dependent on the obsolete media apparatus itself. Unlike other objects which make up the archive of media archaeology, for example, the stereoscope and other early ocular devices, and even various types of film cameras, obsolete consumer video cameras and video equipment contain an internal black box the user can engage with but not touch.

From a media archaeological point of view, there is an ability to engage with archaeologies of signals and signal formats. Instead of a focus on devices, even if lost and outside the mainstream, there are new perspectives that take as their focus components, processes and other "minor, grey elements" of media history. Many of these elements, taken for granted or as specialist areas for scientists and engineers, are being now focused on by artists and media theorist. The same goes now increasingly for the minor themes, and components, of media history in the hands of theorist and creative practitioners: signals, but also valves, tubes, antennas, telephone exchanges and semiconductors are revealed as much more that enabling

technical parts (Parikka, 2012, 154). The SMPTE color bars and blue video menu are part of the "minor, grey elements" which make up the black box inner world of video machines.

Video signals and menu systems are part of this black box of user engagement. The SMPTE color bars are an example of how video can simply consist of signal processes, generated in the devices without any recording (Spielmann 2010, 1-2). The inner workings of consumer electronics and information technologies are increasingly concealed as a result of the development of newer generations of technologies, a feature which is characteristic of recent decades of technological culture. Once developed and deployed widely, technical components are understood by users as objects that serve a particular function: an electronic toy makes a sound when a button is pressed, a telephone makes a telephone call, a computer printer prints documents when requested. The inner workings of devices are unknown to the average user, with the circuitry of the device like a mysterious black box that is largely irrelevant to using it (Hertz and Parikka, 2012, 427-428). The archive of media archaeology in regards to obsolete consumer video cameras and other forgotten video equipment is an archive of black boxes.

Within the archive of media archaeology there exists technological divides which separate the obsolete media devices and apparatuses. While Foucault's analyses of the archive are based on the written archive stored in libraries and other repositories (Goddard 2015, 1766), the archive of media archaeology is not as uniformed. The archive of media archaeology consists of a strata of obsolete media technology separated by decades of time, and by various recording formats and mediums. To empirically practice Parikka's sedimented layers of technology, in the creation of *Videology*, technological connections in the archive needed to be made. Media in its various layers embodies memory: not only human memory, but also the

memory of things, of objects, or chemicals and of circuits (Hertz and Parikka 2012, 425).

Within this technological memory, there exits two different kinds: analog and digital. Both

formats are thrust together in the archive of media archaeology and through Parikkas notion

of sedimented layers of technology work together both theoretically and technologically.

While theoretical connections can exist automatically, technologically there is the need for a

connection between the two. The next images of 'Pure Video' are the result of these

technological connections between the black boxes found within the archive of media

archaeology, connecting the past and the present.

Jussi Parikka suggests that to truly begin to define media archaeology we must start in the

middle by looking at the "entanglement of past and present" (Parikka 2012, 5). The archive

of media archaeology is the physical and theoretical site where this entanglement takes place.

Media archaeology starts with the archive, the implicit starting point for so much historical

research that itself, as a place and media form, has been neglected and become almost

invisible (Parikka 2012, 113). The archive of media archaeology is all around us, tucked

away in junk draws and hidden in basements and attics. Media archaeology is greatly

influenced by Michel Foucault's *The Archaeology of Knowledge*, which deals with

discontinuities, gaps and absences, silence and ruptures, in opposition to a traditional

historical discourse, which privileges the notion of continuity (Lovink, 2003). Media

archaeology and Foucault both agree that the search for true origins is a wasted effort, that

the construction of linear histories runs the risk of leaving important statements, objects, and

networks of power in neglected margins (Hertz and Parikka, 2010).

The "entanglement of past and present" (Parikka 2012, 5) found in the archive of media

archaeology, is partially the result of planned obsolescence. In reference to contemporary

consumer products, planned obsolescence takes place in several ways. It is not only an ideology, or a discourse, but more accurately occurs on a micropolitical level of design with difficult to replace batteries in MP3 players, proprietary cables and chargers that are only manufactured for a short period of time, discontinued customer support or plastic enclosures that are glued shut or break if opened. Technological objects are designed as a "black box", not engineered to be fixable and with no user-serviceable parts inside (Hertz and Parikka 2012, 426). Planned obsolescence helps create the archive of media archaeology through the discontinuation of media devices, thus relegating them to the "dust bin of history".

Around 400 million consumer electronics are thrown away each year in the United States alone. Electronic waste in the form of obsolete cellular telephones, computers, monitors, and televisions make up the fastest growing portion of waste in American society. As a result of rapid, and relatively inexpensive, technological change and planned obsolescence, approximately 250 million functioning computers, televisions, VCR's, and cell phones are discarded each year. The Environmental Protection Agency (EPA) estimates that two-thirds of all discarded consumer electronics still work. Digital culture is embedded in an endless pile of network wires, lines, cables, routers, switches, and other material things. Far from being accidental, this discarding and obsolescence of technological components is integral to contemporary media technologies (Hertz and Parikka 2012, 425). This forgotten pile of obsolete consumer electronics is where we find the archive of media archaeology.

If media archaeology originally set out to impress upon us the otherness of the past, both its singularity and strangeness, then the universal availability of so many obsolete consumer media devices now require the creation of a new kind of scarcity in order to confer distinction, preserve status or generate value. Obsolescence creates scarcity, and scarcity creates value (Elsaesser 2016, 341).

This value of an obsolete media device through scarcity is present in the production of the short film *Videology,* through use of the Panasonic DMR-ES10 DVD player. Released in 2005, the Panasonic DMR-ES10 was just another entry-level DVD player which allowed users to record programs onto a DVD for later viewing. Falling into the category of Thomas Elsaesser's notion of finding something "new in the old", the Panasonic DMR-ES10 is highly sought after today because of the DVD player's passthrough TBC ability. The time base corrector (TBC) is the technical form of videographically active time critique, which is employed to keep signals in sync. In real electrophysics, mechanical imprecision sometimes allows the signal to arrive temporarily faster or slower. Flawless synchronization between video signals is only possible through an external reference signal (Ernst 2016, 154).

Often the "entanglement of past and present" (Parikka 2012, 5) found in the archive of media archaeology, takes places on a theoretical level since the majority of obsolete media apparatuses, for multiple reasons, either do not exist anymore or do not function. However, in the case of *Videology*, the multiple obsolete consumer video cameras, and other forgotten video equipment, used are still functioning and can make actual physical connections. Along with continuously adding to the archive of media archaeology, through ending the lifespan of a media device, planned obsolescence also creates a technological separation between the obsolete media devices which make up the archive of media archaeology. Parikka's sedimented layers of technology allows for the theoretical connections between media devices separated by decades. However, there is still a need to physically have the devices work together, to bridge the technological gap. While the iPhone acts as a control camera to ground the obsolete consumer video cameras, used in *Videology*, in the present by having a

visual comparison the viewer is accustomed to, the Panasonic DMR-ES10 DVD player connects the technological divide between video apparatuses separated by decades.

During the creation of the short film *Videology,* the DMR-ES10 DVD player allowed for the practical entanglement of the past and present found within the archive of media archaeology. Media in its various layers embodies memory: not only human memory, but also the memory of things, of objects, or chemicals and of circuits (Hertz and Parikka 2012, 425). To bridge the technological gap between the sedimented layers of technology used in the creation of *Videology*, and connect the circuit memories of analog and digital, the Panasonic DMR-ES10 was used as a TBC passthrough, the connector between one technical time, analog, and another technical time, digital. However, when the circuit memories of obsolete consumer video equipment interact there is the possibilities of a glitch in the system.
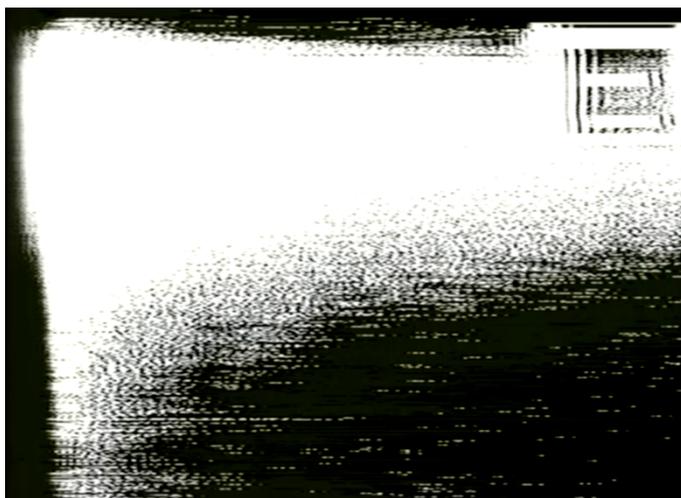

Fig. 28. Glitch image created by transferring of obsolete video, Videology (Brauns 2023)

After a few seconds of the static blue video screen, the image burns through itself until the screen is white with the audio-visual symbols still present, until they also disappear. What is left is a white void with a flickering glitch image at the top of the screen. After this another video menu screen appears. The screen is black, and in the upper right-hand corner are similar audio-visual symbols as the previous menu screen. After several seconds the audio-visual images begin to melt into themselves and video static streaks across the screen. The final image in this series is an already disintegrating video menu screen. The letters on the screen are barely legible as they begin to melt into themselves and slide across the screen. These images are examples of zombie media created by the tension between old and new technology. Zombie media is concerned with media that is not only out of use, but resurrected to new uses, contexts and adaptations (Hertz and Parikka 2012, 429).

Despite planned obsolescence, the probing, exploring and manipulation of consumer electronics outside their standard lifespan is a key tactic in contemporary art practice. Reuse of consumer commodities emerged within various art methods of the early avantgarde in the early 20th century with Pablo Picasso and Georges Braque's work with found newspapers to Marcel Duchamp's *Bicycle Wheel* or his inverted Bedfordshire urinal *Fountain*. Early artistic repurposers of consumer electronics include Nam June Paik, who rewired televisions as early as 1963 to display abstract shapes. Although many artists using electronics have focused on exploring the potentials of new media, others have approached using electronic commodities in the spirit of bricolage. Instead of using electronics to explore cutting-edge technologies, this approach uses "trailing edge" everyday and obsolete consumer technologies as its key resource (Hertz and Parikka 2012, 426).

An example of this trailing edge experimentation is known as "circuit bending": the creative short-circuiting of consumer electronics primarily for the purpose of generating novel sound or visual output. The process of circuit bending typically involves going to a thrift store or garage sale to obtain an inexpensive battery-powered device, removing the back cover and probing the mechanism's circuit board. As a way of operating, circuit bending is an aspect of digital culture that does not easily fit under the term "new media"; the customized, trashy and folksy methodologies of circuit bending recall historical practices of reuse and serve as a counterpoint to envisioning digital culture only in terms of being glossy and high-tech (Hertz and Parikka 2012, 426-427).

Circuit bending is an electronic DIY movement undertaken by individuals without formal training or manufacturer approval and focused on manipulating circuits and changing the function of the technology. The manipulator of consumer electronics traverses through the hidden content inside of a technological system for the satisfaction of entering its concealed underlayer, often breaking apart and reverse-engineering the device without formal expertise, manuals, or a defined endpoint. Circuit bending reminds us that users consistently reappropriate, customize and manipulate consumer products in unexpected ways, even when the inner workings of devices are intentionally engineered as a black box (Hertz and Parikka 2012, 426).

'Pure Video', is also interested in probing, exploring, and manipulating obsolete consumer video cameras, and other outdated video equipment. However, unlike circuit bending which incorporates physical modification, the final part of *Videology* is interested in visually breaking into the black box temporality found inside of the obsolete video devices used to create my short film. The video menu screens are part of the internal "minor, grey elements"

(Parikka 2012, 154), signals, components and processes of video never meant to be recorded. These "minor, grey elements" have been repurposed and resurrected into a zombie like state. The glitch images are the result of black boxes being recorded onto a modern-day computer. They are zombie by definition and because they are in-fact dead video signals.

In media archaeology, media never dies: it decays, rots, reforms, remixes, and gets historicized, reinterpreted and collected (Hertz and Parikka 2012, 430). Part of this technological afterlife is the existence of zombie media. Zombie media is concerned with media that is not only obsolete but resurrected for new uses and contexts and adaptations (Hertz and Parikka 2012, 429). For many consumer media devices planned obsolescence is the catalyst for the transformation into zombie media. The images of this sequence were created through transferring video signals of obsolete consumer video, through the DMR-ES10 DVD on to a computer. The glitch images are the end result of turning off the analog video source and the video signal dying after traveling from one technological time to another.
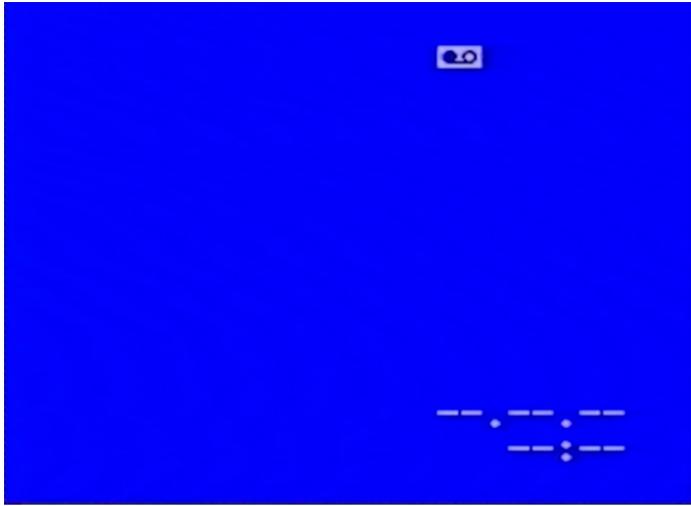
4.3 Marking Video Time

Fig. 29. Empty date and time graphic, Videology (Brauns 2023)

Just like the visuals in the next sequence of 'Pure Video', Christian Marclay's *The Clock* (2010) is a film about time, more specifically a measure of ontology, a trace of how we exist and how we record that existence (Enright 2013, 20). *The Clock* is a 24-hour compilation comprising of more than one thousand clips that span a range of film history and international cinema, with some television material included as well. Each clip refers to time passing, usually through showing a timepiece that is precisely synchronized with the moment during which the audience is watching. Cinematic time and actual time are conflated, for example, if an on-screen clock reads 10:45am, the audience views it at precisely 10:45 a.m. Each shot is perfectly calibrated to coincide with the time of viewing (Levinson 2015, 88-89).

Each selected clip makes explicit the marking and passing of time in some way, with a clock, a watch, or some other symbolic reference. Clips feature wall clocks, analog and digital watches, grandfather clocks, cuckoo clocks, clocks in train stations and on bedside tables.

Actors are getting in and out of bed, leaving for dinner, making a deadline, waiting for

someone to come home or come out of a house, sitting through meetings, sitting in traffic,

playing chess, planning a robbery and dropping off film to be developed. The clips are in

several languages and even silent. Familiar narrative fragments drawn from sources popular,

iconic, and obscure have a slightly shifted focus and the audience is pressed to pay special

attention to the fact that time is passing. The images are a kaleidoscopic rendering of time as

seen through many lenses that confounds the viewer while it also lays bare the mechanisms

by which time in film is constructed (Stevens 2011, 5).

The Clock may be a video collage, but it is very much a cinematic experience, drawing the

viewer into the hermetically sealed world of cinematic time and space. The continuity

principles of editing, sound, and performance create a fluid, endless text (Russell 2013, 243).

The film deliberately invokes certain principles of the cinematic apparatus, including a

specified seating arrangement in a darkened room detailed by Marclay as part of the work.

The Clock invokes the cinema apparatus while also resisting it. Although in the dim glow of a

theater like setting, the viewer remains self-conscious about the time of day, and the diegetic

narrative space is so heterogeneous and lacking any fixed subjectivity (Russell 2013, 245). In

contrast to the normal escapism cinema provides, *The Clock* draws attention to just how

much time the viewer has spent in the theatre.

If we analyze *The Clock* as a   ispositive, which is to stay, a cinema-machine organized by its

own internal set of rules, which includes the social space of reception, it is one based

specifically on the expressive aesthetics of narrative cinema. This type of cinema-machine

that literally works like clockwork can be compared to the experiments of structural

filmmakers such as Hollis Frampton and Michael Snow. Like the films of Hollis and

Frampton, *The Clock* has a set of internal rules that the viewer learns as they unfold. However, unlike the two structural filmmakers, Marclay's rules are not of his own invention and do not belong specifically to film or photography. The cycle of clock-time, with its regularity, fragmentation, and duration, is a phenomenon of modernity. In this sense, the film acquires a documentary validity through an observational rather that personal approach to the subject of clock-time in the cinema (Russell 2013, 245).

The Clock does not provide an exploration of the dynamic expressions of duration in cinema, due to its rigid parameters and structures. This is because its constitutive materials are split between shots of time-keepers and numerous motif clusters: alarm clocks waking disgruntled workers, travelers rushing to catch their train, school bells ringing, housewives waiting for their husbands to arrive for dinner. While this certainly conveys the hailing function of the clock, the administrative function is serves, and the many dramaturgical devices of narrative cinema, time in the film appears organized only in terms of task-orientation (Horwatt 2013, 209). It is exactly this randomness of task-oriented images which make up *The Clock* that connects the film to this sequence of 'Pure Video'. Just as the counting of time is the unifying factor for the heterogenous images of Marclay's film, the topio of the date and time graphic connects a similarly wide range of images found in home movies.

After the video menu glitch visuals, the next image of 'Pure Video' is a blue video screen with an empty date and time graphic in the lower right-hand corner. This familiar iconography is an example of technological topoi found within obsolete consumer video cameras. Deriving from the Greek word for place, a topos is a (literary) convention or commonplace (Huhtamo, 1996, cited in Strauven 2013, 71). Topos is a stereotypical formula evoked over-and-over-again in different guises and for varying purposes. Such topoi

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accompany and influence the development of media culture. Functioning as vessels derived from the memory banks of tradition, topio mold the meanings of cultural objects. As discursive meaning processors, topio not only express beliefs but can serve rhetorical and persuasive goals, as evidence in the field of advertising. New products are promoted by being packaged into formulas meant to strike the observer as novel, although they have been compiled from elements retrieved from cultural archives (Huhtamo 2011, 28). Media archaeology becomes in Huhtamo's words a "way of studying the typical and commonplace in media history – the phenomena that (re)appear and disappear and reappear over and over again and somehow transcend specific historical context" (Huhtamo, 1996, cited in Strauven 2013, 71). The date and time graphic found ubiquitously burned into the image of personal home movies, automatically provides a sense of authenticity to the visuals.

Along with personal home videos, the authenticity imbued by this visual topio is also used in narrative film. Audiovisual displays of information presented on-screen as though being generated from VCR's, projected on video monitors, or perceived through a camcorders viewfinder have served as pivotal moments in works ranging from independent art cinema to Hollywood blockbusters. The Video-in-the-Text (VIT), as a synthesis of both film and video, functions as a hybrid schema, framing a portion of the cinematic diegesis from the imaginary point of view of a simulated video apparatus, but one that is simultaneously material in its evocation of the spectators lived experience of how camcorders and VCR's actually work in everyday life (Moran 2002, 167).

Today the authentic topio of the date and time graphic can even be found on the smartphone. In 2015, Thomas Worth launched a smartphone app called VHS Camcorder and within 10 days it was ranked number 2 on Apple's chart for paid apps. The VHS Camcorder app can

shoot video in three resolutions, in color or black and white, and in 16:9 or 4:3. The VHS Camcorder app shoots a very specific kind of "terrible video" aesthetic. The amateur videos the smartphone app is trying to replicate have a lot of visual characteristics in common. They have tracking lines, usually across a third of the screen. They have a particular color gamut, and the familiar timestamp in the bottom corner. Worth learned about helical scanning, the process used to record video and audio onto tape. He learned about deck architecture, how one VCR plays and records slightly different from another. Worth also started watching hours of YouTube videos of digitized videos. After months, he started to see patterns: certain kinds of distortions, themes with tracking lines he'd notice over and over again (Pierce, 2015).

The VHS Camcorder app's interface is based on the JVC GR-C1, the first camcorder to feature a built-in VHS tape deck and the direct competition to the Sony Betamovie. Released in March of 1984, the JVC GR-C1 is famous for being the camera used by Marty McFly in *Back to the Future.* The app's blue menu button matches the JVC GR-C1's styling, as do the huge W and T buttons used for zooming in and out. The date and time graphic used is an amalgam of every camcorder font he could find. Worth considered finding the right typeface crucial as he felt it was a huge part of the videos everyone remembers (Pierce, 2015).
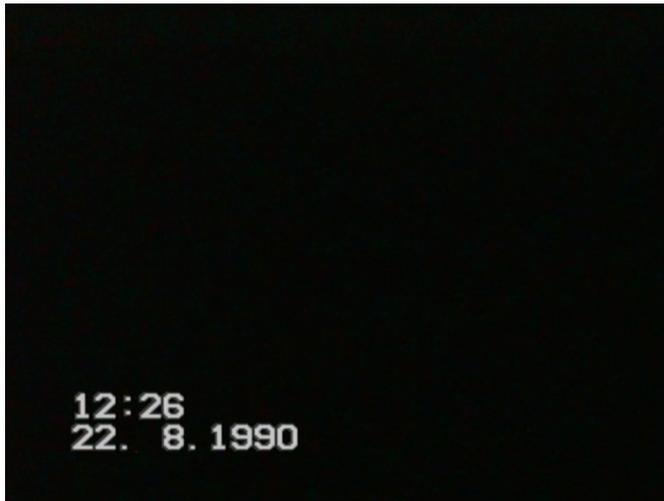
Fig. 30. Date and time graphic in lower left hand corner, Videology (Brauns 2023)

The last image of this sequence is once again the familiar date and time graphic, now showing 12:26 on August 22nd, 1990. Just as the images of people hurrying through their lives in *The Clock* are accompanied by a timepiece indicating the time, the date and time graphic also accompany similar images of personal home movies. The date and time graphic, just like the multiple arrays of timepieces in *The Clock*, is an example of human narrative time. Both *The Clock* and the date and time graphic found in personal home videos, literally burn the time into the image. However, the date and time of 12:26 on August 22nd, 1990 is separated from the traditional visuals of personal home movies and exists in a black frame. The date of 1990 is blinking and after several seconds begins to progress into the future at an ever-increasing rate of speed. The authentic topio of the familiar graphic is broken as the once reliable narrator of the date and time deceives the viewer. This purposeful deception of the topio of the date and time graphic is meant to highlight the difference between human's sense of narrative time and the temporality of the inner world of video. The accuracy of the date and time graphic is only as truthful as the user who sets it, whereas technology always precisely records temporality.

The date and time graphic burned into the image provides context for when the visuals were recorded but there is another kind of non-human temporality also contained in the image, in the form of timecode. In 1967, the Society of Motion Picture and Television Engineers standardized a system to label individual frames of video and film with a timecode. Timecode is used to synchronize video, film, audio content and music and provides a time reference for video tape editing, eventually leading to the invention of non-linear edit systems. The timing data in SMPTE timecode is an eight-digit, 24 hour clock. The count consists of 0 to 59 seconds, 0 to 59 minutes, and 0 to 23 hours. The second number is subdivided into a number of frames, which varies depending on regional acquisition frame rates. When shooting video, timecode is normally recorded onto the videotape even if audio is recorded separately (Stump 2014, 277-278).

While the date and time graphic is burned into the image, timecode is an invisible signal that is recorded along with the audio and video. In actuality, timecode is both concerned with human narrative time, in the form of the world clock, and also Ernst's notion of non-human technological temporality, where technology itself is not only of time, but itself has its own time in which it functions (Hertz and Parikka 2012, 427). While the first numbers consist of seconds, minutes, and hours, the second number is subdivided into number of frames, which varies depending on regional acquisition frame rates (Stump 2014, 277-278). Timecode is the meeting of human narrative time and the internal temporality of video, marked by the number of frames. This hybrid nature of timecode is similar to the obsolete consumer video cameras examined for this research project, which contain their own video worlds but are meant to be used by humans.

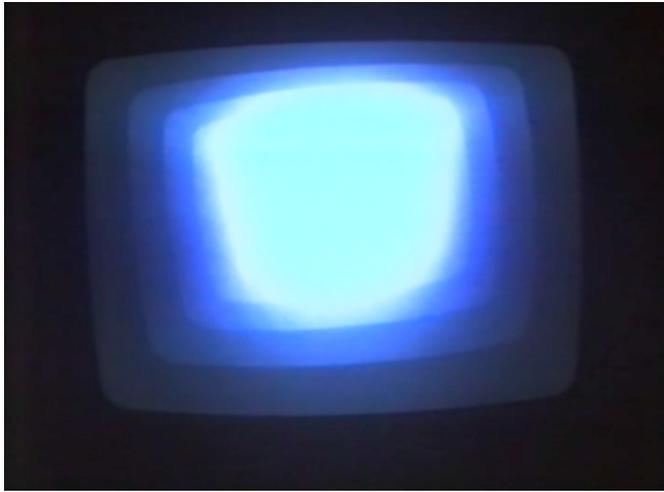## 4.4 Invisible relationship between video and the television apparatus

Fig. 31. Closed circuit television loop, *Videology* (Brauns 2023)

The consequential effect of the Sony Betamovie suddenly "being here" and how the camera challenges the accepted order of things (Sobchack, 2011 324), defined in Sobchack's second definition of presence, presence effect, is more about what is not there: the separation of recording and playback. Although, the Sony Betamovie is the world's first camcorder, it has more in common with the production method and viewing practices of home movies shot on film then those of home video. Within Chalfen's model of home mode production, the home movie apparatus consists generally of a film camera lacking sound recording, projector, screen, and reels of film limited to three minutes of shooting. Celluloid is relatively expensive per foot exposed, cannot be recycled, and requires high light levels and lab processing for proper exposure and printing. In contrast, the home video apparatus consists generally of a camcorder with synchronous sound recording, VCR, domestic television monitor, videocassettes allowing up to eight hours of shooting. Videocassettes are relatively

inexpensive per foot to record, can be recycled, operates in low light levels and requires not lab processing (Moran 2002, 40-41).

When filming in the domestic setting, the Sony Betamovie is similar to the production method of home video with the ability to playback footage on a nearby VCR. However, the difference begins when the camera is used to record outside of the home. Videotape's low cost, extended recording time, and capacity to be reused substantially increased the potential range and volume of events and behaviours recorded during home mode production (Moran 2002, 41). Despite this increased range and volume of events being recorded by home video, the Sony Betamovie is almost limited by its own portability. While the Betamovie does shoot on tape, when shooting in the field, there is no way to view what has been recorded. In this situation, the Betamovie takes on elements of the production methods of home movies shot on film. This disruption is caused by the cameras lack of playback ability during filming. When used outside of the domestic setting the Sony Betamovie physically separates video and the playback device, which today is thought of as one entity in the form of smartphones and other portable screens. Through this separation, the Sony Betamovie challenges the seemingly invisible relationship between television, and more recently portable screens of smartphones and tablets, and the medium of video.

As previously mentioned in the last chapter, exploring the Tyco VideoCam, Roland Barthes argued that televised film elicits the opposite effect of the movie going experience because the familiar domestic setting removes the mystic of watching a film in a darkened theatre (Elcott 2020, 296). While the familiarity of the living room, which Barthes argued disrupted the mystic of televised film consumed at home is stripped away in the visuals created by the Tyco VideoCam, today devices such as smartphones and tablets, allows for the removal of the

viewing process from the domestic setting entirely. Both spectators and screens are primarily mobile, their movements and interactions almost completely destabilize the fixed position and physical passivity associated with watching cinema or television from a distance and sitting down (Sobchack 2016, 157). Through the camera's inability of playback during filming, the Sony Betamovie breaks the invisible connection between video and television, forcing the user to view them as two separate entities. The next sequence of 'Pure Video' examines the relationship between the two separate entities.

The Korean-born Nam June Paik, often credited with being the inventor of video art (Hoberman 1982, 34), also challenged the distinction between the media forms of video and television using the cathode ray tube as a kind of video canvas. "As collage technique replaced oil-paint, the cathode ray tube will replace the canvas" (Spielmann 2010, 77). Paik viewed television as an object, as well as to discover video as medium. Video is not necessarily Television. For one thing, video is continuous. A television set is a household appliance; turn it on and television comes out. Paik's 1963 exhibit of prepared television sets announced the birth of video art; two years later he purchased the first Porta-Pak unit sold in the United States. By the end of the 1960's, Paik had developed a video synthesizer which enabled him to produce electronic special effects (Hoberman 1982, 34-35). Paik's prepared television piece titled *Magnet TV* is used as inspiration for the visuals of this sequence of 'Pure Video'.

Magnet TV is an example of Paik's prepared televisions, in which he altered the television image or physical casing. This work, featured in Paik's first solo exhibition in New York, consists of a seventeen-inch black and white television set on which an industrial sized magnet is placed. The magnetic field interferes with the television's electronic signals,

distorting the broadcast image into an abstract form which changes when the magnet is moved (Whitney Museum of Art, 2023). Paik's placing of magnets in or on a monitor tuned to receive broadcast TV distorts the image, foregrounding the mechanics of reproduction. Against the endless flow of broadcast, a direct address to the presence of the image on screen produces both a critique of the everyday naturalization of the medium as window, and simultaneously generates a visual experience in its own right (Cubitt 1993, 32-33).

After the rapidly increasing date and time video graphic, the next image of 'Pure Video' is a glowing white orb. At first, it could almost be confused with a dying star in space, emanating a bright light that fades as it traverses across the screen. However, the next imagery reveals the same bright light now organized into layers. Although both shots are static, there is a pulsating energy that flows through the frame. This visual energy is the "flow" of information in the construction and reconstruction of electronic pictoriality. The definition of "flow" spanning the media is treated differently in television and video. In television programming the flow of images are as constrained as possible and is what defines the medium, whereas a level reflecting transformative processes develops in video by modifying the existing structure of flow (Spielmann 2010, 55-56). As the camera begins to move, it reveals that the light emitting object is a television screen. The bright glow radiating from the "window" of the television is a closed-circuit video feedback loop. Video feedback is a dynamic flow of imagery created by the camera looking at its own monitor (Spielmann 2010, 96). Just as Paik's *Magnet TV* foregrounds the mechanics of reproduction, the video feedback loops create the flow of video into an image.

Video and Television both present the flow of video through the aspect of "timeshifting" but through different approaches. Television describes a "timeshift" which encompasses the

union of television and video and particularly the cultural use of video molded by television

with the introduction of the video recorder. "Timeshifting" refers to two levels, that of

technology, flow of video images, and that of its application in dealing with television and its

flow of programming. This happens in such a way that transferring something directly

present to repeat it in segments at another time, through video recording, denotes in the

application of video technology essentially the mechanism of a flow of images. This

describes how electronic signals are constructed and re-constructed and how the half images

are put back together while shifting them in time. The former, regarding video, can be

achieved in the simple schema of camera and television screen; the latter appears when the

video recorder is used to fast forward or rewind, or pause an image (Spielmann 2010, 50-51).

The Images for this sequence of 'Pure Video' use the simple schema of camera and television

to create a closed-circuit video feedback loop and turn the invisible flow of video into an

object on the screen. In a simple technical assembly with a camera and a monitor,

information carried by light is registered by the cathode ray tube of the television and

translated into video signals which are transmitted to a screen radiating the electronic signal.

In this process of registering and reproducing, the electronic signal, which contains the video

information, is continuously written in scan lines. The ongoing process of writing generates

television and video images, respectively, by bringing the flow of electronic information into

a form: a horizontally and vertically established structure of lines (Spielmann 2010, 3).

The simultaneity of the image in camera and television screen enables control of the camera

image on the television screen immediately: as dispositive structure, which combines input

and output and allows for the creation of a closed circuit. Video signals are also short-

circuited in feedback loops, in which electronic signals are amplified, distorted and reduced.

Both closed circuit and feedback present reflexive basic forms of vocabulary in video, with which formations of images more complex in multiplication and variation can work. At the heart of these processes lies and open-ended type of image: generated from the linear structure and its rules for combination, together with a dispositive arrangement (Spielmann 2010, 56).

The closed-circuit feedback loop imagery of the sequence in 'Pure Video' was created by the simple technical assembly of physically connecting an obsolete consumer video camera to the television with an RCA cable. Once the physical connection between camera and television was made, the camera was simply pointed at the television screen to produce the effect. After the video feedback loop was created, the participatory nature of Paik's *Magnet TV* was used to experiment and create the visuals. The participatory nature of Paik's prepared televisions, offers a complete rethinking of the conventional use and reception of the televisual apparatus, transforming television from a reproductive medium that communicates from broadcaster to viewer, into a productive one that generates a feedback loop of information between artist and participant (Zinman 2013, 90.)
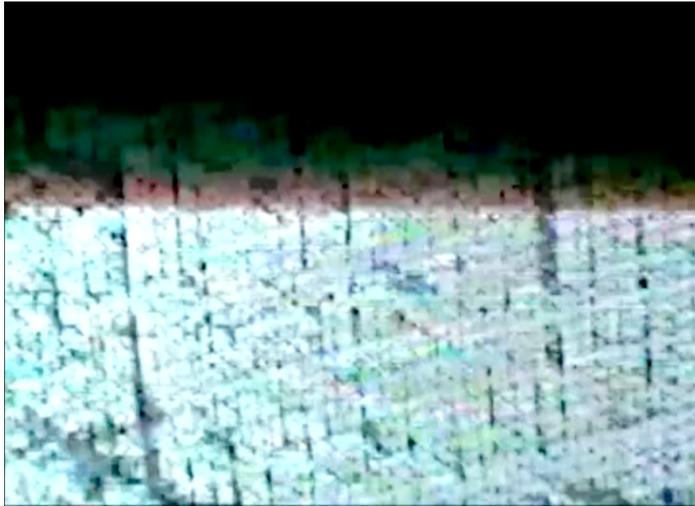
Fig. 32. Visual artifacts within the flow of video, *Videology* (Brauns 2023)

From the static shot of the video feedback loop, the camera travels into the flow of video. The images were created by chance in a similar fashion to the participatory nature of Paik's *Magnet TV*. Paik's experiments with devices and distortion exemplify his desire to eradicate hierarchies between artist and viewer. His embrace of low-tech solutions and accidents were hallmarks of his interventionist media practice (Zinman 2013, 91). For *Magnet TV*, Paik relied on a combination of materials, collaboration, interactivity and chance. By placing the magnet atop the cathode ray tube surface, Paik was able to twist broadcast images. *Magnet TV* married the design and manufacture of a new technological device with chance. Paik and other participants could change the images on the screen by moving the magnet, but they were neither in control of the television broadcast or able to fine-tune the distortions produced by the component materials (Zinman 2013, 92).

The visual artifacts, recorded in this sequence, are similar to the participants movement of the magnet on top of Paik's prepared television. Like *Magnet TV*, there is an element of physical contact between camera and television. The obsolete consumer video camera, connected to

the television through RCA cables, was placed physically touching the television screen and then zoomed in all the way. The images generated were completely random and left up to chance. I was able to change the look of the visual artifacts recorded by the camera through adjusting the zoom on the camera but, like Paik and his participants, was not able to control the flow of video or fine-tune the visual artifacts. While the obsolete consumer video camera is directly touching the television screen, there is no physical contact with the medium of video itself. Just like Paik's *Magnet TV* which manipulates the video signal from outside the television, this sequence does not actually touch the video signal but moves through it. The closest thing to materiality in terms of video is noise.

The visuals created for the final part of this sequence are similar to George Landow's 1966 film, *Film in Which There Appears Edge Lettering, Sprocket Holes, Dirt Particles, Etc.* Landow's film is a 6-minute loop of a woman in a red dress, her image is off-center with visible sprocket holes and edge lettering on the film. The woman is posed for what is known as a color-timing control strip. Color timing was an essential process in films from the 1920s to the 1990s, used to establish visual continuity between shots that may have been filmed under different lighting conditions or on different film stocks. Today, this process is accomplished digitally, but until recently film technicians used the color strips and grayscales as well as the models skin tone as reference guides to achieve consistent color balance and tonal density throughout the film. The color-timing strips, consisting of three to five frames, were attached to the film's leader, and would not appear on the screen at all (Gewertz, 2005).

Landow derived the image used in the film from a commercial test film, originally nothing more than a girl staring at the camera, a blink of her eye is the only motion, with a spectrum of primary colors beside her. Landow had the image reprinted so that the girl and the

spectrum of colors occupies only one half of the frame, with the other half made up of sprocket holes, rapidly changing edge letters, and in the far right screen, half of the girls head appears again. When the film loop was printed, Landow instructed the laboratory not to clean the dirt from the film but to make a clean splice that would hide the repetitions. The resulting film, a found object extended to simple structure. The girls face is static, the sprocket holes do not move but waver slightly as the system of edge lettering flashes around them (Sitney 1970, 339).

Unlike the filmstrip, which can physically exist unto itself without projection, the video image is made up of the flow of reconstructed half-images timeshifted to the present moment, only accessible at the site of the projection event. The raw material of the audiovisual medium of video is noise, which denotes the condition of electronic signals, generated as both audio and visual signals. Video does not present image and sound like film but instead forms of expression from both these signal states. Audio and video are interconnected noises with which the video signal can selectively produce the electronic noise auditively and visually. Video in its radical media form has to be allotted to the category of noise rather than to a consistent type of image (Spielmann 2010, 8). The noise images, which contains both audio and video signals, presented in this sequence are the video equivalent of the sprocket holes and edge lettering found in Landow's film.

Landow's film presents technical images of the cinematic apparatus not meant to be seen by the viewer. Images which exist outside the normal field of view of the projected image. However, despite this, the images are still bound by the frame of the filmstrip. Unlike film, video is not simply bound by the frame. As previously stated, there exists in video various possibilities for signal input even before recording (Spielmann 2010, 1-2). The final sequence

of 'Pure Video' enters the unbounded, multiple possibilities, of video never meant to be seen by the viewer.

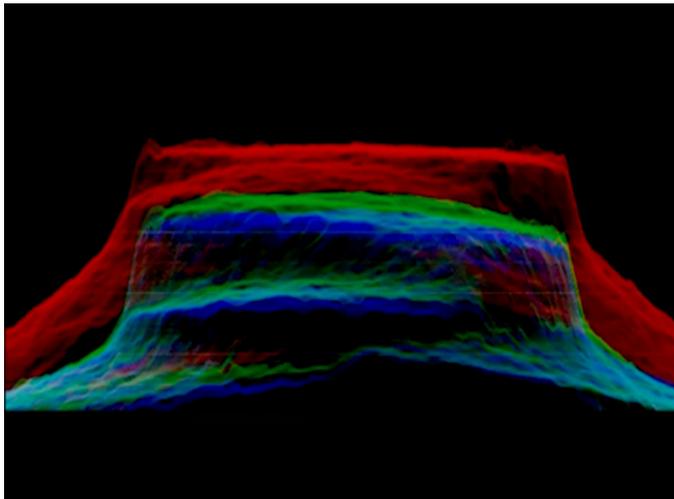## 4.5 Personal Moments as Data

Fig. 33. Landscape within the inner world of pure video, *Videology* (Brauns 2023)

Like the Tyco VideoCam, which defamiliarizes the domestic setting of the home in Chalfen's notion of home mode, the Sony Betamovie also defamiliarizes the home mode model. While the Tyco VideoCam presents the familiar domestic setting through the ostranenie images created by the camera, the Sony Betamovie reduces the interpersonal communication of every day domestic life to the electronic reconstructed flow of video before playback. While all consumer video cameras do this, the Sony Betamovie's inability of playback creates a technological limbo for the recorded images of home mode. In Chalfen's model of home mode, the user is not primarily interested in the image making process but with the content

they record. However, the image making process of the Sony Betamovie, through the break in continuity between recording and playback, causes the images of home mode to exist in the flow of video, between recording and the projection event. While filming with the Sony Betamovie, I experienced first-hand this reduction of images to the reconstructed, invisible, flow of video. Because the Sony Betamovie has no playback ability, this is done with an accompanying Betamax player. However, during research for this chapter, my Betamax player broke. The images I had recorded were in an electronic limbo, stuck in the "no particular place" of video (Spielmann 2010, 1-2), which is also where the final section of 'Pure Video' takes place.

One definition of video is: a recording medium using magnetic tape to distribute synchronized sound and image. However, the word video is also used to distinguish between types of cameras. A film camera uses the more traditional photo-chemical strip, and a video camera uses electronics, in the form of tubes, sensors, silicon chips, to convert light and sound into electrical impulses. Film is an analog medium, with every frame providing an imitation of whatever is before the lens when the aperture is open. But video and digital media, instead of storing representations, store their visual and audio information as blips of electricity, on and off signals, ones and zeros. A filmstrip held against the light will show what has been recorded, something not possible with magnetic videotape. Unlike film, video does not rely exclusively on the camera (Cubitt 1993, xi-xii). The final section of 'Pure Video' dives directly into the "blips of electricity, on and off signals, ones and zeros" that make up the inner world of video, disconnected from the outside reality.

Some 'imageless films' do exist but even then, there's a guaranteed physical presence of the film in the process of its own making with the filmstrip actually being where the work of

marking/exposing it took place. There has been some physical contact between it and some kind of outside reality; the light through the lens, the hands of the filmmaker. Video does not have this connection to the outside reality (Cubitt 1993, xi-xii). Even if film can technically be generated without a camera by scratching, painting, or treating the filmstrip chemically, the medium cannot dispense with its material basis. In contrast, video can manage completely without videotape, and even the video recorder is not a necessary condition for its realization as a medium (Spielmann 2010, 8).

The final section of 'Pure Video' was created without relying on the use of a camera in the traditional sense. The lens is only one of the technologies available to video for generating images. For example, images on television are created by the electronic manipulation of previously existing images, whether produced by film or graphics. Even if the manipulation of the image is as simple as a telecine transfer from film to tape, it still represents an image of an image, and the broadcast image then is one further removed from the real world (Cubitt 1993, 136). The images of the final section of 'Pure Video' are also a technological image of an image. More accurately they are an exact technological copy of the previous sections of *Videology*, Stillness and Watching. Just as the first section of *Videology*, Stillness, created video landscapes from multiple obsolete consumer video cameras, the final section of 'Pure Video' creates video landscapes from the technical information found within the image. This transformation of the image is similar to Woody Vasulka's 1974 film *C-Trend*.

In Vasulka's film *C-Trend*, recordings of street traffic made live with the camera are scanned again and modulated to alter their line structure to achieve the effect of an image object moving freely in electronic snow. In this way, the image field gives up its connection to the X/Y coordinates of the raster image, which normally determine the scale of regular video

images. The videotape reproduces the experiment, in which images and sounds from traffic are recorded with a camera pointing out of a window onto the street. Although, the visual material is changed in form, size and compression along with being divided into two differently formed segments through retiming and repositioning in the Rutt/Etra Scan Processor, so that it finally appears as a completely different form, the recorded sound of the busy street remains unchanged. In *C-Trend*, visual information as content is removed from the television image's raster and exposes the frame itself to the horizontal and vertical blanking via the "empty" raster. By manipulating the raster, the image's content takes on the form of an object and switches directions from above and below.

C-Trend connects two different functions of the scan processor: manipulating the raster and deflecting the scan lines. This operation, together with raster manipulation, produces permanent tension between the live character of the street noises from the original soundtrack, which maintains the relation to the "real world", and the image as an artificial object, which points to the quality of displaying a recorded scene. It is possible to discern the cars in the image object when they drive through the image field. In this early video work with deflecting scan lines, it is possible to make out the "real" objects of the recorded material by their movement. With C-Trend, Vasulka visualizes the tension between the, as he calls it, the "frame-bound" and the "frame-unbound image." If the modulation of the electromagnetic energy comes about with scan processors independent of the brightness, the resulting image object appears in three-dimensionality regardless of whether it was generated internally through a waveform generator or externally through camera input (Spielmann 2010, 204-205).

While objects of the real world are recognizable in *C-Trend*, the final sequence of 'Pure Video' removes all traces of the outside world. Similar to Vasulka's use of the Rutt/Etra Scan Processor, the final section of 'Pure Video' was processed through a computer. The images were created during post-production by recording the electrical signals for the first two parts of *Videology* through several technological scopes. The images were recorded by the computer using the screen record feature. It is no longer easy to separate purely analog video from digital media. Almost all video effects generators now incorporate a digital frame store as a final stage and much of the manipulation of image takes place at a digital rather than analog level (Le Grice 2001, 266). Video which borders on or blended with techniques of digital imaging, leads to the creation of new forms of images and deliberately no longer denotes an "image" contextually perceived as visual unit, but instead dissolves the distinguishing features of the image by emphasizing the audiovisuality of the electronics. Electronic media parametrically make transitions between media visible, as well, at the same time, in the basal relation of exchange between audio and video, self-reflexively revealing the transformation process with the vocabulary of aesthetic forms. Media aesthetics, which is more than the process generating style, form, and genre in film, bound to fundamental categories of technology, who's transformation only makes visible and audible. This fundamental, invisible structure is the matrix of the electronic reflexion, which, by means of the technical-aesthetic realization of video, makes a structure, a shape, and a scale visible (Spielmann 2010, 57-58).

The last series of images of 'Pure Video' were created by recording the internal instruments used to technologically monitor the video image for the first two parts of *Videology*. Instruments such as waveform and histogram are used to keep the video image within an acceptable visual range during filming. All the decisions I made regarding shot composition

for Stillness and Watching are reduced to the "blips of electricity, on and off signals, ones and zeros" that make up the inner world of video, disconnected from the outside reality. Although the images of the final part of 'Pure Video' are technological copies of the previous two sections of my short film, when separated from their pictorial form, they take on their own technological narrative. The result is a visual landscape created by elements of pure video images.

Conclusions

The previous chapters explored themes derived from the technological conflict found within each obsolete consumer video camera examined as part of this research project. Each theme has been translated visually in my practice-based short film *Videology.* The structuralist film presents these translations in three parts: each a self-reflexive look at the obsolete consumer video cameras used in its own production. Part one: 'Stillness' (Sony Mavica), is the deconstruction of the three visual elements found in both still and moving images: recording medium, light, and composition. Part two: 'Watching' (Tyco VideoCam) examines both sides of the ubiquitous nature of video surveillance with the audience moving from viewer to subject. Part three: 'Pure Video' (Sony Betamovie) is the exploration of video that exists independent of recording and playback.

The Sony Mavica, Tyco VideoCam and Sony Betamovie were examined through the lens of media archaeology, with two interconnected lines of enquiry. The technological conflict found within each obsolete consumer video camera was used to explore the cameras themselves and related themes found in the greater context of filmmaking. The first line of enquiry is concerned with the apparatus itself: an obsolete consumer video camera, and the historical and cultural context that surrounds each device. Timothy Druckrey warns of the danger of media archaeology becoming a self-congratulating curiosity cabinet of quirky discoveries (Parikka 2012, 162). To prevent the Sony Mavica, Tyco VideoCam and Sony Betamovie from becoming, as Druckrey warns, a "curiosity cabinet", this research project created a practical framework of proposed heterogenous media archaeological approaches, by key figures in the field, to examine each camera.

First, the peripheral data of the obsolete consumer video camera was examined including the box, manual, other literature, reviews, print advertisements and commercials. Vivian Sobchack's first definition of presence, operative presence, was then applied to bring the obsolete consumer video camera out of the past and into the present. Once transported to the here and now, and in the hands of the user, the images created by the camera, visual aesthetic, were explored as a natural continuation of Sobchack's first definition of presence. This then allowed for the application of Sobchack's second definition of presence, presence effect, to be applied, in which current media hierarchies are challenged by the obsolete consumer video camera simply by being "in the here and now". Finally, this challenging of media hierarchies allowed for the natural de-familiarization of current media devices proposed by Tom Gunning.

The second line of inquiry of this research project, is my practice-based short film *Videology*: a structuralist film that visually translates the themes of cinema expressed by the technological conflict found within each obsolete consumer video camera. Structural film is generally defined as an exploration of the visual and cognitive ideas of structure, process and chance, with viewing a film as an act of reading it. In structural film, form is the content (Rees 2011, 79). The content of *Videology* is self-reflexive and concerned with showing the technology used in its creation: obsolete consumer video cameras and other outdated video equipment. With no traditional narrative, the audience engages in reading the technology of the film.

My film *Videology* is built on this theoretical framework and meant to be as accessible as the obsolete consumer video cameras used in its creation. The images in the film, highlight the

technological aspects which once made each of the obsolete cameras exciting. When a person hears a song for the first time it is new and exciting. Upon several listens the sense of excitement slowly begins to wear off. The song itself hasn't changed; the listener has. The same is true for obsolete consumer video cameras, the technological aspects that made them exciting are still there, they haven't changed, the world around them has. The practical framework of proposed media archaeological approaches used to examine the obsolete consumer video cameras, for this research project, allows for the cameras to become exciting again, like someone hearing a song for the first time.

The application of the practical framework is a contribution to the discourse surrounding media archaeology by highlighting the strength in diversity of the burgeoning field. The practical framework also acted as a self-reflexive look at media archaeology put into practice, actually doing media archaeology. The variety of proposed approaches allowed for a wide range of exploration of the obsolete consumer video cameras. Going forward, I would like to examine other obsolete consumer video cameras and forgotten video technology found in the expanding archive of media archaeology. The implications of the practical framework created for this research project is as varied as media archaeology itself and can be applied to other media devices. Hopefully, as media archaeology evolves, this strength in diversity will not diminish.

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