Obsolescence and Art: The canvas and the CRT

Obsolescencia y arte: el lienzo y el TRC

Miguel Felipe Valenzuela
Doctor of Philosophy - PhD, Art, Design and Media, UNSW, Australia.
Sessional Lecturer, University of Sydney, Australia
miguel.valenzuela@sydney.edu.au

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Abstract
This article proposes that the relationship between obsolescence and art is integral to the way that we conceptualize art and art movements. It looks at the need to reconceptualize the use of CRT television technology in art in the present digital age due to the way that obsolescence has enabled a shift in meaning over two distinct technological eras. Through an analysis of televisual flow and the conceptualization of physical manifestations of television and screen culture, the article argues that the category of obsolete can affect or change the way art is understood or consumed. The importance of this observation relates to theories of use value, perception and design in art and screen culture.
Keywords: art; Obsolescence; art movements; conceptualization

Resumen
Este artículo propone que la relación entre obsolescencia y arte es parte integral de la forma en que conceptualizamos el arte y los movimientos artísticos. Analiza la necesidad de reconceptualizar el uso de la tecnología del tubo de rayos catódicos (TRC) de la televisión en el arte en la era digital actual debido a la forma en que la obsolescencia ha permitido un cambio de significado a lo largo de dos eras tecnológicas distintas. A través de un análisis del flujo televisivo y la conceptualización de las manifestaciones físicas de la televisión y la cultura de la pantalla, el artículo sostiene que la categoría de obsoleto

puede afectar o cambiar la forma en que se entiende o consume el arte. La importancia de esta observación se relaciona con las teorías del valor de uso, la percepción y el diseño en el arte y la cultura cinematográfica.
Palabras clave: arte; Obsolescencia; movimientos artísticos; conceptualización

Video Art

Historical video art is a genre that is difficult to define or even discuss without lengthy explanations of pre-digital era technology that used to be necessary to record and present works of art. In the latest decades, the proliferation of online content streaming through digital applications has turned the term “video” into a synonym of the content broadcast or shared on popular platforms on smartphones. Television, as well, is now a wide screen flat plastic object that hangs on household walls, like a painting, insinuating that we have somehow elevated the act of viewing into an artform. At the same time, older television and video formats, which the digital era has made obsolete, are being now commonly re-conceptualized in popular culture as objects of nostalgia or props in films that help evoke an era or a historical timeframe. Many historical videoart works by prominent artists such as Nam June Paik, Pipilotti Rist, and Gary Hill were created using what are now obsolete electronic devices as their core components, in a similar way to what Duchamp built with his ready-mades.

The concept of obsolescence cannot be avoided when dealing with those types of artworks. The complexities involved in attempting to conceptualize it in order to develop a broader understanding of historical video art brings to light a number of important observations about time, our use of objects in art, and may hold clues in relation to how we might conceptualize contemporary practices, such as Non-fungible tokens (NFTs) or large-scale video wall installations in the future.

It is commonly stated that video art initially represented a rupture to the one-way flow of television transmission produced by the dominant mainstream media at the time, and that this rupture began in earnest with the introduction of the Sony Portapack and the ½ inch

tape in the 1960s (Rush, 2007, p. 13; Meigh-Andrews, 2006). According to Chris Meigh-Andrews (2006, p. 18) "the portable video recorder had considerable impact, empowering artists, politically active individuals and groups to fight back against the corporate monopoly of the 'one way' broadcast television system". Meigh-Andrews provided an in-depth analysis of the historical origins of video art in the USA, the UK, Europe and Canada.[1] Michael Rush, in his important historical text *Video Art* (2007, p. 9), similarly placed the development of video within an international context in which traditional art practices were blending into new forms. For Rush, video art was initially heavily influenced by performance art, in which artists such as Vito Acconci, Richard Serra, Gary Hill, Joan Jonas, Doug Aitken and Sam Taylor-Wood treated video as an extension of their existing toolsets and did not necessarily identify themselves as "video artists" (Ibid.).[2]

Historical accounts of video art such as those of Rush (2007) and Meigh-Andrews (2006) serve as significant frames of reference for the use of one of the most prominent examples of technological obsolescence in human history: the Cathode Ray Tube (CRT). When used in art as an obsolete object, the CRT gains new significance, yet in historical works viewed in the digital era, this significance may not apply to the original spirit of the work and hence may need to be rearticulated. This need for rearticulation is something I have referred to as a "spatio-temporal anomaly" in a previous publication, an expression that needs further research, yet broadly refers to a need to reconceptualize an anachronistic form when its original context, and hence original meaning, has been displaced.

[1] He cites early video art commissions developed by German artist Gerry Shum (*Land Art*, 1969) who experimented with television broadcast 'exhibitions' that showed works such as Jan Dibbets's *TV as a Fireplace* and *Identifications*, as transmissions. Shum also featured the works of artists such as Joseph Beuys, Klaus Rinke, Hamish Fulton, Gilbert and George, and Richard Serra in later broadcasts in the early 1970s (Meigh-Andrews, 2006, pp. 19-23).

[2] Important performance artists such as Joan Jonas and Martha Rosler used video to capture performances that exposed the inherently male dominated and hence ideologically weighted medium of television (Rush, 2007; 86-88). These artists used CRTs in their early performative works, but as with many artists in the same era, such as David Hall, Bruce Neuman and Bill Viola, they were utilising television sets as conceptual tools and not necessarily exploring the sculptural aspects of the CRT.

CRTs came to be regarded as an integral part of pre-flat screen television within a broader context of televisual flow and not as a component or device in its own right. They demonstrate how transmission tends to veil its materiality and how it remains fluid and adaptable to technological change. That is why this article argues that art works which feature CRT technology produced in the digital age continue to disrupt the total flow of television by questioning the linearity of its progress and, in doing so, rearticulate and reinvent the device. Artists that use CRTs in the digital age have raised important questions about materiality in art and design, particularly, in relation to how human beings conceptualize themselves in a given historical era or time frame. Additionally, they question the way in which new designs, artforms and modes of expression are created through the reinvention and reconfiguration of the obsolete.

When artists, most notably Gary Hill, began removing the tube from television encasings and other televisual apparatuses in the 1990s, the function of the device was fundamentally questioned. According to John Hanhardt (2000, p. 120) the removal of the tube from the television encasing allowed "…the moving image to enter into the discourse of sculpture and installation, and of self-inquiry". Essential to this complex narrative of materiality, historicity and conceptual speculation was the CRT's role in enabling the immediacy of live television. The broadcasting of text, moving images, and sound from the 1950s onwards transmitted an unprecedented quantity and diversity of representation.

The most prominent artist to articulate this diversity was Nam June Paik. His career spanned the duration of the CRT television boom. Works such *Electronic Superhighway* (1995) made him synonymous with commercial and larger-scale television installation art, a far cry from his origins in performance art and experimental music, as part of the Fluxus movement (Rush, 2007, pp. 53-59). *Electronic Superhighway* is a fifty-one-channel video installation, consisting of two-hundred and fifteen CRT monitors. The work is forty feet long, fifteen feet high and four feet deep. Consisting of video loops from iconic American television commercials, shows and films that flash by as if being viewed from the window

of a car. Paik references the newly built highways he experienced on his first trip to the US. The scale and color of the huge neon light outlined map evokes the magnitude of a rapidly expanding and developing United States of America (Anderson, 2012).

Paik saw the CRT monitor as analogous to the painter's canvas and immersed himself far enough in the technology to hack and modify them into works of art. He stated that CRTs:

> ***As collage technique replaced oil paint, the cathode ray tube will replace the canvas.
> ****Someday artists will work with capacitors, resistors and semi-conductors as they work today with brushes, violins and junk
> (Paik 1965 in Hanhardt, 2000, p. 114).

Commonly seen as the pioneer of CRT television art, Paik's assertion that the CRT would replace the canvas was not a literal call to paint on the new canvas, but rather to use the CRT and television sets in ways that explored their material, yet non-utilitarian qualities. He used them to display singular images in camera loop assemblages, as part of constructivist or Dadaist experiments with magnetism or to distort electronic signals.[3] As self-standing electronic assemblages reliant on their own materiality, Paik's works questioned their own function and form; they disrupted the utilitarian aspect of the object and, at the same time, provided alternate roles for these very devices in art. His Buddhist background came to the fore in many of his works, exploring television as a metaphor for meditation and contemplation. He was a cybernetic experimentalist whose explorations into the inner realms of electronic circuitry was able to fascinate even scientists and physicists such as Norman Bauman (Ballard, 2013, p. 2).

Today, the works of artists such as Paik, Vostell, Richard Serra, Ant Farm, Joan Jonas and Julia Scher are part of what is widely regarded as an important legacy for video art.

[3]Artists such as Wolf Vostell with his work *Television Decollage*, 1963 (Figure 4) and Ben F. Laposky and his work *Oscillons,* 1953, were also experimenting with CRTs at the time (Decker-Phillips, 1998, p 20; pp. 48-50).

The meaning of such legacy becomes more complex when viewed in relation to the device's obsolescence. The reach of the CRT, especially through television, has been so widespread that it is hard to find any community in the world that has not been exposed to it or affected by it in some way.[4] Through messages, iconography, symbolism, propaganda, immediacy and interconnectedness, television represents normalized or conventional channels of communication. Its preponderance throughout the twentieth century has solidified the CRT's position as one of the most iconic and widely used electronic devices in human history.

Obsolescence and Video Art

In the 1990s, the CRT was superseded by its historical replacement, the liquid crystal display (LCD), and later by the organic light emitting diode (LED and OLED). These screens have become synonymous with the digital age. Today, smartphones and computer devices that use LED and OLED screens outnumber the entire population of the world (Boren, 2014). Yet, even as the CRT has come to be viewed as an anachronistic technology in all of its incarnations, particularly as a viewing device, artists continue to use it in their new work.[5]

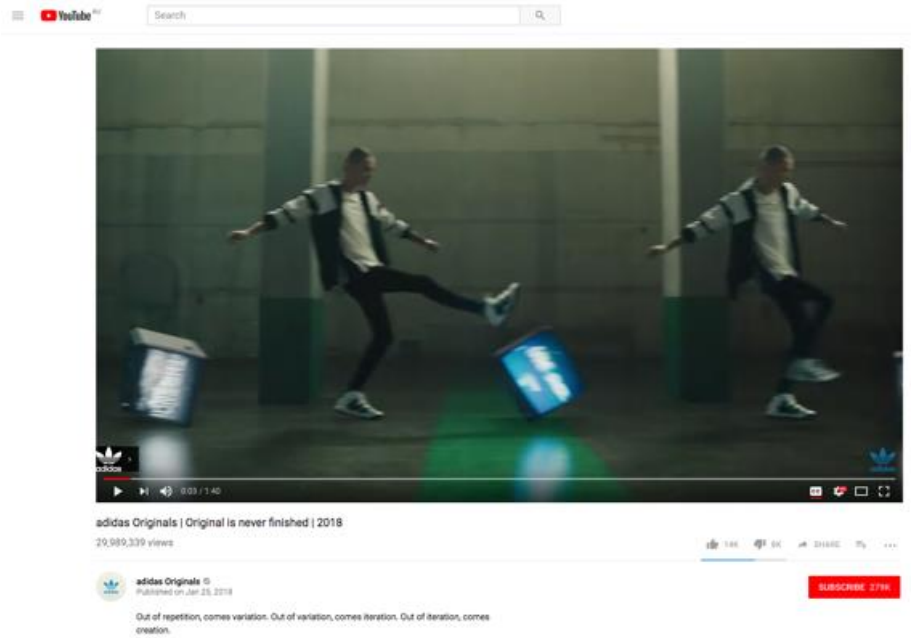
This is clearly evidenced by an Adidas commercial from 2018 titled *Original is never finished* (2018). In it a young man is portrayed kicking a CRT monitor across the screen. The camera zooms out and the image suddenly shows multiple copies of the same actor kicking the same monitor in horizontally replicated flickering frames, referencing a strip of celluloid moving picture film (Figure 1). The camera zooms out again and a number of horizontal levels of frames are revealed, multiple characters walk, skate and move within layered film strips across the screen (Figure 2). Suddenly, color bars flash up and duplicate as copies of multiple characters glitch on and off in time to the heavily edited

[4] This reach was increased by the use of the CRT in personal computing, yet for the purposes of this thesis I have focused primarily on the CRT's role in television.

[5] The LCD is also reaching a point of obsolescence and it is being replaced by LED and OLED screens. Their overproduction has caused an extreme case of market driven obsolescence which has been actively perpetuated by large companies (Slade, 2006).

techno musical accompaniment. Towards the end of the commercial a crowd climbs a mountain of powered CRT monitors that play historical sports footage (Figure 3) as the words “keep pushing, things are going to get better” are repeated over and over along to the music. Despite being a visual feast of screen references to moving image technology, from film to recent advanced digital effects techniques, the advertisement espouses a corporatist view of the CRT monitor in the digital age. This view is widely mistaken as normal or regarded as a given, an *a priori* concept that underscores the way we have been trained to view the CRT. In many ways, such a view overshadows and obfuscates the use of the CRT in contemporary art.

Figure 1



Vision Invisible, *Original is never finished* (2018), Adidas commercial on YouTube.

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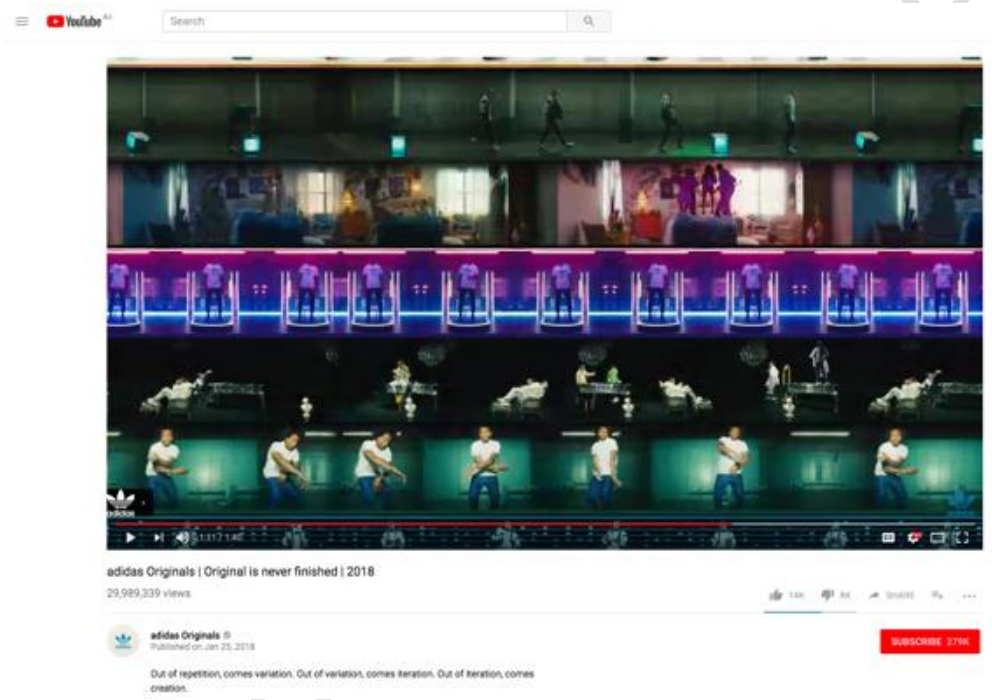
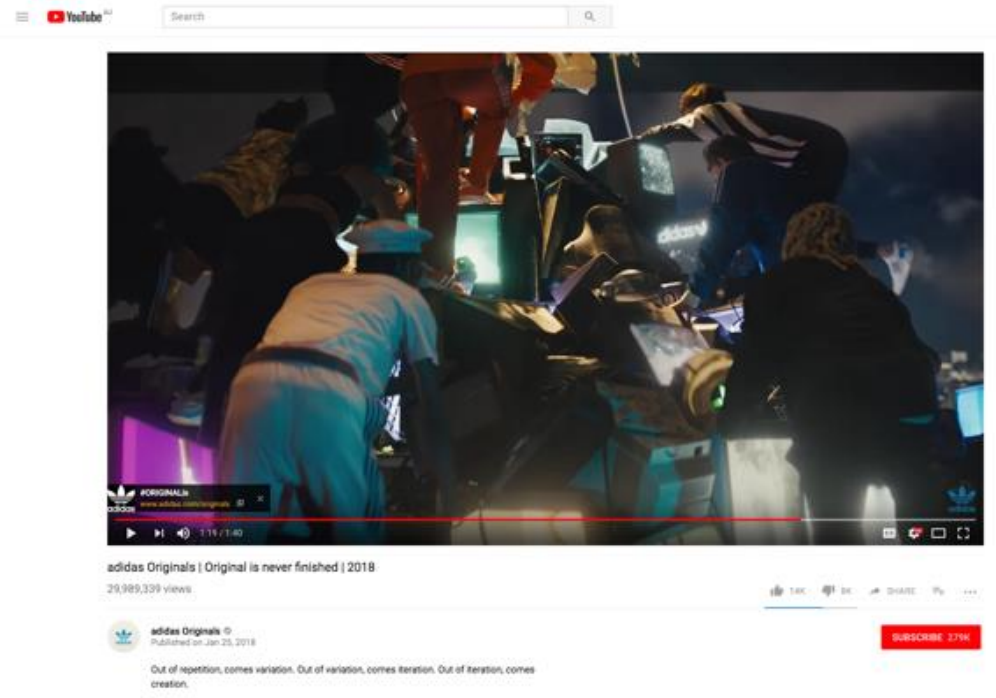
Figure 2.



Vision Invisible, *Original is never finished* (2018), Adidas commercial on YouTube.

Figure 3



. Vision Invisible, *Original is never finished* (2018), Adidas commercial on YouTube.

Total Flow in the Digital Age

As a transmission enabler, the CRT is merely a conduit for the images it displays. Even though its development as a physical object can be traced through an association to various devices, functions, modes of consumption, apparatuses, scientific experimentation, and socio-cultural forms, its most prominent, clearly identifiable historical use was in television. Raymond Williams in *Television: Technology and Cultural Form*, originally published in 1974, notes that television was organized into scheduled programming sequences that represented a *flow* of viewing experiences.

Programming included news, public affairs, documentaries, educational, arts, music, children's shows, movies, general entertainment, sport, religion, publicity and commercials (Williams, 2003, pp. 79-80). Flow, for Williams, was a regimented and

organized implementation of programming through regulations, treaties and laws. Government policies, although varying among nations and states, were implemented to reflect cultural, economic, and social values that guided what viewers could watch. He states that:

> In all developed broadcasting systems the characteristic organization, and therefore the characteristic experience, is one of sequence or flow. This phenomenon, of planned flow, is then perhaps the defining characteristic of broadcasting, simultaneously as a technology and as a cultural form. (Williams, 2003, p. 86)

The problem with flow, for Williams, was the ability of large corporate broadcast systems to surpass or displace smaller locally based television producers, which allowed programming to extend or augment participatory democracy. For Williams, television had the potential to be utilized for the greater good by providing access to information for communities and for its educational capacity. The spread of independent community, activist and art television programming in the 1960s and 1970s, particularly across the United States and the United Kingdom, were prime examples of this. Williams also argued that public broadcasters like the BBC in the United Kingdom, had established themselves as “consensus” based, loosely state controlled yet independent entities that enabled government funded flow (Williams, 2003).

The importance of Williams’ notion of flow lays in the way that programming affects how television and the CRT have come to be perceived. Flow can legitimize or complete the CRT’s utilitarian aspect. Without an image on the screen the CRT is ‘out of use’ or ‘switched off’, and with an image it is fulfilling its role or function as a display or televisual device. In 1974, Williams predicted the proliferation of on demand television viewing, online shopping, news and weather and information services (2003, pp. 141-142).

In short, he predicted many functional aspects of the screen in the current digital era. In this era, flow still exists, yet it is increasingly decentralized and controlled by corporations such as YouTube, Facebook, Tik Tok, WeChat, Instagram and Twitter. Information is unregulated in many regards, although never very distant from being able to be switched off, with live broadcasts of murders and mass shootings becoming a common phenomenon, only to be taken down in retrospect. However unsettling or disturbing, this is still a form of flow, with individuals and small groups attempting to exercise some form of power through their access to the medium, in an ad hoc decentralized and chaotic mode of flow.

According to Andrew Keen, the author of *Digital Vertigo*, electronic networks "…might actually represent the post-industrial future of everything" (2012, p. 48). He laments the cost at which this might be achieved, highlighting the dangers inherent in the degree of "openness" and "sharing" sought by social media moguls such as Mark Zuckerberg (Facebook) or Reid Hoffman (LinkedIn). They represent the rise of what Keen calls social and trust economies that have emerged to "help create a truer meritocracy by exposing disreputable individuals and by rewarding those with proven integrity" (2012, p.49). A perfect world for these technocratic capitalist utopians is one where all citizens relinquish their rights to any mode of privacy and give corporations the rights to all of their personal information and data to generate profits via targeted advertising. Keen describes these calls for increased "transparency" in public life as Orwellian, but he also points out how proponents continually remind us that individual privacy and autonomy are things of the past, and that people who advocate for privacy rights probably have something to hide (2012, pp. 54-57).

At first, the importance of the way social media deals with individual privacy in relation to obsolete CRT technology in contemporary art seems minimal and unrelated. However, its importance comes to the fore when viewed as part of a genealogy of flow from the analogue world of the CRT through to the full digital landscape. William Urrichio's article *Television's Next Generation: Technology /Interface Culture / Flow* (2005) updates the

concept of flow into the digital era, where a relentless late capitalism replaced the CRT with the flat screen and rendered billions of otherwise still functional CRT televisions obsolete. Functionalism and utilitarianism are at the mercy of markets and the ramifications of this for art and design are seemingly arbitrary at first, yet crucial when we take note of the current need for advocacy for the environment and alternative conceptualizations of nature and our place in it.

For Uricchio, the introduction of metadata-based flow both intensified and transformed the conditions underlying Raymond Williams's definition. Agency shifted from schedule programmers and remote-control devices (RCDs) to "metadata programmers and adaptive agent designers" (Ibid., p. 254). He identified this agency as stemming from the convergence of television and computer, speculating that it would usher in "as-yet-unheard-of-industries" and a reduction in the "perceived need for overt viewer control" (Uricchio, 2005, p. 254). As companies such as Cambridge Analytica, Google and Netflix collect our personal data and use it to curate our online/viewing experiences or influence elections, Uricchio's observations become more prescient. His observations on flow are important in relation to the generational change that occurs when a culturally significant object becomes obsolete, such as the CRT being phased out of production and television morphing into a flat screen digital form.

The use of television and, subsequently, the computer by governments and broadcasters as tools to disseminate behavioral social codes, normative conduct standards and define parameters for social interactions, emphasize the transformative power of the screen. They also demonstrate how the physical manifestation of the screen is evolving in relation to rapidly changing historical circumstances, and how our perception of the screen affects the ways in which we might engage with the CRT in art in the present. In this context, the CRT remains as a powerful representation of the past, and an important key to understanding how perception changes in relation to processes such as obsolescence. As an entity, it is still a screen. However, its rapid demise, due to obsolescence, further demonstrates its disruptive capacity, especially in its relationship with the total digital flow

that is permeating screen culture at the present. In short it will be viewed as a *spatio-temporal anomaly*, that is, an anachronistic form that is still functional in the present but will still require a reconceptualization in order to be understood in the digital age.

The digital age requires one of the most extensive, elaborate and resource heavy infrastructures in human history. Thousands of kilometers of servers (Figure 8), communications systems, surveillance infrastructure, millions of cables, satellites, computers, wireless infrastructure and handheld devices have been built to house it. Moreover, the hardware required to capture sound and images, peripherals for cameras, as well as the human resources needed to make all of this possible has had to be developed. In 2016, the asset and combined market value of the largest digital technology companies in the world was worth well over two hundred trillion dollars (Sharf, 2016). The scale of interconnectedness and reach of the digital age has amplified and dwarfed the film and television apparatus of the past. The social connectivity expounded and evangelized by the digital era has created a complex situation in which an expectation of social connectedness and inclusiveness underpins most digital transactions.

Materiality and the Obsolete

Obsolescence is a core element of consumption cycles that governments and corporations implement in order to modernize and improve their capacity via constant upgrade cycles and planned redundancies. This mass scale institutional implementation of upgrade cycles has included a systemic shift towards total digital flow that is marketed and sold within an economy and culture that prioritizes profit over sustainability. Profit generated by the manufactured need for the latest and newest upgrade. Whether we agree with this conceptualization of the present or not, it is hard to argue against the fact that the screen is now everywhere. The digital age is an era in which we are glued to electronic gadgets, they are prosthesis, appendages or reluctant connectivity devices; they have transformed the way we consume media. This is a profound change in the materiality associated with viewing and experiencing art that uses media as its core. In

fact, the gradual replacement of projector technology with large scale OLED screens in large scale mainstream art galleries and shopping centers represents a similar gradual shift in the materiality of viewing that may similarly go unnoticed.

Anthropologist Daniel Miller (2005) argues that any definition of materiality needs to encompass both the predominant colloquial use of the term as it relates to and describes objects and artefacts, as well as what he sees as philosophical uses of the term. He writes:

> We may want to refuse a vulgar reduction of materialism to simply the quantity of objects. But we cannot deny that such colloquial uses of the term *materiality* are common. The standard critique of materialism found in newspapers and everyday discussions take their stand against the apparently endless proliferation of artifacts… (Miller, 2005, p. 4)

Miller argues that any theory of materiality needs to encompass and "situate material culture within a broader conceptualization of culture" (Ibid., p. 4). He uses E.H. Dobrich's *The Sense of Order* (1979) to illustrate how focusing on the frame rather than the artwork leads to the realization that the visibility of a frame depends on how appropriate that frame is (Miller, 2005, p. 5). Miller points out that Gombrich's thesis suggests that a medium can become so ubiquitous that it is often taken for granted or overlooked. Miller aptly uses the phrase "the humility of things" to describe this overlooked or invisible aspect. The frame is important because we do not normally notice it. He states:

> The surprising conclusion is that objects are important not because they are evident and physically constrain or enable but often precisely because we do not "see them". The less we are aware of them, the more powerfully they can determine our expectations by setting the scene and ensuring normative behaviour, without being open to challenge. (Miller, 2005, p. 5)

The frame also encompasses the cultural value ascribed to the object. The frame thus becomes the cultural and social context within which value or significance is attributed to the object. Using Miller's formulation, the gallery or setting within which an artwork is exhibited could also be viewed as an extension of this metaphorical frame, moving space into the realm of *thing* and serving as a possible link between the materiality of the artefact and its philosophical dimensions within space, culture and history. The same could be said of the television itself, as a frame for news, information, culture, advertising, information and art.

In *The Virtual Window: From Alberti to Microsoft*, (2006) Anne Friedberg argues that for Paul Virilio "the screen remains a metaphoric register, a visual surface that overrides any specificities of its media formation" (2006, p. 183).[6] Friedberg shows how Virilio's arguments can be traced back to Paul Valéry and his uncanny prediction of works of art appearing on demand via an apparatus controlled by hand gestures as early as 1928, in an essay titled *Conquest of Ubiquity* (Ibid., p.184). Since Walter Benjamin (1982) quotes Valéry in *The Work of Art in the Age of Mechanical Reproduction,* published in 1936, Friedberg argues that Virilio "channels both authors" through his work and that he sees the speed and proliferation of new technologies as representing a situation where "ubiquity meets instantaneity" (Friedberg, 2006, p. 184). While Benjamin and Valéry focus on the apparatus used to deliver images, Virilio emphasized a dematerialization and disappearance, where the screen is the conduit for the material to become immaterial (Ibid.).

Artworks are material objects, even video artworks that are films of an event or a performance are material representations of a given moment or an attempt to capture a physical moment. How this moment is represented in the gallery is inconsequential to most, yet the materiality of its presentation will affect the meaning of the work regardless of intent or how far we prioritize the immaterial. Video artworks that use visual effects and

[6] Virilio's theories on the relationship between speed, war technology, the accident and their effect on human perception are well documented and are discussed here only in reference to the effect of the context of human development on a broader perception of the CRT's use in art.

simulated 3D objects are still representations of some form of materiality. This seeming contradiction is what gives many new works using computer generated images (CGI) or Artificial Intelligence (AI) a sense of other worldliness – their connection to the real world. AI data collection is reliant on the real world. In a similar vein, new works derive a futuristic sensibility from the mode of presentation, usually through high resolution projection or presentation on custom-built high-resolution OLED screens. The dematerialization and disappearance of these works is reliant on the screen's power as a conduit for the material to become immaterial as proposed by Virilio.

Virilio writes more prominently about television in *The Aesthetics of Disappearance* (1980), where he predicted the merging of the cinema, computer and television screen (Friedberg, 2006, p. 184). Virilio saw the onset of the twenty-four-hour news cycle and the introduction of the VCR as the beginning of "new modes of televisuality". In *Lost Dimension* (1984) he states: "In the interface of the screen…everything is always already there, offered to view in the immediacy of an instantaneous transmission… the instantaneity of ubiquity" (Virilio cited in Friedberg, 2006, p. 185). This notion of the *instantaneity of ubiquity* points to how the proliferation and reach of television has profoundly influenced how the world is perceived.

Frederic Jameson observed that the total flow of television described by Williams required a level of immersion where the viewer accepted the format without criticizing it or the content being transmitted and the planning behind it. Many viewers rejected flow by changing channels, switching off or using commercial breaks as opportunities to go to the toilet. This led to the introduction of new models of choice-based viewing such as cable and video on demand (VOD) (Jameson, 1991, pp. 69-71). Jameson argues that within this context, early video art posed a counterpoint to the total flow of television as theorized by Williams (1991 p. 71). He argued that video art's lack of adherence to television conventions and practices allowed the video artist to explore the wider potential of the format, especially through experimentation with concepts and subjects that may have been deemed taboo for conventional television (Ibid.).

According to this view, video art was able to disrupt commercial television's flow or programming. The use of CRT technology by artists such as Nam June Paik, Wolf Vostell, Steina Visulka and many others, in works that draw attention to the physical presence of the device were also implicitly denying its utilitarian aspect. By rejecting seamless transmission and utilizing loops, video artists posed a challenge to the ubiquity and taken-for-granted-ness of flow.

Art, Past Present and Future

In *Remediation: Understanding New Media* (2000) Jay David Bolter and Richard Grusin argue that television was basically a remediation of film, print and radio communication media. Quite prophetically, they argued that television's survival into the future would depend on its ability to "remediate digital media" (p. 185). It is interesting to note, that the phasing out of the CRT has coincided with the proliferation of the hand-held device and portable computer as a remediated mode of media consumption. As the functions of the computer and television are combined into smaller flat screen devices, the bulkier forms are discarded. Televisions are now flat, thin, light and resemble cinema screens in aspect ratio, color depth and form. They are smart and have applications and games. Bolter and Grusin argue that "…(t)elevision emerged as a media form when the classical Hollywood cinema had already attained cultural status and social and economic stability" (Bolter & Grusin, 2000, p. 185). It therefore rehashed all of the genres already popularized by film.

Television was an excellent example of *remediation*, yet also a direct descendent of the interplay between market forces and political economy, underpinned by an emergent monolith of communication. There were very obvious technological and logistical differences that distinguished film and television, yet the continuation of one form into the other highlighted a clear pattern of remediated formats also visible in other historical examples.[7] Bolter and Grusin articulate the difference between the two media as follows:

[7] For example, radio to podcast, record to cassette to compact disc.

"Film offers us a world elsewhere, an opportunity temporarily to set aside our cultural, personal and economic circumstances, while television offers us a means of structuring those circumstances on a daily basis" (Bolter & Grusin, 2000, p. 186). For Bolter and Grusin, television provided a sense of hypermediated connection to the content being transmitted. Television could be experienced live from the outset, a new experience of immediacy, the CRT facilitated a means of relaying visual imagery and information to the viewer on an unprecedented mass scale and speed.

These capacities relate to Paul Virilio's notion of the *instantaneity of ubiquity*, and television's socio-cultural omnipotence, which initially represented a clear departure from film. Films were viewed collectively as public events, whereas television was part of a "domestic economy". It was encountered in the home and out of public sight, and thus provided a more familial, intimate or personal experience (Bolter & Grusin 1999, p. 186). The introduction of digital television accelerated the demise of the CRT. Giles Slade, in *Made to Break* (2006), sees this as a form of *technological obsolescence,* in which innovation drives consumers towards new products. This is where the terms obsolete and outmoded coincide. For Joel Burges (2007) planned obsolescence in manufacturing is integral to a phase of capitalism that is omnipotent in reach and scope. It is a manifestation of "total market culture" where a degree of commodification and marketability is superimposed on all aspects of life in postmodernity. Burges argues that: "If Adorno and Benjamin see the obsolete as richly symbolic of an 'outside' to capitalist modernity, then planned obsolescence arguably draws that outside inside of the interior of a late capitalist marketplace devoted to absorbing more and more areas, spaces, and processes of human life into economies of exchange" (Burges 2007, p. v). In this context, everything is ascribed a nominal monetary value, even the time we spend doing nothing.

The CRT and Art

Now that the CRT television is obsolete, artworks that once challenged flow in the CRT era may lose potency as the CRT becomes a fetishized vintage consumer object

incapable of evoking the sensibilities that it once did in the past. Using the same tools employed by the mainstream to challenge its preponderance and question its conventions is a timely undertaking. Using them out of context can generate a sense of confusion, particularly for an art world and artists attached and bound to systems of consumption and mindless repetition. This does not mean that works made using CRT televisions have lost their capacity to question or subvert. In fact, in many ways this capacity is elevated by their status as *spatio-temporal anomalies*, the defiant use of the obsolete in the present. Flow and its reliance on the commodification of everything in the digital age is certainly questioned through an act of obstinate denial, the refusal of the current or post/modern and the usage of the old, used, obsolete in defiance of the normal. Unfortunately, the need for contextualization will remain, as new modes of art consumption sculpt anachronistic forms from the old and dictate what is "current" and "avant-garde" according to trends in institutional practice and the whims of curatorial winds or what we might regard as the equivalent of televisual flow in the art world.

References

Anderson, J. (2012). How the American Art Museum Acquired and Rehabilitated Nam June Paik's Work. *Washington City Paper*, December 17, 2012. https://www.washingtoncitypaper.com/arts/museums-galleries/blog/13078636/how-the-american-art-museum-acquired-and-rehabilitated-nam-june-paiks-work

Ballard, S. (2013). Nam June Paik, Cybernetics and Machines at Play. In K. Cleland, L. Fisher and R. Harley (eds), *Proceedings of the 19th International Symposium of Electronic Art*, Sydney: ISEA, 1-4.

Benjamin, W. (1982). *Illuminations*, 4th edition. Fontana Suffolk.

Bolter, J.D. & Grusin, R. (2000). *Remediation: Understanding New Media.* First MIT Press, Cambridge.

Burges, J. (2007) *The Uses Of Obsolescence: Historical Change And The Politics Of The Outmoded, In American Postmodernity*. Stanford University. PhD Thesis.

Friedberg, A. (2006). *The Virtual Window*. MIT Press, Cambridge.

Franceschini, L. (2016) Google – Creating a More Energy Efficient Web. International Standards Organisation, ISO website. https://www.iso.org/2016/11/Ref2139.html

Hanhardt, J.C. (2000). Between Language and the Moving Image: The Art of Gary Hill. In R.C. Morgan (ed) *Gary Hill*. The Johns Hopkins University Press, Baltimore.

Jameson, F. (1991). *Postmodernism, or The Cultural Logic of Late Capitalism*. Duke University Press, New York, N.Y. https://doi.org/10.1215/9780822378419

Keen, A. (2012). *Digital Vertigo: How today's online social revolution is dividing, diminishing and disorienting us.* Constable, London.

Medienkunstnetz (2018a), Medienkunstnetz, website, Wolf Vostell, *Electronic Dé-coll/age, Happening Room,* 1968. http://www.medienkunstnetz.de/works/elektronische-decollage/images/1/.

Meigh-Andrews, C. (2006). *Video Art: the Development of Form and Function,* Berg, Oxford.

Miller, D. (2005). Materiality: An Introduction. In D. Miller (ed.) *Materiality*. Duke University Press, Durham, pp. 1-50. https://doi.org/10.1215/9780822386711-001

Rush, M. (2007). *Video Art*. Thames and Hudson, London.

Sharf, S. (2016). The World's Largest Tech Companies 2016: Apple Bests Samsung, Microsoft, Alphabet'. Forbes website, May 26 2016. https://www.forbes.com/sites/samanthasharf/2016/05/26/the-worlds-largest-tech-companies-2016-apple-bests-samsung-microsoft-and-alphabet/#1c301eddb661

Slade, G. (2006). *Made to Break: Technology and Obsolescence in America*. Cambridge, MA, Harvard University Press. https://doi.org/10.4159/9780674043756

Smithsonian American Art Museum (2008). Paik, Nam June, *Electronic Superhighway: Continental U.S., Alaska Hawaii*, 1995.

Uricchio, W. (2005). Television's Next Generation: Technology /Interface Culture/ Flow. In *Television After TV: Essays on a Medium in Transition* eds Lynn Spigel and Jan Olsson, Duke University Press. https://doi.org/10.1215/9780822386278-009

Virilio, P. (1991). *The Lost Dimension*, Translated by Daniel Moshenberg, Semiotext(e). New York, N.Y.

Vision Invisible (2018). Adidas Originals | Original is never finished | 2018. https://www.youtube.com/watch?v=-19YaVqwioc.

Williams, R. (2003). *Television: Technology and Cultural Form*, (3rd ed.) Routledge Classics, London. https://doi.org/10.4324/9780203426647