THE RISE AND FALL OF THE ANALOGUE TELEVISION SET

FROM MODERNITY TO MEDIA HERITAGE

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Abstract: This article explores the shifting materiality and meanings of television as an exhibited object. To consider the fluctuating discourses involved in the display of analogue TV sets, the article critically examines how the object has been re-presented: aestheticized, interrogated, destabilised and reorganized as science, modernity, art, and media heritage. An interpretive approach drawing on Walter Benjamin and media archaeology is supported by archival sources. The term "analogue rupture" is introduced to critically assess the implications of, and discontinuities involved, in analogue television's status as art and heritage. Digital media heritage discourses that invite us to regard obsolescence as inevitable progress are questioned.

Keywords: analogue television, media obsolescence, media heritage, video art, television set design, media archaeology

1 Introduction

Within a remarkably short time, the analogue television set has shifted from scientific invention, to item of domestic modernity, art installation, design icon, obsolete media, and heritage item. These instances indicate a re-inscription of analogue television receivers at a point in time when the material object vanishes into its screen. Overtaken by computers and digital convergence, the days of analogue terrestrial television sets - with valves and cathode ray tubes in bulky consoles - are over. Meanwhile, present-day museums are reassessing media collections and principles of display. These reassessments raise fundamental questions about the role and status of the analogue television set within national cultures and media heritage.

This exploratory article considers the significance of the analogue television receiver as a physical object in the era of digitisation. Rendered already-obsolete, the analysis of television's analogue presence and presentation involves a conceptual reconsideration. It charts some of the ways analogue television has been publicly displayed and preserved since its inception in the 1930s. Most research on the history and museum preservation of analogue television focuses

on archiving television programmes.[1] Drawing on a series of examples, using primary and secondary sources, mainly from the UK but also referring to the US and Europe, this article examines how the analogue television receiver has been aestheticized, interrogated, organized and exhibited. The history of television varies from country to country, yet a broad timespan and cross-national references allow exploration of notable shifts that have sparked transnational trends and tendencies regarding displays of analogue television's material form. These shifts raise questions about the fluctuating discourses associated with analogue television's spectacle. An interpretive approach drawing on the work of Walter Benjamin and media archaeology is supported by archival sources ranging from museum collections, exhibition photographs, news reports and features about television sets in specialist journals, exhibition catalogues and art history.

Four interconnected modes of display are explored to identify and examine the aesthetic and memorialising discourses involved in the analogue object's move from active to obsolete and commemorative media technology. The first involves trade fairs and national exhibitions to trace the early stages of public display that promoted analogue television as a new technology: first as a model of science, then as a domesticated consumer object. The second and third display types concern the admission of television sets into art museums: on the one hand, the intervention of video art to disrupt television's repute and, on the other, as exemplar of design excellence. The fourth involves the television receiver's resignification as heritage item, within museum contexts. Through these discrete but intersecting modes of display, the article explores the mutable materiality and changing meanings of television as exhibited object. The concept of "analogue rupture" is introduced to understand the discontinuities involved in analogue television's route to heritage item within digitalised museum representations of dematerialisation, obsolescence and legacy.

2 Media Obsolescence and Discontinuous Histories

Media archaeology's focus on the historical specificity of media's material objects and technologies offers a productive approach for analysing the changing status of analogue television receivers. Wolfgang Ernst and Eric Kluitenberg advocate a materialist emphasis for a post-representational understanding of the role of media technologies as objects and processes.[2] Certain features of media archaeology lend themselves to a cultural study of the analogue television receiver. First, the medium itself is approached as both material assemblage and representation. Second, by excavating earlier media forms and processes in their cultural settings, media archaeology interrogates fixed historical media narratives.[3] While historians tend to seek continuities, media archaeology's refusal of linear progress allows interrogation of the discontinuities of media histories by foregrounding rupture and difference.[4] For example, the linear narratives typically used by museums to reconstruct the past are under critical scrutiny, prompted by the "digital turn". A linear evolutionary approach presents an illusion of history as progress through the organisation of objects into "encyclopaedic overviews". As memory institutions, museums face challenges in exploring new modes of digital display. They perform within symbolic systems that label, move and code material objects via inventories, often disguising their discontinuities and contradicitions.

1 For example, Lynn Spigel, 'Our TV heritage: Television, The Archive, and the Reasons For Preservation', in Jane Wasko, ed, *A Companion to Television*, Blackwell, 2005, p. 67–99; Lynn Spigel, *TV By Design: Modern Art and the Rise of Network Television*, University of Chicago Press, 2009; Lynn Spigel, 'Housing Television: Architectures of the Archive', *The Communication Review*, 13, 2010, 52-74; Amy Holdsworth, *Television, Memory and Nostalgia*, Basingstoke, 2011.

2 Wolfgang Ernst, 'Media Archaeography: Method and Machine versus History and Narrative of Media' in Erkki Huhtamo and Jussi Parikka, eds, *Media Archaeology: Approaches, Applications, and Implications*, University of California Press, 2011; Eric Kluitenberg, 'On the Archaeology of Imagery Media' in Erkki Huhtamo and Jussi Parikka, eds, *Media Archaeology: Approaches, Applications, and Implications*, University of California Press, 2011.

3 Jay David Bolter, 'Digital Art and Media: Always already complicit?' *Criticism*, 49, 1, 2007, 108.

4 Michelle Henning, 'Museums and media archaeology An Interview with Wolfgang Ernst' in Michelle Henning, ed, *The International Handbook of Museum Studies*, Volume 3: *Museum Media,* John Wiley and Sons, 3- 22, 2015, p. 10.

Walter Benjamin's Arcades Project (*Passagen-Werk*) and essay on the "Work of Art in the Age of Mechanical Reproduction" allow reflection on the changing status of analogue TV as material object.[5] Opposed to linear narrative, Benjamin offers a genealogy of modernity and aestheticized politics in the Arcades Project using the montage principle of juxtaposition. He emphasises the power of rejected and outmoded objects, institutions and customs to expose the decay of modern experience and reveal the capitalist crisis of ephemerality associated with material objects. In the "Work of Art", Benjamin argues that mechanical reproduction destroys the artwork's "aura" by erasing the distance between the artwork and the viewer. This loss of art's ritual and tradition is offset by his claim that technical reproducibility is potentially democratising: capable of undermining the bourgeoise fetishization of artist and artwork. Today's counterpart to Benjamin's assertion might lie in the claim that digitalization offers a new transparent agency to access analogue technologies. Yet the digital salvaging of "outmoded", discarded objects such as analogue television also involves a loss.

For Benjamin, mass production during twentieth century modernity triggered the transience of objects, generating an obsolescence of once desired, fashionable things. However, Benjamin's interest in remnants and vestiges also provokes a search for new meanings and validations of obsolete objects. His work invites an exploration of how memories of these remnants can interrupt the present to allow past and present objects to be understood and experienced critically. The following discussion considers analogue television's presentation as science, consumer item, art installation, high-end design, relic and heritage object. Yet such reconfigurations occur in discontinuous, contradictory ways. As Kluitenberg points out, even the imaginaries surrounding forgotten, failed, or obsolete technologies hold the promise of later retrieval or reactivation.[6] Technologies discarded as "obsolete" are often "retrieved" at some stage in the future, at which point they may become a source of inspiration. In the context of museal and digital recuperation of analogue television sets, the process of both physical recovery and digital restoration of mass culture's remnants raises questions about the politics of conceiving media obsolescence.

Media archaeology's approach to the notion of the disappearing media object, along with Benjamin's ideas about the meaning, validity and (digital) reproducibility of outmoded objects provide clues about how to assess analogue television's "obsolescence" and re-presentation as both auratic and "evanescent". I use the term "analogue rupture" to assess the commercial, aesthetic and memorializing discourses that reconceptualize the object - involving a shift from active to obsolete item and heritage media. The term "analogue rupture" underscores the uneven, intermittent and non-linear processes through which analogue television is rendered ephemeral, obsolete and nostalgic. The aim, then, is to identify some key events, tendencies and cultural consequences of the commercial, aesthetic, nostalgic and digital displacements involved in television's analogue rupture.

3 Exhibiting Early Television Receivers

Focusing on the materiality of the television set, Morley denaturalises its taken-for-granted status as a domestic item.[7] Preceding and coinciding with the phase of domestic adoption, major efforts to promote and normalise television occurred between the 1930s and 1950s via trade fairs and national exhibitions. The aesthetic and material design and public display of the television receiver involved the interventions of engineers, entrepreneurs, designers, manufacturers and governments in preparing, shaping and showcasing television for home consumption. These public events played an essential role in the "normalisation" of television technology.[8] Before television's manifestation as a

5 Walter Benjamin and Howard Eiland, *The Arcades Project*, Belknap Press, 1999; 'The Work of Art in the Age of Its Technological Reproducibility', in Howard Eiland and Michael W. Jennings, eds, *Walter Benjamin: Selected Writings*, Volume III, 1935–1938, Belknap Press, 2002, 101–33.

6 Eric Kluitenberg, ed, *Book of Imaginary Media. Excavating the Dream of the Ultimate Communication Medium*. NAi Publishers, 2006, p. 15.

7 David Morley, *Media, Modernity and the Geography of the New*, Routledge, 2007.

8 John Ellis, *Visible Fictions*, Methuen, 1982, p. 162.

consumer item, the object was presented as a scientific invention and technical item at trade fairs to represent technological progress as modernity.

At the **Brussels International Exposition 1935**, French television pioneer Bartholomy and the Compagnie des Compteurs (CDC) held television demonstrations. At **London's Science Museum Exhibition 1937**, exhibits displayed John Logie Baird's inventions with working demonstrations of the 30-line television broadcast including cathode ray tube developments in operation. By 1938, Britain's Ideal Home Exhibition staged television to visitors within a spectacular event showcasing modern housing, interior designs and consumer durables. Television was presented as an item of furniture and a "trophy of consumerism".[9] In the US, the 1939 New York World's Fair introduced the public to this innovation as "science" and "domestic modernity" under the grand theme of "The World of Tomorrow". These national fairs galvanised public faith in the strength of nations' economic and political systems by promoting scientific progress. Displayed at the World's Fair's RCA's television pavilion, consoles designed by famous industrial designers such as **John Vassos** formed part of this media imaginary.

Vassos's early television design, the TRK-12 television receiver, combined the geometric shapes of Bauhaus functionalism with streamlined furniture styles using eye-catching, highly polished wood cabinets.[10] Importantly, the World's Fair displayed television sets in two key ways: first as single items on plinths including a transparent Lucite plastic case housing a **TRK-12 receiver** to display its internal workings; and second, to show visitors where to position and view this novel object in the home, Vassos designed the **Musicorner room** to display furniture matched with television cabinets enclosing the machine to appease domestic anxieties about the gaping television eye.

Following wartime austerity in Britain, the government-initiated Council of Industrial Design planned the 1951 Festival of Britain to celebrate Britain's scientific and cultural achievements.[11] Famous designers were recruited to design and exhibit television as an emblem of domestic modernity. Functioning as an agent of moral guidance, advanced designs showcased consumer goods, gadgets and household appliances.[12] TV sets were, again, displayed in model living rooms as part of aspirational home living. In these settings, the material form of early analogue television was staged simultaneously as an exemplar of science and domestic good taste to promote an aura around the object, as an object of modernity.

4 The Role of the TV Set in Video Art

The migration of the television receiver into art museums was initiated by integrating analogue TV sets in installation and video artwork. From the early 1960s to the 1990s, unconventional artists critiqued the fetishization of television and the culture of consumption using video art technology. Among the first video artists to work with television as medium and object were Nam June Paik and Wolf Vostell who critiqued mass culture's soporific effects by contemplating its sculptural potential and disrupting its "objecthood". Korean-born Nam June Paik (1932-2006) was part of the Neo-Dada art movement, *Fluxus*. Spreading to Japan, European capitals and New York *Fluxus* was referred to as "the most radical and experimental art movement of the sixties".[13] Video art offered a powerful way of interrogating analogue television's narrow commercial scope and popular, domestic symbolism.

9 Morley, 2007, *Media, Modernity and the Geography of the New*, p. 278.

10 Danielle Schwartz, 'Modernism for the Masses: The Industrial Design of John Vassos.' *Archives of American Art Journal*, 46, 2006, 4-24.

11 Harriet Atkinson, *The Festival of Britain: A Land and Its People*, I.B. Tauris, 2012.

12 See Deborah Chambers, 'Designing Early Television for the Ideal Home: The Roles of Industrial Designers and Exhibitions, 1930s -1950s', *Journal of Popular Television,* forthcoming 2019.

13 Harry Ruhé, *Fluxux The Most Radical and Experimental Art Movement of the Sixties*, A Prior, 1979.

Moving from Germany to New York in 1964, Paik worked with cellist Charlotte Moorman to combine video and music with performance. His **sculptures** encompassed old wooden television set cabinets from the 1940s and 1950s. Paik would remove the screens and inner workings to create media critical sculptures, replacing them with assorted objects from live fish to abstract electrical patterns.[14] He used the set as a sculptural metaphor to reproach the narrow image-making techniques of mainstream television. In *TV Cello* (1976) Paik and Moorman piled televisions on top of one another, forming a cello shape.

Video 1. Charlotte Moorman performs with Paik's "TV Cello", Art Gallery of NSW, 4 May 2011.

Morley interprets Paik's work as a critique of television's institutional oppressiveness, emphasising its constrained role as a home-entertainment device. For Paik, excessive visual stimulation reduces television viewers to "stationary nomads". He declared: **"TV has attacked us for a lifetime, now we fight back"**. The aim of displacing the TV set involved ejecting the object from its cosy domestic confines. He disrupted the object's traditional meanings by reassembling its parts in uncanny settings. As a "terrorist of aesthetic expectations"[15], Paik undermined the conventional meanings of domestic television in *Participation TV* (1963) by identifying its more emancipating and imaginative possibilities.

Paik inspired succeeding video sculpture projects internationally such as British video art David Hall (1937-2014). Hall's iconic video, *This is a Television Receiver* (1976), exhibited at Remote Control (ICA, London 2011), commissioned by the BBC for their special *Arena* video art programme, 1976, explored the screen as a sculptural intervention. It begins with well-known newsreader, Richard Baker, discussing the fundamental contradictions of the actual and illusory meanings of the TV set that projects him. Sound and image gradually diminish in a series of shots: first taken optically off a monitor, then by a copy from the first shot, then a third copy from the second shot, and so on until "This figure of authority is reduced to what, in essence, he is – a series of pulsating patterns of light on the surface of a glass screen. In this way, paradoxically, the verbal statement is realised by its own gradual disintegration, along with that of the image".[16]

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14 David Morley, *Media, Modernity and the Geography of the New*, 2007, p. 285.

15 Alan Kaprow, 'Nam June Paik, in Toni Stooss and Thomas Kellein, eds, *Nam June Paik: Video Time – Video Space*, Harry Abrams Publishers, 1993, p. 114.

16 Mark Wilcox, 'Deconstruction'*, Subverting Television,* programme catalogue, Arts Council of Great Britain, 1984.

1001 Televisions (End Piece), shown at Ambika P3, London UK (1972/-2012) comprised a contemporary reworking of Hall's earlier work: an installation of one thousand and one cathode ray tube TV sets of various ages and conditions to commemorate the end of analogue TV in the UK, when it switched to digital in April 2012.
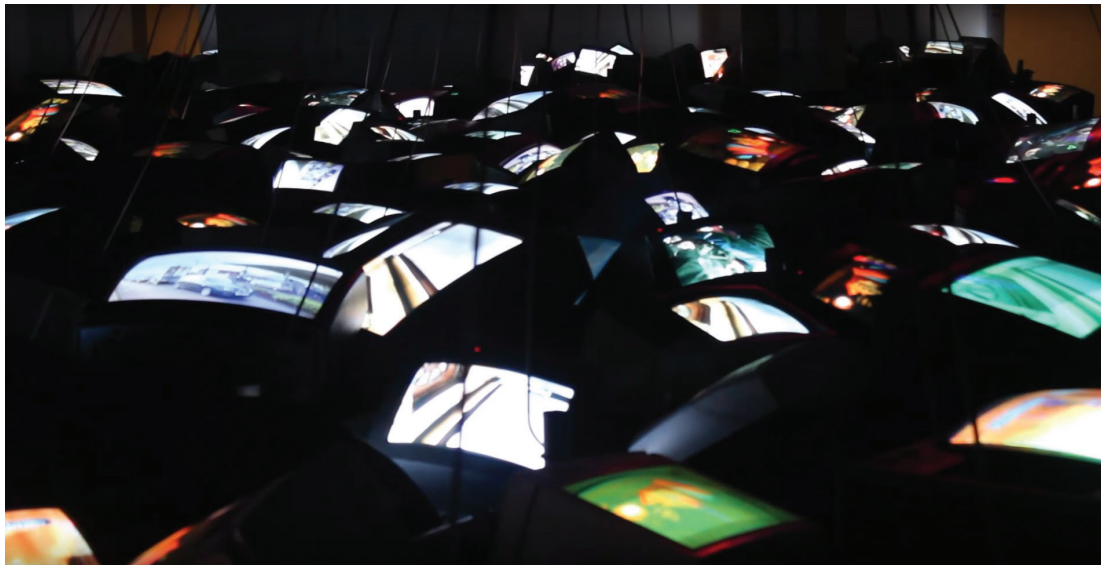
Video 2. David Hall End Piece, 1001 Televisions at Ambika P3, London UK, Joseph Jowels, 2 April 2012.

Later, New York-born artist, Bill Viola (1951) used video art to explore birth, death and aspects of consciousness by denaturalising the TV monitor. Viola's installations have been displayed not only in leading museums and galleries such as Tokyo's Mori Art Museum but also in aberrant situations such as a giant screen suspended over the orchestra at an opera in New York's Lincoln Centre and in the nave of England's medieval Durham Cathedral. Having grown up with television, Viola states: "**For me, it was like going into the belly of the beast. One of the jobs of being an artist is to detoxify things.**" His work, *Heaven and Earth* (Museum of Contemporary Art San Diego, 1992) encompasses television monitors with exposed cathode ray tubes whose glass screens face one another. Reflecting their images into one another, they show how birth and death are suffused.

Video 3. Heaven and Earth, 1992, G. Marsh, 6 February 2017.

Here, the frailty of the human body is reflected by the frailty of exposed cathode ray tubes. Viola comments:

> You look at those cathode ray tubes and you know they are made of glass and contain a vacuum, like a light bulb. They seem incomplete and very, very fragile in the way the two human lives that are being represented are incomplete and fragile.

In these ways, video artists manipulated and disrupted the taken-for-granted materiality of TV as a medium, object and popular form. The extraction of the TV set from its earlier symbolism of modernity and its current expression of commercial banality entailed a recontextualization of the TV set as contradictory, as edgy, clumsy, fragile art installation: unveiled and re-veiled as anti-auratic.

5 1960s TV Set as Design Icon

It was not until the late twentieth century on the cusp of digitisation, that the object had a contrasting encounter with the art world. The re-aestheticization of 1960s portable TV sets as high-end design began in the 1990s when certain early portable models were re-signified and elevated as exemplars of "good design". This trend negates yet intersects with video art's interrogation of commercial television's dissoluteness. Italian and Japanese designs of analogue receivers in the Museum of Modern Art in New York (MoMA) were revered for their beauty and stylistic ingenuity. The dramatic 1960s shift to portability, with transistors and moulded plastic, allowed the encasement of the machine in sleek and space-age styling. As relics of an earlier era, portable set designs were now named among collections as iconic objects: recuperated and elevated as "art" to exhibit outstanding design.

Pioneering, futuristic 1960s portable televisions characterised by the **Algol 11** (1964), Doney **14 TV**(1962) and **Black 201 TV** set (1969), were acquired by MoMA in 1993, designed by partners **Italian Marco Zanuso and German Richard Sapper**. Now part of the permanent collection at MoMA, these iconic objects also occupy an online life. The Zanuso/Sapper collection is digitally preserved for online visitors to view **installation images** and details about the artists as part of a collaborative digital preservation project between Google Arts and Culture Lab. Paradoxically, these objects are replicated as limited, and thus auratic, "design classics".

Sony's portable **TX8-301** (1959) designed by Tsukamoto was acquired by MoMA in 1997. Sony received global acclaim for its advanced transistorised TV technology. Yet this iconic object was judged unviable. Dubbed "Sony's frail little baby", it suffered repeated breakdowns and was discontinued in 1962. Yet its functionality was rendered immaterial. As mounted single "works", these media objects mutated into individual trophy items, displayed using strategies characterising traditional high art. Summoning visitors to contemplate the object at all angles generates an "aura", in Benjamin's sense, by creating a distance between the visitor and TV set as "artefact". The museum places an imaginary protective veil over the object: it cannot be touched. Within a hierarchy of tastes, art historians, critics, and curators rescue the banal TV set by elevating the object as high-end design.[17] Television's entry into design history as "iconic" was now sealed by aesthetic classifications in lavishly illustrated books such as *100: Design in One Hundred Objects*.[18]

It was not until the 1990s, then, when analogue television was about to be digitally discarded, that the meaning and validity of the singular object shifted to embrace art icon. Reviled by video art as banal and depraved yet reinstated as video art, the object's original "analogueness" now signified the genius-like, almost-divine status of the artist who crafted a unique object. On the cusp of the "digital age", this museal object is now rescued as a loss, a nostalgic

17 Pierre Bourdieu, *Distinction: A Social Critique of the Judgment of Taste*, Harvard University Press, 1984.

18 Domitilla Dardi,. *Design in One Hundred Objects*. Motta, 2009; Deborah Chambers, 'The Material Form of the Television Set', *Media History*, 17, 4, 2011, 359-375.

memory. Drawing on Walter Benjamin's "excavations into the rubble of modernity" one might say that, as a remnant of the past, the idolised portable's relocation to art museum confers the object a new, late modern aura validated by the connoisseur.

6 Analogue Television as Media Heritage

Recent preoccupations with the demise of television as a medium trigger a further analogue rupture, leading to public deliberations about its preservation in the museum. Analogue television receivers now gain a new status as "media heritage". As a remnant of the past, the object is now embraced in multiple and contradictory ways as part of personal memories, civic histories, and national heritage, raising questions about "official" versus "popular" memories. Given the traditional materiality of museum cultures as fixed spaces and the conventions of object-oriented curatorship, one might expect the museal preservation of television as a material object to be uncontentious. However, the dilemma surrounding analogue television as "heritage" is how to present and display it, today. Media museums chronicle television history through collections of changing televisual apparatuses and content. Yet their active engagement in reconstructions of that history vary according to museum policy framed by business models, national priorities and digital techniques of exhibiting and archiving.[19]

Differing strategies shape analogue television's status and value as heritage objects. These depend on whether objects, programmes, industry, science, national histories, or a combination of these, are emphasised. Television heritage differs between nations and museums in several ways, influencing the formation of national television heritages. First, diverse museum practices intersect with oppositional commercial and public service broadcasting traditions in the US and European TV systems. For instance, the dominant approach to television and cultural policy in US museums is shaped by a free-market philosophy. Commercially sponsored, private enterprise, reflects US broadcasting history, contrasting with that of most European models.[20] Second, attitudes towards analogue television as transient influences modern collecting practices, supporting a view that its material form is unworthy of preservation.[21] Yet television's enduring presence confirms its heritage as a tool of education and memorialising.[22]

More recent shifts in digital television archiving have prompted increased interest in broader aspects of TV history and historiography, affecting ways of memorialising early television.[23] Although the physicality of material objects characterises traditional museum practices, digital presentations of television's heritage raise questions about permanence and artefactual identity. Digital convergence now allows museums to transcend an object-centred culture.[24] Together with widening access, archival digitisation can fulfil the educational demand for interactive audiences as well as alleviating financial, spatial and storage restrictions.

Yet digital projects and strategies have generated unease about the authenticity of the physical object's presence versus the artificiality of virtual displays and loss of the special aura of the original.[25] As part of an evanescent

19 Lynn Spigel, 'Designing the Smart House: Posthuman Domesticity and Conspicuous Production', in Chris Berry, Soyoung Kim and Lynn Spigel, eds, *Electronic Elsewheres: Media Technology and the Experience of Social Space*, University of Minnesota Press, 2010, 55–95.

20 Laurie Ouellette and Justin Lewis, 'Moving Beyond the Vast Wasteland: Cultural Policy and Television in the United States', *Television and New Media,* Volume 1, 2000, 95- 115.

21 Steve Bryant, *The Television Heritage*, BFI, 1989, p. 2; Spigel, 'Our TV heritage,' 2005.

22 Leif Kramp, 'The Changing Role of Television in the Museum', *Spectator*, 27, 1, 2007, 48-57.

23 See Helen Wheatley, *Reviewing Television History: Critical Issues in Television History*, I.B.Tauris, 2007.

24 Doron Swade, 'Collecting Software: Preserving Information in an Object- Centered Culture', in *History of Computing: Software Issues*, U. Hashagen, Reinhard Keil- Slawik and Arthur L. Norberg, eds, Springer, 2002, 227–235.

25 Walter Benjamin, 'The Storyteller: Observations on the Works of Nikolai Leskov', in *Selected Writings*, vol. 3, 1935–1938, translated by Edmund Jephcott, Howard Eiland et al.; Howard Eiland and Michael W. Jennings, eds, Belknap, 2002, 143–66.; Ross Parry, *Recording the Museum: Digital Heritage and The Technologies of Change*, Routledge, 2007, p. 61.

imaginary, digital displays convey an analogue rupture within a tendency towards digital dematerialisation. Anxieties are expressed about the digital transformation of the museum into an online institution, a simulation where the tangible object fades into a relic, residing only in a virtual space.[26] And despite endeavours to preserve them, objects deteriorate. With its collection of valves, heavy but fragile cathode ray tube and outer casing, the television receiver gradually decays, raising questions about how far this affects its authenticity.[27]

In the US, television heritage is influenced by the dominant model of broadcasting museums. As creative and cultural practices are associated with programming content, television heritage is mainly assembled from textual items such as TV programmes.[28] For example, private, commercial museums such as the **Paley Centre** in New York and Los Angeles, and the **Museum of Broadcast Communications** in Chicago have positioned themselves as tourist sites and public relations exercises that promotes a commercial media industry.[29] They appeal to the public through strategies of museum exhibition, including blockbuster festivals, celebrity signings and star-studded panels, interactive "touristic" exhibits, and nostalgia.[30]

Contrasting with the US programming-content model of broadcasting museums, the **MZTV Museum in Toronto**, Canada explains the history of television through objects corresponding with collections in Europe, Japan and Australia.[31] Launched in 1995, MZTV focuses on consumer electronics, narrating the history of television from the birth of image transmission onwards. The Museum was founded and financed by Canadian media mogul Moses Znaimer whose famous catch phrase is: "There are fewer pre-war TVs left in the world than Stradivarius violins".[32] Contrasting with programme-oriented media museums, MZTV's focus on consumer-oriented technology shows how the technology moved into the living room, how the receiver works by looking inside consoles, and asks "what an old television receiver might tell us about its owner".[33] Presenting one of the largest collections of television sets and receivers, it consists of around 360 television receivers and thousands of tubes, lamps, and capacitors. However, MZTV concentrates less on technical information and more on the intersection of consumer technology and wider culture to address television's influences on economic, social and political histories.

Science and technology museums traditionally display material media as part of technological and cultural history. In Berlin, the **Deutsches Technikmuseum**, established in 1982 exhibits television sets from the 1950s, confirming their status as "museum objects". Explaining the dilemma for such museums, Ernst states:

> A television on display in a museum which does not show the screen working is not shown as a medium; it's just a piece of hardware, a design object. And most people actually look at old TVs and radios like a piece of furniture: they recognize the style of the fifties and sixties and they become nostalgic about it…not attending to it as a medium[34].

Ernst argues that museums should show the medium functioning. The technology is only meaningful when operating, to provide context and make objects meaningful and dynamic. Yet this poses a major challenge for museums: "…it's not easy to get those old media working again. When you show it running, do you show historical footage from the period of the television or do you show up-to-date programmes"?

26 Spigel, 'Our TV heritage,' 2005, Spigel, 'Designing the Smart House,' 2010, p. 68; Holdsworth, *Television, Memory and Nostalgia*, 2011.

27 Ernst, 'Media Archaeography,' 2011, p. 9.

28 Derek Kompare, 'Greyish Rectangles: Creating the television heritage', *Media History*, 9, 2, 2003, 153-169.

29 Spigel, 'Our TV heritage,' 2005.

30 Ibid.

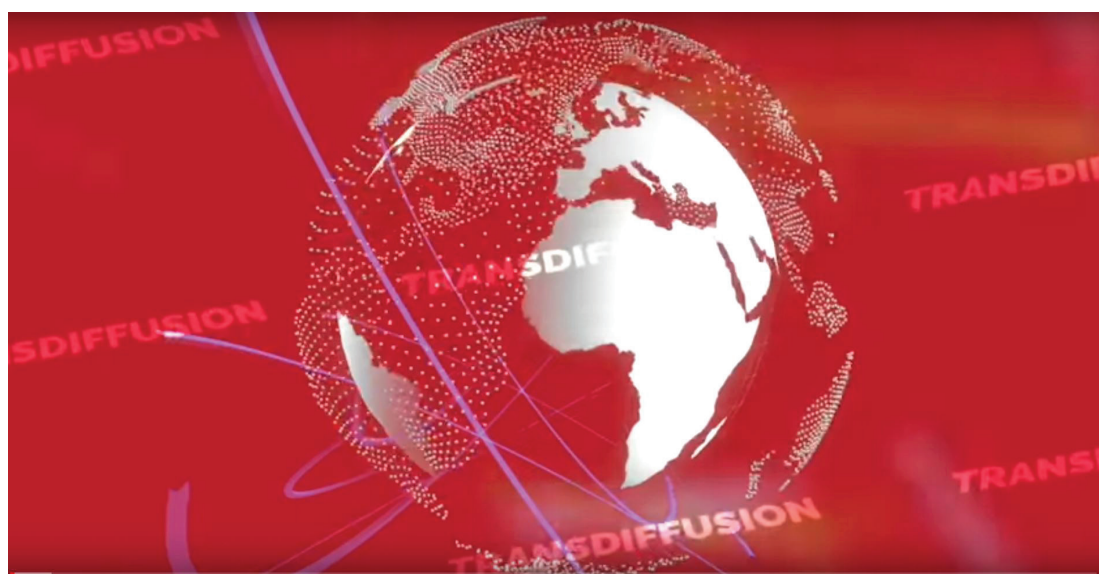31 Kramp, 'The Changing Role of Television in the Museum,' 2007.

32 In Kramp, 'The Changing Role of Television in the Museum,' 2007, First published in *Watching TV*, Royal Ontario Museum/MZTV Museum, 1995.

33 Kramp, 'The Changing Role of Television in the Museum,' 2007.

34 Ernst, in Henning, 'Museums and media archaeology,' 2015, p. 6.

Germany's first television museum, launched in 2006 in Berlin, developed under the name "mediatheque" and integrated into the **Stifung Deutsche Kinemathek** which houses the German Film Museum and the German Film and Television Academy. It was financed by an alliance of public broadcasters and the German government. As Kramp states, "The formation process has become a symbol for the complicated relations between media and politics, as well as for the television industry's missing awareness of its own history".[35] The museum's original mission to build a collection for preservation shifted to embrace educational programmes. The convergence of audio-visual media fulfilled the vital function of upholding diverse cultural identities conveyed via the mass media. This has consequences for accessing our television heritage. Museums are caught between two dominant approaches: as digital archives or as collections that concentrate on object culture. One view is that object culture is as obsolete as the analogue television set itself.[36] Deutsche Kinemathek now promotes itself in terms of broad access as a tourist attraction rather than an academic resource, facilitating the museum's role of reaching out to its diverse communities.[37]

In the UK, the **National Science and Media Museum** (NSMM) responsible for archiving and exhibiting television is situated far from London in Bradford, Yorkshire and adopts a contrasting strategy from US private museums such as the Paley. NSMM was founded in 1983 and funded by the government, as part of the Science Museum Group collection of British museums. The museum's early exhibition in 1986, *Television Comes to Bradford*, displayed historical "scenes" from the development of television in the late 1940s and '50s, characterising the television "family circle".

Video 4. *Television Comes to Bradford,* Transdiffusion Broadcasting System recording of BBC 2 , 7 April 2017.

The domestic setting was re-imagined by creating "living" rooms to reconstruct a narrow historical "memory": nuclear family gathered around the receiver.[38] By contrast, its later exhibitions, the *Race for TV* and a the *Future of TV* "stressed the science and technology behind the medium and its continuing evolution".[39]

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35 Kramp, 'The Changing Role of Television in the Museum,' 2007, p. 48.
36 Harold Skramstad, 'An Agenda for Museums in the Twenty-First Century,' in Gail Anderson, ed, *Reinventing the Museum: Historical and Contemporary Perspectives on the Paradigm Shift*, AltaMira Press, 2004, p. 129.
37 Kramp, 'The Changing Role of Television in the Museum,' 2007.
38 Holdsworth, *Television, Memory and Nostalgia*, 2011.
39 Ibid., p. 138.

The curators faced a predictable dilemma of dealing with television as programming, and its equipment as a resource for experts and a trigger of personal memories within wider public culture.[40] Aware that the approach needed revision to reflect ongoing developments in media technology, and facing government spending cuts, NSMM changed its collecting policy. At risk of closure with a fall in visitor numbers, the collection of 400,000 images curated by the Royal Photographic Society (an international photography resource centre) moved to London's V&A museum in 2016. Invoking a narrative of unequal regional distribution of arts funding beyond London, leader of Bradford Council's Conservatives, Simon Cooke, described the move as an "**act of cultural rape on my city**" and called for a review. As part of a major revamp, a change of name from the National Media Museum to the National Science and Media Museum (NSMM) was announced in 2017 "**to reflect its focus on the science behind the magic of photography, film and television**". The firm, Numiko that designed its new website explained the aim of creating "a contemporary user experience" defined as a "digital experience". This discourse of digitising experience entangles personal memories and public heritage within efforts to order and rationalise the complexities of media museum encounters.

7 Conclusion

Drawing on the work of Benjamin and media archaeology, this article indicates that the study of television's materiality is part of the politics of preserving, collecting, archiving and displaying all media technologies. Television's mutable meanings entail both a crisis of displacement and commemoration of a loss of past knowledge and experiences. The scientization of television at early trade fairs coincided with a commodification and fetishization of the object. This auratic stage involved imaginative projections of modernity and a future utopia. Through oppositional aesthetic objectives, video art questioned the oppressiveness of mass media entertainment and the traditional role of the museum by exposing the television's dissonances at a point when television's aura of modernity was usurped by commercialised domestication. The staging of these bizarre, reviled yet fragile analogue objects as art installations generated an anti-aura that prefigured an analogue rupture. Correspondingly, on the threshold of digitisation, the elevation of the portable TV set as high-end design led by art museum connoisseurs also sets the object apart. The analogue receiver was labelled in this process as already superseded: as a desired object whose aura depended on its status as a relic: set-apart, untouchable, frail and authentic.

The concept of the analogue rupture prompts consideration of the agencies and processes of cultural transmission and media heritage. The notion of "rupture" highlights the discontinuities involved in the displayed narrativization of analogue television: discontinuities now veiled by analogue technology's absorption into the digital archive. The auratic meanings associated with original objects are fluctuating and unstable, influenced by hierarchies of taste and a sense that they are threatened by mediation.[41] This digital configuration of analogue television as an evanescent episode influences today's media heritage. Museal digitisation contrives and sustains an analogue rupture by re-positioning analogue television within a culture of obsolescence. This digitisation of collections involves the disappearance of the television set. Reordered and reclassified once again, the object reappears as a virtual trace. But the sense of presence created by a material object is not effortlessly imitated via electronic media.[42] We are reminded not only that a reproduction or facsimile of the material object involves the loss of its aura, that is "its quality of being here and now" as Ernst puts it.[43] Benjamin also urges us to critically appraise the value of the thing that replaces it.

By approaching digital archiving as a democratising practise, digital media heritage discourses invite us to regard obsolescence as inevitable progress. Although media machines and systems may become dated and replaced by

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40 Ibid.
41 Ernst, in Henning, 'Museums and media archaeology,' 2015, p. 9.
42 Ibid., p. 12.
43 Ibid., p. 12.

faster, alternative systems as part of dematerialisation, this process is not preordained. As such, museal digitisation performs as a heritage arbitrator involving a new politics of display. Of course, museum activity is always a negotiation between past objects and present conceptions. But, questions such as "How museums engage with this media environment, whether they embrace it, attempt to reconfigure or shape it, or stolidly continue to pursue their own goals regardless, are politicized issues ".[44] However, if the staging of analogue television as outmoded and obsolete prompts questions about what has been lost, it also triggers questions about how the object should communicate to us, from one age to the next.

Media studies offers a vocabulary and set of questions through which to analyse new kinds of digital traditions in a more probing way. To draw on Ernst, this can be achieved by deconstructing the vague, metaphysical quality of "tradition" precisely to analyse questions such as: "Who has the power? What technology do we need for transmission? What is the institutional part? What is the technical part? To what degree is memory a social event, a technical event, a storage event"? [45] Museal digitisation may re-instate old agendas yet it can also set new ones. Now transmitting information across time in new ways, museal strategies of coding and their new agencies of memory transmission require transparency. Museums have the potential to generate new methods of representation by approaching analogue television in such a way as to disturb and interrogate our complacent ideas about "new media". This can be achieved by challenging sequential readings of the past - for instance, through Benjamin's montage principles of juxtaposition - to generate discourses and memories of analogue media that interrupt and offer critical reflection on the digital present and media futures.

B i o g r a p h y

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44 Michelle Henning, 'Museum Media: An introduction', in Michelle Henning, ed, *The International Handbook of Museum Studies*, Volume 3: *Museum Media*, John Wiley and Sons, 2015, xxxviii, p. 3- 22.

45 Ernst, in Henning, 'Museums and media archaeology,' 2015, p. 9.