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Technostalgia of the present: From technologies of memory to a memory of technologies

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Abstract

This article reflects on today's 'technostalgic' trend in media culture by examining the various ways in which Super 8 film as a media technology from the past is re-appropriated and remediated in contemporary memory practices. By looking specifically at restorative and reflective forms of tech-nostalgia manifest in the project *Bye Bye Super 8 – In Loving Memory of Kodachrome* (2011) and the digital smartphone app iSupr8 (2011), the author explores how in contemporary memory practices media technologies not only construct and mediate memories but have also become the objects of memory themselves. While analysing this double mnemonic process – accounting for both the memory construction by the media technology and the reminiscence of the media technology itself – it is argued that we currently witness a new kind of memory practice enforcing an attentive shift from technologies of memory to a memory of technologies.

Keywords: technostalgia, memory practices, media technologies, Super 8, vintage, remediation

1   Introduction

In contemporary media culture we currently witness a strong interest in media technologies from the past. Analogue artefacts such as the Polaroid camera, Super 8 film, vinyl records, the Walkman, VHS tapes, floppy discs, and arcade video games have become part of popular media practices, often described and denoted as manifestations of nostalgia, vintage, or 'retromania'.[1] Although this cultural fascination with the past is not histori-

cally new – the music and fashion industries in particular have always re-used and recycled materials and styles from the past – such cultures of re-use have not previously been present at so many levels of cultural expression, varying from professional videographers recording weddings on original Super 8 film to hipsters exploring the direct-print mechanisms of their parents' Polaroid photo camera.[2] In addition to the actual re-appropriation of original analogue media technologies various digital media applications have also been emerging which play with the look and feel of their analogue equivalents, for example by providing users with the possibility to add specific filters to the recorded images or sounds. Applications such as Instagram, Hipstamatic, Retro Camera Plus, 8mm Vintage Camera, and Vintage Scene have made the 'vintage' look of analogue film and photography technologies a part of their trademarks. The re-staging or simulation of 'authentic' analogue elements such as film grain, scratches, flickering lights, torn borders, and degraded colours contributes to something that can be called 'technostalgia': the reminiscence of past media technologies in contemporary memory practices.[3]

This article reflects on today's 'technostalgic' trend in media culture by examining the various ways in which Super 8 film as a media technology from the past is re-appropriated and remediated in contemporary memory practices.[4] It builds on recent insights from the fields of cultural memory studies and film and media studies while further exploring the relationship between memory and technology and technostalgia in particular. After outlining the theoretical debate I will specifically look at two forms of technostalgia. Taking the project *Bye Bye Super 8 – In Loving Memory of Kodachrome* (2011) and the digital smartphone app iSupr8 (2011) as two central case studies, I will investigate how in contemporary memory practices media technologies not only construct or mediate memories but have also become the objects of memory themselves. Drawing on the work of literary scholar Svetlana Boym, I will distinguish between 'restorative' and 'reflective' forms of technostalgia to reframe our understanding of the term and interpret the cases beyond the analogue-digital divide. By doing so, I argue that these manifestations of technostalgia reflect a new kind of memory practice which is not driven by nostalgia in the classical sense as a longing for the past but rather mediates *between* the past and the present, the analogue and the digital, the archival and the performative. I will conclude the article with a reflection on how this new memory practice implies a double mnemonic process – i.e. the memory construction by the media technology and the reminiscence of the media technology itself –

and therefore has enforced an attentive shift in contemporary media culture from technologies of memory to a memory of technologies.

2   Technologies of memory

The interest in the materiality of media technologies is relatively new to the field of cultural memory studies.[5] For a long time, the study of memory mainly belonged to the fields of history and psychology. Memory was thereby often understood as a (subjective) representation of the past; a registration, an inscription, or an interpretable trace of the past to be re-collected individually (remembrance) and/or socially (commemoration).[6] Over the past two decades scholars from a variety of disciplines and fields have increasingly advocated for the understanding of memory as a 'mediated' or 'mediatised' phenomenon. This new perspective does not approach memory as a representation, interpretation, or product of the past but rather as an active, embodied, performative, ritualised, and highly contextualised process that always takes place in and from the present.[7] In their book *Performing Memory in Art and Popular Culture*, Liedeke Plate & Anneke Smelik have formulated this move as a 'paradigm shift' in cultural memory studies from a linguistic to a performative turn:

> [t]he difference is not only one of focus, shifting attention from the memory trace to its act – the event of memory, its happening. It also implies an episte-mological, even ontological shift, from memory as the trace of what once was to memory as the past's present moment.[8]

The understanding of memory not as a product from the past but as something that is always constructed in and from the perspective of the present returns in the work of Marita Sturken, who in her important reflections on memory studies as an emerging field already pointed at the increasing interest in studying 'memory practices, rather than objects or sites of memory'.[9] In addition to Sturken a number of media scholars such as Astrid Erll, Nancy van House and Elizabeth F. Churchill, and José van Dijck have given particular attention to the mediation of memory by so-called 'technologies of memory'; *what* and *how* we remember, both individually and collectively, cannot be seen apart from the media technologies that enable these processes of remembrance.[10]

At the same time, media technologies are as much shaped by memory processes as the other way around.[11] With the emergence of digital media

technologies and online platforms, media technologies not only fulfil the role of archival and mnemonic means but rather and more often serve as 'performative' instruments for (online) self-representation and memory dissemination.[12] Therefore, more than functioning as digital equivalents of the analogue photo album, social media platforms such as Facebook, Twitter, and Flickr operate as 'living archives', strongly characterised by their dynamic, unstable, interactive, and ephemeral qualities.[13] Digital media's often ascribed ephemerality and immateriality (the 'bits and bytes') have frequently been cited as one of the explanations for the return or revaluation of tactility and physicality in contemporary media culture. As Ann Mack argues:

> [a]s digital becomes more pervasive, it seems that we are increasingly fetishiz-ing the physical and tactile. We're embracing things like old-time typewriters, wristwatches, physical books and face-to-face time with friends and loved ones – things being rendered obsolete in the digital era. As we spend ever more time in the digital world, we increasingly value the time we don't spend in front of a screen – the time we spend with real people and real things.[14]

Interestingly, digital applications such as the aforementioned photo and video apps seem to respond to this by trying to remediate the look and feel of past media technologies in their own design and functionality.[15] Perhaps the most popular example today is Instagram, a mobile phone application, online photo sharing, and social networking tool first launched in 2010. It allows users to apply instant filters to the pictures taken, e.g. to make the image resemble a Polaroid photo from the 1970s. A wide variety of filters, including Earlybird, Nashville, Sierra, and 1977 can be selected by the user to adjust the image to the preferred old look.

Fig 1: Examples of Instagram filters.

3   Technostalgia

In the article 'Homesick for Aged Home Movies', film scholar Giuseppina Sapio attempts to answer the question why people shoot contemporary family photos and videos in old-fashioned ways. She argues that the return of the 'analogue aesthetic' has been affected by a *dematerialisation* of family images and memory practices with the emergence of digital media technologies. Today we rarely print our family photos, but instead prefer to store them on our computers as files.[16] Similarly, home movies and their practices have also been dematerialised – reels and tapes are replaced by bits and bytes, and users no longer have to edit their films manually or take care over the film projector during home movie screenings. The return of the analogue aesthetic can be seen as compensating for this loss of materiality in family memory practices. Sapio argues:

> [d]igital technologies have dematerialised the images as objects, thus making family rituals (such as the group viewing of a home movie or the family album) weaker. Families seem to compensate for this loss by adding *grains* to images. […] The grain reminds us of old family images. Adding it to 'new' (digital) footage gives people the feeling of belonging to a wider family group, inclusive of older generations. In other words, adding grains gives the idea of symbolic continuity to the reservoir of family images.[17]

Although Sapio rightly points at how this might indeed recreate the analogue look she does not explain how the analogue aesthetic is (un)able to recreate or re-enact past family rituals such as the group viewing of home movies or family photo albums. Neither does she take into account the degree of materiality still involved in digital media practices – consider, for instance, the use of hard drives, memory cards, and computer hardware on which digital data relies.[18] Nevertheless, her analysis highlights the importance of the symbolic dimension and potential of technostalgia to mediate between the past and the present and across generations, an observation I will return to later in the article.

In 'Memory, Temporality, & Manifestations of Our Tech-nostalgia', John Campopiano perceives 'faux-vintage' – the principle of making something new look old – an important characteristic of technostalgia. Campopiano suggests how the use of instant photo filters signifies a sincere interest, even longing, for the past:

> [p]erhaps those with an affinity for filtering their digital photographs to pro-
> duce decades-old stylistic effects are experiencing some form of nostalgia or, at
> the very least, an interest in the past […] Actualizing the present through a lens
> of the past imparts meaning beyond mere artistic trend. Indeed, one might say
> that these manifestations of nostalgia are anchored in a desire to express a
> sense of place, one's roots in life, and one's belonging to a collective history.[19]

Other scholars are critical about the understanding of technostalgia as a
form of nostalgia or longing for the past. Media historian Andreas Fickers
rejects the term technostalgia, as it often does not indicate any particular
longing for the past itself but rather a 'musing reflection or contemplation
of the past'.[20] Instead, Fickers proposes to rephrase it as 'techno-melanch-
olia' to better account for the aspect of 'living memory' and the 'continuous
(re)construction of the cultural meaning' of a past media technology in the
present. A similar argument is made by Trevor Pinch and David Reinecke
in 'Technostalgia: How Old Gear Lives on in New Music'. Although they do
not propose an alternative terminology, they similarly argue that technos-
talgia should not be understood as 'a desired return to an ideal past'.[21]
Based on how analogue 'vintage' musical instruments such as the Moog
Minimoog synthesiser and the Fender Deluxe tube amplifier have been re-
used over the years, they opt for an understanding of technostalgia as 'an
attempt to mediate between past and present to achieve a particular sound
and feel'.[22] I would like to build on this aspect of mediation between past
and present to further explore the relation between technostalgia and
contemporary memory practices.

4   Two forms of technostalgia

I will now discuss two cases that explicitly deal with the re-appropriation
and remediation of Super 8 film as an analogue amateur media technology.
To analyse how the cases each relate differently to Super 8 as a media
technology from the past I will draw on the work of literary scholar Svetla-
na Boym and her theoretical distinction between 'restorative' and 'reflec-
tive' nostalgia. In *The Future of Nostalgia*, Boym explains the two different
forms of nostalgia as follows:

[r]estorative nostalgia stresses *nostos* (the return of home) and attempts a transhistorical reconstruction of the last home. Reflective nostalgia thrives in *algia*, the longing itself, and delays the homecoming. Restorative nostalgia protects the absolute truth, while reflective nostalgia calls it into doubt.[23]

To make clear what restorative nostalgia entails, Boym takes the well-known and controversial restoration of the Sistine Chapel in the 1980s as a case study. She argues that this specific attempt to reconstruct the monument as historically-accurate as possible has been driven by a conservative and essentialist attitude towards the past. Reflective nostalgia implies a more fragmentary and historically-flexible attitude. Rather than a conservative notion of the past, it is concerned with more fluid forms of individual and cultural memory.[24]

By means of the following cases I will examine how Boym's distinction between restorative and reflective forms of nostalgia provides a useful framework for analysing manifestations of *tech*nostalgia in contemporary memory practices beyond the analogue-digital divide.[25] The first case is an art project by filmmaker Johan Kramer titled *Bye Bye Super 8 – In Loving Memory of Kodachrome* (2011), which, I will argue, adheres to a restorative form of technostalgia. The second case zooms in on the popular iSupr8 app released in 2011, and how it could be interpreted as a reflective form of technostalgia. Furthermore, I will clarify how both cases make visible a new kind of memory practice in which media technologies not only construct or mediate memories but have also become the objects of memory themselves.

4.1   Bye Bye Super 8 – In Loving Memory of Kodachrome

On the first of January, 2011, the world's only remaining Kodachrome film laboratory stopped the development of their most popular amateur film: Super 8mm Kodachrome 40 ASA ('K40').[26] Known for its small yellow package, colour sensitivity and durability, and its bright saturated film colours, the end of Kodak's famous Super 8 film was the beginning of a project initiated by the Dutch filmmaker Johan Kramer titled *Bye Bye Super 8 – In Loving Memory of Kodachrome*, a tribute to the film that 'made reality look even more beautiful than it was'.[27] Kodachrome was a popular colour stock used for the Super 8 format, introduced by Kodak in 1965 as an improvement on the standard 8mm format. Super 8 Kodachrome was particularly popular among amateurs and family filmmakers for whom its colourful aesthetic was unsurpassed and 'timeless'. As Kramer recalls:

> [i]s it the intimacy, the warmth or the imperfection of the images? Or is it its limitations? An 8mm film cassette was pricey and only contained about 3 minutes worth of film […] A Super 8 cassette may be short in duration, but the world of small film is a world of happy moments. The sun always shines, people are always laughing and they often wave […] as if we are attempting to hang on to this happiness forever.[28]

As a tribute to Super 8 Kodachrome – the film with 'the most beautiful blue in the world' – Kramer collected 25 of the last Kodachrome boxes and selected 25 children of the age of 8, starting with his oldest daughter Isabella. By recording these children on Super 8 Kodachrome film he wanted to create a three-minute 'souvenir' from their youth – similar to those 8mm films that his own father used to make when he was about that age.
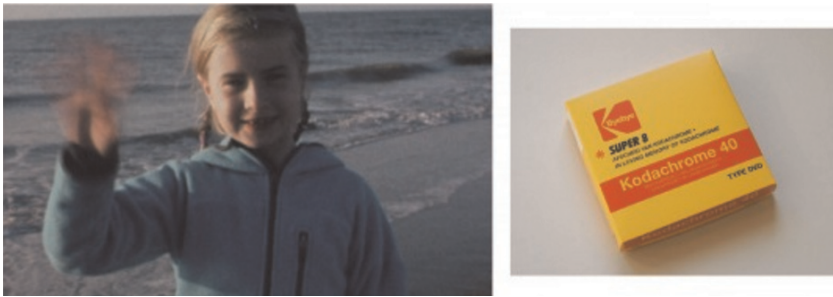

Fig. 2: Isabella waving to the camera (still from Bye Bye Super 8) *and DVD box of the project remediating the design of the original Super 8 Kodachrome 40 film box.*

Kramer's Super 8 Kodachrome film project was screened at the Tribeca Film Festival in New York and was exhibited – with the use of original Super 8 film projectors for parallel screening – at the Kunsthal Museum in Rotterdam (the Netherlands) and in the House of Alijn, Flanders Museum of Everyday Life, based in Ghent (Belgium). Seen from the perspective of this article the project is obviously more than only a tribute to a discontinued film stock; it strongly reflects the notion of technostalgia in contemporary memory practices in at least two ways. It pays homage to Super 8 Kodachrome film as a media technology from the past by mirroring the 'mediated memories' of Kramer's own home movies from the 1970s. In addition, it refers to the (ritualised) process of how memories were constructed and mediated by this media technology in the past. In other words, the project explicitly deals with the material construction of cultural memory as both a product and a process. The re-appropriation of past media technologies has proven to be particularly valuable for acquiring

and regaining insights into past media usages, including the elements of (lost) tacit knowledge, the material affordances and limitations of the media technology, and specific social and aesthetic conventions.[29] In each of the 25 film portraits the children are waving to the camera. Besides a form of goodbye to the Super 8 Kodachrome film, this act of waving re-enacts one of the most common tropes and social conventions in past home movie practices.[30]

The re-appropriation of Super 8 film material is not limited to Kramer's Super 8 Kodachrome tribute but also appears in other popular cultural expressions. Since the 1970s many visual artists and professional film-makers have been making films on Super 8 – often but not exclusively to create a certain home movie aesthetic.[31] Also, commercial wedding video businesses such as the French company Super 8 mon amour have been established, providing exclusive services to record family weddings on original Super 8 film stock, offering customers both the original film reels and a digital version on DVD.[32] In 2005, the year in which production of Kodachrome was officially discontinued, a new film hobby magazine was released called *Super 8 Today: The Magazine for Amateur and Professional Super 8 Filmmakers*.[33] All these initiatives indicate the strong interest in and revival of analogue Super 8 film in contemporary media culture.[34] Nevertheless, despite these new interests the original Super 8 Kodachrome 40 film stock forever belongs to the past.

5   iSupr8

In 2011 the company MEA Mobile released an app called iSupr8, described as a 'Super 8mm HD Vintage Video Camera'. The digital application initially made for the iPhone, iPad, and iPod Touch was 'designed by Super 8 film enthusiasts for Super 8 film enthusiasts'.[35] Similar to Instagram, the iSupr8 app functions as a social media platform which allows users to choose between specific filters to make the digital recordings appear as if they were made on original Super 8 film. Tru8 100D is included as a standard filter, but one can purchase extra ones such as Prime-X B&W, Vibra-Chrome 40, and SuprChrome 40.[36] These filters normally include elements of film grain, flickering lights, scratches, vignette, and the brightly-saturated colours that are so characteristic of Super 8 colour films.[37] As stated on the app's website, with the help of these grading effects iSupr8 can 'turn your videos into memories':

[d]iscover the beauty of authentic vintage 8mm film. *iSupr8* is a video recorder which grades each pixel based on exposure adding old school effects and film-burn. The resulting film becomes a unique and retro masterpiece. Keeping the 8mm movement alive is what we're about. *iSupr8* is not just a fun novelty app, it is an effort to revive and increase awareness of a commercially dying format to a new generation, as well as a production tool for filmmakers seeking an authentic, vintage look.[38]

The description is significant, as it discursively frames the app as a memory technology in multiple ways. First, as a medium it enables users to capture and share memories instantly by means of the app's recording and (online) sharing functionalities. Second, the recorded videos can be 'turned into memories' specifically by means of the grading and filtering mechanisms the app provides.[39] Here the analogue aesthetic of Super 8 film functions as a way to enhance the recorded videos and render them more 'unique', 'retro', and 'authentic'. This is central to the app's functionality. One of the latest updates in 2015 even comes with the possibility to adjust the degree of specific grading aspects, such as scratches, vignette, grain, and flicker, allowing for extra user control over the preferred 'vintage look'.

Much can be said about the relation between vintage and authenticity. In relation to applications such as Instagram, Lisa Chandler and Debra Livingston speak of a 'simulacrum of analogue authenticity' to describe how the applied effects of grading and filtering simulate certain physical signifiers of memory, age, and time.[40] While the idea of vintage objects as 'carriers of authenticity' relies on the principle that they are unique representations of and from the past, the photos and videos made by apps such as Instagram and iSupr8, by contrast, have been aged by the application rather than by time. This observation is shared by Nathan Jurgenson, who states that this faux-vintage photography seemingly provides authenticity but at the same time negates it by its simulation.[41] Kate Bevan even argues that the grading and filtering distort the level of authenticity, as it 'make[s] all pictures look the same'.[42] Despite this problematic relation between vintage and authenticity, the iSupr8 app is supposedly designed to 'keep the 8mm movement alive'. Rather than 'just a fun novelty app', as stated in its description, it is meant to increase awareness of the media technology to a new generation of users.[43] This is remarkable because the app has no actual reference to the original Super 8 film technology itself. The only way in which it triggers memories about Super 8 as a media technology is by means of its simulated appearance.

Fig. 3: Screenshots of the iSupr8 app.

Besides a remediation of the analogue aesthetic, the iSupr8 app also features specific built-in references to the material appearances of the Super 8 film cartridge, the camera, and even the analogue film laboratory. The playful combination of vintage elements with digital functionality is supposedly what makes the app so attractive in terms of user experience for both digital and Super 8 film enthusiasts.[44] The app consists of three distinct interfaces: the camera viewfinder, the development/screening window, and the film laboratory. The camera viewfinder appears when the app is opened and provides a range of possibilities to adjust recording settings, including the preferred film stock simulation (Tru8 is default), frame rate (12/18/24fps), film size/resolution (360p/480p/720p/1080p), and camera case style. The menu itself remediates the casing of a Super 8 film camera, showing the leather-look material and push button to 'open' the holder of the film cassette. When pressing the push button the development window opens, providing another tableau of screens. On the top left a part of the 'original' Tru8 100D film cassette is visible, providing information about the film's filter type, exposure index, and light sensitivity.[45] When opting for film development an interface called iSupr8 Lab opens which formally remediates the film laboratory. It consists of a yellow sheet of paper including the film recording details. Beneath the paper strip the status quo of the development (filtering) and printing processes is communicated. When printing is done one automatically returns to the development window to view the video and, if wanted, to share or delete it.

Fig. 4: Screenshots of iSupr8 app interfaces and film development process.

6   Reframing technostalgia

The film project *Bye Bye Super 8 – In Loving Memory of Kodachrome* and
the iSupr8 app can be seen as forms of technostalgia; both pay homage to
Super 8 film and refer to the analogue media technology, its materiality,
aesthetics, and past media usages, yet they do so in rather different ways.
Whereas Kramer's project makes use of and re-appropriates the (very last)
original Super 8mm Kodachrome 40 ASA films, the iSupr8 app aims to
revive interest in the past media technology by remediating it into a digital
application and making it accessible to a new generation of users.

When applying Svetlana Boym's two forms of nostalgia to the two cases
of *tech*nostalgia described above, Johan Kramer's Super 8 Kodachrome
tribute clearly expresses a form of restorative technostalgia towards Super
8 as a media technology from the past. The project not only works with the
original analogue material and film equipment, it also aims to adhere to
the original film practices, rituals, aesthetics, and recording conventions.
The element of waving to the camera – a common trope and social con-
vention in home movie practices from the past – is illustrative in this
respect. The idea to give all of the 25 children that collaborated with the
project a three-minute 'souvenir' from their youth reveals not so much a
certain longing for a time that once was but a longing for Super 8 as a
material carrier of these memories – a memory technology, Kramer states
significantly, that is to be preferred over 'hours of DV recordings without
anything truly worthwhile'.[46] In contrast, the iSupr8 app manifests a form
of reflective technostalgia due to its remediation of the analogue media

technology.[47] Besides presenting the making of Super 8 films in a new digital form, it renders new user possibilities and practices: the mobile digital device as camera and online sharing tool.[48]

The distinction between restorative and reflective forms of technostalgia proves helpful, as it provides a framework for analysing manifestations of technostalgia in contemporary memory practices beyond the analogue-digital divide. Furthermore, as I have shown in this article, it makes clear that vintage apps such as Instagram, Hipstamatic, and iSupr8 are not nostalgic in the sense that they involve a certain longing for the past. Rather, they are used to evoke a 'technostalgia of the present'.[49] While re-appropriating and remediating the analogue aesthetic and materiality of past media technologies such as the Polaroid photo or the Super 8 film, these faux-vintage apps reflectively and symbolically mediate between the past and the present to achieve a certain authentic yet highly staged look and feel.

7   Conclusion

In this article I have examined how in contemporary memory practices media technologies not only construct and mediate memories but have also become the objects of memory themselves. Today's interest in and revaluation of media technologies from the past is often described in terms of nostalgia, vintage, and retromania. I have used the notion of technostalgia to examine more thoroughly how the materiality and aesthetics of past media technologies such as the Polaroid photo or Super 8 film have been re-appropriated and remediated in contemporary memory practices. To further explore the notion of technostalgia and the variety of forms in which it appears, I have looked at two specific cases which refer to Super 8 film as a past media technology: the film project *Bye Bye Super 8 – In Loving Memory of Kodachrome* and the iSupr8 app. Drawing on Svetlana Boym's theoretical framework, I have distinguished between two forms of technostalgia that include an interest in Super 8 as a technology from the past: restorative technostalgia and reflective technostalgia. Whereas restorative technostalgia pays homage to the original media technology from the past and tries to maintain its aesthetics, practices, and conventions, reflective technostalgia is historically and materially more flexible in its performing or restaging of the look and feel of the past media technology.

Today's vintage culture could be seen as the combination of both forms

of technostalgia. Besides a clear fascination with the re-appropriation of original past media technologies, a more reflective form appears in how various cultural expressions and digital media applications such as Instagram and iSupr8 remediate the analogue aesthetic and/or materiality. Along with these restorative and reflective forms of technostalgia, I have argued that a new kind of memory practice has emerged which does not aim for transparency but explicitly refers to the media technology itself in the process of memory construction. More than entailing a form of nostalgia or longing for the past, it mediates *between* the past and the present. The Super 8 Kodachrome tribute and other restorative forms of technostalgia (e.g. the magazine *Super 8 Today*) actualise the use of past media technologies by paying homage to the original film stock, yet without the necessary desire to go back to the 1970s – the time when Super 8 was the dominant amateur film medium. Similarly, digital vintage apps such as Instagram, Hipstamatic, and iSupr8, as well as other reflective forms of technostalgia, express a technostalgia of the present.

Such a memory practice potentially opens up a dialogue between generations of users by mediating between the past and the present, the analogue and the digital, the archival and the performative.[50] As it has not only inscribed the process of memory construction in the media technology but also the memory technology in the process of memory construction, it enables a double mnemonic process in which media technologies not only construct or mediate memories but have also become the objects of memory themselves. This is a memory practice which therefore has enforced an attentive shift in contemporary media culture from technologies of memory to a memory of technologies.

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About the author

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Notes

1. Reynolds 2011 and Niemeyer 2014. For more contemporary examples of technostalgia, see: https://twitter.com/hashtag/technostalgia (accessed on 25 June 2015).
2. For the use of nostalgia in relation to musical practices and retro cultures, see Katz 2004 and Rothenbuhler & Peters 1997. For notes on nostalgia and fashion see Jenß 2013.
3. On Wiktionary technostalgia was defined as the 'fond reminiscence of, or longing for, outdated technology'. See: https://en.wiktionary.org/wiki/technostalgia (accessed on 25 June 2015).
4. The concept of remediation, as developed by Bolter & Grusin (1999), describes the process in which new media refashion old media (and vice versa). Besides the remediation of the medium itself or the content it produces, media practices can also be re-mediated. See Lanzara 2010.
5. Van House & Churchill 2008.
6. For a short history of memory studies, see Erll 2011, pp. 13-37.
7. See Erll 2011, Livingstone 2009, Lundby 2009, Van Dijck 2007, and Taylor 2003.
8. Plate & Smelik 2013, pp. 5-6.
9. See Sturken 2008, cf. 1997.
10. Sturken 2008, p. 75. See Erll 2011, Van House & Churchill 2008, and Van Dijck 2007. See also Plate & Smelik 2009 and Hirsch 1997.
11. Plate & Smelik 2009, p. 16.
12. Hoskins 2011, Van Dijck 2007.
13. See Van Dijck 2013, Fickers 2012, Hartley 2012, and Ernst 2010.

14. In Campopiano 2014, pp. 77-78.
15. Palmer 2012, p. 88. See also Caoduro 2014.
16. Sapio 2014, p. 44.
17. Ibid., pp. 45-46.
18. See Van Dijck 2007, p. 109.
19. Campopiano 2014, p. 76.
20. Fickers 2009, p. 136.
21. Pinch & Reinecke 2009, p. 153. Cf. Davis 1979.
22. Ibid.
23. Boym 2001, p. xviii.
24. Ibid., p. 50.
25. See Garda 2014 for an examination of the two kinds of nostalgia in relation to retro game design.
26. The production of Super 8 Kodachrome 40 ASA stopped in 2005. However, Kodak's yellow boxes could still be processed. The company Dwayne's Photo, based in Kansas (United States), was the last certified Kodachrome processing facility in the world and developed Kodachrome film until the end of 2010.
27. Kramer 2011. See for a compilation of the project: https://vimeo.com/23007405 (accessed on 28 September 2015).
28. Ibid.
29. The re-appropriation of past media technologies forms the basis of 'experimental media archaeology', a new method of historiography which aims to study the relation between the materiality of media technologies and past user practices in an experimental and sensorial manner. See Fickers & van den Oever 2013 and Fickers 2015.
30. For more about social and aesthetic conventions in home movie practices, see Chalfen 1987. See also the film *This Is For You* (2012) by visual artist Kat Steppe, produced in the 'Focus on Found Footage' series by the House of Alijn, Ghent (Belgium). The film consists of a montage of amateur footage in which people are looking into the camera: https://vimeo.com/54189202 (accessed on 28 September 2015).
31. Cf. Odin 1995.
32. See for more information http://www.mylittle.fr/mylittlewedding/super-8-mon-amour.html and https://www.facebook.com/super8monamour (accessed on 25 June 2015).
33. See http://www.super8today.net/ (accessed on 25 June 2015).
34. In October 2015 the Super 8 film format celebrates its 50th anniversary. Several initiatives have been undertaken, such as the 'Global Super 8 Day' (http://www.gs8d2015.com/). In the Netherlands one of the most active film development laboratories for original Super 8 film is the Super8 reversal lab based in The Hague. See http://www.super8.nl/ (accessed on 25 June 2015).
35. https://itunes.apple.com/us/app/isupr8-super-8mm-hd-vintage/id413566476?mt=8 (accessed on 25 June 2015). See also Myers 2011. Since 2012 iSupr8 is also available for smartphones. Comparable vintage video apps include 8mm Vintage Camera, Vintage Video Maker, and Vintagio.
36. For a full list of filters see https://www.appannie.com/apps/ios/app/isupr8-super-8mm-hd-vintage-video-camera/ (accessed on 25 June 2015).
37. The implementation of digital layering and adding 'old school' effects is not a new functionality. Already during the 1990s various video editing computer programs enabled the use of effects and vintage layers such as sepia and black-and-white.
38. http://share.isupr8.com/ (accessed on 25 June 2015).

39. On Google Play the iSupr8 app was advertised with the slogan 'create new memories with an old school kick'. See https://play.google.com/store/apps/details?id=com.mea-mobile.iSupr8 (accessed on 25 June 2015).
40. Chandler & Livingston 2012, pp. 3-4. See also Caoduro 2014, p. 74.
41. Jurgenson 2011.
42. Bevan 2012.
43. On the relation between old media technologies and authenticity José van Dijck paraphrases Joseph Auer (2000), who 'has suggested that every new medium in a way authenticates the old, meaning that each time a new audio technology emerges on the screen, the older ones becomes treasured as the "authentic" means of reproduction or as part of the "original" listening experience. In the digital era, scratches, ticks, or noise can be removed from tapes to make old recordings sound pristine, but they can also be added to make a pristine recording sound old. Sound technologies thus figure *in a dialogue between generations of users*'. See Van Dijck 2009, p. 113 (emphasis added).
44. In interaction design studies the resemblance of the materials, techniques, or structures of original objects in a new design is called 'skeuomorphism'. See http://whatis.techtarget.com/definition/skeuomorphism (accessed on 28 September 2015).
45. The number 100 stands for 100 ASA (light sensitivity); D stands for 'daylight'.
46. Kramer 2011.
47. I have explored the concept of reflective technostalgia before in relation to the Dutch musician Spinvis. See Van der Heijden 2014.
48. It should be noted that the distinction between restorative and reflective forms of technostalgia is never absolute. Kramer's film project is not only an example of restorative technostalgia, but also manifests a form of reflective technostalgia, as all 25 Super 8 films were digitised and printed on DVD. The same goes for the iSupr8 app, which reveals a certain longing for authenticity, as it was supposedly aimed for 'keeping the 8mm movement alive' and developed as a production tool for users 'seeking an authentic, vintage look'.
49. The notion of technostalgia of the present draws on terms and concepts used by others: Fredric Jameson uses the term 'nostalgia *for* the present' to describe the appearance of nostalgia in postmodern culture (Jameson 1991, p. 279); Nathan Jurgenson uses the same term in relation to faux-vintage photography (Jurgenson 2011); Arjun Appadurai speaks of 'imagined nostalgia' in relation to forms of mass advertising in fashion consumer cultures (Appadurai 1998, p. 77); and Elena Caoduro has used the term 'timeless nostalgia' in relation to vintage photography apps such as Instagram (Caoduro 2014, p. 71).
50. Examples of such boundary transgressions are also visible in 'new' analogue media technologies such as the Lomokino film camera (reference to the Russian LOMO photo camera), which works on original 35mm film, and hybrid digital Super 8mm video cameras such as the Chinon Bellami HD-1. See http://microsites.lomography.com/lomokino/ and http://www.digitaltrends.com/photography/chinon-releases-bellami-hd-1-super-8-camera/ (accessed on 25 June 2015).