Chapter 12
Older People Positive, Active and Creative ICT Use: A Study in Three Countries

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12.1 Introduction

An ever-growing ageing population and the ubiquity of Information and Communication Technologies (ICTs) in our everyday lives have motivated Human-Computer Interaction (HCI) scholars to explore the relationship between older people (60+) and ICTs. Qualitative and quantitative studies of their attitudes towards, and use of, several ICTs, ranging from mobile phones (Leme et al. 2014) and Online Social Networks (OSN) (Gibson et al. 2010) to digital games (Mosberg Iversen 2014) and video-sharing sites (Harley and Fitzpatrick 2008; Sayago et al. 2012) have been carried out. Assistive technologies, apps, OSNs and other computer-based tools, such as e-mail systems, have been specifically designed to help older people to conduct (instrumental) activities of daily living, ranging from keeping in touch with their relatives (Rodríguez et al. 2009) to being able to remember when they have to take their (McGee-Lennon et al. 2011). Within this body of knowledge, older people have almost unambiguously been characterized as:

- a very heterogeneous segment of the population, because "with increasing age there is an increase in inter-individual differences in rate, onset and direction of change in most functions and processes. This means that older people vary considerably in their abilities, skills and experiences" (Czaja and Lee 2007, p. 344),

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- a user group "with a set of specific characteristics: they have a range of health concerns, they experience physical and cognitive decline, they are slow at performing with technology, and experience social isolation and a loss of independence" (Vines et al. 2015)
- consumers, rather than producers, of digital content, e.g. "(even) social technologies designed specifically for older adults often prioritize functions that allow users to easily access content produced by others, rather than to create and share their own digital media" (Waycott et al. 2013).

Within this characterization of older people, "technologies that can help compensate for people's frailties and the assumed needs that arise when getting older" (Rogers et al. 2014, p. 3913) is the most predominant design approach.

We do not claim that this portrayal of older people within HCI is inconsistent, although we consider that there might be reasons for thinking just the opposite: how can a heterogeneous user group be uniformly regarded as consumers of digital content with a set of specific characteristics? Ageing is a cultural, multifaceted process of gains and losses (Gilleard and Higgs 2000). Thus, it should come as no surprise to see older people running marathons or leading an active and social life-style while others are homebound, living in nursing homes and socially isolated. Yet, this heterogeneity does not prevent older people from exhibiting fairly similar interaction practices when they use ICTs to, for instance, look for information online or keep in touch with their friends and children. Age-related changes in functional abilities (especially in cognition, vision and mobility) hinder considerably older people's interactions with technologies. Have you ever heard of older people complaining about the small size of mobile phones, or struggling to use the mouse? Moreover, if they find it difficult to access digital resources, how (and why) would they want to engage in digital content creation activities? In light of the interaction issues they are faced with, which sometimes become impossible barriers to cross, it is reasonable to assume that their ICTs use is more limited and/or poorer than that of other user groups (think, for example, how teenagers use smartphones). Accommodating for declines in functional capabilities in user interface design is therefore of paramount importance to make ICTs more accessible to older people and enable them to make the most of these technologies.

In this chapter we present selected key aspects of the PhD dissertation conducted by one of us (Ferreira 2015). We argue that characterizing older people as a heterogeneous group of consumers of digital content with a set of weaknesses/limitations is not enough to understand their relationship with ICTs, since people with a profile similar to Maria's, a 73 year-old Spanish woman, have not received enough research attention. This chapter also claims that compensating for age-related changes in functional abilities is not sufficient to design ICTs that people like Maria would want to incorporate in their everyday lives. Who is Maria? She lives in a flat in Barcelona, visits her grandchildren during the weekends and keeps in touch with her children, who lead a hectic lifestyle and are living in towns nearby, via e-mail, Facebook and WhatsApp. Maria started to learn computers and the Internet around 8 years ago. Currently, she has experienced changes in her vision, sometimes forgets

things, such as the name of a person she has recently met or where she has left her keys at home. Maria also acknowledges that learning a new computer program is becoming a more and more challenging task. Maria makes her own digital videos of her trips—not without difficulties, though. She still does not remember all the steps to take in order to transfer video files from her tablet to her desktop computer. How does Maria fit in the current views of older people within HCI? How can the 'downside of ageing' (Rogers et al. 2014) approach help us to design technologies that are not only accessible and usable, but also meaningful in her life?

This study draws heavily on an ethnographical study of ICTs use by approximately 220 older people conducted over a 5-year period in Barcelona (Spain). It also draws on two rapid ethnographical studies (Millen 2000), one conducted in Denmark and another in Brazil, over 4 and 2 months, respectively, with around 180 older people (90 in each study). The results shows how older adults with mild-to-moderate age-related changes in functional abilities can (and indeed, did) move from seeking online information, e-mailing and voicing similar attitudes towards a perceived lack of privacy in OSN, which are oft-reported tasks and interaction behaviours associated to older people in HCI, to engaging in not so widely reported activities, such as creating their own digital videos with contemporary technologies (i.e. not designed specifically for them, such as Windows Movie Maker) and exhibiting creativity while editing them. They used digital videos as a means of keeping in touch with trusted members of their social networks. They also showed remarkably similar interaction practices, such as a perceived need of taking control over 'who sees what' when they share digital media online, such as photos and videos, despite having different cultural backgrounds. By editing digital media with contemporary ICTs, and sharing it with those they care for, older people in Barcelona, Denmark and Brazil reported feeling more useful, socially and digitally included.

These results present an alternative view of ICTs use by older people that differs deeply from the one that emanates from how this user group is characterized within HCI. These results invite us to re-imagine HCI research with older people by reflecting upon, and questioning, for instance, the following issues:

- How older people are and should be conceptualised within HCI. While it is difficult to argue against the fact that they are a heterogeneous user group, this study claims that when their ICTs use as a group is examined from within, i.e. from ethnographical lenses and over prolonged periods of time, more similarities than differences as far as their concerns, attitudes and interaction practices are concerned can be found.
- The design space and approach. This study does not argue against the fact that some older people might need special tools. Yet, this study suggests that reframing the design space in terms of supporting and facilitating older people's creativity, which has mostly been overlooked, could potentially widen the design space, wherein compensating for the downside of aging will be just one (important) part of the task to design more usable, accessible and meaningful ICTs for (and with) this user group.

12.2 Related Work

Studies of digital content creation by older people are surprisingly rare. Surveys show that older people are "beginning to use social media more and more" (Hope et al. 2014) and increasingly adopt mobile phones (Ling 2008) and tablet PCs (Werner et al. 2012). Research studies suggest that recording and watching home videos might be a familiar activity for most older people (Chalfen 1988), and that "digital content production can provide important opportunities for older adults for social engagement and self-expression" (Waycott et al. 2013). Moreover, "news, public discussions and product marketing emphasize the possibility to have a video camera in settings and situations previously unlikely" (Lehmuskallio and Sarvas 2008), and "one only has to look at online repositories of video such as YouTube to begin to understand how growing access to digital video is widening participation in a new culture of video production, exchange and viewing" (Kirk et al. 2007).

However, previous studies that have examined (a) digital video practices by non-professionals (e.g., O'Connor and Fitzpatrick 2009; Lehmuskallio and Sarvas 2008), (b) emerging issues introduced by personal media (photos and videos) on the web, such as ownership and remix (e.g., Marshall and Shipman 2011, 2013), and (c) video-user generated content, such as popular videos and patterns of user participation (e.g., Cheng et al. 2013; Park et al. 2011), have not been conducted with, or have not considered, older people. An exception is an online survey in which 290 online Korean people aged 50+ participated, conducted by Ryu et al. (2009), who argued that the respondents reported being willing to adopt video creation services if some conditions, such as ease of participation, usefulness, and enjoyment were satisfied. Another exception are Harley and Fitzpatrick's studies (Harley and Fitzpatrick 2008, 2009), which analysed 8 videos generated and uploaded by an older person, Peter, also known as 'Geriatric1927' and the subsequent responses, arguing that intergenerational contact, reminiscence, reciprocal learning and co-creation of content, emerged from how the videos produced by Peter were used in YouTube.

Thus, there is room for claiming that little if anything is known about older people creation of digital content in their everyday lives. In this chapter, we aim to reduce this gap in knowledge by showing older people in Spain producing and appropriating of digital videos and participants in different settings engaging in digital content creation.

12.3 Methodology

We understand the way (older) people interact with ICTs as a socially constructed, dynamic and diverse cultural practice (Dourish 2004). Thus, we turned to ethnography (Fetterman 2010), as we consider that depth, natural settings, intensity, holism, non-judgmental orientations, and giving voice to people in their own local contexts,

which are foundational elements of this way of looking, listening, thinking and writing about social phenomena, should (and could) help us reveal and explain older people's ICTs use.

The crux of this study is a 5-year (2010–2015) ethnographical study conducted in Àgora,[1] a 35-year old highly participatory adult learning community in Barcelona, Spain. Àgora provides free courses, which are mostly run by volunteers and adopts a dialogical learning approach (Aroca 1999), which empowers the students—using Àgora's terminology, participants—to decide what they want to learn. Over this period of time, the first author participated in 21 computer courses and 18 drop-in sessions, resulting in a total of 298 h of fieldwork with 217 older people (aged 60–85; women: 120; men: 97) with different levels of experience with ICTs. In these activities, older people interacted with several ICTs, such as desktop computers, tablets, mobile phones, e-mail, ONS and video editing platforms. Courses lasted up to 12 weeks and were run in weekly sessions of 2 h long. Workshops were usually run in a 2-h session. The first author either ran the sessions or helped the person in charge of them. Participants reported having been using computers and the Internet from three months up to eight years. Informal conversations revealed that they were born in different Spanish regions and had low levels of educational attainment (70% finished primary school).

Given that older people are often regarded as a very heterogeneous user group, we considered that doing fieldwork activities in countries with different levels of economic development could (and should) help us understand how similar or different their ICTs use is. This research was conducted in Casa do Idoso,[2] a centre where older Brazilian people take computer classes and carry out other social activities, such as handcraft courses or playing cards, and in three social centres[3] in Denmark in which computer sessions for older people are organized. In both studies, the first author conducted first-hand observations of, and conversations with, older people (78 in Brazil, and 79 in Denmark) while they were using computers and the Internet in the courses organized in the social centres. Most of the participants reported not holding a university degree. The first author took part in these activities by helping the person in charge of the courses. In both countries, she also carried out home-based interviews about older people's use of TV, mobile phones, tablets PCs, computers, Internet and opinions regarding iTV services. These interviews included 13 participants in each country and explored the opinions and ICTs use of older people that were not enrolled in computer classes in the social centres.

Fieldnotes were taken mostly immediately after the sessions in the courses, due to the active participation in most of them. Additionally, in the interviews the fieldnotes were taken in situ. The analysis followed the interpretation by Nigel Gilbert in

[1] Agora, Escola d'Adults de La Verneda-Sant Martí, Barcelona, Spain, http://www.edaverneda.org/.

[2] Casa do Idoso, São Jose dos Campos, Brazil, https://www.sjc.sp.gov.br/servicos/apoio-social-ao-cidadao/casa-do-idoso/.

[3] FoF, Aalborg, Denmark, http://www.fof.dk/AfdelingForside.aspx?enhed=1. Borger Datacenter (affiliated with Ældremobiliseringen), Jerslev, Denmark http://9740.dk/borgen.aspx.

Kastaniegården, Frejlev, http://aktivitetscentre.aalborg.dk/vest/kastaniegaarden.

Researching Social Life (Gilbert 2008) of Strauss and Corbin (Strauss and Corbin 1998) Grounded Theory's methodology.

After presenting the methodological approach and the environments where the fieldwork activities were conducted, we present the results next.

12.4 Results and Discussion

The results presented in this chapter center on the participants ICT use in their everyday lives. We focus on older people access, creation, and sharing of digital content, discussing their similarities and showing an active and positive use of technology. In the first section, we discuss the similarities on ICT use in the three settings. The second section show selected details on participants' video content creation practices in our main setting, Spain.

12.4.1 Their ICTs Use Is not so Heterogeneous as One Might Think

12.4.1.1 Similar Interests, Concerns and Interactive Practices

Despite the fact that our participants had different economic and cultural backgrounds, our results show similar interest and concerns in relation to their ICT use. The use of ICTs for communication, the concern with privacy and the interest for multimedia content stood out among the participants that use computers or mobile devices in the different settings.

Regardless of whether the participants were in a social or private environment, the results show them interacting with different devices to access and create digital information. In addition to using the desktop computers provided in the social centers, participants owned laptops, mobile phones, tablets, and digital cameras. The results show an increasing interest in mobile devices. Participants used different technologies according to their personal interests and/or situation (e.g., communication, access to information or digital media creation). Accessibility features of tablets and mobile devices, such as a simple learning curve and easily enlarging the fonts sizes, also facilitated the adoption and inclusion of new users. Next, we present more details on participants' interactions practices, interests, and concerns in the three settings.

12.4.1.2 Multimedia Content and Online Communication Channels

The use of ICT for communication and the use of multimedia was a key motivation for using ICT regardless if in a social environment or if learning independently. Creating and editing multimedia content was a frequent activity amongst all the Àgora participants, as well as a motivation for them to learn ICTs. Courses on MS Power Point, photo edition or calendar creation were part of the ICT activities organized in

Àgora. Most of the participants were also motivated to share the multimedia contents they created, as illustrated by this participant in an Introduction to ICT course, [72, M11][4]: (showing the researcher 4 calendars that he created with pictures) "*These two are very similar but the size of this file is smaller, which helps me to send the calendars by e-mail to the people that usually e-mail me*."

Online communication and working with multimedia content were also of great interest to the Casa do Idoso participants. From our observations and the inter-views with teachers, editing pictures was a source of motivation for them to keep learning about ICTs; namely, how to look for, edit and share online content with people they knew. The e-mail was the most popular Internet application amongst the least and more experienced Brazilian participants. Indeed, Facebook was the second most popular communication tool, especially among the participants with more experience with ICTs, who also used Skype for keeping in touch with family members living abroad. In the in situ interviews, 70% of the Internet users report-ed using the e-mail. Half of them reported using social network sites and Skype too.

Similarly, communication was key amongst Danish participants. Participants were highly motivated to use, and, indeed, often interacted with, online applications to keep in touch with close friends and relatives. All the participants reported using the e-mail in the in situ interviews. Halt of them (54%) also used Skype, and 38% claimed to use OSN. Editing personal photographs on the computer was a very popular activity too. This popularity manifested itself in the activities carried out in the center, such as photo edition and creation of MS Power Point presentations, and it was confirmed in our conversations with the instructors and participants. The main reasons for editing and creating multimedia content can be divided into three categories: (a) keeping a digital record of the family to be circulated amongst the younger generations, such as grandchildren, (b) keeping memories of trips and (c) digitizing paper-based materials related to their hobbies or interests. 61% of the participants pointed out during the interviews that they edited photographs at home as well.

12.4.1.3 Privacy

As one may expect, privacy concerns were highlighted and discussed in all studies. All Spanish participants reported feeling uncomfortable with OSN when they were unsure about who could read their posts. Privacy was also an important concern amongst Brazilian participants. They needed to feel in control of the technology to decide who could see what. The comment from one participant in the in situ interviews is representative of that: [71, MbII] "*I use Facebook but not very often. When I receive something I answer, but adding things is very difficult for me and I don't do it. I don't know how it works well, so I avoid doing stupid things. I prefer to just see other people's contents. If you make your own things public…that is dangerous*." They did not feel comfortable when sharing content online with people

[4]The code for participants' identification consists of: (a) their age, (b) their sex (F. fe-male, M. male) and the ID that the fieldworker assigned to them.

they did not know—close groups were preferred (e.g., friends on Skype, Facebook or sending an e-mail to a group of people).

Similar issues were identified in the two centers in Denmark. All the instructors pointed out that privacy was an important concern amongst the Danish participants. They disliked the idea of not having control over what people could get to see and know about them online. They refused point-blank to publish content in OSN. They preferred private strategies of communication. As one of the participants put it in a semi-structured interview, [70, Fd15]: "*I don't use Facebook. It's dangerous. I tell my son to never ever put a picture of me on that. People should not put their personal things there, like if you are going to travel for example*."

We agree on the fact that age-related physically changes are different for each individual (Durick et al. 2013), and that different aspects should be considered when characterizing an older person besides her age, such as abilities, experiences and attitudes (Redish and Chisnell 2004). However, this study shows that older people with different cultural backgrounds and previous experience of using ICTs presented remarkably similar interaction practices, concerns, interests and needs in their use of ICTs. The participants appropriated popular contemporary ICTs to enrich aspects of their lives, such as OSN to keep in touch with family members and friends. Communication serves critical functions as we grow older (Nussbaum et al. 2000), and reducing social isolation and being closer to those one care for is important for (many) older people. Participants also expressed fairly similar concerns with respect to trust and the need of privacy online. Their life experiences are likely to play an important role in this finding, since the lessons learned over a person's lifetime determine to a great extent his or her current behavior. Yet, we found differences too (Ferreira et al. 2014). For instance, the high digitalization of public and private services in Denmark raised the urgent need of older people to access e-shopping or e-government digital applications. In the moment this re-search was conducted this issues was not so evident in Brazil, possible as a reflection on the different levels of digital technological development.

12.4.2 An Alternative View of ICT Use: Creative, Active and Positive Relationship with ICTs

In addition to their interest in accessing information online, our results show older people as active digital content creators. The results of the study in Spain portray older people as both consumers of digital content and active, creative makers of digital videos with contemporary video capturing, editing and sharing technologies. During the ethnographical study in Spain, we registered 320 videos produced by the participants (Ferreira et al. 2016). In keeping with their motivations and interests, 57.8% of them were about special events, such as birthday parties or trips, documenting memories of their relatives or their hobbies; 42.2% were about other events meaningful for them, such as neighborhood parties (Fig. 12.1) or AG activities; 38.7%

Fig. 12.1 Participant recording her partner in neighborhood event

of the videos were created with still images using a video-editing suite; 61.3% were recorded using camera phones, tablets or digital cameras. Next we present details on participants' motivation to create digital content, creativity and sharing practices.

12.4.2.1 Motivations and Creativity

By creating digital videos, our participants perceived that they could:

- Share with their relatives and friends key moments of special occasions, such as a trip around the Mediterranean: "*I want to create a video with the photos I took with my digital camera during my trip with my friends and partner in Tunisia. We had such a great time. I want to burn the video into a DVD and give it to them*" [75, M3].
- Keep alive memories of their relatives, especially those who were deceased, and share these memories with other family members: "*I've created a video about my family. I've got many pictures of my family, old ones, from people that are already dead, and more recent ones, from the new generation. One day I came up with the idea of creating a video representing my family tree and passing it on to the youngest members of my family*" [75, M27].
- Take forward their journey towards ICTs proficiency: "*The good thing about creating videos is that there are many effects and cool things (…) there is always something new to learn*" [68, M28].

- Feel more socially included, "*Nowadays, it's important to know how to use computers in order not to be excluded from society*" [63, F13].

The first important results that our ethnographic study helps us to identify are the importance of an event, documenting family history, and achieving personal objectives that made digital videos relevant for our participants and encouraged them to engage in digital video production. Keeping and sharing memories have motivated older people with different cultural backgrounds to engage with user-generated content (Karahasanović et al. 2009; Harley and Fitzpatrick 2008). Recording events also motivated adult people in families to find value in digital videos (Kirk et al. 2007). By contrast, attaining personal objectives, such as learning more about ICTs, and feeling more socially included, seem to be more specific motives of our participants. Their videos going viral was not among our participants' motivations for producing them. However, "35% of (American) adults who post videos online have posted a video with the hope it will be seen by many people or going viral" (Purcell 2013). These differences in aspirations might be due to the setting where we conducted our study and the profile of our participants.

All participants, regardless of being more or less familiar with ICTs, showed a high level of creativity while editing videos. Participants with more video editing experience tended to explore the editing tools (e.g., advanced options), while those with less experience used the most basic functions. Yet, participants' creativity showed up in the selection of tools, topics, animations, colors, fonts and music.

12.4.2.2 Controlled and Meaningful Sharing

There is room for thinking that privacy concerns could have hindered or prevented the social appropriation of digital videos from happening. Yet, participants adopted three different strategies for sharing videos in a controlled and meaningful way.

Co-located One-to-One and One-to-Few. The content of the video was personal and shared with people participants knew well. For example, participants put videos on USB drives or DVDs and passed them on to relatives: "*This weekend I'll visit my son, he has a modern TV. I'll bring the pen drive to show him the videos I made in the course on his TV*." [75, M41]

Online One-to-One and One-to-Few. An alternative sharing strategy was observed when participants created a video and wanted their friends and family members to watch it. The most common way of sharing the video was to send the file via e-mail, either as an attachment or a link using file transfer tools (e.g., WeTransfer). The more experienced participants shared videos via WhatsApp too: "*Look, this is the video I recorded from the lunch last weekend (showing the video in a WhatsApp conversation). I sent it to my partner's son, who was also there. He told me that he liked it a lot*." [75, M3]

One-to-Many in SNS. Only those participants who had more practical knowledge of ICTs shared videos on SNS, especially through Facebook. They did so by uploading videos in their profile pages or on their friends' walls. The videos shared were mostly

related to artistic presentations, such as a typical Spanish dance. Participants pointed out that sharing these videos on SNS allowed them to reach people that could be interested in them in a non-intrusive way. E-mails were not considered appropriate for doing so: "*I give the name of my YouTube channel to people, so if they want, they can go and watch the videos. This way, I don't have to e-mail them every time I create and upload a video. If their friends are also interested in the videos, they can also watch it, I don't mind. These videos aren't private*." [74, M2]

Thus, participants came up with their own solutions to share digital videos in a controlled and meaningful way. These different sharing strategies reinforce the creativity found in digital video production and had a positive impact on their perceived wellbeing.

Whilst "current research concerning design technologies specifically for older adults often focuses on providing access to digital resources, rather than creating and sharing their own content" (Waycott et al. 2013), this study portrays older people as both consumers of digital content and active, creative makers of digital videos with contemporary video capturing, editing and sharing technologies. This study shows a social appropriation of digital videos in which these artefacts become meaningful objects within inter- and intra-generational communication, and where privacy, controlled and meaningful sharing strategies play a key role in the acts of appropriation. These results show an alternative, more positive and active view of ICTs use by older people, and prompt us to suggest that there is room for re-framing the relationship between them and ICTs in a different way. In addition to accommodating for age-related changes in functional abilities and helping them to access to digital resources, tapping into older people's creativity and seeing them as (potentially) digital content creators can (and should) inform the design of (usable and accessible) ICTs that enrich their everyday lives.

Central to the contributions this research is the fact the relationship between the participants and ICTs can be regarded as positive. They are interested in incorporating ICTs into their everyday lives, sign up for courses on computers and the Internet and even agree to take part in research activities aimed to understand their ICTs use. On the one hand, this positive view differs greatly from the negative one that dominates HCI. On the other hand, however, it reinforces an emerging strand of research aimed to capitalize on the strengths of older people and positive aspects of ageing. Noteworthy examples of this research strand are (Rogers and Marsden 2013), who draw attention to the need of moving beyond the "rhetoric of compassion", in which the focus is on providing for a lack of something, to an approach that promotes empowerment through technology, and (Carroll et al. 2011), who regard ageing as a resource, and argue that "Technology can improve the quality of life for elderly persons by supporting and facilitating the unique leader-ship roles that elderly play in groups, communities, and other organizations."

12.5 Conclusions

From the results of these studies we observed that older people ICTs use is not so heterogeneous as one might think. The results show that older people with different cultural backgrounds and previous experience of using ICTs presented remarkably similar interaction practices, concerns, interests and needs in their use of ICTs. Participants appropriated popular contemporary ICTs to enrich aspects of their lives, such as OSN to keep in touch with family members and friends. Communication serves critical functions as we grow older, and reducing social isolation and being closer to those one care for is important for (many) older people. Participants also expressed fairly similar concerns with respect to trust and the need of privacy online.

Furthermore, in this chapter we show an alternative view of older people ICT use: creative, active and positive relationship with ICTs. Our results portray older people as both consumers of digital content and active, creative digital content creators. Participants in the three countries used contemporary technologies to capture, edit and share content such as photographs, videos, digital cards or text messages.

Contrary to the most predominant approach—focused on compensating for age-related changes in functional abilities—within HCI, the results presented have portrayed older people with mild-to-moderate age-related changes in functional abilities as active, creative, and social ICTs users. This alternative view reinforces and extends previous works, which proposed a change in the paradigm in HCI research with older people, moving from compensating from diminishing abilities to understanding their real-life use of ICTs, promoting empowerment through technology and seeing ageing as a resource. This study contributes to this research strand by (i) detailing the digital content production (namely, videos) of older people, (ii) showing more similarities than differences in their interaction practices, and (iii) revealing their appropriation of digital videos.

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