Relational components in the use of digital devices and apps

Mapping media appropriation processes among older adults in Sweden

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Abstract

Since access to and use of digital devices and applications often become more challenging with age, it is important to study how media appropriation processes unfold later in life. The present article contributes to existing research by applying the concept of transaction – developed within relational sociology – to study digital media appropriation. Using this concept, I focus on how older adults' relations with various actors (known others, distant others, and non-human transactors) fuel the appropriation of digital devices and apps. Drawing on interviews with 22 older adults (70–94 years of age), I identify four types of appropriation processes. This shows the diversity of ways in which digital devices and apps enter the lives of older adults and the diversity of agentic roles in media appropriation. The results also reveal how a sense of coercion in media appropriation was present among the older adults, especially in relation to their children.

Keywords: media appropriation, older adults, transaction, relational sociology, digital inclusion

Introduction

In a digitalising society, it becomes increasingly important for individuals to continuously appropriate relevant digital devices and applications. The concept of appropriation as developed within media domestication research can be understood as involving two main phases: the initiation phase (leading to appropriation) and the subsequent phase of purchase, installation, and initial learning, in which the medium is appropriated (De Schutter et al., 2015; Leong, 2017; Silverstone, 1994). To provide further insight into the factors that prevent or facilitate inclusion in the digital society, media research

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should advance the understanding of how media appropriation unfolds among different groups of people (Ragnedda & Mutsvairo, 2018). This article specifically investigates the appropriation of digital devices and apps among older adults (aged 65+) in Sweden.

Previous studies show a great diversity among older adults and reveal how demographic factors shape older adults' access to information and communication technologies. It is evident that younger age, higher educational level, and support from social networks facilitate the appropriation of digital devices and applications (Barrantes Cáceres & Cozzubo Chaparro, 2019; Bergström, 2017; Fang et al., 2019; Hargittai & Dobransky, 2017; Lissitsa & Chachashvili-Bolotin, 2015; Olsson et al., 2019; Tirado-Morueta et al., 2021). Accordingly, most non-users of the Internet are found among older adults, with one-third of persons above the age of 76 in Sweden stating that they do not use the Internet (Internetstiftelsen, 2021). There are also considerable differences between countries when it comes to older adults' media appropriation and use. In Europe, older adults in the Nordics are more active Internet users compared with older adults in countries in the south of Europe (Eurostat, 2021).

Researchers have commonly studied the role of social support agents – often including "warm experts" such as family members and friends – and have revealed how support agents contribute to appropriation by giving old or new devices, by identifying needs and advocating for new media practices, and by helping in the process of installation and initial learning (Bakardjieva, 2005; De Schutter et al., 2015; Hänninen et al., 2020; Khvorostianov, 2016; Olsson & Viscovi, 2018; Quan-Haase et al., 2016; Tan & Chan, 2018; Tsai et al., 2015). Studies have also revealed how family members sometimes serve as an obstacle in the process of appropriation, as they may lack engagement in the process of teaching (Gallistl et al., 2021; Khvorostianov, 2016; Tan & Chan, 2018). In addition, studies have shown how older adults' own interests can drive appropriation, for instance, a general interest in new technology or a passion for reading books can result in the acquisition of digital media (such as e-books) (De Schutter et al., 2015; Quan-Haase et al., 2016).

Two developments in existing research are particularly relevant to understanding older adults' appropriation and use of digital media: the research revealing the diversity of practices among older adults, and studies emphasising the agency of older adults. Regarding diversity, Hänninen and colleagues (2020) have shown the diverse ways in which older adults appropriate and use digital media and their diverse needs of social support from warm experts. They identified how older adults engage in three forms of technology use (including appropriation practices), that is, active and independent use of technology, continuously supported use and co-use, as well as proxy use, where other agents act on their behalf (Hänninen et al., 2020; see also Hargittai & Dobransky, 2017).

Regarding the question of agency, some scholars have emphasised the agentic role played by older adults in appropriation processes. Gallistl and colleagues (2021), in their study of older adults' non-use of digital media, argued that non-use is not a lack of action, but an active process that older adults perform in their everyday lives. Additionally, Quan-Haase and colleagues (2016), in their study of older adults' use and adoption of digital media in the context of everyday life, emphasised the following:

> Agency is central to our understanding of digital seniors' use of ICTs [information and communication technologies], they critically consider various technological

> options, and make choices around personal preferences, convenience, and affordability. […] agency emerges as an important dimension in the study of ICT use in seniors' everyday lives. (Quan-Haase et al., 2016: 701–703)

In this article, I connect with both these lines of existing research and aim to further our understanding of digital media appropriation among older adults. To gain these insights, I argue that we cannot look one-sidedly at the role of social support networks of family and friends, but we must employ a broader relational perspective. Therefore, the present study contributes to previous research by using the concept of transaction (Dépelteau, 2008; Emirbayer, 1997) to study media appropriation and by mapping out different types of appropriation processes. The study includes a wider spectrum of relationships than existing studies, and I analyse their role in the different phases of appropriation, including the initiation and motivation of the appropriation process.

The concept of transaction is especially fruitful for this purpose, as it enables us to study the manifold of relations involved in older adults' appropriation of digital devices and apps, and to understand how individual agency always takes place within and is shaped by different relations (Dépelteau, 2008; see also Dépelteau, 2015). The manifold of relations that are considered in the analysis are personal relations with known others in everyday life (including support agents such as warm experts), impersonal relations with unknown and distant others in the wider societal sphere, and non-human transactors (Burkitt, 2018; Dépelteau, 2015, 2018a). By paying attention to the manifold of transactions involved in older adults' appropriation of digital devices and apps, the present article can better distinguish the roles played by older adults and social support agents, respectively. I depart from the following research questions:

RQ1. What different types of media appropriation processes can be identified among older adults based on their transactions with other agents in everyday life?

RQ2. How do these types of appropriation processes and their characteristics further our understanding of agency and diversity among older adults in media appropriation?

Theoretical framework

This section provides further elaboration on the concepts of media appropriation and transaction and situates them within media domestication theory and relational sociology, respectively. I argue that these two concepts are relevant for studying the acquisition of digital devices and apps in today's digital landscape and explain how the concepts relate to each other.

Digital media appropriation

In this article, the concept of appropriation is understood from the perspective of media domestication theory. Within media domestication research, appropriation is commonly seen as the first stage of the domestication process, where a media device or media

content is acquired (Berker et al., 2006; Haddon, 2016; Silverstone et al., 1992). After this follows the processes of objectification (the spatial location of media in the home), incorporation (the use of media and their integration into the routines of everyday life) and conversion (the display of media to others as part of identity work) (Berker et al., 2006; Haddon, 2016; Silverstone et al., 1992). The whole process of domestication concerns how objects from the formal economy (the public) enter the moral economy (the private), and how the social context both shape and is shaped by media use (Silverstone, 1994). Social actors are seen as active in shaping technology; hence, the meaning and use of media is socially constructed (Bakardjieva, 2006; Haddon, 2016; Sørensen, 2006). Through the domestication process, media is tamed and integrated into the routines of everyday life (Haddon, 2016; Hartmann, 2006). Sørensen (2006: 48) wrote that while domestication "may appear to involve adaption and habituation, it is through hindsight – the knowledge of what actually happens" and points out that domestication (as any other social process) involves social conflict, discipline, and power.

Looking more specifically at how appropriation was defined in the early domestication research, Silverstone (1994: 126) wrote that an object is appropriated "at the point at which it is sold, at the point at which it leaves the world of the commodity and the generalised system of equivalence and exchange, and is taken possession of by an individual or household". Hence, appropriation stands for "the whole process of consumption" (Silverstone, 1994: 126), where the object crosses the boundary of the formal and moral economy and gains meaning (see also Silverstone et al., 1992). In later domestication research focusing on digital media, additional practices of the appropriation process have been highlighted. Downloading and installing software, and the initial steps in learning how to use a technology are also included in the appropriation process (De Schutter et al. 2015; Leong, 2017; Olsson & Viscovi, 2018). This is probably due to the increasing complexity of digital media, where devices and apps must be continuously updated and re-learned. Later studies have also questioned the idea that appropriation is only about acquiring new devices and have included practices such as receiving an older device from family members or friends (see Olsson & Viscovi, 2018).

Hence, appropriation concerns the purchase (or other means for acquisition) as well as the initial installation and learning how to use a device or application. However, there is one important part of the appropriation process that has not been discussed yet, namely the initiation and motivation of the process. Some scholars have emphasised the negotiations and discussions that take place in households prior to purchase and how people motivate the purchase of a certain technology (Haddon, 2016; Olsson, 2006). Other scholars have focused more broadly on the different circumstances that initiate appropriation, for instance, how parents can be inspired by their children to start playing digital games (De Schutter et al., 2015; Willett, 2017).

Based on this, the present article defines appropriation as comprising two main stages: first, the initiation phase (what leads to the acquisition), and second, the subsequent phase of purchase, installation, and initial leaning in which the medium is appropriated. This article thus studies how these two stages of the appropriation process unfold among older adults and how different relations are involved in the process. Acknowledging the double articulation of media (Silverstone, 1994), I hence analyse appropriation of both devices (primarily smartphones, tablets, and laptops) and content (mainly apps and computer programs).

As demonstrated above, domestication theory (including the concept of appropriation) has been developed and adapted to the study of an increasingly complex digital everyday life, and several studies point to the continuous relevance of this approach in today's media landscape (Martínez & Olsson, 2021). Accordingly, this article finds the concept of appropriation highly relevant for studying the acquisition of digital media; it also argues that our understanding of this phenomenon can be further developed by introducing the concept of transaction.

Transaction

The concept of transaction has been developed within relational sociology, which is a field comprising different directions, but the common thread is the focus on relations as the essential dimension in forming social reality (Dépelteau, 2018b). More specifically, this article adheres to the pragmatic approach in relational sociology developed by Emirbayer (1997) and Dépelteau (2008, 2015, 2018a), who were influenced mainly by the work of John Dewey and Norbert Elias. Dépelteau (2008) outlined central principles of the pragmatic approach, two of which are particularly relevant to the present study.

The first is the principle of transaction, which holds that social actors and social action must be understood as parts of chains of transactions with other actors and the environment: "Social actors and actions are what they are [or do what they do], at some specific time and space, only through empirical chains of trans-actions" (Dépelteau, 2008: 61; see also Dépelteau, 2015: 55). There is no independent self-action, but agency is "always one piece of a moving puzzle composed by interdependent actions" (Dépelteau, 2008: 60). Agency and action are here seen as closely connected: "an agent is someone or something that through an action produces an effect on the world or upon other people" (Burkitt, 2018: 531). In the context of this article, this means that appropriation of digital devices and apps is seen as co-produced by older adults and various other actors.

Relevant to this study is also the principle of the primacy of process in relational sociology (Dépelteau, 2008). The social world and social phenomena are fluid, dynamic, and changeable (be it families, states, digitalisation, or wars). However, this does not mean that there are no patterns or continuity: "The social universe is full of more or less continuous and similar trans-actions […] Their discovery and explanation is one of the most important tasks in sociology" (Dépelteau, 2008: 62). In line with this, I understand media appropriation as processes involving different phases that are fuelled by various transactions between older adults and their social and material surroundings. With this article, I seek to identify patterns and distinguish different types of processes, while also acknowledging that social processes are fluid and dynamic.

This study acknowledges relations with human transactors as well as non-human transactors in the material environment. Dépelteau (2008: 65) argued: "The principle of transaction is founded on the idea that the production of the social world happens through social relations and in a physical environment". In later work, Dépelteau (2015, 2018a) also explicitly stressed the need to include non-human transactors as part of the analysis, when considered relevant. This focus on human as well as non-human transactors obviously shows some similarities to other frameworks, for instance, actor-network theory, which is also commonly considered part of relational sociology (Papilloud,

2018). However, as argued in the introduction, this article uses a broader relational analysis primarily to understand the human relations – in this case, the agency of older adults and social support agents.

So, what can the concept of transaction – which has not been developed for studying digital media – add to the study of digital media appropriation? Using this concept and its inherently relational perspective can help in identifying the various relations involved in motivating and supporting the appropriation process. As stated above, in research on media domestication – including media appropriation – much attention has been paid to social relations and social support. Thus, domestication research most commonly departs from a relational perspective. However, applying the perspective of relational sociology and the notion of transaction enables us to decentre the role of social support agents (known others) and to highlight relations with distant others and non-human actors. Decentring the role of social support agents may also help us more clearly distinguish their role.

Method

I performed qualitative interviews to get insight into the experiences and practices among older adults in everyday life (Hennink et al., 2020). 21 in-depth interviews with 22 individuals between 70 and 94 years of age were conducted from September 2019 to January 2020. Shorter follow-up interviews were conducted to gain additional insights and clarifying information (Kvale & Brinkmann, 2009). The interviews were part of a project investigating intergenerational learning, that is, how older adults learn about digital devices and apps together with younger generations, primarily children and grandchildren. Questions were asked about the ways in which the participants appropriated digital devices and apps, how and why they started using these devices and apps, and who else was involved (if anyone), including the phases of purchase, installation, and initial learning.

The interview guide was designed to support the participating older adults in narrating their experiences of media appropriation, for instance, asking specific questions about the devices and applications they were currently using and then asking follow-up questions about how they started to use these media devices and apps. The participants also most commonly had their mobile phones or tablets present during the interview, and they could look at their devices to recall the apps they had. All participants narrated several different experiences of appropriation, making the data rich and highly useful. Processes of media appropriation may be difficult to recall, as they often form part of the flow of everyday life; however, the strategy adopted in this study proved to be productive for eliciting data.

The participants were recruited primarily in community centres located in the south of Sweden. After providing information about the study and obtaining informed consent, the interviews were conducted in the participants' homes or in group activity rooms at the community centres. One of the interviews included a couple (at their request) while the others were individual interviews. Thirteen women and nine men were part of the study, and their educational backgrounds ranged from secondary education to post-secondary education. Twelve participants lived alone, nine lived together with a partner, and one was temporarily sharing a household with her 18-year-old grand-

daughter. All participants used digital media devices (tablet, computer, mobile phone) regularly, but their use patterns varied. Some had several different (often newer) devices and a broader online repertoire (Olsson et al., 2019), while others had older and fewer devices or a less broad online repertoire.

The audio-recorded interviews were transcribed verbatim and analysed using software for qualitative coding. The initial coding focused on selecting all data covering appropriation, including initiation (what led to acquisition) and the subsequent purchase, installation, and initial learning. The stories of appropriation concerned devices (primarily smartphones, tablets, and laptops), as well as media content (mainly apps and computer programs). The appropriation stories were then read and re-read, and the constant comparative method (Boeije, 2002) was used to identify patterns. The aim of the analysis was to identify the role of different relations in the appropriation processes, including older adults' relations with known others, unknown others in the wider social environment, and non-human actors. This analysis showed how known others (social support agents) played different roles in different appropriation processes. Based on the roles of the support agents and the older adults, four different types of media appropriation processes were identified:

- Self-initiated and self-performed
- Self-initiated and supported
- Other-initiated and self-performed
- Other-initiated and supported

The typology presented below is based on the participants' stories of appropriation processes. One interview participant could have several stories of appropriation and can therefore be represented in more than one type of appropriation process. The last step in the analysis focused on identifying potential patterns related to the participants' age, gender, and online repertoires. The interviews were conducted in Swedish and a professional translator translated the interview quotes into English.

Results: Types of media appropriation processes among older adults

The four main types of media appropriation processes identified in the analysis are presented in Table 1. On an overarching level, appropriation is divided into self-initiated and other-initiated appropriation. This distinction was based on the active involvement of known others (interpersonal relations) in initiating appropriation among the respondents. However, this conceptualisation is not intended to suggest that self-action exists. The analysis below shows how transactions – interdependent actions – were continuously involved in shaping appropriation. After the initiation phase, appropriation unfolded as either supported or self-performed. Based on the initiation phase, the supported forms of appropriation were characterised in different ways. In self-initiated appropriation, it was primarily the older persons who fuelled the process, while in other-initiated appropriation, known others were more active in fuelling appropriation, to the point where the older person might feel a sense of coercion. How the different types relate to the interview participants' age, gender, and online repertoires is discussed after the four appropriation processes are described in further detail in the following sections.

Table 1 *Different types of media appropriation processes*

	Self-initiated and self-performed	**Self-initiated and supported**	**Other-initiated and self-performed**	**Other-initiated and supported**
Initiation phase	Appropriation starts as a transaction between the person and the material and broader social environment. Other known agents do not actively prompt appropriation.	Appropriation starts as a transaction between the person and the material and broader social environment. Other known agents do not actively prompt appropriation.	Appropriation starts through transactions with known others actively prompting initiation.	Appropriation starts through transactions with known others actively prompting initiation.
Purchase, installation, and initial learning phase	The person manages the appropriation process by themself, through transactions with media technology.	Other persons in everyday life support the appropriation based on the needs of the older adults, but appropriation unfolds primarily in being actively fuelled by the older adults.	The person manages the appropriation process by themself, through transactions with media technology.	The person receives support in the appropriation process by known others. These agents are active in fuelling appropriation.
Type of media device or app use	Both continuous use of devices and apps, and appropriation of new device and app uses.	Both continuous use of devices and apps, and appropriation of new device and app uses.	Mainly appropriation of new device and app uses.	Mainly appropriation of new device and app uses.

Self-initiated and self-performed appropriation

In self-initiated and self-performed appropriation, acquisition was initiated through the older adults' transactions with their material and wider social environment. Other known agents in their everyday lives, such as family and friends, played no active role but at most an indirect one. Initiation came in three sub-forms, presented below.

Appropriation of a new media technology could be initiated through a transaction between the older person and another media technology (self↔media-technology initiation). For example, for any reason their previous device could no longer be usable, which led to the decision to acquire a new device or computer program, mostly to be able to continue already-established media practices. In some situations, it was unclear for the participants who did the acting – they or the machine. They expressed uncertainty about whether they had broken the device or whether it stopped working on its own, or whether it was their lack of competence or something wrong with the device that caused the malfunction. Their interpretation of the machine as inoperative, based on the machine's performance, sometimes led to the purchase of a new device. In other situations, participants located the agency more clearly in themselves, such as when they had dropped their phone on the ground, or in the machine, when it stopped working and displayed a message such as: "Your computer has performed an illegal operation and will be shut down" (woman, 76).

Another example of self↔media-technology initiation was when appropriation of a new device, app, or program was connected to the purchase of another media technology; for example, when an app (such as Instagram) was pre-installed on a smartphone, or a device (such as Google Home) came as part of another purchase (such as a smartphone). Hence, the person did not actively initiate appropriation, but when they

encountered this new media technology and interpreted it as relevant to explore, their new use was established. This transaction can also be said to involve another human relation, namely one with the marketers who designed this marketing strategy aimed at facilitating appropriation.

Appropriation of a new device or app could also be initiated through the older adults' transactions with the surrounding society (self↔surrounding-society initiation). Changes in how payment could be made for different services, for example, prompted participants to consider the benefits of appropriating new media. This could be experienced as an opportunity to better function in society, or more generally a need to "keep up with the times" (woman, 73 years). However, there was sometimes a sense of coercion, and a need to appropriate new media to evade constraints on their capacity to act:

> We were supposed to park next to the church, but there were no parking spaces anywhere, so you had to use Parkster. So, all you could do was go in and search through the apps to find Parkster […] Not exactly something you were praying for [laughter]. (man, 73 years)

From a relational perspective, these transactions with the surrounding society can be seen as involving relations with distant others, such as the municipality workers and corporate agents who had contributed to these changes. Hence, in this way, distant actors constrained the actions of others to make them to act in new (and for them, desired) ways.

Appropriation could also start as a transaction with the surrounding media society. For instance, someone could learn about an app or device from reading a newspaper article or through advertisements. These media representations, combined with their own interests and their specific circumstances (such as going on a trip), led to appropriation as they saw the potential to act in new ways. It is possible to distinguish in these cases other (distant and unknown) agents as parts of the transactions, such as journalists and marketers. In some cases, known others also played an indirect role, such as one participant who downloaded Candy Crush after reading about it in a newspaper as well as knowing that her daughter and grandchildren played it (thus including an element of self↔others initiation; see below).

Appropriation could also start based on transactions between the older adults and known others in their everyday lives, mostly family members and friends (self↔others initiation). In these cases, the others served as inspiration and a source of motivation but did not actively prompt appropriation; hence, family members and friends did not act in the role of warm experts (Bakardjieva, 2005). For instance, participants observed the use of devices and apps among family members and friends and decided to appropriate on the basis of this combined with their own interests and needs (entertainment or more practical needs). Other people's media practices also enabled them to imagine themselves as engaged in new media uses: "The neighbour had bought one like that, so I thought I might as well have one too" (man, 73).

Known others could also play an indirect role, for instance, when the older person acquired a new device or app with them in mind. Participants described how they wanted to connect with friends and family using digital media and drew on their knowledge of them – based on their previous actions – to select the relevant media that would engage them all. One example is a woman (73 years) who downloaded a game app which she

liked, and thought would also interest her grandchildren, and subsequently they played this game during their holiday together.

As seen here, appropriation was initiated in different ways. After the initiation phase, in this type of appropriation the older adults managed purchase, installation, and initial learning on their own without the involvement of known others such as family and friends, and the process was described as unproblematic. Self-initiated and self-performed appropriation was mostly about acquiring new apps and computer programs, but also devices such as laptops and smartphones. When apps were pre-installed, there was only the learning phase left, and this unfolded as a transaction between the person and the media where different features were explored. One participant said concerning Instagram: "So, I went in and opened it […] then worked through it by trial and error to learn what I know" (man, 75).

In cases where apps needed installation, this process was described as straightforward. One woman (82 years) spoke about installing a museum app after reading about it on a website: "I managed to install that app myself when I was going to go on a trip, so it was really good. I installed it, so I can do some things on my own". Devices such as tablets and smartphones were also acquired in a seemingly uncomplicated way, including both new and continuous practices. After observing the use of iPads among family members, a man (70 years) bought one for himself: "I just went to Net-on-Net and bought it, easy peasy. There was nothing strange about it, that much I understood".

Self-initiated and supported appropriation

In self-initiated and supported appropriation, the initiation phase was very similar to that in self-initiated and self-performed appropriation. Hence, initiation started – as described above – in different forms of transactions: self↔media-technology; self↔surrounding-society; and self↔others.

However, in this type of appropriation, other known agents in the older adults' everyday lives were involved in all or some of the processes of purchase, installation, and initial learning. These other persons were involved based on the specific needs of the older adults, and according to the participants' narratives, it was them who in most cases activated their family members and friends (or salespersons or bank officials) for different kinds of support. In these cases, the older adults managed the appropriation process by acting as directors who knew which persons were relevant to engage and when. Based on their knowledge of their own and others' competences, they tried to orchestrate a successful appropriation process. Hence, the older adults took on a clear agentic role vis-à-vis the known others also in this type of appropriation.

In the purchase phase, the older adults commonly sought the advice of family members regarding which object to buy (price, brand, standard, etc.) based on their needs. The family members, acting in the role of warm experts, provided advice before purchase, and sometimes they bought the device for the older adults or they went together to the store. In the store, family members acted as mediators between the older adult and the salesperson, providing a sense of security and reassurance that they were not being duped. One woman (81 years) said:

> Woman: Well, he [her grandson] always comes with me when I'm going to buy something […] like when I was going to buy the tablet or the phone. And he lets me

> know if he thinks it's a good buy, and if not, we do something else. After all, you can never trust a salesman a hundred per cent.
>
> Interviewer: How does that work? Do you ask him to come along, or what's the situation like?
>
> Woman: Oh yes, I ask him. […] And then he comes with me. […] Yes, I trust him. I think he knows what he's talking about. Because then he says, "Yes, but it's this or that much there … No, this is a good … It's good". And then it's a good price and so on.

As seen in the quotation above, the woman described how she asked her grandson to join her based on her understanding of him as knowledgeable and trustworthy.

The phases of installation and initial learning mostly involved family members, but they could also involve a salesperson or a bank official. The participants described how they sought out this support where it was available and from persons they knew had the specific knowledge required. One woman (79 years) selected between her daughter and her son. When she needed to install an app for money transfer, she asked her daughter, as it was about the smartphone:

> Woman: I said, "Honey, I'd like to have Swish, can you install it for me?" And she did. Then she entered a BankID and I got a number there. I was able to choose myself. So, I did that and it all worked out. […] If anything comes up, I say "Hold on, let me ask Anna" [her daughter]. All the time.
>
> Interviewer: What did she do when she showed you how to use Swish? Do you remember what she did?
>
> Woman: Well, I said, "Let's see what happens if I send money to you". I said "I'll send you one krona", and I swished a krona over to her. So I was able to do that and she accepted. And then I knew how to do it, after trying once, maybe.

In this quotation, the woman describes how she directed the installation and initial learning phase and selected what parts she wanted to learn. She chose her daughter, who usually supported her in issues concerning the smartphone. In contrast to this, other participants sought help from family members who had phones of the same brand, to mobilise the relevant knowledge and support.

Other-initiated and self-performed appropriation

In other-initiated and self-performed appropriation, the acquisition of a new media technology was initiated through transactions with known others who played an active role in prompting appropriation. These known others were primarily family and friends, but in a few cases, professionals such as bank officials and librarians. This type of appropriation mainly concerned the installation of new apps.

The acquisition of new apps was mainly initiated through mediated communication from family members, for example, by sending a message through an app that the older adults needed to install to read the message (other↔self initiation through

mediated communication). Sending these messages was based on the needs of family members to communicate, combined with relevance of the information for the older adults. One example is a man (70 years) who installed Reddit after receiving a joke from his stepson:

> He often sends jokes to me because I love jokes, or love to laugh and joke around. So, he sent something to me that I couldn't open, so I had to get Reddit and that's why I have it [laughter].

As can be seen here, there was also a sense of coercion, making installation of the app feel like a "must". Sometimes, this was perceived as coercion on behalf of the machine: "If I get a message in Messenger, the computer tells me that I have to install the Messenger app" (man, 76 years).

Appropriation could also be initiated following a suggestion or encouragement in face-to-face communication (other↔self initiation through face-to-face communication). Others pointed to the practical relevance or the possibilities for entertainment with acquiring, for instance, a new app. These suggestions were based primarily on what they perceived as the older people's interests and needs, but in some cases, their own needs, such as wanting a grandfather to have an app for transferring money. However, to result in appropriation, the older adults needed to see a fit in their own lives; this could come either immediately or at a later point in time. In some cases, when evaluating the relevance of a new technology, the older adults also drew on experiences from other family members, for instance, having observed the use of an app or device (self↔others initiation). Hence, different chains of transactions with known others were interlinked in their decision.

In this type of appropriation, installation and initial learning unfolded as a transaction between the person and the medium, and the process was presented as uncomplicated. One woman (81 years) said:

> My bank manager told me, "You can install that [the 112 app]. It's actually a good thing to have". […] And it wasn't hard to install it. […] So, sure, as long as you're open to most things, it works out.

Other-initiated and supported appropriation

In this type of appropriation, the initiation phase shares some similarities with other-initiated and self-performed appropriation discussed above. For instance, acquisition of digital devices and apps could be initiated through transactions with known others in face-to-face communication (other↔self initiation through face-to-face communication). In addition to this, appropriation was initiated when family members gave media devices to the older adults (other↔self initiation through giving media devices), which sometimes was related to family members transactions with their own media technologies (other↔media-technology initiation).

When face-to-face communication was involved in other-initated and supported appropriation, it came as a more direct instruction from family members, primarily from children, to acquire a new app (such as BankID) or a smartphone, which they considered practical in the lives of their parents. In these cases, appropriation was experienced

as coercion, as the others did not leave space for the older adults' own evaluation and decision-making. One woman (77 years) spoke about how she acquired her first smartphone: "Well, they forced me. […] 'You have to have a smartphone, Mom'". After this initial coercion, the woman became an engaged smartphone user, and she felt that her son understood her better than she did herself.

The appropriation of a new device could also be initiated by family members, primarily children and grandchildren, when giving an older adult a media device (other↔self initiation through giving media devices). Mostly they gave away their old devices when they were about to buy a new one and saw a fit in the life of the older person. Hence, one could also say that other↔media-technology initiation was involved here, as this initiation was connected to the others' previous media use. In judging the fit, the others drew on knowledge of the older adults' previous actions. One example is a woman (77 years) whose children and daughter-in-law gave her an old computer as a Christmas present because they knew she had attended a computer course.

A sense of coercion could also sometimes be seen in this form of initiation. One example is a man (78 years) who was encouraged to use the computer in his daughter's house, and when she saw that he could play card games, she found arguments to give him the computer, something he experienced as coercion: "I didn't want a computer in the first place. The kids kept nagging me [laughter]. So I was forced into it". In both cases presented here, the family members drew on knowledge of previous actions, thus acting on the older adults' actions and constructing chains of transactions to push appropriation.

As stated previously, in self-initiated and supported appropriation, the older adults were those who mostly orchestrated purchase, installation, and initial learning. In contrast to this, in this type of other-initated and supported appropriation, others took a more active role, sometimes to the extent that the older people experienced a sense of coercion. However, there was variation in what and how much support they received. It was mainly family members who provided this support, but other agents could also be involved.

When others instructed the older adults to appropriate digital media in face-to-face communication, the family members also commonly took the initiative to purchase the new device, rather than the older person seeking out advice in the consumption process. One woman (77 years) explained how she felt coerced by her son when he drove her to buy a smartphone:

> Woman: Yes, but they forced me. He was going to drive me. "You have to have a smartphone, Mom".
>
> Interviewer: What did you think?
>
> Woman: I thought it was stupid, but I was willing to try. It was stupid. An oldie can't learn anything. […] But he was smarter than me [laughter]. It was good.

The others were also more active in managing the phase of installation and initial learning, but some of the phases could also be directed by the older adults. In some cases, family members not only initiated appropriation and managed the process, but also engaged other relevant actors. One woman (82 years) said that her daughter took her to the bank and made her get a BankID, because she thought she should have one:

> So, my daughter came to my house and said "Now, this is just the way it is, you can do it, now you're going to have a BankID and you're going to learn, and you won't need that service account any more, that's just the way it is now" [speaking as if she was giving an order]. "Okay", I said [speaking as if it seemed unreasonable]. "Yes, I've made an appointment at the bank", she said. "And we're going now" [laughter]. "Okay then" [speaking as if she has no choice].

In the quotation above, the woman expressed how appropriation was forced on her. Later, she also described how there were subsequent steps of learning and problem-solving involving both the bank and her daughter. In other cases, family members took a more motivational role, encouraging them to explore and learn by themselves. Sometimes, family members were only engaged in initiation, and the older adults received support from professionals (primarily bank officials).

In cases where a family member gave an older adult their old device (or bought one for a surprise), they were not involved in the purchase phase but were directly introduced to the medium. Usually it was the family members who performed the installation and supported the initial learning, but in a few cases the older adults joined a course. A man (82 years) described how he observed his granddaughter installing her old computer in his house:

> Interviewer: Okay, so were you surprised when she showed up with it?
>
> Man: Yes, I was. "I'm going to hook this up, Grandpa". "I see", I thought… and then she connected it [laughter].

In another example, a man (94 years) was active in seeking additional learning experiences from his grandson after receiving his first smartphone from his 75-year-old girlfriend, and the grandson wrote step-by-step notes on how to send messages and take photos. When receiving a device from family members, active encouragement was also used as a tool for motivating learning. The family members picked up on small successful actions the older adults performed with their devices, and used these actions to advocate for new actions, thus constructing chains of transactions to fuel appropriation.

The typology related to interview participants' age, gender, and online repertoires

As previously stated, the typology presented in this article is based on the participants' stories of appropriation processes. Since one interview participant could have several stories, they could be represented in more than one type of appropriation process. However, the analysis shows some patterns related to the participants' age, gender, and online repertoires that are relevant to discuss here. The clearest patterns relate to two types of appropriation: self-initiated and self-performed, and other-initiated and self-performed. These two types mostly comprised younger men in their 70s who had a broader online repertoire and a range of (often newer) devices.

In contrast, a broader mix of participants – including men and women in their 70s, 80s, and 90s, some with broad online repertoires and several devices and some with a less broad repertoire and fewer devices – was represented in the two other types of

appropriation: self-initiated and supported, and other-initiated and supported. These two types were also most prevalent in the data. Notably, the younger male participants who were represented in the first two types mentioned above were also represented here. For instance, they could handle the appropriation of a new laptop but needed support from known others when appropriating a new smartphone.

In self-initiated and self-performed and other-initiated and self-performed appropriation, people are motivated by relations with different actors but perform the practical tasks of purchase, installation, and learning without transactions with known others. This requires certain experience with and knowledge of digital devices and apps. As stated in the introduction, studies have shown how demographic factors such as younger age facilitate the appropriation of digital devices and applications (Barrantes Cáceres & Cozzubo Chaparro, 2019; Bergström, 2017; Fang et al., 2019; Hargittai & Dobransky, 2017; Lissitsa & Chachashvili-Bolotin, 2015; Olsson et al., 2019; Tirado-Morueta et al., 2021). This could explain why the younger participants in their 70s with a broader online repertoire and a range of (often newer) devices dominated this group. However, it is less clear why men in particular dominated these types. Previous studies do not show any clear gender differences when it comes to digital media access and use (Fang et al., 2019). Moreover, previous studies on access and use have not looked in detail into actual appropriation processes, and further studies are needed to understand whether men actually tend to handle appropriation processes more often without the support of known others.

In self-initiated and supported and other-initiated and supported appropriation, people are motivated by relations with different actors but receive support from known others in the purchase, installation, and initial learning phases. The recruitment strategy in the present study – which focused on how older adults learn about digital devices and apps together with younger generations, primarily children and grandchildren – can explain why these types were most prevalent in the data. The fact that these two types were represented among a broader age range, including the 80- and 90-year-olds, can also be explained due to the fact that older age is related to more challenges when it comes to media appropriation (Barrantes Cáceres & Cozzubo Chaparro, 2019; Bergström, 2017; Fang et al., 2019; Hargittai & Dobransky, 2017; Lissitsa & Chachashvili-Bolotin, 2015; Olsson et al., 2019; Tirado-Morueta et al., 2021).

Discussion

In this article, I have sought to further our understanding of the complexity of digital media appropriation among older adults by studying the manifold of relations involved in the different phases of digital media appropriation, and based on this, mapping out the different types of appropriation processes. Studying media appropriation among older adults is highly relevant as access and digital media use become more challenging with older age (Barrantes Cáceres & Cozzubo Chaparro, 2019; Bergström, 2017; Fang et al., 2019; Hargittai & Dobransky, 2017; Lissitsa & Chachashvili-Bolotin, 2015; Olsson et al., 2019; Tirado-Morueta et al., 2021). However, the theoretical framework presented in this study – where the notion of transaction (Dépelteau, 2008; Emirbayer, 1997) is connected to digital media appropriation – can also be used in future research studying other groups of people to further the understanding of media appropriation processes.

This article has identified four types of media appropriation processes, based on older adults' transactions with other agents in everyday life:

- self-initiated and self-performed
- self-initiated and supported
- other-initiated and self-performed
- other-initiated and supported

On an overarching level, these results show the diversity of ways in which digital media enter the lives of older adults. There is a diversity of relations, practices, and circumstances in everyday life that shapes and co-produces media appropriation. There is also a diversity of different agentic roles played by older adults and support agents in these four types. The results show how older adults are always active in media appropriation to some extent as transactions – interdependent actions – are constantly involved in shaping action.

However, we can see how the locus of agency shifts between the different processes. In some appropriation processes, the older adults are those who actively fuel the process while support agents play a less active role or no role at all. In contrast to this, in some processes, social support agents are those who more actively fuel the process to the extent that older adults experience a sense of coercion. This article hence furthers our understanding of older adults' agency by highlighting the nuances in their roles vis-à-vis social support agents. The broad relational perspective applied in this article has decentred the role of social support agents, something which helps us better distinguish the role they play. Hence, the agentic role played by older adults in digital media appropriation – also in cases when they receive support by known others – is an important finding in this study. It seems as if receiving support is associated with and necessitates a form of agency. Previous studies have also highlighted the agentic role of older adults (see Gallistl et al., 2021; Quan-Haase et al., 2016), and this study contributes to this research by showing how older adults exert agency in various ways in different types of media appropriation processes.

The sense of coercion present in digital media appropriation is also especially relevant to highlight here. Previous studies have also shown how both older and younger people sometimes experience pressure to acquire media technology from home, work, or study (Bakardjieva, 2005; Mascheroni et al., 2011; Olsson, 2006; Quan-Haase et al., 2016; Stewart, 2007; Sørensen, 2006). This article furthers our understanding of this phenomenon by showing how older adults experience pressure to acquire digital devices and apps from distant others, known others, and non-human agents. In the case of known others, it was primarily children who were engaged in pushing their parents towards using new media technology. The participants in this study were usually reluctant to start using media introduced by their children, but after some time, these technologies became integral parts of their everyday lives, providing opportunities for social interaction, information, and entertainment. Domestication research has shown how social conflict, discipline, and power are present in domestication processes (Sørensen, 2006). However, what this actually means in the lives of media users – whether coercion in media appropriation can be considered beneficial or not – needs careful analysis. In this study, coercion was connected to the appropriation of new media practices that were

later seen as beneficial; thus, it can be seen as a facilitating factor for digital inclusion.

The findings of this study show that it was primarily the younger (70s) male participants who were represented in the two types self-performed appropriation, where participants had handled the appropriation process without the support of known others. This resonates with previous research showing that younger age facilitates media appropriation (Barrantes Cáceres & Cozzubo Chaparro, 2019; Bergström, 2017; Fang et al., 2019; Hargittai & Dobransky, 2017; Lissitsa & Chachashvili-Bolotin, 2015; Olsson et al., 2019; Tirado-Morueta et al., 2021). However, it is also relevant to highlight that these particular participants also narrated stories about supported forms of appropriation. For instance, they could be knowledgeable and manage computers on their own but needed support when appropriating a new smartphone, as knowledge about one type of device may not be directly transferable to another. As such, most of the participants needed support in media appropriation to some extent.

There are also some limitations with this study. The interviews included older adults who had experiences from intergenerational learning about digital devices and apps, and hence, all participants had experiences of social support from younger family members. It may be the case that older adults in general have less experiences of social support related to digital media appropriation. Future research should study the diversity of media appropriation processes using other selection criteria, such as including older adults who lack experiences of social support related to digital media.

I have focused on older adults living in Sweden, which may have consequences for the results. Older Swedes have greater access to information and communications technologies and the Internet compared with many other countries, both in Europe and in the rest of the world (Anderberg et al., 2020). The participants in this study did not express concerns about financial resources or lack of Internet access. Appropriation of digital media hence seemed to be a matter of choice and related to different social and practical circumstances. Future research could study how different types of media appropriation processes unfold in other cultural contexts and among older adults with less economic resources.

Studying digital media appropriation is important, as this research, among other things can provide insights into the factors that prevent or facilitate inclusion in a digitalised society (Ragnedda & Mutsvairo, 2018). These insights can be useful for developing policy as well as social support structures. One relevant finding from this point of view is that even the more resourceful and privileged older adults sometimes needed social support when appropriating media devices new to them. Digital media use is highly complex in today's society, involving many different devices and applications that are also constantly developing. Therefore, support structures must be available to all groups of older adults, and this support should be offered continuously due to the fast technological development.

The results of this study are also relevant for various actors working with older adults and questions related to digital media. Most importantly, the results can be used for advancing our understanding of what it means to appropriate digital media in today's society and the complex webs of relations involved. Different actors – such as salepersons, bank officials, librarians, or family members – should be aware of the role they can play. First, they should acknowledge the efforts performed by older adults in adapting to a digitalising society and not position older adults as passive or solely

as receivers of help. As also shown by Gallistl and colleagues (2021), even "non-use" of digital media is an active process that older adults perform in their everyday lives.

Second, different actors should understand the potential importance of their engagement, from merely using digital devices and apps in the presence of older adults to giving recommendations and providing the support needed to start using digital media. The results of this study also show that in some cases, older adults need strong motivation from family members to appropriate new media. All agents should take their responsibility and contribute to older adults' inclusion in the digitalising society. A relational perspective is productive in this enterprise, as it helps us to understand the meaning of actors' practices in complex chains of transactions.

Future research should seek to further distinguish the nuances of practices in media appropriation, to problematise the position of older adults as receivers, and support agents as those who do the acting. Receiving support is not the same as being inactive; on the contrary, getting support may require a substantial amount of effort. Hence, future studies could examine the efforts involved in managing social support networks, thus focusing on the practices involved in fuelling and directing social support agents' work. The sense of coercion involved in media appropriation is also relevant to study further. For instance, future research could study under what circumstances these kinds of pressures result in appropriation, and under what circumstances older adults resist those practices. Here, the relational and situational dynamics between older adults and their family members can be studied to better understand what motivates older adults to appropriate digital devices and apps in situations where they are initially reluctant. This could provide further insights into the factors hindering or facilitating older adults' inclusion in the digitalising society.

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