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Older People and the Use of ICTs to Communicate with Children

and Grandchildren

Loredana Ivan*
National University of Political Studies and Public Administration (SNSPA)
Communication Department
Bucharest, Romania,
Expoziției, 30A, 012104 Bucharest
+40723276080
loredana.ivan@comunicare.ro

Mireia Fernández-Ardèvol
Open University of Catalonia / Universitat Oberta de Catalunya
Interdisciplinary Internet Institute (IN3)
Barcelona (Catalonia), Spain
Parc Mediterrani de la Tecnologia (edifici B3)
Av. Carl Friedrich Gauss, 5
08860 Castelldefels
+34 93 450 5329
mfernandezar@uoc.edu

Corresponding author

Loredana Ivan
Associate Professor
National University of Political Studies and Public Administration, Bucharest, Romania
Communication Department
Expoziției, 30A, 012104 Bucharest
+40723276080 / loredana.ivan@comunicare.ro

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Abstract

In this research we explore older people's incentives to use Internet services to communicate with their children and grandchildren; and the factors that make older individuals stop using (or even reject) Internet mediated communications. We apply the uses and gratifications theory, and the gratification niche of medium concept (Dimmick, Kline, & Stafford, 2000) to understand the way people return to less sophisticated tools of communication once the marginal utility is lost. Our analysis is based on empirical evidence the two authors gathered in a set of case studies. We conducted semi-structured interviews with people aged 60 and above in Barcelona, Romania (Bucharest and rural areas), Toronto, Los Angeles, Montevideo, and Lima. The results show that communicating with children and grandchildren, when families get separated, is an important motivator that "pushes" the elderly to learn more about the use of ICTs. We emphasize the fact that once motivation is lost (i.e. when family members are back home) the interest in using a particular technology to communicate is diminished, therefore older people might stop using it. We argue for a more dynamic model of technology appropriation for this age group that includes successive stages: ignoring, appropriation, rejection and re-appropriation.

Key words: Older people use of ICT; Motivation in using ICT; Mediated communication for older people; Grandparents-grandchildren communication; Uses and gratifications theory

Introduction

Recent demographic predictions estimate that about one in four people of the world population will be over 65 in the next 20 years (UN, 2015). Growing old is often accompanied by a decrease in social interactions and family networks. In the context of the current intensive global migration for work and study, elders are often left behind (Lunt, 2009). Also, as people age, they experience less residential mobility because (among other factors) they feel more attached to their community and have a sense of belonging to a certain place (Gilleard, Hyde, & Higgs, 2007). This sense of attachment is not reduced to the "physical dimension" of the place; it includes the "social insideness" (Rowles, 1983) – social relations with significant others developed throughout an individuals' life stages.

Lack of contact with family members has been shown to have a negative impact on health and well-being (Santanta et al., 2005). At the same time, studies show that older adults value the activities that help them keep in touch with family members, and are willing to invest time and dedication to maintain links with persons important to them and who live at a distance, particularly children and grandchildren (e.g. Lindley, Harper, & Sellen, 2009). Internet-mediated communication technologies can offer suitable mechanisms for family members to share daily experiences whenever they get separated. These technologies enable family members to be co-present and to support each other emotionally across distance (Baldassar, 2016; Harwood, 2000; Tamme & Siibak, 2012).

However, data show the existence of gaps among different age groups, with older people making less use of such innovative services. The highest age gap is recorded for photo and video sending, and Internet browsing in the case of mobile devices (Fernández-Ardèvol, 2011).

While older adults might acknowledge the importance of new technologies, their use is rather non-sophisticated (less applications and less content creation). Studies regarding Internet use have distinguished between more passive and more active types of users and indicate that older people tend to be associated with the latter category. For example, Slot and Frissen (2008) distinguished six roles that social actors might play when using the Internet: "consuming", "communicating", "creating/customizing", "facilitating", "contributing", and "sharing". Slot and Frissen found that older people are more associated with the first two roles: consumers of the web (e.g. surfing, reading e-mail, looking for content), and communicators (e.g. sending someone an e-mail, sending a message to a service). This finding is particularly relevant to our study because an important component that is missing when families get separated is the sharing of daily experiences. Home is not just a physical setting but it enables people to preserve their social identity and their life meanings, creating an extension of the self (Lecovich, 2014). Thus, being able to communicate our daily-life experiences as well as our histories of meaning to relevant others is important in preserving the integrity of the self.

When somebody is using less sophisticated tools to communicate with their long distance family members (e.g. through e-mails or phone calls) the content of communication is limited to basic information: communicators' well-being, health, and important news (Wilding, 2006). Over time, these modes of communication (phone calls,

emails) are reserved for special occasions such as birthdays and emergency situations and they fail to meet older people's need to be in constant communication with family members (Fernández-Ardèvol & Ivan, 2013). As some studies have already emphasized, older people need to share small things from their everyday lives with their children and grandchildren (see for example Santana et al. 2005). These interactions are both emotionally driven and enjoyable, and they constitute incentives to go online and use Internet services to communicate.

In this research paper we explore older people's incentives to go online and to use Internet services to communicate with children and grandchildren. We start from the fact that when important family members move long distances away, using web services to communicate becomes comparatively more attractive. The motivation to maintain personal networks helps to highlight the importance of online channels of communication. Within this context older people would become (more) motivated to learn to use ICTs in order to share daily experiences. By applying the uses and gratification theory (Blumler & Katz, 1974), which states that media users will seek out a media source to satisfy their needs, we use the concept of "gratification niche of a medium" (Dimmick, Kline, & Stafford, 2000) to argue that a person starts to use a communication medium once they believe that it allows higher satisfaction in relation to particular communication needs. Presumably, older people become motivated to use Internet services to compensate for the loss of traditional forms of contact with their children and grandchildren. Research studies (González, Jomhari, & Kurniawan, 2012; Quadrello et al. 2005) confirm that such patterns can be found in the use of different types of technologies (i.e. online photo albums, photo-based narratives). The depiction of old people as "technophobic" is not supported by this research, which shows

that regardless of their social-economic background, older individuals are willing to learn advanced Internet technology to communicate with their children and grandchildren who are living long distances away (see e.g. González, Jomhari, & Kurniawan, 2012). However, there is, to the best of our knowledge, little research on whether older people continue to use those ICTs to communicate with others from their social network, once their children and grandchildren return home. Presumably, when a particular application does not offer a gratification opportunity any more (Dimmick, Chen, & Li, 2004), the user might return to the "competitive" agency (in this case, the landline or mobile phone) and stop using the sophisticated tool when it is no longer needed.

Older people and the perceived instrumental value of new technologies

The research on the daily interaction patterns of people using ICTs is mainly focused on the young, as they seem to be more proactive and always ahead in adopting the latest technologies, whereas older adults are described as struggling to catch up with yesterday's innovation, running the risk of becoming "digital immigrants" in their own country (Prensky, 2001). Some scholars (e.g. Lindley, Harper, & Sellen, 2009; Loos, 2012) argue for a more nuanced approach, and advocate the concept of "age heterogeneity", while others (see Bennett, Maton, & Kervin, 2008) have strongly criticized such concepts ("digital immigrants" as opposed to "digital natives") due to the lack of evidence and the potential for unsubstantiated prejudiced views. We consider it is preferable to emphasize a "digital spectrum" (Loos, Haddon, & Mante-Meijer, 2012) rather than a digital gap, with different life stages, socialization processes, and contextual factors playing a more important role than age alone, particularly in relation to the rapid advances of new media.

This said, scholars (Charness & Boot, 2009; Loos, 2011; Coughlin, 2015) agree that older adults might perceive the relevance of the new technologies differently relative to younger adults, and they attribute different meanings and expectations to the digital devices. Thus, there is evidence that older people's adoption of new technologies and their integration into everyday life routines seem to be built-up from a utilitarian approach rather than a hedonistic one (Conci, Pianesi, & Zancanaro, 2009). In any case, their motivations are different from those of other generations. Adolescents, for example, tend to integrate new technologies in their life to avoid exclusion and to strengthen the social ties within their network, whereas the elderly are more motivated by the instrumental value of the new technologies, as for example communicating with their children and grandchildren, and also for safety and security reasons (i.e. looking for health information - see for example Loos, Haddon, & Mante-Meijer, 2012). Furthermore, the perceived importance of different technology types is not only different between generations (see Sackmann, & Winkler, 2013), but also between the stages of adoption, which comprise: appropriation, initiation, and continuation of use (Lee & Coughlin, 2015). Following this line of argument, older individuals might start using Internet services if they perceive an instrumental value in being helped to communicate emotional content and daily routines with their loved ones, whereas the absence of perceived utility of a particular device might cause them to reject the mediated communication. There could also be situations when the elderly stop using a device – particularly when the gratification niche or the perceived usefulness diminishes, for instance when loved ones move back home.

Grandparents using web-based services to communicate with children and grandchildren

Social contact has been shown to be one of the most important factors of mental well-being and life satisfaction for older people (see for example Grundy et al., 2007). Amongst the oldest-old and older people with family members (children and grandchildren) living long distances away, social loneliness is difficult to surpass. Authors like Lloyd (2008) have pointed out the benefits of intergenerational contact for older people, as for example maintaining relationships with children and grandchildren.

Studies regarding grandparents' use of web-based services to communicate with their children and grandchildren show some gender differences that seem to be a reflection of the common communication roles within families. Grandmothers are more engaged in communicating actions (i.e. writing emails) than grandfathers, although they tend to be less technologically skilled (Quadrello et al., 2005). Furthermore, there are also content differences, with grandparents focusing on facts whereas grandmothers refer more to interpersonal relations, empathy, family bonding and support (Burke, Adamic, & Marciniak, 2013). As recipients of web-based content, females (daughters and granddaughters) make more use of emotional support and disclosure than males (sons and grandsons), who are more encouraged to be independent. A common topic is food and recipes, and important incentives for grandparents to go online are photos and news from children and grandchildren, especially grandbabies (Tee, Brush, & Inkpen 2009). Communications with grandchildren change as they grow up, and grandparents are engaged in giving advice, complimenting, keeping in touch, developing plans about getting together and sharing information related to health and healing. Grandparents' choice of a

particular channel to communicate with their grandchildren is generally mediated by distance and by the type of gratification (Quadrello et al., 2005). When grandchildren live relatively close, using mobile phones or landlines (i.e. hearing grandchildren voices) is most appreciated. In the case of grandchildren who live at great distances, email, Skype, and Facebook meet four aspects that elderly value the most for a particular medium of communication: 1) they allow personalization, 2) they offer focus and time of reflection; 3) they make it easy to make contact; and 4) they are designed to support reciprocity (see Lindley, Harper, & Sellen, 2009). Depending of the quality of the relationship with their children and grandchildren, grandparents are willing to engage in learning how to use different ICTs, especially when their loved ones are abroad (Santana et al., 2005).

There is evidence (González, Jomhari, & Kurniawan, 2012) that grandparents are often pushed to go online by their children and grandchildren who are able to set up the devices for them (e.g. a computer with an Internet connection at home), or pay for the costs of communication. In a previous study (Fernández-Ardèvol, & Ivan, 2013) we addressed questions regarding ownership of the devices and intergenerational-power. We noticed that such situations can make older people more cautious with particular uses. For example, they are worried "not to break anything", and thus the communication flow ends up being led by children and grandchildren, who might even have the option of activating their grandparents' computer applications from a distance. Findings regarding older people from rural areas, for example, (Fernández-Ardèvol, & Ivan, 2013; González, Jomhari, & Kurniawan, 2012) also suggest that they rely on other members from the community (usually younger individuals) to help them to use various devices. In general, variable levels of assistance were identified: from independent users, to dependent users − i.e.

situations in which older people communicated with distant family members through others (see Fernández-Ardèvol & Ivan, 2013). The findings regarding assisted users raise concerns about personal autonomy and independence in interpersonal communication in the case of older people (Abascal & Civit, 2001). Consequently, older people might find no incentive to continue using devices or applications once the children and grandchildren return home.

To sum up, we investigated older people' incentives to go online and use Internet services to communicate, the type of device or applications they use to communicate with children and grandchildren living at great distance from home, and how the sharing of daily experiences is managed when families get separated. Building on the uses gratification theory (Blumler & Katz, 1974), and "gratification niche of medium" (Dimmick, Kline, & Stafford, 2000) as a theoretical framework, we explore the gratifications that each agency provides to older people and the situations that make them stop using specific ICTs. Our hypothesis is that new ICTs offer gratification opportunities for older people to communicate with their family members; however, they can return to less sophisticated tools once such marginal utility is lost. The empirical data was gathered through conversations with 162 participants in a set of 6 case studies conducted in Barcelona, Bucharest and rural areas from Romania, Toronto, Los Angeles, Montevideo, and Lima with people aged 60 years and over.

Method

The data analyzed in this paper come from a set of case studies (see Yin, 2003), that share a similar methodological design: semi-structured interviews in various settings with

people aged 60 and above. The case studies were conducted to reveal the way older people use ICT in their daily life routine, with a focus on mobile communication. The purpose of each case study was not to target transnational families, although most participants recalled moments in which they had to handle situations of family members (usually children or grandchildren) moving long distances away or abroad for longer or for shorter periods of time.

We used a flexible, interactive research design to take into account the specific circumstances in which the research was carried out (Maxwell 2005, p.7). Case studies were conducted in six different locations between 2011 and 2014 in Europe, North America and South America. Two locations are European: Barcelona (Catalonia, Spain), and Romania, including Bucharest and other urban and rural parts of the country; two are North American: Los Angeles (California, USA), and Toronto (Ontario, Canada); while the last two are South American: Montevideo (Uruguay) and Lima (Peru). Previous analyses of these case studies are available, among others, in Fernández-Ardèvol & Arroyo (2012), Ivan (2012), and Fernández-Ardèvol (2012a, 2012b, 2013, & 2014). The selection of locations brought diversity to the analysis in terms of information and communication technologies (ICT), diffusion (for a comparison, see ITU, 2016), and socioeconomic development (the highest in North America and the lowest in South America).

We interviewed, in total, 162 individuals aged 60 years and over; no upper age limit was enforced and the oldest participant was 98 years old. Participants were approached by means of a snowball sampling method. While most case studies were conducted in metropolitan areas, the Romanian case study included both urban and rural areas (the city of Bucharest, two small towns with less than 20.000 inhabitants, and two rural localities).

The case study in Toronto focused on one retirement home, whereas in Barcelona a small number of the participants were living in residencies for older people. In Los Angeles, participants were mostly linked to a volunteers' center. Finally, while in Lima we accessed both low income and high income neighborhoods, in Montevideo we only accessed mid- and upper class participants. Table 1 shows the most relevant characteristics of the sample for each case study.

The main research tool was individual interviews; however, in Lima two focus group discussions were also conducted. While the original goal was to explore the ways older people use mobile telephony to communicate, other communication channels were also considered to understand each individual's media ecology (Tacchi, Slater, & Hearn, 2003) in order to arrive at an accurate analysis. Conversations, therefore, followed an open, flexible approach and focused on the communication channels used by the individual (mobile phone and Internet), and the common uses of these communication channels. The conversation considered the following topics: (1) communication and information technologies used in everyday interactions, with a focus on mobile communication and Internet mediated applications; (2) motivations, opinions, and personal experiences regarding the decision to adopt different ICTs; (3) communication channels used with family members, including with children and grandchildren; (4) perceived advantages and disadvantages of using different technologies, instances where participants stopped using specific applications. All interviews were voice-recorded and transcribed for further thematic text analysis. Ethics protocols were adapted to each country. Participants were informed of the goals of the research project and the anonymity of their contribution. During interactions, fieldwork researchers answered every question participants had.

As a result of the empirically grounded evidence, this paper focuses on long distance online communication involving older persons. In what follows we refer to participants by indicating their place of residence. We discuss evidence regarding individuals in each case study; we do not assume any generalization of results to the countries or cities where the interviews were conducted.

Results

Overview of the results for each case study

In Barcelona, SMS and voice calls on the mobile phone were combined with calls on the landline. Individuals who moved to a retirement home increased the use of – or started using– mobile telephony as it was found to be more convenient. In general, the Internet played a less important role among participants. In Romania, mobile telephony was also more popular than the Internet. Supporting networks in rural areas seem to be less ICT savvy, which might cause lower levels of autonomous use of digital technologies among these older people. In contrast, in Los Angeles, Internet was more popular than mobile telephony among the participants in the study, and there were Internet users who had never been interested in owning a mobile phone. In Toronto we learned that moving to a retirement home did not necessarily mean losing personal connections. Mediated communication remained important, and every participant had made their own decision about these channels. In Montevideo, all Internet users were also mobile phone users. Permanent connectivity was highly appreciated, and channels of communication changed depending on the conversational partner. Finally, in Lima Internet was more important in upper socio-economic levels, while mobile telephony was essential, as a substitute for the

landline, in lower income segments. Among low-income participants in Lima, we observed that when skills were limited and there was not enough support, interest and motivation were not sufficient to reach an autonomous level of appropriation.

Evidence for the gratification niche of a medium theory and the instrumental value of the new technologies

All case studies revealed that in order to incorporate a particular device and start using it, participants must perceive its instrumental value for everyday purposes (e.g. work tasks, communicating with distant family members) whereas the loss of perceived utility may cause rejection. Participants might stop using a particular application even after they had used it for years, when the initial incentive was lost: they retire, their families are reunited, or there is no longer a need for long distance communication. Indeed, using Skype or Messenger is connected with the need to communicate with children and grandchildren living long distances away, which seems to be the strongest incentive to start using these forms of communication.

To illustrate this idea, consider the case of a 95 year old woman in Toronto. She lived in a retirement home and had lost her interest in computers. When asked about her use of computers since she moved to the residency, three years before the interview, she explained that she had a computer for a while in her apartment at the residency but she quit using it:

> *I tried for years. I'm very bad at this sort of thing. I took some lessons. I kept trying. My son got me something that I tried to use in my apartment [in the residency]. I'm very bad at that sort of thing. And I use it enough to know how to send an email. That's about it (Woman, 95, secondary education, retirement home, Toronto).*

At the time we talked to her, this person was back to using the Internet and the computer. Her motivation returned when her granddaughter and her family moved to Dubai (Arab Emirates), and the telephone became too expensive as a means of keeping in touch. She was using the e-mail once or twice a week, in the library of the premises. She already participated in Skype conversations set up by her daughter:

Oh yes. It's been a wonderful thing because... Well, I picked it up again. I neglected it for a while. I don't want all these jokes and unnecessary things. I'm not patient enough for that. But look how it's come in handy, and it's been wonderful. One of my grandchildren and her family, her husband and three children, he got a position with the Emirates, in Dubai, in computers, and (...) Anyway, my part was at least I can email them and my granddaughter replies, so. And we did set up Skype, but...and I saw it once, but I saw it at my daughter's home. So that is fantastic.

This quotation summarizes the change in her attitude, from rejection ("not to bother") to re-appropriation. Her motivations for using the e-mail, for making the effort to use it, simply changed:

For a while (...) I did not bother because I said [to my children and grandchildren], "I just am not that interested. I'd rather pick up the telephone." However, since she [her grandchildren] has moved to Dubai, I'm doing it a little more.

Our findings suggest that participants can go from rejecting technology to accepting it, depending on the motivation to communicate (for example, when a family member moves to live a long distance away) , and they can again lose interest in the device, following by re-appropriation when the situation changes.

However, in the case studies conducted in developing countries (particularly in the Romanian rural areas), participants hardly use any Internet service. They lack the skills and are completely dependent on others to communicate with their families abroad. Because making a phone call to another country has obvious economic barriers, older people from the rural areas and also those from the 70+ age group have lower motivation to use ICTs because they lack skills in the use of such technologies, they feel helpless when their children are living long distances away and they are frustrated when communication *via* such means is interrupted due, for example, to technical problems.

> *Interviewee: First of all, I cannot use the Internet. But my son is talking by Internet with my daughter from Germany.*
>
> *Interviewer: And you, how do you talk with her?*
>
> *Interviewee: Through them: my son says to me…"I've talked with Flory, she said this and this". She calls me only on my birthday to congratulate*
>
> *(Man, 73, secondary education, Bucharest)*

In those cases, assistance in using the device becomes truly important, and we recorded different type of assistants from family members to people from the community. For the isolated individuals, those with a decreasing number of contacts, the lack of assistance in using the device is associated with frustration when the loved ones are living long distances away and the traditional ways to communicate do not help anymore. For those living in urban communities, in particular those who are middle-class or highly educated, there are always better opportunities of assistance once the motivation to go online appears. A typical case would be one we found in Lima (Peru): a 90 year old woman, with secondary education, belonging to upper-middle class family. She lives "on her own", which meant

in fact that she had one two full-time domestic worker at home. From what we were able to observe, she was an assisted user of computers. That is, she was able to perform basic tasks, but for solving simple technical problems she needed external help. Her personal interest in socializing online was important, as she was on Facebook. Thus, it might be the case that her close relatives promoted the use of this social network site, creating a kind of "gentle pressure" for her to try Facebook. Regarding Skype, "gentle pressure" could have been in operation as well, but it seems that the motivation related to having a close relative abroad is the main driving force in her case. She did not report any local conversations on Skype, as she has more convenient channels for this, such as the phone (landline or mobile), or face to face meetings. On the contrary, in the lowest income neighborhoods in Lima we found participants who responded to situations in a similar manner to those found in the Romanian rural areas. These participants had children and grandchildren abroad and faced two kinds of restrictions. The first was the skills and experience of use barrier, as they have never used a computer or never had the opportunity of using one. This makes people dependent on others for normally cheap long distance communications (the communication mode could be cheap, when using the Internet, for example Skype application, or more expensive, with the use of phone calls). The second restriction is the resource barrier, which does not allow for the possibility of being given a computer as a gift, and which makes these persons unable to start exploring the use of these devices themselves.

Our data support the "gratification niche" theory (Dimmick, Kline, & Stafford, 2000). That is, participants reported in particular that they start using a communication medium once they believe that it offers a gratification opportunity. A relevant case is that of an 86 year old woman from Los Angeles who had extensive experience using computers

and the Internet even though she had never used them at work. At the time of the interview, her daily routine included going online twice a day. Internet was an everyday tool for communication, both with close relatives living abroad and with those who lived in the same city. She also communicated through e-mail with friends living at long distances away from her. She had received some training years ago, something she appreciated because her son had already moved to Indonesia:

> *See, for the computer, my son living in Indonesia, there isn't... Now there's Skype. But when he first moved there seventeen years ago, there… there was no such thing as Skype and so there was no talking to him, there was no mail, so the only way I could communicate with him is through the Internet. And I was very fortunate that I learned at the (…) Volunteers [organization]. They had a program for us about twelve years ago and they wanted to see if seniors would do better with the ball or the mouse... and so they taught us. We had about three months of instruction using the computer. And so I was lucky enough to be in that class, and to learn the computer. And it was really funny, at that time nobody in the group had a computer. I was the only one (Woman, 86, secondary education, Los Angeles).*

Internet and e-mails were important to her, and she kept using those services that were convenient to her:

> *Interviewer: And then you managed to use it [Internet and the e-mail] and, and....*
>
> *Interviewee: And enjoy it, you know. Enjoy it. I know several people, you know, who just put up their hands. They don't want to bother, you know, learning it because they don't have the same incentive that I have. I would miss it terribly now because I use it a great deal. Yes.*

Interviewer: And how often do you Skype?

Interviewee: Uh, Skype, I don't use it at all. My daughter, my daughter has it and so, if it's something important, my son will call over there. But mostly I communicate with my son through email.

(…)

I'll email him at night and he'll get it the first thing when he's in the office in the morning, and answer me (…). So using Skype and having to try to figure out, you know, is he busy, is he at the office, you know, I… I never know, so […](Woman, 86,secondary education, Los Angeles).

The Internet, then, was vital to her, and she had a great motivation to go online almost every day to communicate with her son abroad. Nevertheless, she kept on using asynchronous communication, the e-mail, as this was a better way to communicate with her son, particularly due to local time differences, which created inconveniences for synchronous communication.

Web-based services to communicate with children and grandchildren

Our data support the idea that older people are motivated to learn how to use Internet based applications to communicate with their children and grandchildren. The data also reveal that, once this motivation is gone, older people do not necessarily continue to use that particular application. A 69 year old woman we interviewed in Montevideo (Uruguay) is an interesting example of the utility of Internet in specific moments of life. This person completed primary studies and she was still carrying on some economic activities (crafts) as pension benefits were not enough to support her. Her son moved abroad for one year with his family. During this period she used to go online in a nearby

cybercafé, as she had no computer at home. There she used to write long e-mails and also used Skype. The owner of the cybercafé would help her in case of any technical difficulty. However, she stopped going to the cybercafé when they returned back to the country. At the time of the interview, the telephone and face-to-face meetings were the ways she used to communicate with her children and grandchildren. She preferred these to online communication. As the original motivation for using the Internet disappeared, and as she did not move to other social activities online, she gave up using these tools.

Grandmothers and Internet mediated communication

Our interviews also revealed gender difference in the type of conversations older people have with their children and grandchildren when the latter are abroad. Thus, grandfathers tend to emphasize facts, whereas grandmothers prefer to talk about interpersonal relations, empathy, family bonding and support:

With family and friends it is great; especially when they are in the same network [Telephone Company] we talk like crazy. I have long talks with my friends, we support each other, and we give advice. For example, when I am at the market I call and say: "there is this and this product….if you want that product you can come. Do you want me to buy it for you?(Woman, 64, university degree, Bucharest).

I don't like private discussions on the mobile phone. I mean it is ok to congratulate or to send a SMS for a birthday, but no more than 1 minute. I don't like discussions that tend to turn into gossip (Man, 73, university degree, small town in Romania).

Women reported more often "having fun" when using Internet based applications to communicate with family and friends. An illustrative example is that of a woman, 69 years old, from Barcelona who used Voice over IP (VoIP) systems for long distance conversations. She used them mostly with her son; he moved to Germany twenty years before the interview to get married. He was already separated and had the children with him in given periods of time. In these occasions they were motivated to have video Skype calls. She also used VoIP with a friend who used to live in Palma de Majorca, and they explored applications mostly for fun.

> *When he [her son] had the kids with him, we sometimes did it. Very few times, you know? But well, just to see them: "Look, mum, how big they are". (...) I also used to use it before, when a friend of mine was living in Palma [de Majorca]. She now lives here [in Barcelona]. Then, we could talk through Skype or through videoconference [Messenger video call], but mostly for having fun (...) because we also used to have the phone with a flat rate. (Woman, 69, primary education, Barcelona.)*

Participants in Barcelona appreciate using Skype, and the possibility of having video signal in synchronous communication, they also acknowledge how important it is to have video communication if their children are abroad.

In the Romanian case study, grandmothers in charge of taking care of their grandchildren (from Bucharest) were also more motivated to learn to use new technologies to communicate and were also quite skilled in using several mobile applications (for example sending and receiving photos, downloading games, or using web-based applications). In the interviews they mentioned the "gentle pressure" from the family to

learn how to share the child's daily routine, and also their personal willingness to play an active role in grandchildren activities.

Furthermore, we found evidence that grandbabies could be an important incentive to make grandmothers go online and communicate. They reported using more photos and Internet browsing to communicate with other family members and learning to use different services to witness the daily experiences of their grandbabies.

Discussion

This article presents the results of six case studies, drawn from the experiences of 162 participants, conducted between 2011 and 2014. Participants were 60 years old and over and they were interviewed about the use of ICTs to communicate with others. Two case studies were conducted in Europe: Barcelona (Catalonia, Spain), and Romania (Bucharest and other urban and rural parts of the country); two in North America: Los Angeles (California, USA), and Toronto (Ontario, Canada); while the last two in South America: Montevideo (Uruguay) and Lima (Peru). In the current work we analyzed the way communicating with children and grandchildren can be an incentive for older people to go online and use Internet services. We applied the uses and gratification theory (Blumler & Katz, 1974) to explore the gratifications that each mode of communication provides to older people and the situations that make them stop using a specific communication medium.

Our findings support the "gratification niche of medium" theory (Dimmick, Kline, & Stafford, 2000), as participants tended to return to less sophisticated tools of communication once the marginal utility of a media tool was lost. Generally speaking, the

"gratification niche" describes the intrinsic characteristics of a particular medium of communication. In the current paper, we include contextual factors, which might indicate the personal relevance of a communication medium, as for example family dynamics

As a result, we suggest a model of technology appropriation that includes the motivation to share everyday experiences with family members as an important factor. Our findings reject the assumption that once an older person has learned to use a particular device or application, they would continue to use it regardless of the contextual factors that shape the interactions with others. Building on the research data that underline the fact that patterns and motivations for technology appropriation are different for older people (who pay more attention to ICT's instrumental value, see Loos, Haddon, & Mante-Meijer, 2012), we argue for a more dynamic model of technology appropriation for this age group. The model includes successive moments of relationship with the service that are not necessarily sequential: rejection-appropriation-ignoring-re-appropriation of the new technologies to communicate. Some of the contextual factors that shape this process, as we have seen in the six case studies, include: the need to communicate across long distance with family members (particularly when grandchildren or grandbabies are involved); the existence of alternative ways of communication that offered competitive gratifications, the possibility to have assistance in using the new technology.

Based on the data gathered through interviews, we argue that grandparents are motivated to learn to use more sophisticated tools to communicate in order to share daily life routines with children and grandchildren, when the latter are living long distances away. Although we did not specifically target transnational families, we came across older people's difficulties in managing distance, once their loved ones moved away, particularly

if they had moved abroad. Therefore, our results could be analyzed in connection with the current literature on transnational families (e.g. Baldassar & Merla 2014). While some research on the use of ICTs by transnational families has focused on the economic and social-cultural limitations (for example Wilding, 2006), or on long distance family relations and the care for the elderly (Baldassar, 2007), we focused on the way digital information and communication technologies create a substitute for the lack of presence of important family members in everyday life and motivate older people to start using or re-appropriating a particular device or application to allow what Baldassar (2008) describes as virtual co-presence.

Further research is required to analyze the interrelated process of technology adaption and rejection by older people, which should include an analysis of contextual factors and, in particular, the family context and the relative need for long distance mediated communication. We suggest in this context that it is not helpful to argue for a duality of adoption vs. rejection when discussing the use of digital technologies by the elderly, but rather a spectrum of appropriation-rejection-re-appropriation, which is shaped by contextual factors that may be defined by different life stages. We started from the idea that sharing everyday experiences with children and grandchildren is a constant need for grandparents and therefore long distance conversations with family members could be treated as a constantly important motivator, regardless of life changes.

Our findings support the idea that talking with children and grandchildren, and generally speaking with important family members, when families get separated, is an important motivator that "pushes" older people to learn more about the use of Internet mediated communications. Contrary to similar studies on technology appropriation by

older people, which discuss only factors that influence the adoption of a particular device or application (e.g. Braun, 2013; Peek, 2014 for a systematic literature review), we also focused on (i) what happens when the motivation is lost (i.e. family members are back home) and the interest in using a particular technology is thereby diminished, and (ii) how distant-family relationships shape this process of appropriation-rejection-re-appropriation.

In future studies we plan to further explore the process of rejection and re-appropriation with a focus on family communication affected by reverse migration. While rejection can be linked with the lack of perceived utility of a medium of communication, eventually older people can be involved in a process of re-appropriation when the family situation has changed. The media spectrum appropriation does not follow a given path. The uses of digital media respond to needs, and needs change over the life course. In addition, ICTs also change following fast innovation processes. Therefore, individuals –at any age– can, and have to, decide whether to use, or not, given technologies in a changing landscape of needs and available digital media.

Conclusion

The current research focuses on older people and the way they appropriate different technologies. We highlight the fact that technology appropriation includes the motivation to share life experiences with children and grandchildren and this factor becomes particularly relevant for them, once the family members move long distances away.

Our research provides support for the "gratification niche of medium" theory, showing that older people are more motivated to learn to use new digital communication tools to share everyday experiences with children and grandchildren. They also stop using

those tools, once the marginal utility is lost. That is, they stop using them when family members move back, mostly because they use these digital tools exclusively with them. Still, it is not the intrinsic characteristics of the communication mode that makes it more likely to be used by older people, but contextual factors, such as the family dynamics. The model of technology appropriation we suggest here, rejection-appropriation-ignoring-re-appropriation, is dependent on the personal relevance of a communication mode in the context of family changes. In conclusion, the relevant aspect is family communication, not the mere use of a given digital technology. Moreover, individuals – whatever their age – have a dynamic relationship with the communication tools that help maintain their social contacts.

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Table1. Sample structure – the six case studies (*N* = 162)

	Romania (16)		Barcelona (53)		Los Angeles (20)		Toronto (21)		Lima (37)		Montevideo (15)	
	60-65	66+	60-74	75+	60-74	75+	60-74	75+	60-74	75+	60-74	75+
Women	4	4	22	11	7	8	-	17	20	8	9	1
Men	4	4	12	8	2	3	-	4	5	4	5	-
Primary or less	4	4	11	16	1	-	-	4	12	10	1	-
Secondary or more	4	4	23	3	8	11	-	17	13	2	13	1
Internet	5	2	24	1	7	7	-	7	4	1	8	-
Landline	3	6	30	13	9	11	-	20	17	7	14	1
Mobile phone	8	8	34	16	6	9	-	6	22	5	12	1