

My Grandma Uses Facebook: Communication Practices of Older Adults in an Age of Social Media

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ABSTRACT

Many studies have identified the needs of older adults for keeping in touch with their remote family members, including investigations of loneliness and social isolation. Yet few have shown how older adults specifically cope with communication in an age of social media where many people are in constant contact with one another. We also know little about just how much connection older adults wish to maintain with their family and friends. To address this, we have studied the current living and communication practices of older adults using in-depth interviews and a home tour. Our findings show that while there is a desire to maintain contact with family and friends, some older adults also desire to maintain large degrees of solitude. We illustrate how our participants achieved this by presenting specific user archetypes that show technology use, withdrawal, and even avoidance. Together, our results inform the design of technologies and services to improve the current communication practices of older adults.

Author Keywords

Aging Adults, Elderly, Communication, Families

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Design, Theory, Human Factors

INTRODUCTION

Many people want to stay in contact with their family members and friends [20,21,26,31]. For example, grandparents often want to see their grandchildren grow up, parents want to know about the well being of their adult children, and relatives want to know the health state of their aging family members [20,21,26,31]. Gathering this information is easy to do when family members live close to one another because they can simply meet each other and converse. Yet when people become separated by distance (e.g., living in different homes or cities), it can be much more difficult to stay connected [15,21]. In these situations, families make use of technology such as the telephone, video chat (e.g., Skype), or social networking sites (e.g., Facebook) [21,26,31]. However, not all family members find it easy to use such technologies and some do not have

access to them. This leaves certain individuals “out of touch” and isolated from their family members.

One particular group that often faces this challenge is older adults. Many older adults do not have access to modern day technologies or, if they do, they simply find them difficult to use [2]. This problem is exacerbated for those with physical or cognitive impairments. As a result, many older adults report feelings of loneliness and an increased longing to communicate or interact with family or friends [2,10,22]. With the proliferation of smartphones, ubiquitous access to communication technologies, and the prevalence of social media for connecting with family and friends, it is likely that older adults face increasing challenges in interacting with their younger family members who use such technologies. Yet few studies have actually examined to see if this is actually the case and how older adults cope; notable exceptions include work by Lindley et al. [18,19].

This paper explores a cross section of older adults with varying technical know-how to understand how they participate or do not in an era of instant access via mobile phones and the ever-connectedness found in social media applications such as Facebook and Twitter. Here we have taken a detailed look at the communication routines and needs of twelve older adults with a particular emphasis on *their* perspective rather than that of caretakers or their family and friends. A common assumption is that all older adults are basically the same: they work hard to stay connected with family members, may feel isolated or lonely, and have a difficult time using new technologies. However, as we conducted our study, we learned that this is certainly not always the case; there are a variety of distinct behaviors and needs when it comes to older adults and communication technology usage. Our results show a variety of communication routines – and in some cases, a purposeful lack of routine - along with varied attitudes towards and use of technology. We also learned that social isolation is not necessarily a negative connotation. In fact, some people consciously take measures to engage in less connectivity, and, therefore, maintain more solitude. Yet there are also people who are lonely, with or without the heavy use of communication technologies. We illustrate these needs and practices through a series of four

archetypes that show the range and diversity present in the communication practices of older adults. We conclude by discussing the implications of our research for design.

RELATED WORK

There has been a large amount of research on older adults' communication needs in respect to isolation, loneliness, and designs that connect them with their family and friends.

Social Interaction

As one ages, his or her social network changes as do interactions with others. Social networks typically decrease in size with age because people focus more on particular individuals where the relationships are seen as most beneficial and more emotionally rewarding [16]. Thus, a shrinking social network is not necessarily a sign for concern as the interaction focus shifts from quantity to quality [16]. Family relationships between older adults and their offspring are almost always asymmetrical; that is, each desires to know different information than the other and sometimes at a different frequency [16,20,27]. Older adults like to live autonomously and avoid interference from their offspring, yet they also like to see what their offspring are doing and want to "monitor" this [16,20]. There is a common assumption that older adults require help from their children, but that is not always the case [16]. In fact, many older adults offer support to their adult children because they understand the demands of modern society and want to feel valued, competent, and needed [16].

We also know that communication with the elderly revolve around routines, and that there is importance in indicating availability for interaction to the remote family [3]. That is, when older adults want to interact they will go to places where people are or where they can reach them via technology [3]. When they want solitude – time to themselves and away from others [1] – they will withdraw from these locations or avoid technology [3]. Older adults also do not want to bother their children by contacting them too frequently [3].

Social Isolation

Not all older adults are able to achieve their desired level of interaction with family and friends. This may be because of physical or cognitive decline, distance separation, or moving into a care facility [2]. Social interaction is important for it can help people recover better from disease or other health issues [32] and it can help people avoid feelings of social isolation [7], their which can also be detrimental to one's health and welfare. Those with less access to loved ones report unhappiness with their level of social contact and often have a heavy reliance on reading, TV watching, gardening, or shopping to pass the time [24]. It is possible for older adults to gain higher degrees of social interaction by going to places with others present such as senior centers, yet older adults may be adverse to this because of hearing difficulties, perceived narrow-mindedness of other seniors, or challenges with breaking into existing friendship groups at such locales [24].

Loneliness

Many studies have looked at older adults and their challenges with loneliness - a subjective experience where one desires more contact or companionship with others [10,11]. Lonely individuals are more likely to be anxious, depressed, suffer from social issues such as social anxiety or low self-esteem, and be less satisfied with life [28]. Certain people are more prone to loneliness and situations that cause a certain individual to feel lonely may not cause someone else to feel lonely [10]. For example, people who believe meeting others and forming new relationships is just a matter of luck are more likely to be lonely [22].

Social isolation can certainly lead to one feeling lonely [11,28] but it is not necessarily the only reason for it. Other reasons include immigration [10], physical disabilities [8,10], deteriorating health [11], having no children (or none surviving) [11], or losing a partner [10,11]. In fact, the loss of a partner can cause the greatest increase in loneliness and finding a new partner does not significantly reduce loneliness [8]. Loneliness can also be made worse because of a lack of money [10] and typically loneliness increases with age [8,22,25].

Loneliness is sometimes reduced when residents of care facilities form social relationships with staff or pets [11]. One can also increase the number of opportunities older adults have for social contact to try and decrease loneliness [10]. Yet a study shows that group activities (e.g., discussion groups, classes), rather than one-on-one contact (e.g., counseling) are more successful [4].

Technology Design

Arguably, the earliest technology design aimed at connecting older adults to their families is Mynatt et al.'s Digital Family Portraits [20,27]. Here two picture frames connected households and showed remote activity levels [20]. A field trial of the system showed it could reduce loneliness for an older adult while allowing a younger adult child to monitor his mother [27].

Based on focus groups with older adults, Lindley et al. [18] suggest designing technologies for older adults that offer personalized interaction that is targeted at individuals and not broadcast to large groups, do not interrupt other activities, support reciprocity where older adults can learn about the lives of their younger family members, and allow older adults time to reflect before responding. They present two design concepts that support this: ShoddyPop, which allows one to send emails where the delivery is unknown (akin to postal mail), and PersonCards, which allow users to send handwritten messages to people and messages from cell phones to an in-home picture frame. Building on this, Lindley [16] studied the use of a lightweight messaging system called Wayve. She found that older adults desire more heavyweight interactions akin to face-to-face situations, yet are willing to use lightweight, asynchronous systems because they know they are preferred by their younger family members [16]. Grandparents also liked that

Wayve was used as part of a closed network as opposed to broadcast systems like Facebook or Twitter [16].

Other researchers have looked at video as a communication tool. Demiris et al. [7] found that videophones made care facility residents feel more connected to their family members. Oliver et al. similarly found videophones to be usable and desirable by seniors and hospice providers [23]. Judge et al. [14] explored the use of always-on video as part of a media space and found that it played an important role in sharing episodes of everyday life between grandparents and grandchildren. Subsequent work, however, found that older adults may not always be able to understand how to use such technologies, even if embodied in simple domestic artifacts like pictures frames [15]. Certain older adults may also desire less frequent interactions than such “always-on” technologies afford [15]. David et al. [6] designed a digital picture frame that supports asynchronous video sharing for older adults with chronic pain. A preliminary study found promise in its simplicity, however, some desired more functionality [6].

Together, the related work paints a detailed picture of older adults and their communication routines and needs. Based on this, we had anticipated that our study would find a fairly uniform set of routines characterized by little technology use (or reliance on less modern technologies like the phone), communication exchanges dominated by face-to-face interaction, and a fairly consistent need to stay connected with family with many feeling isolated or lonely. Furthermore, we expected to hear many negative thoughts about modern day social media technologies such as Facebook and Twitter. However, for the most part, we were wrong about all of these for at least half of our participants and our study results painted a much more diverse picture. We articulate our method next followed by these results.

STUDY METHODOLOGY

The goal of our study was to understand the communication routines and needs of older adults.

Participants

We recruited twelve participants via snowball sampling and ads posted to Craigslist. Each potential participant filled out a brief screener questionnaire via email prior to our selection. Our goal was to have a broad range of ages and experience with technology. Two participants were between 55 and 59 years old, six were 60-69, three were 70-79, and one was over 80 years of age. Ten participants were female and two were male. We presume that more females were interested in the study due to past literature that shows females are the main household organizers and communicators [13,30]. We also wanted diversity in living situation and purposely selected our participants such that half lived independently and half lived with a partner. None lived in a care facility. Participants had a range of occupational backgrounds such as teaching, office administration, counseling, dental assisting, and marketing; however, eight were retired at the time of the study.

Method

We conducted in-depth interviews with participants in the context of their own homes; the lone exception was one participant who lived out of the city but was visiting the area. Interviews were very detailed and lasted between ninety minutes and three hours. Interview questions revolved around four main themes: daily routines and activities, communication and interaction patterns, attitudes about caregiving, and technology and social media usage. Interviews were semi-structured; thus, we asked questions about each of these topics and probed for further details depending on the participants’ responses. Following the interviews, participants led us on a tour of their homes where they were asked to show us areas where they communicated with others, either in person or using technology [9]. Our goal was to understand the context in which participants communicated and to pick up on any additional interaction practices.

Data Collection and Analysis

Interviews and home tours were documented with video recordings, photos, and interviewer notes. We used open-coding to inductively analyze our interview notes [29] and reviewed all video footage to thoroughly understand our data. This allowed us to draw out the dominating themes and reasoning behind the themes. Thus, all four of the user archetypes we present were generated inductively from our data, despite some appearing similar to common stereotypes of older adults. We also compared our findings across the various ages, genders, and living arrangements of our participants and found that these did not appear to affect their communication practices and needs; however, studies with a larger sample and of a quantitative nature would need to be used to adequately support this claim. Our findings point to the patterns of communication that we found in our data, rather than their tie to specific participant demographics or any such causal relations, which is not the intended goal of qualitative research.

FINDINGS

Our analysis revealed that participants fell into one of two high level categories: those who placed a great deal of emphasis on maintaining contact with their families and loved ones, and those who wished to maintain less connectivity with others, and, thus, more solitude. Participants used a variety of methods to achieve these states. Some were accustomed to using newer technologies such as Facebook, Skype, and email. Those who preferred more traditional means of communication used more traditional technologies such as the telephone. We present these results through four archetypes that exemplify the diversity in how our participants communicated with family and friends, or, in some cases, how they did not:

1. *The Living Newspaper* maintains communication with family and friends without relying on new technology.

2. The High-Tech Social Hub is always online and available via modern technology and is usually the go-between person who shares information with the family.

3. The Free-Spirited Bird maintains a spontaneous lifestyle and prefers not to have scheduled interactions.

4. The Isolated Communicator makes extra efforts to maintain communication with family and friends, but efforts are not always reciprocated.

Below are detailed accounts of these archetypes and examples of how they maintain connectivity, a sense of solitude, or a sense of both. Each archetype presents the dominating qualities and characteristics of participants that fit a particular type of communication routine and need. It is likely that the archetypes do not exhaustively show all types of older adults; more may exist than what we found in our study but this is hard to know for certain. Our participants were distributed roughly equally across the four archetypes, likely because of our recruitment process and its goal of diversity. It is also important to realize that the archetypes we present are not personas [5,12]; instead, they are actual descriptions of real people and their routines in order to ground our results in factual data. We feel this is necessary in order to show the richness of peoples' real routines. This is also why we are deliberately descriptive in the details of our participants and their lives. We want the reader to understand the needs and routines in as much detail as possible and, perhaps, even to feel what it is like to be "in the shoes" of our participants.

The Living Newspaper

"If the world loses power, the new generation won't function." – A Living Newspaper

The Living Newspaper is an older adult who finds importance in maintaining a connection with loved ones, but with limited technology usage. One might argue that the Living Newspaper is quite similar to one of the more commonly assumed stereotypes when people think about older adults. Living Newspapers maintain a healthy connection with family and loved ones, are quite social, and always know what is "going on" with their family and friends. They generally require help when acquiring new electronics or appliances, or fixing them longer term. Thus, there is a strong reliance on face-to-face engagement and interaction to maintain connections with family and friends. Living Newspapers use the telephone as a primary means for communication and are often intimidated by new technology such as mobile phones and the Internet. Living Newspapers are not typically social isolated or lonely because they make extra efforts to interact with their family and this is generally reciprocated.

We describe details of a typical Living Newspaper through the routines and lifestyle of one of our participants who we call Sherri. Sherri is in her early 80's and lives independently. She works hard to be self-sufficient. Sherri has three adult children who each have their own families.

Two of them live in the same metropolitan city as Sherri and one lives within a flight of several hours. Sherri has not grown to use new technologies, mainly due to language barriers, as she can speak and understand English but cannot read or write it as well. Therefore, her main method of communication with her family and friends is through the home phone. Sherri calls her children at least once every few days, if not daily, and even has weekly phone conversations with her grandchildren, who are college-aged and study away from home. Sherri is normally on the phone during early afternoons, once she has completed her morning routine, but is always up for a phone conversation. She is always aware of what is going on in the lives of the people she communicates with due to her social nature.

Whenever Sherri is out of her home, she always makes sure to inform her family of her whereabouts before she leaves the house. She is always moving around, helping others whenever she can, and can sometimes be tough to get a hold of. Conceivably, Sherri could help alleviate this situation by using a mobile phone, which her son has suggested. Yet she has specifically chosen not to get one:

"I don't own a cell phone. No, I can't. Even cell phone I can't because I don't know how to use this. My son said I can buy for you, I say no, I don't want, I'm happier... simple, simple."

As can be seen, Sherri's hesitation relates to challenges in knowing how to use new technologies. This challenge extends beyond just mobile phones: Sherri must have any new electronics or technologies set up for her by someone else. Whenever she needs to troubleshoot a utility in her home, she calls her son who is readily available to come over and help with anything. Her home is generally set up for convenience. For example, she has a phone in every room so she can easily access it.

Beyond phoning her family and friends, Sherri relishes in seeing people in person. She sees her children in person at least every week and also has small outings with her many friends.

"I can see twice a week, my daughter is there twice a month, I can see her...[When you] go to friend's house, you enjoy that."

Many of Sherri's social outings and visits revolve around food. She loves to cook and nourishes others through her love of cooking. She actively helps others out of pure interest and goodwill. Sherri will routinely visit her family or friends and bring baked or cooked goods to their homes as part of the visit. The primary purpose of the visit may seemingly be to bring food to help others out, but under the surface it provides a solid foundation upon which Sherri's face-to-face communication routine is built. Thus, the food is really a means to an end, in this case, face-to-face interaction. This routine extends beyond her immediate family members; in her community, Sherri is known for her cooking talents and is often called upon to help others cook

for events and gatherings. Often she will make a social outing out of this and is away at other peoples' homes for days at a time. Thus, through cooking, Sherri stays connected with her family and friends in a manner that does not involve modern technologies such as social media.

We also saw other Living Newspapers that were similar to Sherri and expressed the core attributes of this archetype. For example, Lydia, a woman in her early 60's who lives independently, also does not like or make use of newer technologies to communicate. Because she lives with arthritis, her mobility is limited, and she finds difficulty in dealing with keyboards or buttons and they tend to overwhelm her. As a result, she too relies heavily on the phone and face-to-face encounters.

"The VCR I have to get help with because it requires three hands. By the time you hold the flashlight and put your glasses on and then try to hold the buttons, there's not enough hands to do it so I have to wait until someone comes over."

The High-Tech Social Hub

"Years ago, communication was not constant. Now technology is so advanced that you are obliged to keep in touch." – A High-Tech Social Hub

The High-Tech Social Hub is an older adult who actively makes use of new technologies to stay connected with family and friends. He or she often uses a smartphone or social networking tools such as Facebook to communicate with others. This person is easily able to tailor communication methods to the preference of others, and is not afraid to try new ways of communicating if they are more convenient for particular family members or friends. This person is always available by staying "online" through technology. Because of their constant connectivity, High Tech Social Hubs are generally people in the family who communicate any news to others in their social network, no matter how big or small. High Tech Social Hubs are not socially isolated because of their high degree of connectivity, but they may feel lonely at times.

We describe the richness of a typical High Tech Social Hub's routines through a participant who we call Nancy. Nancy is a tech-savvy woman in her early 60's who lives with her husband in a mid-sized city. She is approximately a four-hour drive from a major metropolitan city where her two children live with her grandchildren. Nancy's parents live in an assisted living center that is a ten-minute walk from her house; her mother is in her early 80's and suffers from Alzheimer's Disease and her father is in his late 80's. Nancy is currently on disability leave from work and says this has given her more time to connect with her family.

Nancy sees her parents in person several times a week and feels responsible for ensuring their well-being. Beyond this, the focal points of Nancy's social network are her two adult children and their families. Nancy is sometimes lonely, despite having family live in the same city as her. This

loneliness stems from living in a different city than her children and grandchildren. Nancy could certainly try to participate in more community activities or social groups to meet people and feel less lonely, but this isn't what she wants. She wants more time with her family and desires less to connect with new friends. Here she willingly turns to social media and text messaging to stay connected and match the technologies being used by her younger family members. Nancy received her BlackBerry smartphone from her husband two years ago after he won it in a contest. Neither knew how to use it at the time, but, two years later, it has fundamentally changed the way Nancy connects with her family. At first, Nancy cautiously used it as she slowly learned its features. Now, without it, she would feel lost.

"We used to phone call a lot, long distance, but once I got my blackberry [my daughter] got me in to texting and I remember it was only like a year or so ago, like a year and a half ago, and all a sudden I was texting her and she said I was getting really fast at this so she was quite impressed. They're very busy you know with family, work, and my daughter with school, the kids going to school umm so a text message doesn't take long to do to say, 'Hi, how was your day,' or if the kids have been sick you can send a quick message, I'll say hi how are they feeling now, did they have to go to the doctor. It seems like you're interrupting their day more and if you do get them on the phone and you're not really sure when's the appropriate time to call. I still like to phone occasionally just to hear the voice, but it's surprising too with text messages that you can pick up a person's how they are actually feeling, their emotions."

"I have a few friends that I umm, with my Blackberry I send Blackberry messages...to one friend especially...and that's also how I keep in touch with one of my grandsons."

We see that Nancy has taken up text messaging because her daughter is a heavy user of the technology. Nancy has also extended her use of texting to include a close friend and her fourteen-year-old grandson – also because they are frequent users of the technology. The quote also illustrates that Nancy is concerned about interrupting the routines of her family so she tries to minimize this by texting given its asynchronicity. Nancy's self-consciousness about using technologies also comes to the surface. She is willing to try new technologies, but does face challenges in knowing how to use them. She feels pride when complimented by her children about her degree of technical competence. Certainly Nancy could simply give up on new technologies when she faces problems, but she knows that not using them would make her feel less connected to her family.

Nancy also uses social media. She has around 120 Facebook Friends and follows around 30 Twitter feeds, but her focus is much more central on certain individuals. In this case, social media allows her to connect with her sister (who lives about a 15 hour drive away), her pre-teen and teenage grandchildren, her tech-savvy son, and also select distant cousins and aunts (who live within a flight of several

hours). Here Nancy's communication routine is just that, a routine. She checks her email, Facebook, Twitter, and news web pages in the mornings on her computer after she wakes up. Then throughout the day, she checks for messages from these systems on her BlackBerry. Nancy is purposely always online and available for interaction; thus, Nancy's life revolves around connecting with others. She responds immediately to messages, even when in the middle of a task. Nancy finds importance in staying connected to loved ones and will compromise her own routine to facilitate this connection. She wants her family and friends to know that she is always there for them, and will even check up on them if she senses that they are physically or emotionally troubled.

Nancy is the "information go-between" in her family. Not only is Nancy always in the loop, but she keeps others in the loop as well. Her high degree of connectivity is a catalyst for sharing news with her family. This includes small things such as a running update of her grandson's hockey games via text messages when she visits him or larger health news about her parents. She sends information to others and also acts to forward information on that she receives, either in person or through technology. For example, Nancy ensures that extended family knows about the week-to-week health of her parents and that her parents know what is happening to their extended family who they are no longer able to connect with.

"[I connect with them] because they live further away, one is my mother's sister-in-law and the other one is my aunt who is also my mom's sister, so I keep in touch with them a lot of the time to describe how my parents are doing and keep in touch that way. Kind of the go-between, a communicator between my parents and them. Cause then when they have special events happening, they let me know and then I can relay it to my parents."

We also had other High Tech Social Hubs in our study that were similar to Nancy, but used other modern technologies like video chat as opposed to social media. For example, Caroline, another "go-between," did not rely on Facebook very often, but used the phone to keep in touch with her mother and Apple's FaceTime to keep in touch with her daughter. Gina, another participant, also did not rely on Facebook, but instead used the phone, email, and Skype heavily, depending on who she connected with. Thus, while the specific routine of the High Tech Social Hub may differ, the core elements of connecting with family or friends through near-constant technology use remains.

The Free-Spirited Bird

"We're both on journeys, right now our paths are separate but they do cross." – A Free-Spirited Bird

The Free-Spirited Bird is an older adult characterized by an unpredictable schedule and a preference for a life of spontaneity. This person does not like to be constantly tied down to commitments and prefers not to have scheduled

instances of communication. The Free-Spirited Bird enjoys the aging process and likes to take advantage of this newfound "me" time. They appreciate their solitude and will sometimes take measures to purposely avoid communication with others (e.g., screening phone calls, traveling). In this way, they are not constantly trying to maintain contact with their family and friends; in fact, they are doing the opposite. Yet when moments of connectivity with others do occur, they are genuine and worthwhile. They know how to use many modern technologies, but prefer richer face-to-face interactions with others. Free Spirited Birds are socially isolated at times and this is by choice; they are certainly not lonely however.

Janet is in her late 60's and readily characterizes the qualities of a Free-Spirited Bird. She lives in a major metropolitan city in North America but is originally from England. She has a background in Human Resources and was an employment trainer, coach, speaker and writer focusing on workplace differences. Janet has two children and four grandchildren. Her adult daughter lives in a rural area a few hours drive away with Janet's grandchildren, and her son lives within a flight of several hours. Janet's mother lives in England along with other relatives. Janet and her husband have an interesting relationship - he lives and works in England and has been working abroad for the last twenty years. She calls it "*a marriage that exists because we don't see each other a lot.*" As a result, Janet travels a lot, spending two months in England followed by two months in her hometown.

Janet enjoys her freedom. She has a mellow lifestyle, does not sleep much, and approaches her day depending on what needs to be done. She used to volunteer at the library and a book group, but now finds volunteering too routine given her unpredictable schedule.

"I'm a very free spirit. I don't sleep a lot so my routine if anything is I'll be in my office on my computer, I might stop there and read the paper. But I don't do anything on a regular basis because I did that when I worked. When you get to my age, life is too short."

Though Janet does not dwell over keeping in touch with people, she is told that she is good at maintaining relationships. Janet visits her mother in England three to four times a year, but only sees her for about a day or so, as that is "good enough" for her mother who lives with a mental disability. Janet does not see her children too often, usually three to four times a year depending on whether it's the "right time or the right place." She speaks to her son and daughter-in-law over the phone once a week, and less often with her daughter due to her busy lifestyle. When it comes to her grandchildren, she calls herself "Project Grandmother": Janet would rather not babysit her grandkids, but she says she is "all theirs" whenever she does see them. She loves reading to them, playing with them, and cooking with them. She treats them like they're her own children.

Janet is not adverse to new technologies. In fact, she is quite tech savvy. Janet was the first person in her social group to own a BlackBerry and even taught her son, who works at a software company, how to load “tunes” on to his BlackBerry. When they are apart, Janet communicates with her husband over the phone, Skype, and email. They speak briefly everyday and also have shared Google Calendars to keep track of one another. Despite, this heavy technology usage, Janet feels face-to-face communication offers a much richer and understandable experience for people.

“So much is done on email that you’re not talking to people and I think that’s a big thing that people need to do is talk, communicate, face-to-face or even on the phone for that matter rather than just on email...what you say to them it may not convey cause you might see it, read it differently, you know, I think that happens a lot in email. I think well oh, maybe they didn’t mean that. When you’re talking to them, you know, right, so I think that’s still the best way.”

We also saw other Free-Spirited Birds that were similar to Janet. For example, Shelley is a single woman in her 70’s who heavily uses Facebook to “keep tabs” on her grandchildren. Her extended family lives in England where she is originally from. Shelley comments on the need to be “free” after retirement:

“Once you’re retired that’s it. If you don’t live your life now, that’s it...so I make up for the things I couldn’t do because I was a single parent...Sometimes I think about [traveling to England] and I think if I’m going to spend money on a vacation, I want to go to Vegas, I want to go to Mexico, I want to go to Cuba, I want to do these things...I only get this retirement once and if I don’t do it now, or maybe the next year or the year after or the year after that then how do I know I’m going to be in shape to go to Vegas and have a great time and Mexico or wherever else I want to go. I decided it’s about me and now and I’m going to do what I want to do.”

The other Free Spirited Birds in our study exhibited the same core attributes as Janet. For example, Rosa also prefers a spontaneous schedule so that she can choose what she does in the moment:

“It’s catch me if you can. As I said, I don’t have a routine. If I’m out, leave me a message, I’ll call you back...there’s no time when anybody knows where I am or what I’m doing because I’m unpredictable, depends what happens. I’m reluctant even to go to a community center or class because if it’s a lovely day and someone rings me up and says let’s go for a walk, I don’t want to say, well, it’s Tuesday morning and I have to go to my French class, so I’m very reluctant to commit my time because I’d rather be free to make spur of the moment decisions.”

When Rosa does interact with others she will have a deep, meaningful conversation. She contrasts this with social media and systems such as Facebook and Twitter where she

feels the level of detail and content of the discussions is different and less appropriate for her:

“I’m fascinated by [social networking systems], and I mean I really enjoyed the social networking movie that I went to see, but I dunno it seems to me that’s not how I want to spend the rest of my life. I don’t really care. I don’t actually care at the level of detail that people seem to want to tell everybody. I mean I could see huge advantages if Egypt’s in an uprising and people are Twittering but you know on a daily basis, do I care whether you’re now five minutes further along <the bridge>? No. You know what I mean?”

The Isolated Communicator

“I try so hard to be a part of this family and they continually push me away. I always feel like they don’t feel like I’m a part of them.” – An Isolated Communicator

Isolated Communicators are older adults who make extra efforts to maintain communication with their family and friends; however, their efforts are not always reciprocated. Isolated Communicators unconditionally offer help and support to family and friends in order to maintain a relationship, even though they would similarly benefit from such support. This person may experience feelings of loneliness and social isolation and often reaches out to others to fill the void regardless of geographical distance. They adapt their communication methods to match that of the recipient in a hope that this will increase reciprocated communication. They are also likely to use social media such as Facebook in order to connect with as many others as possible.

We describe the richness of a typical Isolated Communicator using a participant who we call Eddie. Eddie is a divorced man in his 60’s. He lives on his own and is a father to three adult children and three step-children who all live in the same metropolitan city as he does. His mother is in her 90’s and also lives in the same city. Eddie’s only brother lives in a city about a four-hour drive away. He has a background in marketing, and works part-time in the field. He also volunteers for local charity work.

Eddie’s home exhibits many pictures of his family members along with cards or gifts from his family. Many of these are quite dated, yet each carries with it a unique and special story for Eddie. The multitude of items and memoirs appear to fill a social void. Eddie also constantly keeps the stereo on for background noise, as he says he has never become used to the silence of his children not being present after his divorce (nineteen years ago). Eddie has framed poems and other artwork given to him by his children and placed them on the wall at the top of the staircase, which he calls the “Trophy Wall.” It acts as a constant reminder of his children’s love for him and he finds great comfort in it.

“What I got there, that’s what I call my Trophy Wall. That wall there by the thermostat and that’s stuff that my kids have given me and guess you could say that’s another form

of communication. That's another type of communication that's obviously not an everyday thing. Just certain things that they've done...That's a poem that my oldest daughter found somewhere. She wrote it out for me and gave it to me in a birthday card quite a few years ago and that was very touching. It's "When You Thought I Wasn't Looking", that's the name of the poem and it goes into detail like from a child's perspective of how you do things for the child and you're not even thinking about it, it's what you do. It's a part of everyday life but the impact it has on a child and so the child says and then you did this and this is what it meant to me... If this place was to burn down, those would be the three things I would want."

Eddie's tech-savvy son-in-law introduced him to computers fifteen years ago. Since then, his computer has become a focal point for his communication routine. It is placed on a desk in his living room. This position lets him see either the television or his computer display with only a swivel of his chair; in this way, the TV, an open instant messenger window, or a Facebook page keeps Eddie company when he is at home. Eddie joined Facebook two to three years ago after he received an invite. He considers Facebook "addicting" and checks it often throughout the day.

"Facebook is quite addicting so I got into it. It sort of progressed... Facebook has such a pull to it you gotta push yourself to get away from it."

Eddie uses Facebook to read about what others are doing and also for direct social interaction where he typically initiates communication by sending messages to others or commenting on status updates. Eddie has also recently started using Twitter as a social marketing tool for work.

Eddie has learned over the years that in order to connect with his children, he must adapt his communication methods to suit their preferences; this gives him the best opportunity for a response.

"My youngest daughter, Facebook email is the best way to communicate with her and then my son, regular email works best with him or phone, and then my oldest biological daughter, it's a toss-up. She's not that good at responding so sometimes it'll take a couple of emails. Like she doesn't, I could phone and more than likely she's busy or whatever so she doesn't pick up. I could leave a voicemail but she doesn't check her voicemail. She'll phone me later or the next day and will say, 'I see you called, what do you want?' <shakes head> I left you a voicemail...I figured that out after a while. With the three of them, what's the best way to communicate."

As can be seen, Eddie feels he has managed to connect with two of his children, yet communication with the third is more difficult because it is often not reciprocated. Eddie tries to see most of his children every few weeks, but he is nearly always the one to drive out to see them. Many of these visits focus on Eddie trying to help his children by bringing them groceries and then cooking meals, or picking

them up to drive them various places. Despite this, it is not clear from Eddie's descriptions that the children fully appreciate such visits. They are also not reciprocated. Instead, reciprocal contact for Eddie tends to come from people he knows through work. One co-worker lives just down the street with two children that he considers his "adopted grandkids." He goes over to play with them often, perhaps to add excitement to his life through the constant presence of children.

We also saw other Isolated Communicators, some of whom experienced even more isolation than Eddie. For example, Mary is in her late 50's and her efforts to maintain contact with her family are explicitly not reciprocated to the point that she has given up communicating with them. To feel a connection with the world, Mary has focused her efforts on providing advice through online forums and also posting and reading updates on Facebook and Twitter that have to do with world events.

"I spend a lot of time on Facebook...sometimes two or three times a day because like I said I'm connected with a lot of people who are involved with spirituality and their posts are just absolutely fascinating and videos that they have found or they're people whose, they're people whose lives are focused on the world around them rather than themselves. So there's just a lot of really interesting people in the world and I'm really interested in what they have to say, think, what they're involved in. I can at least share events, videos, whatever that I think might help somebody somewhere."

DISCUSSION

Based on in-depth interviews and home tours, our research has described the communication practices and needs of older adults in the dawn of social media tools like Facebook and Twitter. Older adults are a diverse population in this regard and we have presented this diversity through a series of archetypes. Each archetype portrays different qualities, yet they also possess similarities to one another. Living Newspapers are similar to Social Hubs in that they both find ways to maintain a strong connection with their family members and friends, despite a difference in technology usage. Each could certainly feel lonely, but they overcome this. Free-Spirited Birds may portray some qualities of the High Tech Social Hub due their open mindedness in trying new methods of communication, but do not remain as regular in communication as Social Hubs. We also see heavy social media usage for both High Tech Social Hubs and Isolated Communicators, yet the reciprocation of communication is different.

It is clear then that the archetypes we present are not clean-cut. There may be people who portray characteristics of multiple archetypes and the archetypes may better fit in a continuum rather than the distinct categories that we have presented. The categories, however, make it simpler to think about and understand core attributes of older adults' routines and needs such that one could design to support

them. People may also change their attitudes and communication routines over time and move between the archetypes. For example, a Living Newspaper could begin to use more technology and become more like a High Tech Social Hub. Despite this, it is likely that it would take a long time for older adults to purposely change their communication practices; most of the participants we spoke with had been engaging in their current communication practices for years. Family situations may also change and cause a High Tech Social Hub to become more like an Isolated Communicator if communication becomes less reciprocal. If physical or cognitive decline occurs, High Tech Social Hubs may become more like Living Newspapers because they can no longer understand technology well enough to utilize it.

Our work both confirms and extends the related work about older adults. We too saw that older adults do not necessarily want to bother their children with too much contact [3]; this was mainly found for High Tech Social Hubs. Older adults also certainly helped out their adult children through a variety of means [17]; this was found across all four archetypes. In particular, for Living Newspapers and Isolated Communicators, this help can be a focal point to encourage and increase face-to-face interactions. We too found that older adults like to live autonomously [17,20]; this was especially prominent for Free Spirited Birds. Our results also build on Pettigrew's work [24] to show that those who are socially isolated, like Isolated Communicators, may use social media as a pastime to fill the social void. Birnholtz and Jones-Rounds found that communication amongst older adults focuses around routines [3], however, we found routines to be much more diverse, or even non-existent (e.g., Free Spirited Birds). And lastly, we too found that certain older adults desire rich interactions, but some are more willing to compromise and use lightweight tools [16], in our case, social media by High Tech Social Hubs and Isolated Communicators. Together, these distinctions from the related work are important for we have shown that not all older adults are the same when it comes to their communication practices and needs. Findings from the related work will differ depending on the person and which type of archetype they fit best.

Beyond descriptive accounts of practice and routines, our archetypes are also meant to guide or inspire informed design. Each of these groups has specific design needs that should be considered for product design, service design, and overall accessibility. For High Tech Social Hubs, we need to continue to find ways to allow them to utilize the latest and the greatest technologies, and provide resources for accessing and learning about them. For Living Newspapers, the challenge is that others keep advancing in their technology use, which continually increases the gap between technology and non-technology users. Here, like Baecker et al. [2], we suggest simple communication technologies that are embedded into everyday objects that are more familiar to older adults. Given the varied

availability of Free-Spirited Birds, Birnholtz and Jones-Rounds [3] suggestion of tools to provide availability awareness may be especially important. For Isolated Communicators, the main challenge is to have their communication efforts reciprocated. Yet we certainly cannot force the family and friends of Isolated Communicators to communicate with them. What we can do though is provide these users with tools to promote new relationships and interactions.

We acknowledge that as resourceful as our research may be, it also comes with its limitations. Though our archetypes are representative of our , they may not be representative of the entire aging adult population. That is, there may be more patterns of communication and resulting user archetypes than we found. In particular, we did not interview participants with major cognitive impairments or those in care facilities. Our focus was also not on those over 80 years of age (though one participant was in her early 80's). We suggest future research expand on our explorations to include such individuals. Each archetype is also based on a small number of participants, which may mean that some could be more prevalent than others if we were to sample a large number of people. Regardless of these caveats, we have been able to illustrate the diversity that exists amongst older adults in terms of their communication routines and needs, in particular, in an age of social media and instant connectivity.

CONCLUSION

Our work expands on past research of social isolation, loneliness, attitudes towards technology, and the communication practices of the older adults. The study was done in an exploratory and qualitative manner in order to gain in-depth insights and details of communication practices. Our results point to a variety of communication needs for older adults: one size does certainly not fit all. Some are socially isolated, some are lonely, some prefer solitude, and others maintain a high degree of connection with their family and friends. In addition to designing to support those who are socially isolated or lonely, there are also a variety of other needs that must be met for aging adults. Overall, there is a sense of value attached to the aging process and successfully achieving the preferred state of connectivity will only help the quality of everyday living for this demographic.

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