

Chapter 11

Discovery of the ICT User Typology

During a research project over a decade ago, I became inspired by the older adults I met in a community center computer class.¹ These diverse older adults had come to learn new skills, but often had to overcome the challenges of being a new learner, sometimes combined with physical and/or cognitive declines or disabilities. Through this class I met Margie, with whom I recorded a life history. Margie and I spent most of a Friday together while we spoke about the influence of technology on her life. She, along with her husband, had been involved in organizing labor in the city where she had lived during the Great Depression. Both she and her husband had risked life and limb to do so: her husband had been beaten and they both had been jailed numerous times. Beyond her fascinating life experience, however, she also taught me about what it was like to navigate an often youth-obsessed culture filled with a bias toward older adults.

Margie explained to me that although a person “could find out a lot of information about what it is like to be old, most of that information comes from people who aren’t old.” Such refrains, while spoken about (Bragg, 2004), have not often been reflected in the ways we collect data in the empirical gerontechnological literature (Birkland & Kaarst-Brown, 2010). Gerontechnology has often approached studying ICT use by focusing on external measures of older adult performance or simple adoption studies, not on how older adults feel about using technology: the meanings they ascribe to the ICTs, their use, and their rejection (Brophy, Blackler, & Popovic, 2015). While these prior studies have great value; they often miss the older adult’s voice. The feeling of being voiceless that Margie expressed would be echoed by many older adults I have met over my career.

After meeting Margie, I saw my mission in my research changing. It was not only about sharing the experiences of older adults regarding technology, but also about sharing their voices. For my work, showcasing older adults’ experience through their own words became paramount: I wanted to tell stories told by the older adults who lived them.

The following sections denote the method I used to discover the ICT User Typology. Provided both for replication and greater understanding of how the typology was developed, it demonstrates how the evidence supports the claims made in this book. Beyond this evidentiary purpose, it is intended to guide those

¹In this chapter, I refer to myself strongly in the first person to carefully delineate my agency and choices in methodology.

interested in interactionist methodology and/or those studying older adults. I've chosen to present this chapter as a journey, which allows you, as the reader, to see the messiness of the process, the issues I encountered, and the active choices I made as a researcher.

The Process of Discovery: Determining the Method

Early in my search for a plausible method to explore older adult ICT use, I investigated many potential methodologies, mostly qualitative. The original goals of the study were not to create a theory, but rather an explanation. I intended to document the diversity of older adult ICT use and begin to carve away at the reasons why such diversity existed.

In organizing my thinking, I explored many common theories of ICT adoption, including the Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989), UTAUT (Venkatesh, Morris, Davis, & Davis, 2003), Diffusion of Innovations (E. M. Rogers, 1962, 2003; E. M. Rogers & Shoemaker, 1971), and Domestication Theory (Silverstone, 2007; Silverstone & Haddon, 1996; Silverstone & Hirsch, 1992; Silverstone & Hirsch, 1994). TAM, UTAUT, and Diffusion of Innovations have commonly been explored to understand technology adoption and use by Gerontechnologists (Charness & Boot, 2016). Based on my background research in older adults and ICTs, I found that these commonly employed theories failed to explain the diversity in use, as I was interested in use more than in adoption.

When I encountered Domestication Theory (Silverstone & Haddon, 1996; Silverstone & Hirsch, 1992), it immediately spoke to me. It conceptualized ICT use in a way that I felt was logical but, more importantly, it gave me a framework to study the introduction, use, display, and meanings of ICTs, while also examining non-use (Umble, 1994). A relatively new theory to the gerontechnological literature (De Shutter, Brown, & Abeele, 2015), it focused on qualitative data collection methods I knew would elegantly showcase older adult voices.

Those studying domestication most often employ a case methodology (Haddon, 2007) where ICT use is bounded, be at the country, social group, household, or in the case of this study, individual level. Treating each older adult as a case of ICT use allowed me to bound such use, while capturing what Flyvberg (2006, p. 223) calls the “nuanced reality” that individuals inhabit: contextual spaces that are complex, rich, and real that represent everyday life.

Early in my conceptualization of ICT use, I realized that I needed to study a diversity of ICTs to develop a more thorough explanation of use and non-use. Prior studies of a single technology did not allow us to understand the integration of ICTs used together, nor did they allow us to understand a mix of rejection and acceptance by the same person. Inspired by a description of the everyday aspects of older adult's lives determined by Gerontechnologists (Bouma, Fozard, Bouwhuis, & Taipale, 2007; van Bronswijk et al., 2002; van Bronswijk et al., 2009) I decided to examine ICT use in older adults' family, work, community, and leisure lives.

Interpretive Interactionism (Denzin, 2001) was integrated into the study as the primary methodology to understand the meanings presented in each case. A methodology which finds its roots in phenomenology focuses on finding and negotiating meanings through conversations. The flow of an interpretive interactionist interview feels much like an engaged conversation, enabling participants to feel more comfortable in sharing their views with a researcher compared to other question and answer formats occasionally seen in qualitative work (Denzin, 2001).

Having decided to explore the domestication of ICTs in older adults' everyday lives through interpretive interactionism, I turned toward determining the structure of the individual cases.

Deciding a Basic Case Structure: Multi-interview Format

Given the amount of material I was seeking to collect (the ICTs the older adult was using, not using, how they were using them, why they were using them, and their history of ICT use) a multi-interview format made practical, in addition to methodological, sense. A hallmark of interpretive interactionism, the multi-interview format, not only allows meaning to be checked in the interviews themselves, but allows the researcher time to analyze the interviews, and bring these interpretations back to the participant, resulting in further iterations of meaning-making (Denzin, 2001). I settled on a series of three interviews, as Wengraf (2001) suggests three such interviews not only result in more detailed data, but also improve participant recall.

In addition to the three interviews with the primary participants, I decided to include secondary participants (whose contribution was highlighted in Chapter 8). Secondary participants were friends, family members, and coworkers of the older adult primary participants. Secondary interviewees were incorporated for two main reasons: first, their inclusion acted as a triangulation method for establishing primary participants' ICT use, and second, I wanted to understand how technology was used in the primary participants' relationships with others.

Primary Participant's interviews lasted from an hour and a half to over three hours in length, with approximately 5–10 hours of interviews per case. Secondary participants were interviewed between the second and third primary participant interviews. Analysis after each interview was brought back to the next interview with the primary participant. If possible, 2–3 secondary participants were interviewed for each case.

Having determined the basic case structure, the next step was determining who I would interview as primary participants.

Who to Interview: Conceptualization of the Sample

Prior age-based research, which has grouped older adults into one group (often sampling everyone age 65 and older), has clouded the generational issues that can impact ICT use, including lifetime exposure to ICTs (Birkland & Kaarst-Brown, 2010). Birth cohorts, or what we commonly call generations, are groups

of individuals born closely together who experience the same historical events at a similar age and life stage (Eyerman & Turner, 1998). Technology, and its introduction, is such a historical event (Birkland & Kaarst-Brown, 2010; Edmunds & Turner, 2002; Larsen, 1993). A technological introduction impacts individuals differently based on their life stage: young children have a vastly different experience than those who are older adults when the same ICT is introduced. For the Millennials (born 1983–2001), the personal computer (introduced in 1984) has always existed, while for the WWII generation (born 1909–1928), the computer was introduced during their retirement. These two generations not only had drastically different experiences with the computer, but our society views one of these generations as “natural” and “legitimate” computer users (the Millennials) while viewing others as less legitimate (the WWII generation) (Birkland & Kaarst-Brown, 2010). Selecting a single generation to study in-depth as primary participants prevented these generational differences from clouding any possible results.

In choosing a specific generation, there were several factors to balance. I was quite interested in understanding how work impacted ICT use. Work remains a critically understudied area of Gerontechnology research (van Bronswijk et al., 2002; van Bronswijk et al., 2009), with most research studies focusing on how having older adult workers impacts organizational productivity (Charness, 2006; Charness, Kelly, Bosman, & Melvin, 2001; Czaja & Sharit, 1993, 1998).² Such work misses how older adult’s ICT use, meanings, and technical skills impact their employment.

Outside of the productivity stream of research, the presumption by many researchers appears to be that older adults are retired and no longer working. This does not always reflect reality: many older adults in the United States continue to work beyond age 65: 27% of older adults age 65–69 and 15% of older adults age 70–74 are working for pay. In fact, the rate of workforce participation only drops to 5.8% for those age 75 and over (US Bureau of Labor Statistics, 2018). Clearly, with over one in four older adults age 65–69 working and one in 20 older adults still working at age 75 and beyond, not all US older adults are retired.³

While many individuals in the US plan to remain working past age 65 (Benz et al., 2013) and are protected in doing so for most careers by the Age Discrimination in Employment Act (ADEA) (US Equal Employment Opportunity Commission, 1967), this is not the case globally. Some European countries have age-based mandatory retirement ages (typically age 60 or 65),

²Given how much of the general, non-technological focused literature on aging and work focuses on how the aging workforce will impact organizations (Burtless & Quinn, 2001; DeLong, 2004; Hedge, Borman, & Lammlein, 2006), such a focus in gerontechnological research on work is not surprising.

³Since the majority of middle-aged US adults plan to continue working beyond the traditional age of retirement (age 65) (Benz, Sedensky, Tompson, & Agiesta, 2013), work will continue to be an important context to study.

and such age restrictions have been upheld in court (Bilefsky, 2007). This may account for some cultural perspectives not exploring aging and work. Given that this study was to be conducted in the US, I knew that the work context would be critical to consider.

Work can have an important impact on older adults' everyday ICT use. Workplaces provide not only access, but also formal training and informal mentoring, resources, and support. Recognizing the importance of work in influencing use, as well as the lack of literature addressing working older adults, I realized that I needed to select a cohort with large numbers of older adults still working.

Based on these factors, I decided to choose my primary participant sample from the Lucky Few birth cohort/generation (born 1929–mid-1946) (Ortman, Velkoff, & Hogan, 2014).⁴ The Lucky Few generation was the youngest generation currently completely in the older adult population (age 65 or older) and, therefore, the most likely to still have participants working. In order to control more strictly for historical exposure to technology, I firmly limited the birth years of primary participants from 1936 to mid-1946, eliminating those born 1929–1935 from participating as primary participants.

Having determined who would comprise the primary participant sample, I needed to develop a sampling frame that would allow me to compare cases of older adult ICT use.

Creating a Sampling Frame

Sampling in case studies is quite different from sampling in many other types of research. In case studies, participants (be they entire organizations or single individuals) are selected on theoretical reasoning and are not intended to form a representative sample. Instead, the selection of cases seeks to understand how these cases may differ based on theoretical differences (Yin, 2009).

There are many potential variables (suspected theoretical differences) I could have designed my case sampling frame to incorporate. Notable studies have examined how ICT use by older adults is impacted by living situation (community versus institutionally dwelling, rural versus urban) (Depatie & Bigbee, 2015;

⁴The end of the Lucky Few generation is considered blurry, due to controversy as to when the “Baby Boom” that created the Boomer generation began. The US Census Bureau indicates that the Boomer generation begins in July 1946 (Ortman et al., 2014), so participants who were born in the first-half of 1946 were considered members of the Lucky Few generation for this study. The ends of generations are often blurry and individuals at the end/ beginning of two generations may identify with either generation. Therefore, participants throughout the study were asked, “What generation do you identify with?” Some participants stated that they identified with the “Silent Generation” (another term for the Lucky Few), some identified as being born in the same generation as famous members of the Lucky Few generation, and some participants identified as being “born in the generation before Boomers” or “not a Boomer.”

Parviainen & Pirhonen, 2017; Saunders, 2004), income (Bergström, 2017), socio-economic class (Ihm & Hsieh, 2015; Iyer & Eastman, 2006; Parviainen & Pirhonen, 2017), education (González-Oñate et al., 2015; Vroman, Arthanat, & Lysack, 2015), experience with ICTs (Jacobson et al., 2017; Lee & Coughlin, 2015; Rosenthal, 2008), disability (Opalinski, 2001), and gender (Helsper, 2010; Padilla-Góngora et al., 2017). (Studies on the impact of race and ethnicity on older adult ICT use are unfortunately seriously lacking (Normie, 2003).) Incorporating all these variables into my case sampling frame would have been impossible, given the demands in time and resources such an intensive case study format requires.

Work was an important context I wanted to capture, so work status became the first theoretical difference in my sampling frame. Older adults who are retired often are the ones that volunteer for research, due to their more flexible schedules (Bouma, 2001; van Bronswijk et al., 2002; van Bronswijk et al., 2009). This has often prevented us from understanding the experiences of working older adults. In order to ensure I had working older adults in my study, I would have to seek them out.

Gender has long been conceptualized in the literature as being an important variable impacting older adult ICT use (Helsper, 2010), so gender was selected as a second theoretical difference for my sampling frame. Gerontechnology research has found that women tend to have greater difficulties in learning to use computers in the same settings as men (Hill et al., 2008; Ng, 2008; Shoemaker, 2003) and report lower usage rates (Helsper, 2010; Kim et al., 2017). Research in the domestication sphere (i.e., age diverse) has found that men and women often use technologies for drastically different reasons: men tend to use them for escape and to avoid socialization, women use these ICTs for interaction, socialization, and engagement with others (Lie, 1996; Livingstone, 1994), and women prefer personal ICTs over ones they view as impersonal (Singh, 2001). Having established gender as an important case sampling criterion, I realized from my readings on the Lucky Few birth cohort, that while many women from this cohort worked or were still working, there were also women who had chosen to stay at home after their children were born and remained housewives (Carlson, 2008).⁵ I expanded my conceptualization of work to include those that had stayed at home.

I created a sampling frame (Table 4) which sought to recruit men and women who were still working part-time, still working full time, retired, and women

⁵Many middle-class women of the Lucky Few generation worked prior to having children or being married but then chose to stay home due to societal expectations of women in this birth cohort (Carlson, 2008). Women's participation in the workplace has historically always been lower than men. Currently, 25.2 % of women aged 65–69 years and 13.8% of women aged 70–74 years have paid positions of employment. This is compared to 33.5% of men aged 65–69 and 20.8% of men aged 70–74 (US Bureau of Labor Statistics, 2018).

Table 4. Case Sampling Frame with Cases Completed.

Work Status		Gender		Totals
		Male	Female	
Working	Full time	Boris Harry	Alice Belinda	4
	Part-time	Fred George	Jackie	3
Retired		Cleveland Dan Jack	Gwen June Margaret Nancy Natalie	5
	Stayed at home	XX	Mary Mindy Jean	2
	Totals	7	10	17

who had stayed at home for the majority of their lives.⁶ I defined work as “work for pay” and set full-time workforce participation to be more than 30 hours a week of paid work, and part-time participation as less than 30 hours of paid work per week. Retired older adults were those that no longer worked for pay, but once had. I sought to recruit at least one participant who met each combination of case sampling criteria. Such a framework was intended to allow for literal replications (Yin, 2009) (comparisons across cases I thought would be similar due to similar work status or gender) as well as theoretical replications (Yin, 2009) (comparisons between cases where I expected contrasting results because of different work statuses or between men and women).⁷

This sampling frame represented some issues that needed to be navigated during the study. Older adult’s “self-descriptions” often did not match my own definitions when it came to work. Boris, who was self-employed in construction, tended to work about 50–60 hours a week during the summer, but often did not work during the two coldest winter months. Jackie was currently working part-time at multiple jobs while searching for additional employment. While Boris described himself as “semi-retired” (as in his youth he had often worked

⁶I remained open to recruiting men who had stayed at home for a significant period of time, having raised children, managing the household, or due to disability. However, I was unable to locate men born 1936–1946 that met these criteria.

⁷Due to the addition of two cases late in data collection to increase racial diversity, retired women outnumber retired men.

more than 80 hours a week in the summer), Jackie spoke about “working full-time” (despite the fact that her current work hours fell under 20 per week). Therefore, it became critical to discuss with the older adult during the recruitment phase as to what they meant by their self-description, asking them to provide the specific number of hours and months they worked.

I realized that many of the commonly used recruitment strategies when studying older adults (Birkland & Kaarst-Brown, 2010) would not suffice to fill this sampling frame. I could not go to a retirement community or a managed care setting and find older adults actively working full time. The strategy I eventually developed, based on snowball sampling (Goodman, 1961), sought to overcome the challenges of recruiting community-dwelling older adults.

Recruitment of Older Adults: Primary Participants

In the Gerontechnology literature, there has been a focus on recruiting older adult participants primarily from managed care residential settings or retirement communities (Birkland & Kaarst-Brown, 2010). A large population of older adults are available at these settings, and often residents are eager to be involved in projects with outside individuals for a change of pace from their typical days. While such samples are convenient for researchers, they are problematic, as only a small portion of older adults live in such settings.⁸ These communities and institutions often restrict or, conversely, offer ICTs that the general older adult population may or may not have access to. For instance, Nancy’s assisted living center prohibited residents from using social networking sites by blocking them, but also provided a gaming console.

Those in such captive settings, such as retirement homes and graduated care, are easy for us as researchers to access, and by that measure, we often select from them liberally. There are some very concerning ethical issues in basing much of our gerontechnological research on captive populations (Birkland & Kaarst-Brown, 2010), who may feel unable to refuse participation (Reich, 1978).

In order to overcome these sampling issues, I decided to use a referent snowballing (Goodman, 1961) recruitment method, often advised to recruit older adults over “cold calling” potential participants (Johnson & Finn, 2017). In my home institution, I approached faculty, staff, and students (as well as my neighbors) asking if they knew an older adult who met the case selection criteria and would be willing to participate. Many times, if they referred me to individuals who themselves did not meet the selection criteria, these individuals had a contact who did.

⁸While certain characteristics, such as decreased cognitive and physical function and advancing age are predictors of living in a residential care setting (Luppa et al., 2010), not all older adults live in such settings and those that do often do so only for a short time period (Kelly et al., 2010). Retirement communities often exclude lower-income seniors (Salkin, 2009).

This referent-based recruitment method proved useful in attracting participants who were able to meet the demanding nature of the study. With approximately 6–10 hours of the primary participant's time spent in interviews (with an open-ended 2- to 3.5-hour segment of time needing to be scheduled for each interview), additional time spent in observations in the participant's own home, and being asked to interview two to three potential friends, family members, or coworkers, this was a demanding study.⁹ Compared to our stereotypes about older adults having large amounts of free time, many are busy with their leisure, community, family and (in many cases) their work lives (Bouma, 2001; Choi, Burr, Mutchler, & Caro, 2007; Eggebeen & Hogan, 1990; van Bronswijk et al., 2002).

Referents, therefore, served an important role in recruitment. Participants were not approached by a stranger, but rather a friend, family member, neighbor, or professional contact. Referents were able to describe not only the study but answer any questions the potential participant had about it at the outset, as well as vouch for me personally. Almost any person would be hesitant to allow a stranger into their home to view their technology for their own safety (such a research study would appear to be an almost perfect cover to allow criminals into your home). Additionally, referents were able to reassure potential participants that I was indeed interested in both use and non-use and that I was not trying to evangelize technology use or judge non-users.¹⁰

Such a referent recruitment method proved extremely successful, meeting the case sampling framework. Participants were well-aware of the steep requirements of the study from both the referent and myself, and this resulted in every older adult who enrolled in the study completing all three interviews, for a total of 17 older adult primary participants (cases). (Secondary participants were not able to be recruited for all cases, as some older adults had very small social networks.) Only one person who was referred to me (who meet the selection criteria) declined to participate.

Near the middle of data collection, I realized that while I was likely to meet my sampling frame for the study, and had achieved an educationally, work status, and income diverse sample; racial diversity was lacking. My sample identified almost entirely as white, with one participant who identified as Hispanic/White. I had serious concerns about the overwhelming whiteness represented in many gerontechnological studies (Normie, 2003) and how this further silenced older adults of color. I wanted to include voices from this often ignored a segment of the older adult population.

⁹Primary participants received a US\$20 gift card (of their choice) at the start of each of their interviews as an incentive.

¹⁰Such referents also provided a check on the participant's trustworthiness and helped to provide for my own safety. I met my participants in their own homes, often venturing into unfamiliar neighborhoods and rural areas, and would be gone for an undetermined amount of time, with my friends, family, and colleagues unaware of my exact location to protect the identity of my participants.

Older individuals of color have extremely valid reasons to not participate in research. Research's abusive and racist history is not just "historical": many older adults remember these abuses when they happened (or were revealed) – in their own lifetimes. The university I was working from at the time also had a contentious relationship with the local communities of people of color. Located near one of the most impoverished sections of a racially segregated city, the university had a multi-decade history of starting community projects, promising long-term investment, obtaining research results, and quickly abandoning these projects with promises unfulfilled. As a white researcher from this institution, I would understandably be mistrusted from the start.

I decided that I needed a strategy to personally build trust with the older adults in the nearby communities. I reached out to six community organizations in my city, asking if I could join their community meetings for a period of time in order to eventually recruit participants. One community organization allowed me to do so, and I attended a series of meetings to become familiar with attendees and to build greater trust.¹¹ After several attendances, I was approached by two African American women. I ended up recruiting both women (Gwen and June), which greatly added to the diversity of voices.

Originally, I had determined that I would not include participants from residential care settings in my study. My original reasoning for not recruiting directly from these settings was to avoid the unnecessary burden that had been placed on these individuals by their over-selection. I also wanted to remove possible ethical concerns around consent. One of my contacts referred me to her mother, Nancy, who lived in an assisted living facility. Upon considering her inclusion, I realized that for Nancy, her home *was* the assisted living center she lived in. For many older adults, their home is their assisted living center, nursing home, or retirement community. I was not selecting her *because* she lived in assisted living, but because she *met the criteria* of the study.

As I considered the issue even further, I realized that not allowing Nancy to participate in the study simply because she had made her home in an assisted living center would be unfair to her. If my goal was to hear from the older adults themselves – to have them voice their joys, struggles, and concerns over ICT use – then I had no reason to exclude an older adult's voice because of where they had made their home. The next day I received a call from Nancy herself, asking to be included in the study and sharing a bit of her story. While I had a few participants who had contacted me (as opposed to me contacting them as a referral), she was the only participant who contacted me to argue their case to

¹¹During these meetings I took part in the meeting content (only if appropriate) but I always made it clear that I was a researcher who was seeking participants. The content of these meetings was outside of the scope of my research. I was careful to not record any information about the many participants of the meeting. Upon recruiting the two individuals I recruited from this setting, I stopped attending to prevent myself from contaminating my data collection on these individuals.

be included. Quite frankly, I admired her tenacity and knew I could learn something from her case.

The data that I collected from Nancy were extremely rich and added deeply to my understanding of the ICT User Typology. As a Socializer, Nancy found herself often prevented from using the ICTs she wanted to by disability or policy (see Chapter 4). Nancy's case illustrated physical and policy concerns that I would not have captured without her inclusion.

While the primary participants for the study were selected based on the sampling criteria, secondary participants were identified and recruited based on the recommendation of the primary participant for each case.

Secondary Participants Recruitment and Sampling

For secondary participant recruitment, I asked the older adult at the center of each case (the primary participant) to identify individuals they used ICTs with (be it the phone, cell phone, computer, television, etc.). I asked them to identify one person who was of the same birth cohort as themselves (the Lucky Few generation) and one to two people who were either older (WWII/ Good Warrior Generation) or younger (Boomer, Generation X, or Millennial).¹² These relationships could be of any type: romantic, family, friendship, coworker, etc. Therefore, of the two to three people I asked them to identify, one had to be of the same birth cohort, and two were from a different birth cohort.¹³

In some cases, I ended up recruiting Lucky Few secondary participants to become primary participants in my study. This yielded very rich data, as I could understand from multiple perspectives how these individuals used ICTs in their relationships with others. This type of recruitment happened specifically for Jackie (who was recruited from Natalie's network) and Fred (who was recruited from Alice's network).

Each case involved several forms of data collection, including interviews, observations, and reviews of documentation that older adults used in their support of ICTs.

The Interviews: Collecting the Data

Data were collected over a two-year time period. Several cases were being collected at any one time; each case's data collection phase lasted approximately two months. Each case included three semi-structured interviews with the

¹²Due to the stipulations put on my study by my institutions' Internal Review Board (IRB), all the secondary participants had to be age 18 or older (adults). This excluded Generation Z from secondary participants, as this generation was just entering adulthood.

¹³Secondary participants received a US\$10 gift card of their choice. This was typically sent through the mail, as the vast majority of these interviews were conducted on the phone.

primary participant, one semi-structured interview with each of the two to three secondary participants (if possible), observation of the primary participant's home (and workplace, if applicable) and the display of ICTs within it, and review of the documents that the older adult identified as important in their use of ICTs (if relevant).

Semi-structured interview guides were created for each primary participant interview and the secondary participant interview. The first interview with the primary participant focused on determining the ICTs used by the older adult, ICTs they had abandoned, and ICTs they wished to try. During this first interview, a set of color-coded notecards was created for each participant. Each notecard listed a single ICT: green notecards recorded ICTs the older adult was currently using, pink notecards indicated the ICTs the older adult no longer used (rejected), and yellow notecards indicated the ICTs that the older adult wished to try.

The second interview focused on understanding, through a notecard sort, how the ICTs recorded on the notecards in the first interview were used in different life contexts by the older adult (work, leisure, community/volunteering, and family life). As we addressed each of these contexts, the older adult was asked to sort out the ICTs they used in that context and speak about how they used them (and for what purposes). (New cards/ ICTs could be added.) I took pictures of the cards for each context to facilitate data analysis. This process of card sorting was repeated for the yellow (want to try or are interested in trying) and pink cards (abandoned or rejected ICTs). I encouraged the primary participant to tell me stories about the ICTs they used, rejected, or wanted to try. Once we had finished examining a life context, the notecards were returned to a pile, shuffled, and we addressed the remaining life contexts in turn with their own notecard sort.

Throughout the first two interviews, I sought to gather names of potential secondary participants. Between the second and third interview with the primary participant, I interviewed any secondary participants that had been identified that wished to participate. Secondary participants were able to be recruited for 13 of the 17 cases. The secondary participant was asked to describe their relationship with the older adult, how they had met, how often and how they communicated, with a focus on how ICTs were used in their relationship with the older adult. They were also asked to characterize their own ICT use. These interviews were often half an hour to an hour and a half in length, most often over the phone.

The third and final interview with the primary participant had two major purposes: the first was to gather further information on the relationship between the secondary and primary participants from the older adult's perspective. The second was to explore the primary participant's display of ICTs in their home and workspaces (if applicable).¹⁴ This final interview also served as a "wrap up" and disengagement of the case. Participants were asked to share any final stories.

¹⁴If participants agreed, images of the arrangement of their ICT displays in their homes and workspaces were also taken during this visit. Any identifying information from these images was immediately removed and only anonymized images were saved. (Older adults were never included in these images.)

I also shared what I had learned from their case, but also what I was finding overall through my field work. These discussions served as a check on my findings and analysis. Often, it was during the final interview that many participants (particularly Guardians and Traditionalists) would share the most sensitive stories of ICT use and non-use. Margaret, for instance, during our third interview together shared her story of how the introduction of the computer and television to her workplace correlated with the reduction of her job responsibilities.

Interviews were transcribed immediately after an interview was conducted to allow analysis before the next interview (if appropriate). Data collection continued until the sampling frame had been filled (with the addition of two cases, June and Gwen, to increase racial diversity). At that point, data saturation had been reached, as the final cases were yielding no new nuances to the user types I had developed earlier in my data analysis.

Data Analysis

Ongoing data analysis took several forms which were often overlapping and intersecting. Analysis occurred at three points in each case: during the interviews themselves (dialogic analysis), after each interview (memoing, within case analysis, emergent themes and meanings analysis), and at the conclusion of each of the cases (between and across case analysis, emergent themes and meanings analysis).

Dialogic analysis is a reiterative process of examining a segment of text or interview, relating that meaning to participants, and then revising that meaning until the researcher reaches shared understanding (Denzin, 2001). During the interviews, I employed active listening, through which I sought to understand the meanings presented by the primary and secondary participants.

Between interviews I utilized bracketing. Bracketing is a method of data analysis frequently used in phenomenology, which allows a researcher to separate a text from a context (Denzin, 2001). I began by gathering the stories and biographies presented in a case and bracketed elements and meanings about ICT use and non-use. I took the bracketed elements, listed them in the order in which they occurred, and then detailed how these elements were interrelated. Finally, I re-contextualized the phenomenon of technology use by incorporating the participant's biography, their history, and social environments to create themes. I then compared the themes of these stories to other stories that were similar or contrasted within the individual case I was examining. Finally, I examined these themes between the collected cases.

For these comparisons, I used many case analysis strategies outlined by Yin (2009), including explanation building (creating an explanation from a single case and comparing this explanation to others), pattern matching (creating and exploring rival explanations for similar outcomes within a case), and cross-case analysis (comparing cases to understand different outcomes). In the end, explanation building proved one of the most powerful case analysis methodologies I employed, particularly when paired with memoing (Bentz & Shapiro, 1998).

Every day during the study I reflectively memoed about the cases I was collecting (Bentz & Shapiro, 1998), creating case descriptions and listing case similarities and differences in ICT use and meanings. As I analyzed the cases, I came to understand that it was the meanings these individuals were applying to ICTs that explained the differences between cases. While coding was critical in determining the specifics to each user type and understanding their nuances, it was through memo writing about the meanings that I first came to realize that I might be seeing distinct categories or user types.

My study began with three cases: Natalie, Margaret, and Jackie, all individuals I would later determine to be Guardians. During my early memoing and bracketing process I believed that I had found a gender effect, rather than the user types I would go on to discover. When I added Alice's (an Enthusiast) case to my study, I found that her meanings and beliefs about ICTs were much different than the other women I had previously interviewed. As I was memoing in my car following an interview, exploring possible differences between Alice, Jackie, Natalie, and Margaret, I had a breakthrough: it was not gender that was making a difference between these cases, but meaning. Jackie, Natalie, and Margaret were not all similar because they were women, but rather similar because they held the same set of meanings: viewing technology as a potentially negative influence. Alice's meanings were not a reflection of a gendered interpretation of ICTs but represented a set of meanings shared by Enthusiasts.

Through memoing, I was able to build explanations of my data, developing the ICT User Typology, and then using further cases to first expand and then final cases to test the typology. While the Enthusiast and Guardian types emerged early in the study, the Practicalist and Traditionalist types emerged toward the quarter mark of data collection. Although I had interviewed a Socializer by the middle of data collection, it took more substantial memoing to separate the Socializer type from the Enthusiast type. Two thirds of the way through data collection I had discovered all five types and spent the rest of data collection determining if the following cases added any additional types to my original five (they did not), added nuances to my cases (after 13 cases the following four did not), and if they confirmed my findings (they did). I memoed each day during the almost two years of data collection, often referring to my transcripts, field notes, and analysis.

The power of the interactionist case method was not only in building the ICT User Typology, but also in its ability to recruit participants and develop rapport, which were critical to hearing the often deeply personal stories I heard from participants.

Power of the Interpretive Interactionist Case Methodology

Using the referent snowballing method helped recruit potential participants who otherwise might not have participated in a technology study due to the fear that their technology use/non-use would be negatively judged. The interpretive interactionist case methodology, because of its dialogic method which

prioritizes conversation and meaning, led to the development of deep rapport with participants (Denzin, 2001). As a result of this rapport, participants shared many stories that I might not have heard otherwise, helping to develop a rich participative theory.

Recruiting Community-dwelling Working Older Adults

Recruiting community-dwelling older adults has sometimes been a challenge in the gerontechnological literature, due to older adults' busy lives (Bouma, 2001). In particular, it has often been difficult to recruit older adults who are not participants of community center programs or programs designed specifically for seniors (Birkland & Kaarst-Brown, 2010). Many older adults do not participate in such programs, and attendance of such programs may be difficult for working older adults due to scheduling.¹⁵

An extremely diverse sample of participants was recruited through the snowball referent methodology (Goodman, 1961). The sample included college professors, nurses, administrative assistants, electricians, contractors, retail workers, and retirees; those with extremely low incomes that depended on government assistance and those with high incomes who had retired early; those who worked as directors and VPs and those who had been front-line retail employees and administrative assistants; those that did not finish high school and even two participants with doctorates (one a PhD and one a professional doctorate). Participants lived in the inner city, urban areas, a host of suburban areas, rural towns, and in extremely rural areas. (The only aspect of diversity which fell short was racial, addressed previously in this chapter.) I cannot envision any other methodology allowing recruitment of such a diverse sample, given the unequal spread of potential recruitment sites across the geographical area.

With the exception of two of the participants whom I had met before, all the other 15 participants were total strangers to me at the outset of the study. Despite our unfamiliarity, these participants were willing to share some of their most sensitive stories with me, in part, because I had been recommended to them by someone they trusted (a friend, family member, or community contact). The referral system worked not only to recruit individuals that would be otherwise inaccessible, but it also worked in developing trust. For many participants, they regarded me as trustworthy because someone they already trusted in their lives had referred me to them. Margaret shared that she only participated in the study because her neighbor (who had been her referral contact) had reassured her I did not have a hidden "pro-technology agenda" (Margaret).

Since participants were recruited into the study by someone they trusted, they tended to trust me, as a researcher, from the start, which made them feel more

¹⁵Only two participants had participated in community center and/or senior focused programs, attesting to the fact that when we sample from such programs we are often missing many older adult experiences.

at ease. The use of the dialogic method (Denzin, 2001) also helped participants feel comfortable and helped to develop our relationship.

Developing Rapport

Mary commented at the end of our sessions together, “Oh, this is just like therapy! You are so soothing to talk to and you really listen.” While active listening sought to reinterpret the meaning back to the participant (Denzin, 2001), it also resulted in participants feeling heard and we developed deep trust. Many participants shared that they had not encountered people who were interested in or open-minded when it came to their technological stories.

Older adults face many stereotypes (Glover & Branine, 1997; Longino, 2005), not only about how they think (Binstock, 2005; Cutler, 2005), but also about technology use in our societies (Cutler, 2005), including that they are slow and unwilling learners or have extremely high levels of computer anxiety (Dyck et al., 1998; Mitzner et al., 2010). Technology is stereotyped as for the young (Larsen, 1993), the young are believed to be “digital natives” (Helsper & Enyon, 2010); the valid and appropriate users of innovative new ICTs (Larsen, 1993); the old are not (Rama, De Ridder, & Bouma, 2001). Older adults often internalize these stereotypes, regardless of their skill level (Birkland, 2016).

By the end of the third interview for some participants, I was hearing painful stories which they told me that they had rarely or sometimes never shared. Margaret shared with me in our last interview that she came to see technology as slowly eroding her job responsibility. She was embarrassed to admit this, as it seemed to suggest she was overly fearful of technology in a society that worshipped it. Mindy Jean shared with me that she had little interest in using the computer and did so only to please her family members, something she would not admit to her children or husband. Natalie shared with me very personal stories about the impact of television and video games on her divorce.

Many of the participants commented that they found the study to be “fun” and “interesting” and were very keen on hearing how their case was shaping my findings. They were all eager to assist in building my theory of ICT use.

Generating a Rich Participative Theory

The notecard sort, home observations, and language checks were extremely helpful in building the ICT User Typology. The notecards, on which I had recorded the ICTs older adults were using, had abandoned and wanted to try in the future, were a powerful method of visualization. It was easy to determine an Enthusiast from their notecard sort – nearly every notecard was on display for every life context. For Practicalists, ICTs tended to only appear in one or two piles (appearing only in work or appearing only in family and community piles, for instance). Participants found using these notecards fun, with some commenting it was like a game, but it was serious enough that all participated.

By the end of the study, it was easy to distinguish the various types upon entering a person’s home. Enthusiasts’ would have their main living space

enveloped in technologies; Traditionalists' would have their television be prominently displayed; and Socializers' would meet me at the door, cell phone in hand. Being able to observe the environment that the older adult was living in was crucial to understanding how ICTs were being used in these everyday environments.

When I showcased my ongoing results with primary participants, many had comments and suggestions, and sometimes this resulted in the generation of new stories. In developing the user type labels, I looked toward the participants' own words, but also checked my labels with my participants themselves. I wanted to avoid the often negative, derogatory, and stereotypical labels we apply toward older adult's ICT use. I do not believe that Traditionalists or Guardians should be portrayed negatively; both represent a legitimate approach toward technology which is just as valid as Practicalists, Socializers, or Enthusiasts.¹⁶

Despite the power of the interpretative interactionist framework, it also had several pitfalls, including difficulty with recruiting secondary participants and challenging ethical dilemmas.

Challenges with the Interpretive Interactionist Case Methodology

The delineation of the challenges I encountered in this research is a somewhat a false separation as many of these issues (recruitment, sampling, and ethical challenges) are related to one another.

Recruitment Challenges: Secondary Participants

For some of the older adult primary participants, their networks were extremely small, making identifying and recruiting secondary participants difficult.¹⁷ Retired older adults tended to have smaller social networks than those still working. Even if network participants could be identified, it was often difficult to track them down or arrange an interview time. June identified a list of participants I could contact, however; I was unable to get in touch with most of them and those I did contact declined to participate. Jackie did not want me to contact any of her friends in her small network: she was relying on both of them as places to park her trailer when she moved out of her apartment. (Given her precarious financial situation, she did not want to endanger her relationship with either person.)

Unfortunately, there is not much that can be done to encourage greater participation of secondary participants. While a small incentive was provided for

¹⁶After all, many of us, who do not identify as Guardians or Traditionalists, have expressed concerns over the societal influence of technology or nostalgia for our youth.

¹⁷Secondary participants could only be recruited for 13 out of the 17 cases, leaving four cases with only primary participants.

the interview, this proved not to be effective.¹⁸ Even when a primary participant, such as June, encouraged her contacts to return my calls, they often did not. While I had cultivated relationships with my primary participants by meeting them face to face, using the active listening techniques of the dialogic method, and meeting them several times over the course of the study, I was unable to cultivate the same types of relationships with secondary participants. These individuals were often not in the same area as myself (living at a distance) and to them, I was a voice on the phone, not a person who was meeting with them within their home. They were often less interested in the topic compared to primary participants as well.

Secondary participants were also likely concerned about contaminating their relationship with the primary participant. Some secondary participants were hesitant to speak about their relationship other than the basic “facts” of when and how they met, and how often they communicated. When I asked questions such as, “how would you describe your relationship with [the primary participant]?” some secondary participants were uncomfortable enough with the question to answer only in simple sentences and resisted further probing. Other secondary participants wanted to know exactly what I would share from the interview with the primary participant.

Given the amount of time I invested in contacting and arranging secondary interviews (which were often rescheduled at the last minute) compared to the ease of arranging primary participant interviews (with only two interviews rescheduled out of 51 total primary participant interviews), I would likely recommend not including secondary participants in such a case study, unless the focus of the study is relationships, or the potential data is predicted to be valuable.

Although secondary participant interviews did not provide data which contrasted or contradicted older adults’ own stories of their ICT use, they did yield valuable data that served to inform the ICT User Typology. When I began to develop the typology, I realized that this was not an age-specific theory, but rather that these types were reflected in the age-diverse secondary participants as well. (These data are explored in depth in Chapter 8.) While these interviews were the most difficult to collect, and these participants the most difficult to recruit, they did add value to my study. Therefore, it is important for researchers to weigh the power of the results against the hurdles in secondary participant data collection.

Sampling Diversity Challenges

As our societies not only gray, but also become more racially and ethnically diverse (Hayes-Bautista, Hsu, Perez, & Gamboa, 2002), we should not collect all white samples (Normie, 2003). Older people of color may be more sensitive to participating in research studies because of their more intimate familiarity with

¹⁸A US\$10 gift card of their choice.

the research abuses their population has experienced. For older adults, racist research such as the Tuskegee Experiments (active from 1932 to 1972) (Freimuth et al., 2001) is not distant history, but rather an event that happened in their lifetimes. One cannot expect a community that experienced such horrors to be receptive to researchers, no matter the study topic. Older adults of color also tend to have fewer economic resources at their disposal compared to whites (O'Brien, Wu, & Baer, 2010), impacting their ability to participate when studies require time resources. However, from an ethical and moral standpoint, it makes the voices of these older adults incredibly important to represent.

Issues of mistrust may be lessened if the researcher is a person of color and/or already a member of that community (Freimuth et al., 2001). Gwen shared that older adults in her African American community understood that their knowledge was powerful, and many felt that sharing knowledge outside the community was relinquishing power. She suggested that in future studies having an African American individual collect such information would be helpful, as a person from within the community would face less resistance not only in entering the community, but that people would be more forthcoming and willing to share their thoughts and feelings. For white researchers, it is important to establish connections with fellow researchers who identify as people of color, who can provide vital insight. However, being or involving researchers of color is simply not enough; we must ensure our studies are ethically and professionally sound (Freimuth et al., 2001). If researchers are to have any hope of building ties with these communities, we must be diligent to ensure we treat participants fairly.

Ethical Challenges

One of the greatest challenges I encountered was that the interactionist case design often led to a blurring of the relationship between researcher and participant. Over the course of the study, the high number of contact hours and my active listening style led to several participants seeing me less as a researcher and more as a friend. This was problematic and ethically concerning: I was a researcher who was going to write about their experiences, and such writing might not always involve the flattery or omission of negative details that a friendship relationship might provide. One of the most difficult cases was Natalie.

Natalie's situation was unique in the study: she was extremely socially isolated. The loss of her family in mid-life had been a devastating blow to her self-confidence. As a result, Natalie's loneliness often led her to make overtures toward friendship. She would invite me to lunch and suggest we go shopping after our interview appointments. I always politely declined and gently reminded her that I was there as a researcher.

A compromise I struck with her is that I would stay an extra half an hour to speak with her at the end of each interview, but I declined going elsewhere or ordering food. She could become quite critical when I refused further socialization, which was often followed by a cycle of her apologizing for her behavior. Throughout the study, she also often contacted me with invitations to social

events. I instead researched and then suggested a list of social groups she might be interested in joining focused around her political interests and hobbies. After several months, the calls dropped off.

I also observed less than ideal living situations for several of my participants. I had met Natalie at her home during the third and final interview. She had commented in previous interviews, “You can come to my house, but I have a lot of stuff.” Upon entering her home, I saw paths existed to all three downstairs doors, but otherwise, Natalie had placed items, often stacked to the ceiling, in every room of her home. I was immediately concerned for Natalie’s safety and well-being and wondered if I should intervene. As my observation continued, I examined her house for several criteria: I found that she had relatively wide paths still available in her home to three exits (and many windows were also clear and could serve as an exit if necessary) and that there was no visible garbage. The home did not smell, and even though her counters were piled with items in her kitchen and bathroom, they (as well as the sinks and toilet) were nearly spotless. The floors were also freshly cleaned, and she was currently cooking using both her stove top and oven. She had running water and electricity.

After discussion with a colleague about Natalie’s living situation, I decided that I would take no further action. While her situation was not ideal, Natalie did not express being unhappy with the way her home functioned or was organized, or even over the existence of so many objects in her living space. She commented that she, “had what she needed.”

Jackie, another participant, had fallen on difficult times after the death of her partner. The two never married because they viewed a marriage license as a “slip of paper.” Since Jackie had lived outside of the US, she did not qualify for Social Security, falling under the number of working years required to collect benefits.¹⁹ Jackie had worked mainly hourly jobs as an administrative assistant or in retail, typically as a clerk. While her partner had left her his estate, she found she had little money left over after clearing their debts. She pieced together part-time jobs and picked up seasonal work but found it increasingly difficult to find employment. Interviewers would often comment on her age, suggesting she was unable to do the level of work required (standing, lifting, and using the checkout machines). Her work schedule was getting more difficult for her to maintain as she grew older.

Jackie had decided that she could no longer afford to maintain an apartment. She took the remainder of the estate she had inherited from her partner and bought a pull-behind popup trailer. She found a campground in the southern

¹⁹Social Security is the United States pensioner program for older adults. Typically, a person qualifies for a sum of half of their spouses (or former spouses, even in the case of death or divorce) social security benefits in lieu of collecting their own benefits. However, they must have been married for 10 years or longer, and not qualify for benefits on their own, or the amount they could collect is lower than half of their spouse’s (United States Social Security Administration, 2018). While Jackie and her partner had been together for 10 years, they were not legally married.

United States that only charged US\$50 a week to park a trailer, and she planned to move to the campground for nine months of the year, returning north to live on her friends' property during the summer months. She had several leads on retail jobs in the area she was moving to, convinced that US\$200 a month in "rent" would be much more affordable than the US\$800 she was paying for her current apartment. In the end, I realized that although I could suggest that Jackie look into social welfare programs, there was little I could do to help.

Encountering these situations in the field was challenging for me personally. What I found to be of great help was to develop a network of colleagues who were also researching older adults or other at-risk communities. Within this network, I could discuss the issues I was facing in my research, talk through my thinking, and bounce ideas and solutions off my colleagues. I was not alone, and I was not the only person experiencing ethical dilemmas and encountering challenging situations.

To any researcher working with older adults, or indeed with any at-risk population, developing such a network of colleagues is essential. In the end, unless there is a case of abuse observed, it is up to the researcher to determine their limits and when they will intervene, and how. Using such a group to talk through such issues (always keeping the identity of participants secret) can be helpful not only in determining solutions, but also in helping the researcher to deal with their own difficult emotions.

When it comes to these ethical issues highlighted when working with older adults, it is important to set boundaries, but it is also important to be flexible and understanding of your own personal limitations. Things will likely change as your study progresses, and you will likely encounter situations one would not expect. It was impossible to not feel heartbroken at Natalie's situation or to be concerned about Jackie's. While it is important to be kind to your participants, it is also important to remember to be kind to yourself.

I wish to end this book the way I started it, by acknowledging the older adult participants who made such a study possible: thank you for sharing your lives with me and for helping me to develop the ICT User Typology. The two years I spent in close contact with you will forever be a highlight of my life, professionally and personally. Thank you for your stories!