Accounting for Age in Technical Communication Research

Allegra W. Smith
PhD Student, Rhetoric & Composition, Purdue University

All research begins with an exigency.

It's March 2018, and I am spending my spring break in a central Florida retirement community with senior citizens who like taking me to quilting circle, hymn sings at the local church, and trivia night in the rec center. This is my second time conducting field research in the senior apartments in the community, where the older adults age 70+have welcomed me into their homes to conduct interviews with them about their digital user experiences, and observe them as they interact with their computers and other devices.

It's Thursday night, and I'm sitting in the kitchen with an 82-year-old woman who insisted that I give her the pseudonym "Holly" after Holly Golightly in her favorite film, *Breakfast at Tiffany's*. She's showing me her laptop while her husband, who has dementia and doesn't use the computer much, watches game shows from the bedroom. After demonstrating her typical internet use to me—email, news, some healthcare research, a little online shopping—I ask her to complete a series of tasks so that I can better understand how she goes about finding information and solving problems online.

The next 15 minutes are… a right kerfuffle. Holly struggles with the laptop's chiclet keyboard: "See," she says, "my fingers [can] type faster, but this is too small for me… no, I don't like it… this is not a good keyboard for an older person." She's attempting to find a news story that's of interest to her, so she's searching for journalism about Donald Trump's finances—but she does so not by navigating to a search engine (like Google or Bing) or typing a query into the address bar, but instead types what she's looking for into the search bar in Gmail's interface, which is her most frequently visited page (though not her browser's homepage). She types in all of her search requests as though they are webpage addresses written in sentence case: "www . info on trumps finances . com." When Gmail yields no results (because she has no messages in her folders that would match this content), she returns to the search bar and clicks "Search the Web For," which brings up Google search results in a new tab.

The final task that I ask Holly to complete is to find a government document that answers the following question: "How do I deduct medical expenses for transportation to doctors' appointments from my taxes?" The next three minutes involve Holly clicking through advertisement after advertisement, getting stuck in a loop of sponsored content—first paid search engine results, then SEO-optimized placements of medical billing software and claims processing companies. In the end, she gives up on the task, unable to find an adequate resource for explaining the tax law.

Given these results, it's no wonder that, midway through the task analysis, Holly sighs to me, "It's [the computer's] not my favorite thing in the world. The telephone is my favorite thing! And most of my friends are telephone people. You can put that in your whosiwhats [dissertation]… because that's what we grew up with."

How can we be accountable to our elders?

Holly's experience offers an interesting cross-section of issues that I've run into in my three years of research with older adults in this retirement community. The difficulties that she faces have a variety of causes, as well as a variety of potential solutions or workarounds. Her struggles with finding information are shaped by embodied, material, cognitive, cultural, educational, and design factors. These could be mitigated by ergonomic or assistive technologies, training from experts or peers, user experience design research and interventions, or clear(er) documentation for completing these types of tasks. Today I'll explore some considerations for creating user experiences with members of Holly's age cohort in mind, to give best practices for working with aging populations and to ultimately make a case for why technical communicators are well equipped to advocate for older adults in an aging country and world.

I find Saul Carliner's (2000) model of information design to be helpful here when thinking about the ways in which older adults interact with technology, as well as drilling down the pain points that they experience. Carliner offers three levels of consideration to "reduce friction" (Buley, 2013) between users and the information that they are seeking. First, *physical design* "helps users find information," producing a document or interface that is stylistically cohesive and enables users to quickly search for and retrieve the information that they need. Second, *cognitive design* "helps users understand information," modularizing information and reducing the mental load required of users to process the information presented to them. Third, *affective design* "motivates users to perform," attending to considerations of culture, motivation, language, and socio-political impact.

Older adults' adoption and use of technologies is dependent upon design features and interventions at all three of these levels. Physical design considerations for this population may include increasing type size for older users with low vision, or replacing touch keyboards with voice-to-text for users who have tremors or other conditions that make striking small keys difficult. At the cognitive level, older adults require "consistent and persistent" navigation for websites or apps that span multiple pages or screens, because the ability to filter out perceptual information unrelated to a user's goal decreases sharply after age 40 (Siple, 2009). Finally, in relation to affective design, older age cohorts hold different attitudes regarding technology's social functions.

This is where designing for elders gets complicated, and where I think that technical communicators—particularly those of us who are trained as humanists—are well-equipped to contribute to this work.

A brief interlude to take a look at the literature.

Older adults represent the fastest growing segment of the country's population—in a decade, 20% of Americans will be over the age of 65%. Despite the country's shifting age demographics—and, consequently, the shifting demographics of technology users—technical communication research still fails to account for age as a component of identity, and focuses its inquiry largely on 1) students in undergraduate programs and 2) the communication work of academics and practitioners in their workplaces, before old age and/or retirement. In 2004, Gail

Lippincott asked in the *IEEE Transactions on Professional Communication*, "Where are the Technical Communicators in Research and Design for Aging Audiences?" Since then, there has been some work from human-computer interaction and usability studies addressing the needs of aging users, but very little research from technical communicators, even though they are uniquely situated to address issues of difference and access shaping the adoption of digital technologies. The work that has been published in technical communication was written over ten years ago (Chisnell, Redish & Lee, 2006; O'Hara, 2004), before the advent of Web 2.0—thus, it fails to account for technologies such as smartphones, social media, and virtual assistants.

In human-computer interaction (HCI) and user experience design (UX), age is often conflated with or reduced to disability and, as a consequence, older adult populations are viewed by designers and communicators according to a deficit model. For the past decade or so, HCI and information design have published experience reports discussing elders' interactions with different digital technologies. These studies have primarily focused on the differences between older and younger adults' learning and use of technology, from personal media players (Kang & Yoon, 2008), to digital thermostats (Brajnik & Giachin, 2014), to GPS interfaces (Roberts et al., 2011). The majority of these studies focus largely on differentiating between the needs of adults in distinct age segments, rather than examining the everyday use of technology by adults of a certain age category. But because of this research, as well as the observations of practitioners in the field, user experience leaders have begun developing "best practice" resources for designing for older users (see Campbell, 2015; Chadwick-Dias, McNulty & Tullis, 2003; Finn, 2013; Johnson & Finn, 2017; Wilkinson & Gandhi, 2015).

However, this work fails to tell the stories of individual users and/or their communities. Neither technical communication nor user experience design appear to have conducted studies localized to specific communities of older adults, however. Retirement or senior living communities remain apparently untouched by researchers as a resource for understanding the wired lives of older populations, as well as the resources that older adults draw on within their own communities for technological learning and troubleshooting. Rarely do these best practice documents or experience reports cite directly the researchers' experiences with older adult users, either—they lack qualitative data and examples to substantiate the claims that they make about this population. We are well-positioned, given our training in humanistic theory and research methods, to tell users' stories and advocate for them. Technical communicators have long advocated for users.

Theorizing technology design for older adults from a holistic perspective

To return to this idea of what *we* can contribute to *gerontechnology* work—that is, the combination of *gerontology* and *technology*—I bring us back to my own project, and how I'm conducting research with this population and framing the work for my dissertation project. I've outlined four key influences that shape older adults' adoption of digital technologies and their user experiences with those technologies. These expand upon, adapt, and modify Carliner's (2000) categories.

1. Embodied/material factors
2. Cognitive/psychological factors

3. Educational factors
4. Generational/cultural factors

The first three are somewhat self-explanatory. Aging bodies use technology in different ways: deteriorating eyesight and/or hearing, as well as tremors or other conditions that affect motor control affect physical interactions with digital interfaces. Older people use digital technologies differently (Campbell, 2015), which calls for specific design considerations: large, easy-to-read fonts with high contrast; "consistent and persistent" navigation across pages on a site; and limited information on each page to facilitate "visual search efficiency" (Sibley, 2008). On the cognitive side, reduced short-term memory and attention capacities are critical considerations, as well as the psychological motivations that drive (or hamper) these folks' technological adoption—consider the recurring narrative that elders are "slow" or "technologically incompetent. Education encompasses formal and informal computer and technology training that elders have received, usually through a patchwork of contexts: some learned on the job, while others were taught by relatives or grandchildren. Some are self-taught through a variety of methods: immersion or trial-and-error, how-to books, etc. Others took courses at local libraries or community centers (McKee & Blair, 2006; Tofteland-Trampe, 2017).

Cultural factors are a bit more difficult to define and pin down than these three others. There are twin forces there are pulling on technical communication right now as a discipline: a cultural force and a material force. We see in our conference themes and in our journal articles a movement towards revaluing and reintegrating culture, and affirming an ethical commitment toward social justice through research, teaching, and praxis (see Agboka, 2014; Jones, 2016; Jones, Moore & Walton, 2016). However, the discipline is also emphasizing materiality—physical things and their power—through its widespread adoption of frameworks like new materialism and Latourian Actor-Network Theory, or ANT (McNely, Spinuzzi & Teston, 2015). "ANT is the ultimate methodology for an integrated research scope," explain Read & Swarts (2015) in their contribution to *TCQ*'s special issue on methodology, "It enables the continuous tracing of associations across boundaries of space, time, and materiality without ever stepping off the trail into context" (pg. 39).

However, it is precisely because of this lack of context that Latour's theory cannot paint a complete picture of users' experiences. ANT fails to take into account epistemological, ontological, and ideological forces that shape human/technological assemblages—forces that have real, material impacts on users' interactions with tools. Put another way, material frameworks that only foreground the interactions of *things* function in the realm of explicit, physical actors (people, computers, applications, etc.), to the detriment of implicit, symbolic forces that also exercise control over human-technology interactions (race, class, gender, age, affect, history, etc.). This means that the experiences of users from diverse backgrounds are collapsed into a dominant (typically white, Euro-American, masculine) norm, with underrepresented groups either treated as an afterthought or ignored entirely. ANT and other methods like it thus ignore critical factors shaping users' contexts of use, to the detriment of populations already marginalized by scholarly research—such as women, communities of color, individuals with disabilities, the working-class, and—yes—the elderly.

Technical communication cannot afford to ignore the material, embodied realities of the people it affects. And these embodied realities do not just have to do with corporeal bodies, in this case—not just hands with tremors or eyes with cataracts or ears with hearing aids—but also the social and cultural components that surround and are imbricated with those bodies. The generational norms and assumptions—the hidden "curricula of aging" (Bowen, 2012)—that shape whether older adults adopt, adapt, or alienate themselves (Rumsey, 2009) from technologies.

So how do we study older adults while attending to the cultural considerations that mark their age cohort? I conclude with some tips from my own work.

Methodological considerations for technical communicators working with older adults

When conducting research with older adult participants, time is key. In *Convivial Toolbox*, design scholars Sanders & Stappers (2012) explain:

> "Elderly participants have a lot to share and have the time for sharing. Plan on sessions with the elderly to take up twice as long as sessions with younger people. It takes some practice to decide when to steer the conversation, and when to let it go its own pace and direction" (pg. 104).

Being conscientious of the idiosyncrasies of the communities and cultures that we research with is critical to building trust with them. This includes understanding their values and norms, so that we can treat them with respect and represent their lived experiences as faithfully as possible. You have to meet community members where they're at.

This is where *contextual inquiry* is key. Visiting older adults in their home, where they're comfortable and they can show you how they've adapted or hacked technology to work to their advantage, helps shed more light on their usage than if you require folks to come to you. Going into seniors' apartments in the independent living facility where I conduct my research has shown me that most of them keep their passwords close by their computers—in a binder next to their desktop, on a post-it note taped below their keyboard, pinned to a bulletin board behind their monitor. This is a valuable insight that I couldn't get without *going to the context of use*. Because of this, I plan to offer a workshop on digital safety and security the next time I collect data, providing tips on creating secure passwords, safeguarding personal data, and maintaining encrypted connections.

On that note, the final advice that I have to give is to give back—this is based in my feminist research methodology training (Reinharz, 1992), which emphasizes the importance of *reciprocity* with participants. Those of us who have teaching experience can use that gift to thank older adult research participants for their time and their energy. Offering lessons, leading workshops, or creating video tutorials are all ways to leverage our expertise to help the communities we work with. For me, this often involves providing tech support. During my last field research trip, I asked participants aged 75–90 to complete a series of tasks on their home computers: things like searching for directions, changing their desktop background, and creating an account on a social media site. After this process, I'd ask them if there was anything they'd like to learn, or any

other questions they had about how to use technology. In this post-mortem period after the data collection, I did all of the following...

- Set up a new illuminated magnifying glass that a woman bought to use while crafting, but couldn't figure out how to install batteries in
- Taught a man how to use keyboard shortcuts to change the display size on his laptop, and to create email lists to contact participants in the two different support groups he managed
- Sketched out documentation on paper, explaining the steps to send a Facebook message
- Helped walk a woman through using her doctor's new online patient check-in portal
- Taught a woman how to identify sponsored content in search results, so she could differentiate between bullshit advertising and legitimate websites

These might seem simple, but to the research participants, they provide solutions that they had been searching for to persistent problems. As Cindy Selfe (1999) has said, "small, potent gestures" can make a world of difference. I'll leave you with this idea of giving back, and ask how you might practice the same kind of reciprocity with your own research participants, in the spirit of this year's conference theme: accountability in technical communication. Thank you!

Allegra W. Smith // smit2632@purdue.edu // @argella

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