Adapting to technological change in the workplace: An assessment of the effects of information and communication technology on older workers

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ADAPTING TO TECHNOLOGICAL CHANGE IN THE WORKPLACE: AN ASSESSMENT OF THE EFFECTS OF INFORMATION AND COMMUNICATION TECHNOLOGY ON OLDER WORKERS

A Dissertation

by

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submitted in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

April 2014

ABSTRACT

Adapting to technological change in the workplace: An assessment of the effects of information and communication technology on older workers

by

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While much has been written about the effects of information and communication technology (ICT) on the workplace, little research has focused specifically on its effect on older workers. Using Pierre Bourdieu's theories of "capital" as a frame, I investigate how older academic faculty, clergy, and government employees have been affected by the rapid technological changes that have occurred in the workplace over the past 25 years. I conducted 75 semi-structured interviews and discovered that older workers, while generally limited in their technological familiarity and competence when compared to their younger coworkers, do have a wealth of skills that make them invaluable as employees in the modern workplace. Through the use of their social connections and organizational knowledge, I found that older workers are able to successfully mitigate almost any lack of technological skill. Moreover, as the responsibilities of workers change, because of globalization and the automation of work, I contend that the skills of older workers will be able to successfully manage the transition.

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ACKNOWLEDGMENTS

For those who don't know, completing one's dissertation is just the last step in a long journey that begins many years prior. It takes much to survive. Fortunately, I didn't travel this journey alone. Many wonderful people helped me along the way both professionally and personally. To a great degree it is because of their support that I have achieved the journey's culmination, my PhD. I would like to take this moment to formally thank them.

Foremost, I'd like to thank my committee John Williamson, Sara Moorman, Brian Gareau, and Eva Garroutte. They actually read this entire document and kindly and repeatedly took time out of their busy lives to discuss with me the ideas and concepts presented here. Thank you for believing in and guiding me.

While at Boston College, I have had the pleasure of working with a cadre of tremendous individuals who are passionate about their work and who have inspired me to be a better sociologist, a better professional, and a better person. They include Stephen Pfohl, Sarah Babb, Sharlene Hesse-Biber, and C. Shawn McGuffey. I'd also like to thank Jean Lovett for all of the help she has given me over the years as well as for the many fantastic conversations we've shared. Thank you all for creating a wonderful environment in which students, especially me, can learn and grow.

In addition to the wonderful Boston College faculty and staff, I would also like to say thank you to all of the graduate students with whom I've grown over the past five years –Emily Dubois, Ross Glover, Lara Birk, Adina Koch, David Harker, Fatima Sattar, and Eliz Storelli. A special thanks as well to two people in particular who were more than just colleagues but became true friends, Tom Laidley and Emily Barko (and Bella!). Thank you all for the support both in and out of the classroom. I will never forget those moments together.

Before I came to BC, I had the pleasure of working with a group of fantastic professors and graduate students at the University of South Florida. Their influence and support have been as important as any I received at BC. They include but aren't limited to Donileen Loseke, Maralee Mayberry, Michael Kleiman, James Cavendish, Laurel Graham, Elizabeth Vaquera, Sara Crawley, and Shawn Bingham. Additionally, I'd like to also thank Eric Duke, Tamara Zwick, Cory Caswell, and Rebecca Hensley. Finally, I am grateful to Christina Partin for persuading me that my true career passion is to teach and to my sociology MA cohorts including Jarin Eisenberg, Branimir Cvetkovic, Ginger Jacobson and Sean Currie. Thank you for sharing many wonderful experiences and providing advice when I really had no idea what I was doing.

In addition to the professional support and guidance I have received over the years, I wish to thank those individuals in my personal life who kept me focused and driven toward my goals. They include Abbey and Brandon Lehman, Kris Bowen, Robert Sanchez, Adriel Bowman, Barbie Gutierrez, and Conchi, Cristina, and Erica Lundblad. Moreover, I'd like to thank Arlene Prieto, Martha Miranda, David Ratner, Ralph Remis, John Kricker, and Jim Gasior. Additionally, I'd also like to thank Peg and Ed Beucler for giving me and Jess the best possible home to start our lives together.

To the Fitzsimmons' Family – Phil, Katie, Dana, Nick and Jade: You have accepted me as one of your own and given me more love and support than I could have ever asked for. I am lucky to have you in my life and I hope that you all know how much I love and cherish you all.

To Lourdes and Mely: Thank you for cheering me on throughout this process. Sometimes we just need someone to vent to at the end of the day and I am fortunate to have you both in my life to listen and to help with whatever I need.

To my sister, Cristina Hernandez: I love you. You listened to all of my whining throughout this experience and worked to keep me in good spirits no matter what. My sanity and good humor is intact because of you. Thank you.

To my father, Jose Hernandez: I am the man that I am today because of your inspiration and support. You are the absolute best role model in my life. Lourdes once told me that I would be lucky if I ever became ½ the man that you are and I can't agree more. I hope to one day be worthy of the example that you have set. I love you.

Finally, to the person that is my everything: Jessica Fitzsimmons. I live each day in awe of the fact that you are my wife. Not only are you brilliant and beautiful but you also love the hell out of me and that is easily the best feeling in the world. I am the luckiest man in the world because I am with you. I love you and I will always love you. Lemondrop.

To anyone I have omitted, I apologize. Maybe try harder next time? Just kidding. I love you all.

Young men know the rules, but old men know the exceptions.

– Oliver Wendell Holmes

Chapter 1

Introduction

"I'm happy that I'm almost retired. It's not the same job anymore."

Those were the words spoken to me by Arturo[1] at the end of our interview. Over the past 30 minutes he has explained the various ways that his job, in which he has been working for over 30 years, has changed dramatically from the one that he was originally hired to do. Arturo is a 64 year old plant electrician at a county water & sewer plant in a major U.S. city. His duties predominantly center on installing and maintaining electrical components and repairing any electrical problems that may occur at the plant. While the job description of the plant electrician may be similar to what it was when he was first hired, the job itself has changed so dramatically that he

[1] Name changed to protect identity.

doubts if he would be hired for the same job if he had to apply all over again and compete with younger men. What has changed? According to Arturo, "I've gotten old." Moreover, the duties called for in order for him to perform his job now demand computing skill and knowledge, both of which he freely admits he does not have. "Do I know how to touch-type? I don't even know how to turn on a computer! I let me wife deal with that stuff at home and I get the young guys to do that stuff here [at work]." When asked how he has managed to get away with that setup without being reprimanded by his supervisors or his co-workers, he replies with a sigh followed by a smile, "I'm old but I still know a few things…"

A common experience for older workers like Arturo occurs in modern society when they are abruptly bombarded with an array of new technologies within the workplace. These include digital media such as the internet (e.g. email, instant messaging, social networking, research databases etc.) and mobile devices such as cellular phones and tablets (Robertson and Vatrapu 2010). These technologies are not simply helpful novelties but are in fact the tools needed for job survival and success (DiMaggio and Bonikowski 2008). Unfortunately, the technology is not always seen as useful or even necessary by older adults, who are more likely to show reticence around information and communication technology (ICT), and in fact may view it as an unnecessary nuisance (Wagner, Hassanein, and Head 2010).

This change within the workplace is becoming increasingly commonplace because American society is experiencing two simultaneous changes: First, society

is generating new technological breakthroughs at a markedly rapid pace (Dickinson and Gregor 2006). Second, the average age of our population and workforce is increasing (Burke, Cooper, and Field 2013; Wagner, Hassanein, and Head 2010; OECD 2006; Dickinson and Gregor 2006). Consequently, there are greater numbers of older workers within the workforce than ever before (Hart, Chaparro, and Halcomb 2008) and these older workers have and continue to face unanticipated challenges that are historically unique and specific.

How the growing dependence on technology in the workplace affects the aging workforce is important both now and going forward because historically older Americans have been the group most apprehensive toward technology and its adoption (Cf. Wagner, Hassanein, and Head 2010; Morris and Venkatesh 2000; Laguna and Babcock 1997). A significant number of older adults simply do not feel comfortable using many forms of technology that are common within the workplace, including personal computers, email and the internet (Wagner, Hassanein, and Head 2010; Charness and Holley 2004; Fox 2004). The same level of apprehension is not observed in their younger co-workers (Broady, Chan, and Caputi 2010). In the modern workplace, where technology is integrated into nearly every action and interaction, a younger worker's comfort with technology can be considered a significant advantage, whereas the older worker's lack of equivalent competence and familiarity with technology can be considered a disadvantage (Broady, Chan, and Caputi 2010).

I intend to augment this literature not by focusing on the weaknesses or deficiencies of the older worker but instead on the characteristics that make older workers valuable commodities within the modern workplace. Additionally, I will discuss some ways older workers use their experience-laden skill set including their knowledge of the work culture, their extensive social network, and in some cases, their position within the work hierarchy to adapt to the sweeping changes facing workers today. I aim to illustrate that older workers, even in our technologically-driven world, are an invaluable asset that can and should be sought after and appreciated.

While the aging workforce has been a topic of concern for many years there has been relatively little policy-related work done over the past twenty years to combat the many challenges that this group may experience (Burke, Cooper, and Field 2013; Griffiths 1997). In an effort to rectify this, the results generated by my research will be applicable to a variety of topics and fields including work, aging, education, economics, and human-computer interaction and are intended to stimulate discussion and debate regarding this important issue. For example, a growing number of researchers are currently investigating what role human workers will play in what has been dubbed "The Second Machine Age" (Brynjolfsson and McAfee 2013). In this world of automated technologies, what kind of worker will be most effective? Will technological competence be the most valuable skill for a worker to possess or will other skills supersede them? Moreover, how will currently employed older workers handle this change? These questions are at the cutting-

edge of scholarly research and their answers may provide valuable insight in the quest to understand and ease the transition for workers (Chan and Chen 2013).

Definition of Key Term

For this project, the use of "older worker" refers to a person who is at least 50 years old (as of 2013) and was working a full-time job at the time of the interview.

Why denote "50+" to characterize the older worker? There is currently no consensus in the literature regarding who is "old" (Hsu 2013). Some researchers choose to operationalize "old" or "older" as 65 years old, which is when many begin to first receive Social Security benefits in the U.S. Others choose 40 which is the minimum age necessary to receive workplace protections against ageism (Age Discrimination in Employment Act). Moreover, past scholars interested in “older workers” have used 44 and over (Wallen and Mulloy 2006), 50-65 (Simpson, Greller, and Stroh 2002) and 55-67 (Elias, Elias, Robbins, and Gage 1987) to identify this particular group (Hsu 2013). Fifty years old was selected as the benchmark for this project because workers in this age range are most capable of relating the various ways modern ICT has changed the workplace experience as many common workplace technologies were integrated into standard workday routines in the early 1990s. Persons who are at least 50 years old in 2013 would have been about 30 years old in the early 1990s and would have experienced the bulk of their occupational training (e.g. graduate school, seminary, vocational school, etc.) and

completed at least some work experience before the popularization of ICTs like email, the internet, PowerPoint, text messaging, etc. They are also able to describe in detail how the integration of these and other important technologies has changed their work experience.

Research Question

The purpose of this project is to examine how changes occurring within the workplace have affected and continue to affect older workers in three occupations, in this case academic faculty, clergy, and government employees. For example, how has the day-to-day experience of work, as perceived by older workers, changed over the past 20+ years as a result of modern ICT? Additionally, I also examine to what degree technological skill affects a worker's success in the workplace and whether a lack of technological competence can be successfully mitigated through the use of social and cultural capital.

The question of whether an older worker's lack of technological competence or skill can be successfully mitigated is especially important when we consider what it means to be "successful" within the modern technologically-driven workplace. Older workers can use their social networks and relationships (from here on known as social capital) and their organizational knowledge (from here on known as cultural capital) in both positive and negative ways to help them succeed even if they do not possess significant technical skill (Lin 1999a; Lin 1999b; Tsai and Ghoshal 1998; Dimaggio 1997). For example, an older worker may use his or her

knowledge of the work environment to compensate for a lack of technological competence by maximizing the effect of other skills such as interpersonal relations, organizational skills, or mentorship while minimizing the effects of a lack of technical skills. In contrast, other older workers may use that same knowledge of the work environment or their workplace prestige only to avoid having to keep up with technological change. These types of actions make further exploration of the various ways in which older workers in different occupations adapt to the modern workplace a worthwhile endeavor. This insight may allow us to better understand the needs of this specific group and ultimately create an environment that allows all workers to function at their best.

Overview of Methods and Standpoint

To answer these questions, 75 semi-structured interviews were conducted with older academic faculty (33), clergy (15), and government employees (22) as well as related parties such as IT professionals and secretaries/office managers (5). These groups were selected in part because they each derive from important social institutions within our culture as laid out by one of the founding fathers of sociology, Émile Durkheim (Durkheim 1982).[2] These interviews were performed over a 2 year period starting in the summer of 2011 and concluding in the summer of 2013. Interviews with academic faculty and clergy were conducted entirely in a Northeastern state in the U.S. while interviews with government employees were

[2] Other important social institutions include the family, the legal system, and the military.

largely conducted in a Southeastern state in the U.S. (19) while the remainder were performed in a Northeastern state (3).

As I set out to conduct this project I was admittedly apprehensive as to whether or not I would find anything worthwhile. In other words, would the stereotype of the "aging curmudgeon who can't keep up with the times" be proven correct? Would I simply hear story after story from older workers describing how much better things were in "the good old days" and that new technologies had simply ruined the workplace both in terms of productivity and satisfaction? Or, would I find a diverse group of workers who have used their experience and wisdom to help them succeed over "ambitious young pups" that rely heavily on their technological skill? Additionally, how different would each group of workers in this study really be? Would I find a plurality of experiences that were unique to each occupation? Finally, would the individuals interviewed see the world through the prism of their age or might they never address their age at all? With the successful completion of each interview, these and many more questions were answered while others were confounded in ways that enrich our understanding of age, technology, and work.

Structure of the Dissertation

In Chapter Two, I provide a general overview of the pertinent literature and themes. This section features a review of a number of important scholarly topics that help contextualize the findings of this project including the digital divide, the

technological competence of older adults, and ageism in the workplace. Additionally, I lay out the relevant theoretical framework, namely social, cultural, and technical capital that is used to examine and understand the experience of older workers. In Chapter Three, I discuss the methods used to conduct my study as well the three populations that I focus on for my dissertation: academic faculty, clergy, and government employees. I also describe how each occupation group was selected and why I chose to use semi-structured interviews as my method of choice.

Chapter Four features my findings on the effects that ICT have had on older academic faculty. I begin by presenting various ways that everyday work life has changed particularly in regards to research, teaching, and in communication with peers and students. Through this research it became clear that older faculty are by no means intimidated or made anxious by modern ICT as some of the literature on older adults would have us believe. A number of older faculty do discuss the lack of perceived benefits derived from technology such as PowerPoint which is consistent with past literature. However, because of the fact that everyone interviewed enjoys tenure and has cultivated a wealth of organizational knowledge these faculty members are able to adapt quite well in the face of ICT integration.

In Chapter Five I discuss the various ways that ICT has changed the work life for various members of the clergy. I illustrate the fact that ICT has become an integral part of clerical religious life. This was in some ways surprising when considering the fact that the duties of clergy have been largely the same for centuries. Interestingly, like older academic faculty, clergy have relied on their social

status, personal relationships, and deep understanding of the world in which they work to allow them to be successful even as new technologies become common tools within their workplace.

Chapter Six provides some contrast to our two previous chapters by looking at government employees. Unlike faculty or clergy, who tend to have much more autonomy and power in regards to their day-to-day jobs, most government employees are more susceptible to pressures to change and adapt. This is especially true for older blue collar workers and this chapter demonstrates that even lower level employees can survive in an increasingly technologically-dominated world if they rely on their developed strengths and experiences.

In Chapter Seven I compare the three occupational groups for similarities and differences. The intent is to highlight the various issues that are common among older workers and those that are person or job specific including education, class, and power differences. I conclude my dissertation with Chapter Eight which features a general discussion of my findings and how they contribute to the growing literature.

Chapter 2

Literature Review and Theoretical Framework

The motivation for this project is founded in the need for a more nuanced understanding of how modern ICT has changed work life for older employees (Cf. Zillien and Hargittai 2009). For more than two decades researchers from various fields have examined assorted issues related to modern ICT use from general overviews of access differences between diverse groups related to the digital divide (van Dijk 2006; Hargittai 2003; Norris 2001, Bimber 2000) to studies of how people, particularly older individuals, actually use and feel about ICT (Livingstone and Helsper 2007; Selwyn 2007; van Dijk 2006; DiMaggio et al. 2004; Selwyn 2004). A broad examination of the literature reveals, for example, that the technology engagement of older adults – in terms of use and comfort – differs in many ways

from that of their younger counterparts. Several scholars note that while there is rising interest among seniors in the internet and with computers in general, this group faces several significant barriers to their successful use of ICT including a lack of experience with technological tools (Laberge and Scialfa 2005), a limited knowledge of the internet and its potential uses (Hogan 2005), and feelings of intimidation and anxiety related to technology in general (Karavidas et al. 2005; Fox 2004). These differences in use have in turn played a major role in shaping public and professional opinion against older individuals in the form of ageism (e.g. "You can't teach an old dog new tricks"). In this section, each of these subjects, the Digital Divide, differences in the use of ICT, and ageism in the workplace are reviewed to properly contextualize the theoretical framework of this paper.

The Digital Divide

With the rapid expansion and integration of ICT in our personal and professional lives, it is often easy to forget the many benefits gained through the use of technologies such as personal computers, the internet, and mobile phones. This is unfortunate as modern ICT has made many formerly difficult or inconvenient tasks much easier and convenient. For example, personal computers, be they desktops or laptops "can be used to store retrieve, organize, transmit, and algorithmically transform any type of information that can be digitized – numbers, text, video, music, speech, programs…to name a few" thus making their use much simpler (Brynjolfsson and Hitt 2000: 23). Because less time and energy must be spent on

basic tasks like data processing, people are more likely to engage in preferred leisure activities. Additionally, the internet and the World Wide Web have played a major role in giving a voice to millions of people who were previously voiceless be it in the form of the "Arab Spring" or the "Occupy Wall Street" movement (Howard et al 2011; Preston 2011; Castells 2007). Moreover, ICT has allowed more people than ever to stay in contact with friends, family, and everyone in-between. Through the rise of social networks such as Twitter, Facebook, and Snapchat, Americans are more connected today than ever before (Boyd 2014).

Over the last twenty years social scientists have studied the effects of new technologies on social and cultural development (Gunkel 2003; van Dijk 2002). Class, gender, race, geographic location, education, and – most importantly for this project – age, are important demographic characteristics that affect an individual's ability to access and ultimately benefit from ICT (van Dijk 2006; Castells and Cardoso 2005). The starting point for a discussion of the various ways in which groups use and benefit from ICT is derived from this research in which scholars note the alarming disparity in access to, usage of, and skill disparities with technology known as "The Digital Divide".

Throughout the 1990s and early 2000s, surveys revealed consistently growing gaps between the "haves" (the wealthy, the educated, racial/ethnic majorities, the young) and the "have-nots" (the poor, the uneducated, racial/ethnic minorities, the elderly) related to their physical or material access to ICT, the most obvious of which is computers (van Dijk 2006; van Dijk 2005; OECD 2001; OECD

2000; NTIA 1999; NTIA 1998; NTIA 1995). The background characteristics of this material access divide, revealed through large-scale multivariate analyses, indicate the three variables that best predict ICT disparities are income, age, and education (de Haan 2003). Over the last 15 years, the importance of income as a predictor of material access to ICT has been reduced resultant of the mass production and diminishing cost of computers, smartphones, and access to high-speed internet service. However, income remains the most important predictor still, particularly in developing nations (van Dijk 2006).

Scholars and activists looking to close these gaps and to reduce inequality have argued that the obvious way to achieve these goals is through purchasing and making publicly available computers and other ICT for the general public to use (van Dijk 2006). The logic supporting this claim is simple: The reason the poor, the rural, the deprived are not benefitting from the advantages gained by using ICT results from their not owning or having access to the technology. Subsequently, in effort to expand ICT availability to all, scholars and politicians have advocated for increased funding to schools, libraries, and other public institutions specifically to allow them the purchasing capability for these technologies. While there have been some noticeable ICT gains by the "have-nots," particularly in North American and Western European countries, scholars continue to note that disadvantaged groups still do not realize the same benefits from ICT as their counterparts in spite of the increased amount of material access. This is especially discouraging when considering that local, state, and federal governments have spent billions of dollars

to provide ICT to the general public. These results indicate the answer to "why some groups benefit from ICT while others don't" requires a much more nuanced solution than simply giving people laptops and hoping for the best. Moreover, it is clear that while material access to ICT is important, it is by no means the only factor needed to understand information inequality and to bridge the digital divide.

While searching for a digital divide solution over the last decade to avoid relying solely on equalizing only material access for all users, researchers have focused on two additional access components that also must be bridged: *skills access* and *usage access*. Skills access describes the ability or skill needed to operate computing hardware and software. This skill ranges from knowing how to turn on a computer or being able to properly use a mouse (van Dijk 2006). Research on skills access has produced two major findings:

> (1) that the divides of skills access are bigger than the divides of [material] access and (2) that, while [material] access gaps are more or less closing in developing countries the skills gap…tends to grow. A striking result is that those having a high level of traditional literacy also possess a high level of digital information skills (de Haan 2003; van Dijk, L. et al. 2000).These skills appear to be more important for computer and internet use than technical know how (van Dijk 2006).

In addition, researchers have concluded that the best way to eliminate the divide in skills access is through consistent practice along with trial and error as opposed to classes or workshops.

Researchers (van Dijk 2006) lastly observe that even when *material access* and *skills access* are equalized there is a noticeable gap still between those individuals who benefit from ICT and those who do not. This is identified as a

difference in *usage access*. Usage access refers to how effectively an individual operates a technology device toward gaining the maximum benefits of ICT. Because a person has physical access to a computer or a smartphone, it does not mean that one actually uses it. Moreover, just because a person has physical access to a computer or smartphone and may use it occasionally for basic tasks does not mean that they can or will obtain benefits from the ICT. For example, some older adults have taken to purchasing personal computers for their home. The most common use of the computer is for basic computing tasks such as composing letters using word processing software or writing emails to loved ones. These very basic tasks require little skill and do not invite the full use, power, and capability of the technology. This difference usage is referred to as "The Knowledge Divide" (Graham 2011). Scholars argue that what is paramount today is the effective use of ICT by citizens., The ability to interpret and understand the information generated by ICT , defined as effective use, is significantly affected by social factors such as the individual's education level and age (Gurstein 2011).

In sum, digital divide research makes clear that the dream of a world in which everyone can and does prosper from ICT is simply not a reality. A pronounced disparity exists among citizens in material access, skills access, and usage access. Until each of these gaps is addressed and resolved the disparity between the "haves" and "have-nots" will only increase.

ICT Challenges Among Older Adults

Digital Divide research suggests that some groups have taken advantage of advancements in ICT while others have not. In addition to socio-economic status (Selwyn 2006), the best predictor of who will benefit from ICT and who will not is age. Simply put, older adults differ from younger (18 – 49 years old) adults in their engagement with and use of technology. This disparity is especially pronounced in three main areas: (1) Experience with ICT, particularly computers, smartphones, and the internet; (2) Levels of anxiety and intimidation due to ICT; (3) Perceived benefits of ICT.

The first significant difference between younger and older adults in their use of ICT is their contrasting involvement with it in their personal lives. (Laberge and Scialfa 2005). As discussed above, a major reason why older adults lack experience with ICT is they lack material access. Studies have found that most people over the age of 65 simply do not own computers and few ever use the internet (Blaschke, Freddolino, and Mullen 2009; Selwyn et al. 2003). Additionally, those who do possess computers have only purchased or been gifted them relatively recently. This lack of physical access negatively affects an individual's ability to develop beneficial computing skills as it is difficult to gain experience with ICT without the presence of those technologies. This dearth of material access among older adults is in stark contrast to studies of younger adults which indicate that over 70% of adults under 35 years old own and regularly use both computers and smartphones (Smith 2013). While these studies exclusively focus on the personal and not professional use of

technology they still lay a foundation in which to explain why it is that older adults within the workplace may be reticent when it comes to using modern ICT.

A second difference between younger and older adults is their responsive levels of anxiety and intimidation as they relate to ICT (Hogan 2005; Karavidas et al. 2005; Laguna and Babcock 1997). Research indicates that due to their lack of experience with ICT, older adults experience higher rates of anxiety and are more intimidated by technology than younger adults. This has been demonstrated in a number of observational studies where researchers actively monitor how older adults use technology (see Wagner, Hassanein, and Head 2010, for a review). They have found that older adults are much more cautious when doing basic tasks such as opening, saving, or closing a document. Some of these older individuals note a fear of breaking the computer because they did something wrong or inappropriate. This increased rate of anxiety and intimidation ultimately acts as a negative feedback loop where the lack of experience creates anxiety which in turn limits any desire to gain future experience. Considering the ever increasing rate of technology advancement, this feedback loop is especially discouraging for scholars who are hoping to reduce the differences in ICT use between younger and older people. The fear is that unless the loop is broken soon millions of older adults will never fully benefit from ICT both in their personal lives and within the workplace.

Lastly, past researchers have found that a major obstacle to computer use among the older population in their personal lives is a perceived lack of benefit to their lives (Blaschke, Freddolino, and Mullen 2009; Eastman and Iyer 2004; Irizarry

et al. 2002; Melenhorst, Rogers, Caylor 2001). These scholars note that "either the technology does not meet the needs of the user, or they do not understand the technology sufficiently to appreciate the benefits" (Wagner, Hassanein, and Head 2010: 5). This is an especially difficult problem to overcome as it requires scholars to fight an uphill battle to persuade older adults to replace firmly established routines with digital alternatives as they may argue "Why change when it works for me?" For example, when communicating with family members, most older adults elect to use the telephone. Contrarily, recent research into communication among young adults reveals that the most popular form is the text message (Smith 2011). In fact, this research established that young adults actually text 23 times more often than adults aged 65+. It is suggested that this large variance is due to the young adult's appreciation of the speed and convenience of the text message. Researchers also found that young adults enjoy the ability to communicate simultaneously with multiple people. Similar inclinations have not been identified among older adults. It is clear that until ICT use differences between older and younger adults diminish, the older population will continue to lag behind their younger counterparts in the realization of the benefits of ICT. While this may not seem like a significant problem in general because realistically it is always possible to simply use the telephone; however, what this thinking ignores is that for certain populations (e.g. the young) and environments (e.g. the workplace), older technologies like the telephone, are becoming increasingly passé, thus losing their practical efficacy (Boyd 2014; Tapscott 2008).

Interestingly, this last obstacle may be in the process of being eliminated, at least in part, if recent literature is to be believed (Zickuhr and Madden 2012; Olson et al 2011; Mitzner et al 2010). For example, researchers have found that past studies have either overstated or wrongly generalize their findings to include unstudied variables (Mitzner et al 2010; Olson et al 2011). For example, some previous studies (see Wagner, Hassanein, and Head 2010) tend to focus on specific forms of ICT in their investigation including email use (Melenhorst, Rogers, and Bouwhuis 2006) or personal digital assistants (PDAs; Arning & Ziefle 2007). They then generalize their findings to say that older adults *in general* have difficulty perceiving the benefits of ICT *in general* when this is not the case. This type of description simply perpetuates the idea that older adults are a monolithic group as opposed to the complex group that they really are eschewing any nuance that may exist. Selwyn (2004: 380) also notes that researchers in the area of aging and ICT use must always remember what is true for one group and one technology at one point in time will not always be true as perceptions do change:

> Being a "computer user" is not a permanent state-of-being and once having learned to use a computer does not irreversibly make one a computer user for life…Instead...the influences behind people's (non)use of ICT are multifaceted and historical—with individuals living technological "careers" mediated by "local" contexts of individual and community technology use. Over their lifetime…older adults…move through different states or levels of technology (non)use depending on their circumstances and context. For example, someone making continuous and comprehensive use of ICT in the workplace may then move into making only spasmodic and limited use of ICT once having retired.

While it may be the case that some older adults have difficulty perceiving the benefits of some types of ICT in certain contexts, this is by no means a fixed position. At work they may see text messaging as a valuable communication tool while at home they much prefer the connection of the telephone. Researchers must continue to examine the experiences and perceptions of older users in relation to ICT in order to better understand how it can and does affect their lives.

This examination is important for the present study because it provides a foundation on which to expand on the present literature. Presently, the majority of the studies cited above on use or non-use of technology by older adults are focused predominantly on personal use (Wagner, Hassanein, and Head 2010) and not professional use. My research aims to fill this gap by focusing exclusively on professional use. For example, do older academic faculty, clergy, or government employees experience the same anxiety or frustration found during personal use? Is it easier for older adults to perceive the benefits of technology when they are in a work context? Does the increased likelihood of material access to ICT within the workplace affect the likelihood that older workers will feel more comfortable with ICT?

Ageism in the Workplace

These contrary notions related to the perceived value and utility of technology by older adults have led to prejudice and discrimination in the workplace (Butler 2005). With the addition of these new technologies such as

smartphones and social networking sites like Facebook and Twitter, some older workers, as a consequence of a lack of appreciation of technological competence, have experienced ageism not only from their younger co-workers but also their bosses (Roscigno 2010; Roscigno et al. 2007). A common employer view of older workers is that they are "expensive, inflexible, possibly stubborn or forgetful, and bad for the company image" (Roscigno 2010: 17). While this perception may be entirely overblown and outdated (Butler 2005), this attitude may lead to the marginalization and even forced retirement of some older workers, in part, due to the Thomas Theorem which states "if men define situations as real, they are real in their consequences" (Thomas and Thomas 1928). In this case, these older employees are seen as burdens, not assets, and are thus treated as such. Sadly, this is by no means a "new" problem as there are reports as far back as one hundred years ago that note "technology was one of the most common explanations of the employment problems of older workers" (Graebner 1980: 21). It has certainly taken on a distinct flavor in our modern society with the rapid integration of new technologies. For example, according to Griffiths (1997), a number of studies over the last 30+ years show that there is a major discrepancy regarding aging employees and productivity that place the contributions and achievements of older employees in a negative light (Salthouse and Maurer 1996; Warr 1994; McEvoy and Cascio 1989; Rhodes 1983). While these studies carefully note their prescriptive limitations this has not stopped their conclusions from being used to justify discrimination.

Lessons from the Literature

The purpose of this literature review is to contextualize the various ways that ICT benefits some groups and severely limits others, including older adults. Understanding how ICT can be effectively harnessed for the betterment of the masses, as we have seen, is not as simple as purchasing more gadgets and distributing them to all. Material access is simply one of several obstacles that must be overcome for older individuals to fully benefit from ICT. While these impediments are many and complex, they are not insurmountable. In fact, it would be a serious mistake to assume that simply because the modern workplace is becoming more technologically-centered, the potential contribution of older workers should be marginalized. Antithetically, older workers may be even more prepared for this new workplace because they more experience adapting to changing expectations and responsibilities within the workplace.

Theoretical Framework

Based on the above literature, it may seem as if older employees offer few skills that would allow them to survive, let alone thrive, in a technological-driven environment such as the modern workplace. Fortunately for older workers this may not be necessarily true as there are other resources that an employee may use to demonstrate value to the institution that employs them and in some cases make them valuable commodities (Shimamura et al. 1995). To help explain what these skills and resources may be I use the sociological concept of "capital." In the

following section, I define and describe how different forms of capital can be used by older workers to give them a distinct advantage within the modern workplace even if they may not possess much or even any technical skill.

Capital

First developed by Pierre Bourdieu (1986) and later refined by others, "capital" denotes those skills and resources available to individuals or groups that allow them to gain an advantage over others. These advantages include four types of capital: (1) *economic* (financial and material assets), (2) *human* (an individual's knowledge and/or skills (Ritzer 2007), (3) *social* (privileged group membership) (Mouw 2006; Fine 2002; Portes 1998) and (4) *cultural* (privileged knowledge/skills that are specific to a particular culture) (Lamont and Lareau 1988).

This study makes use of Portes's (1998) definition of social capital which expands on the foundation set out by Bourdieu[3]: "the ability of actors to secure benefits by virtue of their membership in social networks or other social structures." He differentiates this form of capital from others noting: "economic capital is in people's bank accounts and human capital is inside their heads, social capital inheres in the structure of their relationships (Pg. 7)." This form of capital is

[3] While there are many useful definitions of social capital (see Mouw 2006), this particular version best conforms to my overarching research question by noting that individuals may derive benefit from their social standing and social connections. This is in contrast to, for example, Fukuyama (1999) who focuses on norms and group outcomes, which is tangentially related to the above definition but ultimately does not fully address the main question of this project.

of particular use in this project because ICT, by its nature, has had a significant effect on the social networks of all workers, the magnitude of which is directly linked to their social capital (i.e. their position within the workplace hierarchy). Consequently, it can be hypothesized that an older worker, as a result of time and experience as well as their position within the work power structure, will have a reasonably high standing within the workplace (e.g. supervisor, professor, priest) and consequently could use their position and the relationships formed from those involvements to their advantage to alleviate information and communication technology competence shortcomings.

In addition to social capital, another resource that can be beneficial to older workers as they adapt to technological change is cultural capital. Cultural capital describes an understanding of organizational knowledge as well as an appreciation and mastery of culturally important tasks: in this case, the utilization of ICT by workers.[4] For example, based on their understanding of the written and unwritten rules of the workplace, older workers may be able to mitigate certain deficiencies or weaknesses that they may have including those related to a lack of technological

[4] Cultural capital, like social capital, also has a history of ambiguity in regards to its definition. At times, cultural capital has been defined as a knowledge or understanding of 'high' culture (DiMaggio and Useem 1978), as a substitute for educational attainment (Robinson and Garnier 1985) or as the mastery of certain tasks or practices (Martin and Szeleny 1987; Gouldner 1979). Because of this variability, the term has become surrounded by confusion and has basically become a catch-all term to signify a multitude of loosely related phenomena (Lamont and Lareau 1988).

skill or utilization of technology. Whether or not this occurs and in what ways this manifests itself in the workplace is of paramount importance to this study.

In the midst of sweeping cultural change during the dawn of the 21st century, Bourdieu (2005) refined his view of capital to include a new branch of capital – technical capital (TC). This form of capital describes the skills and advantages gained through the mastery of ICT. Much like the other forms of capital, technical capital gives its possessors a distinct advantage within their social world by empowering those who know and understand the value of ICT (Gilbert 2010; Kirkpatrick 2010; Zhang 2010).

Bourdieu is by no means the first or only person to note the advantage that technical skill and understanding could impart on an individual. According to van Dijk (2006), this advantage has been described by several others in the past including 'computer, information or multimedia literacy,' 'computer skills,' 'information capital,' and 'digital skills' (see van Dijk 2005, 2003, 1999). Moreover, while Bourdieu and others (Emmison and Frow 1998) choose to describe technical capital as a subset of 'cultural capital,' others instead argue that it is actually an offshoot of other forms of capital including social capital (Lin 2000) and human capital (DiMaggio and Bonikowski 2008; Mahroum 2007).

In this research project, the term technical capital is used because technological knowledge and skill do provide a clear advantage to their possessor, at

least for the time being (see Brynjolfsson and McAfee 2011 for examples).[5] However, this advantage does not take place in a vacuum and is intimately linked to other important factors. For example, according to Bourdieu (cf. Mahar, Harker, and Wilkes 1990), each form of capital is connected to every other form in some way. Individuals with high financial capital (i.e. money), for example, are able to afford a good education at an elite university. While at university, they can enrich their human capital by learning valuable skills and their social capital by making important personal and professional contacts that can benefit them in the future. In contrast, individuals with low financial capital, few social connections, and sparse education are unlikely to have these same resources and are thus at a disadvantage in the social and business worlds. Based on these factors, it would not be unreasonable to assume that older workers may make decisions about whether or not to enhance their technical capital based on the other forms of capital that they may possess (Lin 1999).

In an effort to explore this fascinating interplay between different forms of advantage and disadvantage within the workplace based on the possession of capital, I examine how the perceived importance, effectiveness, and value of these different forms of capital have changed in the eyes of older workers due to integration of ICT. Through my research I intend to demonstrate that social and

[5] The authors note that current changes within the workplace in the form of increased automation of tasks may temper the overall value of low-level technical skills such as data entry and processing but the value and demand for high-level technical skill such as computer programming skills and creative interpretation and analysis of big data may increase.

cultural capital are valuable assets for older workers made even more valuable when accessed relative to technical capital. The possession of social and cultural capital, while maybe not as glamorous and overtly in demand as the ability to deftly use new technologies, are still undeniably important and provide older workers with the resources needed to not only survive in a technologically-integrated workplace but ultimately thrive.

The Groups – Academic Faculty, Clergy, and Government Employees

For this dissertation, the three groups that I investigated are academic faculty, clergy, and government employees. In the following section I provide a brief overview of the literature for each group.

Academic Faculty

Currently, universities around the country are investing huge sums of money to integrate a variety of technologies within the college campus (Sahin and Thompson 2007; Selwyn 2007; Garrison and Kanuka 2004). These technologies, which include personal computers, tablets, and the internet, have been sold to the academic community as important tools to "enhance the teaching and learning experiences of faculty and students" (Brill and Galloway 2007; see also Tang and Austin 2009; Gibson, Harris, and Colaric 2008; Nicolle and Lou 2008). The integration of this new ICT has expectedly transformed the college experience for almost every person on campus (Ayala 2009). As some of the most important members within the university, academic faculty have experienced this

transformation first hand and have had to adapt to these changes in a number of different ways in order to protect the skills and resources (i.e. social and cultural capital) that they have accumulated over their professional career. In the present study, I investigated what effects the rapid integration of ICT onto college campuses over the past two decades have had on the work experience for older academic faculty. In particular, I build on previous literature that explores how faculty are actually making use of ICT in the classroom (Brill and Galloway 2007; Selwyn 2007; McAlpine and Gandell 2003; Fass 1998) by also examining the various ways that the research process and communication with colleagues has changed as a result of ICT.

Clergy

As one of the most important social institutions in our country (Giddens et al. 2011), there has undoubtedly been considerable investigative research over the last two decades covering the effects of ICT, namely the internet, on religious institutions and religiosity (George 2006; Hojsgaard and Warburg 2005; Dawson and Cowan 2004). This research has established that the study and discussion of religion and religious topics is one of the most popular activities on the internet. This research literature includes the multifarious ways in which different religions portray themselves (Helland 2004), how the internet works to shape a young adult's religious identity (Lovheim 2004), and the different ways in which evangelists use the internet to dispense information (Cowan 2004) and recruit new members (Dawson and Hennebry 2004). This research project included interviews with various older clerics, who are non-faculty, concerning how ICT has affected the way

they interact with their colleagues and parishioners (social capital) and how it has changed what is expected of them as clergymen (cultural capital). Additionally, interest in discovering whether or not it is advantageous for older clergy to possess high levels of technical capital as a means for professional development and benefit was a concern.

Government Employees

Lastly, for over two decades, researchers from a wide array of disciplines have investigated the advantages and disadvantages of embracing ICT within the public sector also known as the 'e-government' (Gichoya 2005; Pavlichev and Garson 2003). The advantages are numerous including increased productivity, efficiency, and improved services for citizens (Cegarra-Navarro et al. 2012; Ferro and Sorrentino 2010; Brewer, Neubauer, and Geiselhart 2006; Kamal 2006; Landsbergen and Walken 2001; Pavlichev and Garson 2003; Lehr and Lichtenberg 1999; Pratchett 1999). For example, the emergence of electronic health records is touted by proponents of the integration of ICT into the government as an effective way to reduce the cost to the taxpayer by reducing the amount of duplication and bureaucracy that generally comes with a trip to the doctor or hospital (Angst and Argawal 2009). However, while there is much discussion of the advantages, there has also been much written about the disadvantages of embracing an 'e-government': namely, the effect on disadvantaged members of society (e.g. the poor, the elderly, immigrants, etc.) (Jensen et al. 2010; Wright and Hill 2009; Brewer, Neubauer, and Geiselhart 2006). Some consider that the problem of implementing

an 'e-government' extends beyond the aforementioned groups to also include government employees, particularly older government workers, because they tend to possess the least amount of technical capital and thus are most negatively affected by ICT change within the workplace.

In summation, the overall aim of this project is to provide meaningful contributions to three main areas of study: First, I build on the current literature that tries to understand how older adults feel about ICT and how they actually use ICT. My drive is to move beyond personal use to include the professional realm. In other words, do older workers share the same lack of material access, elevated anxiety/intimidation levels, and a view that ICT has limited benefits in their lives? Or, does the workplace complicate our understanding? Second, I contribute to the growing digital divide literature as it relates to ageism in the workplace. As described above, the perception of older workers as inflexible employees unable to adapt to the changing workplace can be damaging for present and future employment opportunities. In what ways, if any, do they counteract these negative beliefs and attitudes? Finally, in regards to the growing literature and the use of different forms of capital to explain differing degrees of success, what resources do older workers rely on, if any, to help them succeed in a technologically-driven workplace. Moreover, how do they employ social and cultural capital? And lastly, how do older workers use these different forms of capital in relation to one another?

Chapter 3

Methodology

For this study, I conducted 75 semi-structured interviews with older academic faculty (33 interviews), clergy (15 interviews), and government employees (19 Water & Sewer interviews & 3 Department of Transportation interviews) as well as related parties such as IT professionals and secretaries/office managers (5 interviews). Each group was selected through the use of either convenience sampling or snowball sampling. Interviews with academic faculty were performed during the summer (May – August) of 2011 as a part of an earlier research project and interviews with clergy and government employees were conducted during the summer (May – September) of 2013. Interviews with academic faculty and clergy were conducted exclusively in a Northeastern state in

New England while interviews with government employees were largely conducted in a Southeastern state (19) while the remainders were performed in a Northeastern state (3). The reason for the deviation was entirely due to snowball sampling as I received interview opportunities through interviewees.

Why these Groups?

One of the guiding forces in the population selection process for this project was Durkheim's description of sociology as laid out in "The Rules of Sociological Method." In it he notes that sociology is the "science of institutions, their genesis and their functioning" (1982: 45). As a result, I elected to focus on three of the most powerful social institutions in our culture, namely education, religion, and the government. While there are many other important institutions (e.g. the military, the legal system, industry) that could have been examined, these three were selected for four main reasons – (1) lack of study by sociologists, (2) accessibility, (3) similarity/difference from one another, and (4) possible expansion of literature on the importance of social, cultural, and technical capital as they pertain workplace success.

First, over the past 20+ years, there has been a growing interest in the study of work, aging, and technology by economists (Crino 2010; Goldin and Katz 1998; Machin and Reenen 1998), gerontologists (Angus and Reeve 2006; Sterns and Miklos 1995), education scholars (Selwyn 2007), and others (Heidkamp 2012; Munnell and Wu 2012; Heidkamp, Corre, and Horn 2010). Interestingly, there has

been little qualitative research done by sociologists during this same period. I aim to fill this gap in the literature by providing qualitative empirical research that can be used alongside the quantitative data being generated by organizations like the Sloan Center on Aging & Work at Boston College. I believe that my data will help future researchers explain the "how" and "why" questions in relation to the workplace experience for older workers thus allowing researchers to better serve the general public going forward

My second major concern when selecting a population was accessibility. Without access there is no data. Because of this understanding, I set out to examine populations that were accessible to me. While I was not always successful[6] more often than not I was able to persuade perspective interviewees to open their doors to me with relative ease.

The third reason I selected each group for study was because of their similarities and differences to one another. For example, each population has its own unique area of focus - the intellectual, the spiritual, and the state. This variability was appealing because it provided some interesting contrast between the older workers. I could reasonably answer "Are all of the older workers in my study dealing with rapid technological change in the same way?" In addition, I was intrigued by the similarities between the three groups. For example, both academic faculty and clergy have the power to shape the focus of their followers as instructors

[6] For example, my attempt to meet with administrative employees within the local Veterans Affairs offices was rebuffed.

and mentors. Additionally, while they both regularly interact with others during the course of their work, faculty and clergy also spend a considerable amount of time working by themselves. How has ICT affected this work experience?

My final concern when selecting a population for study was to focus on occupations that I could be reasonably assured held workers who possessed different forms of capital. For example, can it be assumed that workers within the particular occupation gain advantage based on their social networks and social status? Can the workers gain advantage over their peers through the possession of organizational knowledge? Lastly, does the possession of technological competence skill benefit some workers over others? I contend that each of the groups selected for this project have the ability to contribute to our understanding of how different forms of capital privilege some workers within the workplace.

Academic Faculty

This dissertation focuses on how older academic faculty members have been affected by and adapted to technological change over the past 20+ years. The data for this study was gathered through 38 semi-structured interviews with currently employed Academic Faculty and Technology Consultants (33 academic faculty/5 technology consultants)[7] at a private northeastern university between May 2011 and August 2011.

[7] Technology Consultants are IT professionals who work for the various colleges at the university. Their job is to purchase, set up, and maintain all of the technology on the campus.

Each interview was conducted at the workplace of the participant and ranged in length from 20 minutes to two hours. Each interview was audio-taped and transcribed in full. Participants were initially contacted by email (see Appendix B for recruitment letter). With the help of departmental contact lists from University websites, recruitment letters were sent out to faculty from every department on campus who met the recruitment criteria.[8] Ultimately, older academic faculty from nine separate departments were recruited including Mathematics, Biology, Chemistry, Physics, Economics, Psychology, History, Business Management, and Education.[9] Additionally, participants employed as university campus Technology Consultants were enlisted. Of the 110 faculty who were contacted for participation in the study, 33 responded for a response rate of approximately 30%.[10] Fifty percent (5 of 10) of the Technology Consultants contacted for this study were interviewed. They were also recruited using publicly available email lists. Additionally, the technology consultants interviewed each represented at least one of the departments examined.

[8] I only sent recruitment letters out to those faculty whose CV noted that they had received their PhD before 1991. Anyone who did not have a CV posted online or who did not list a completion date for their PhD was not contacted.

[9] It should be noted that the university in which the study was conducted did not have an engineering department and only one person within the Computer Science department met the recruitment criteria and he did not respond to initial contact. This is important because it can be reasonably assumed that older faculty within these departments would be more likely to possess high technical capital and thus could have affected my findings.

[10] I have been informed through personal communications with various qualitative researchers that this is a relatively high response rate for qualitative research.

Because the research questions reference older faculty members whose work experience is long enough to have been affected by the initial implementations and continual inclusion of developing technologies, only faculty who met the following criteria were selected: (1) Each received a terminal degree before 1991; and (2) each possessed at least ten years of work experience in academia. These criteria were employed to limit participants to older faculty as opposed to faculty of any age. The diploma cutoff date was selected to provide interviews only with individuals who had initial professional development absent of many modern technologies, most notably smartphones (e.g. the iPhone, Blackberry, etc.), email, and the internet. For example, an individual who received a doctorate in 1986 would most likely be over 50 years old and therefore could reasonably be characterized as an "older worker" which conforms with the academic literature (Hsu 2013; Wagner, Hassanein, and Head 2010; Dickinson and Gregor 2006). Based upon direct questioning, each participant was discovered to be at least 50 years old, thus proving the efficacy of this method.[11]

The use of email as a recruitment tool allowed easy contact to a significant number of individuals. Regardless of their technological competence, most university personnel are required to have a university-supplied email address. Resultantly, I contacted faculty who fit the noted parameters without the fear that I was limiting contact only to those who were technologically-savvy enough to set up

[11] I also found that simply looking for individuals with at least 10 years of work experience after completion of their PhD tended to yield positive results as well.

their own email account. A notable feature in the recruiting process was that the study was conducted almost entirely over the summer months when standard school-year classes were not in session. This may have generated a self-selection bias as only those individuals who had chosen to work on campus during the summer months were interviewed. This is not to be overlooked. Due to pragmatic concerns it was a necessity. However, there is no indication that individuals who remained on campus through the summer were appreciably different in terms of their resources, skills, or disposition from those who did not.

Each interview began with questions regarding the participant's general work activities and regularly used technological devices (e.g. computers, laptops, Smartphones, tablets, etc.). Questioning progressed to include specifics about the participant's use of technology in the research process, within the classroom, and as a communication tool. Because the aim of the project was to explore how older faculty have been and continue to be affected by workplace technology, age was not introduced into the conversation unless it was specifically mentioned by the participant. This was done intentionally to avoid biasing in their responses such as saving face while trying not look less informed than their younger counterparts or to exaggerating the influence or impact of age upon their life experiences.

Clergy

The sample of clergy interviewed included clergy from various religions and denominations encompassing Christianity (Baptist, Unitarian Universalist, Lutheran,

Catholic, Episcopalian, Methodist, and Greek Orthodox) and Islam. Unlike academic faculty, each member of the clergy was contacted first by telephone with follow-up communication by phone or email. This change was necessary because many religious institutions do not provide the personal email addresses of the clergy to the public. The clergy have email accounts but the general public does not generally have access to them.

While the contact method was different between academic faculty and clergy, each clergyperson was selected using the same basic guidelines: each had to be at least 50 years old at the time of the interview and have at least ten years of experience as a cleric.[12] Again, these criteria were used to reach individuals who went through the beginning stages of their careers without the aid of email, the internet, and other common forms of ICT. Also, this similarity brings uniformity to the three studies, thus making them easier to compare and contrast later.

In total, 15 semi-structured interviews were conducted between May 2013 and September 2013 with currently employed clergy in a Northeastern state. The participant's place of work was the location for each interview and they generally ranged in length from 20 minutes to two hours. Each was audio-taped and transcribed in full.

Potential participants were located through a basic internet search using Google Maps of local churches, synagogues and mosques. Google Maps then located

[12] One of the clergy who was interviewed was 44 years old at the time but also had almost 17 years of experience which meant that she spent most of her early years working without the aid of ICT like the others so I chose to include data from her interview.

each church, synagogue, and mosque within my surrounding location. My search parameter identified all of the religious institutions within a 10 mile radius of my home. I then contacted these institutions by telephone. Through this technique, clergy from seven different Christian denominations and a prayer leader at a local mosque were located and recruited for this research project. Of the 45 clergy who were contacted for participation in the study, 22 responded for a response rate of approximately 48% and 15 were ultimately interviewed as I had reached saturation.[13]

Government Employees

The third and final group interviewed was a segment of government employees. Because this is a rather generic term for any number of government occupations including police officers, teachers, tradesmen like electricians and plumbers, and clerical workers, to name just a few governmental occupations, I chose to focus my attention on local and state government employees whose daily activities do not regularly include interaction with the public as they tend to receive less attention from the public and researchers alike (as compared to other government employees like politicians, police officers, and school teachers). In this case, I have interviewed older employees within a state Department of Transportation (3 interviews) and older employees from a city Department of Water & sewer (19 interviews). These individuals are important government

[13] Those who were contacted but never interviewed were called back and thanked for their interest.

employees because they help manage and maintain our civic infrastructure (e.g. Transportation and Water & sewer treatment, respectively) while working day-to-day out of the public spotlight unlike their more conspicuous counterparts.

Unlike the previous two groups, choosing participants from this population was more challenging because there was not direct access to readily available contact information. However, through convenience and snowball sampling, the email addresses of a couple office managers within the two government departments became available to me and were used to locate willing participants for interviews. Again, individuals who were at least 50 years of age and who had at least ten years of experience in their profession were chosen. These criteria were used to reach those individuals who were most likely to have gone through the beginning stages of their career without the aid of email, the internet, and other common forms of ICT. Additionally, this similarity adds some uniformity to the three studies.

In total, 22 semi-structured interviews between May 2013 and September 2013 with currently employed government employees from a Northeastern state and a Southeastern state were conducted. Each interview took place at the participant's place of work and ranged in length from 20 minutes to two hours. Each interview was audio-taped and transcribed in full.

Contributors were located through snowball and convenience sampling.[14] Initial contacts with individuals (made through a mutual acquaintance) in a county

[14] While effective at reaching older government employees, did force me to move across agencies and even to different states.

Department of Transportation provided me with contact information (primarily through telephone and email) that then allowed me to locate and contact additional individuals for interview within a state Department of Transportation and a local Department of Water & Sewer. Of the 29 government employees who were contacted for participation in the study, 22 responded and were interviewed for a response rate of approximately 75%.

Data Collection, Analysis, and Interpretation

For this study, I employed a series of semi-structured interviews to collect data. Semi-structured interviews are characterized as one-on-one interviews in which the researcher has a general interview guide that they use to interview each participant, yet they can, and often do ask follow-up questions based on the participant's responses (Hesse-Biber and Leavy 2010). Semi-structured interviews were employed for a couple notable reasons: First, semi-structured interviews were selected because many of the current studies that have been conducted in relation to older adult's perception of ICT and their experiences with technology have relied on either large-scale surveys (Braun 2013; Chung et al 2010; Pan and Jordan-Marsh 2010; Hogan 2005; Morris and Venkatesh 2000) or experimental study (Karavidas et al. 2005). While these studies have been invaluable in identifying the relationships between specific variables, they "fail to provide insight into the underlying reasons and motivations contributing to technology usage" (Chen and Chan 2013: 4647). Chen and Chan go on to note that research that uses qualitative

methods may be able to answer a number of important questions that may better inform our understanding regarding the use and non-use of technology by older adults. For example, "how [do] older adults appraise technologies?" and "Is there a difference between the reasons for use and reasons for non-use [of ICT]" (Chen and Chan 2013:4647)? In-depth interviews provide a simple tool to attempt to answer these questions.

A second reason that semi-structured interviews were selected was to understand the perceptions and experiences of academic faculty, clergy, and government employees. This focus on experiential data best lends itself to in-depth interviews (Hesse-Biber and Leavy 2010; Rubin and Rubin 2005). For example, one of my primary topics of interest was to better understand how social capital benefits older workers within the modern workplace. According to Lin (1999; see also Lin, Cook, and Burt 2001), the literature regarding how and when individuals rely on their strong relationships (also known as strong ties) to help themselves and when individuals use their weak relationships (also known as weak ties) to help themselves is still heavily debated. This is further complicated when technology is introduced as older employees may elect to communicate with their strong ties using one medium and their weak ties with another. For instance, one can assume that an academic faculty member would prefer to speak to students using email in order to maintain professional distance yet they would elect to communicate with long-time colleagues in person or over the phone. Or, it can be that the strength of ties is never even considered when selecting a medium. These types of concerns are

just the tip of the iceberg in this fecund area and only become more complex and interesting as different occupations and settings are introduced. Fortunately, these complexities, and many others including those of primary concern for this study such as the perceived value of cultural capital are easily discussed through in-depth interviews.

To analyze the data, the procedures and guidelines of the responsive interviewing model set out by Rubin and Rubin (2005) were employed. This model features a number of important steps the researcher should follow to accurately and usefully interpret the data. A brief discussion of each stage of this process will properly contextualize the concepts and themes discussed in subsequent chapters.

The first stage of the data analysis process begins with *recognition* (Rubin and Rubin 2005). In this stage the researcher aims to find "concepts, themes, events, and topical markers" within the various interviews (Rubin and Rubin 2005). This is a long process that requires the researcher to review the data line by line several times, as familiarization occurs important ideas that address the research question become apparent. For example, the phrase "changing expectations" was mentioned by the majority of those interviewed. By itself this expression is in no way special or important. However, when it is often repeated and always in relation to the workplace it becomes apparent that the researcher should take note of it. After several weeks of reviewing the transcripts from each interview a number of these terms and phrases were identified.

The second stage is known as *elaboration*. Within this stage:

> *You systematically examine the different interviews to clarify what is meant by specific concepts and themes and synthesize different versions of events to put together your understanding of the overall narrative. As you refine the meaning of each concept or more precisely state a theme, you will almost always think of other parallel ideas* (Rubin and Rubin 2005).

This is an important stage because through the identification of major themes and concepts other new concepts and themes emerge and take on significance.

The third stage is familiar to most: coding. Coding is the process in which the researcher categorizes each concept, theme, event, or topical marker with a helpful label that can be referred to later when writing research manuscripts or articles. These labels, which are known as codes, fit into a categorical structure that is set up by the researcher in a way that best allows him/her to address the purpose of the study. For example:

> *If you were coding tales about animals, you might set up individual coding categories for each animal: dog, cat, sheep, cow, goat, and horse. But if the purpose of the study is to examine how people conceive of animals, you might want to group animals in coding categories that reflect how interviewees see them, for example, as pets or as commercial animals. If the purpose is to learn how they are treated for scientific purposes, you might group them and set up codes such as [italics] more like humans and [italics] less like humans. For this type of analysis, you might not need the labels dog, cat, sheep, cow, goat, and horse at all* (Rubin and Rubin 2005).

The codes that a researcher chooses are very important because they ultimately direct the description and presentation of the data. For example, a few of the codes that I used when analyzing the data generated by clergy included "connection," "collaboration," "communication," and "relationship" as I was interested in uncovering how important social relationships are for religious leaders in an effort

to better understand the effects social capital. Additionally, some of the codes that I selected for my examination of government employees were “bureaucracy,” “efficiency,” and “productivity” as these are commonly discussed ideas within the eGovernment literature. It is imperative that the researcher reviews transcriptions several times throughout the data analysis process. This is done to protect against important codes being overlooked.

The next step after coding is organizing each code into categories. For example, one category that became apparent after coding for academic faculty was "teaching". In this category I placed any code that related to teaching including “students”, “notes”, “PowerPoint”, and “teaching assistant”. By grouping similar codes it is possible to understand how they contribute to the bigger picture:

> *How the concept was seen overall, and then examine for nuances, that is, for subtle differences in the way the concept was used, or you can explore what an event meant to different participants, or you can look for systematic similarities and differences between groups of interviewees on the same concept, theme, or event* (Rubin and Rubin 2005).

Some of the categories and codes created were derived from past research and others were derived from theory (e.g. capital) and the supporting research literature. This approach was selected in an attempt to understand the experience in a fresh and ultimately unique way and to avoid forcing established theories and themes to fit the research data thus creating a square peg in a round hole problem (Rubin and Rubin 2005).

Finally, quotations were selected for inclusion into the narrative in order to contextualize my findings. In other words, I use the interviewee's own voice to illustrate meaning. In general, I feature quotations that are most typical. However, in certain situations I may include dramatic or extreme quotations to make a point. This is generally noted in order to protect against misinterpretation by the audience. This is a common practice within qualitative research (Hesse-Biber and Leavy 2010) because it evokes both feeling and understanding for the audience.

In all, this is a process that is ongoing. I returned to the interview transcripts and my coding schemes repeatedly throughout the data analysis and writing process. This was done to ensure that my interpretations were not the product of a single reading or whim. It would be hubris to pretend anyone could review data only once or twice and know what those data mean. Investigators, analysts, scientists, researchers are invariably a product of the moment and it is important to remember this while analyzing data.

The Reflexive Researcher

Almost immediately after I had selected my research topic for this project, I began to feel apprehension. This was not because I was locked into a major commitment that would demand more time, effort, and energy than I have ever given any endeavor in my life. The uneasiness was due to one major question: Would I be able to do this important subject justice? Could I, a (then) 26 year-old graduate student truly comprehend what it was like to be an older worker, let alone

an academic faculty member, clergyman, or a government employee? In this section, I would like to briefly address this issue and the various methods/techniques that I devised to aid my research.

Age: Because each of the older workers that I would be interviewing was at least 20 years older than me (with one exception), my age was, in my opinion, the factor that I was most aware of and driven to allay. To do this I chose to use a very specific set of rules when engaging with each individual. First, I always addressed each person by their formal name or title (e.g. Dr. X, Father Y, or Mr. Z) unless they told me otherwise. I believe that by demonstrating deference and showing respect I was able to make them feel that I considered their age to be a strength. Second, I always wore business-formal attire – namely, slacks and a dress shirt. In addition, I was always clean shaven and I always hid my tattoo. Next, I let the interviewee select the meeting location. This was an effective method for two reasons: it allowed the individual to feel secure and in control and it showed them that I was at their disposal. I feel that these actions effectively demonstrated to each individual that even though I was a young person, I was in no way a threat to them.

Graduate Student: I believe that the fact that I am a graduate student helped me much more than it hurt me because I possess important cultural capital that better allows me to interpret my data. My organizational knowledge, while relatively limited compared to the participants interviewed for this project, is by no means insubstantial. Additionally, in the case of academic faculty and the clergy, I think that my position was a major benefit because each group normally works with

graduate students in their daily work. Moreover, both groups were also able to respond comfortably to my questioning because they each understood the realities and concerns of graduate student life since they have both experienced it firsthand (i.e. their cultural capital gave them an advantage). In contrast, for government employees, I quickly discovered that playing up my graduate student credentials was not to my benefit as they could be misinterpreted negatively by the interviewee. For example, during one of my early interviews with a government employee, I prefaced the interview by laying out all of my credentials. I believed that by doing this I could demonstrate my competency as an interviewer. As I later discovered, this only led to a distancing effect between myself and the interviewee. This is because the individual whom I had been interviewing only had a limited education (he had dropped out of high school in the 10th grade) and he felt intimidated by my C.V. From this experience I learned to only discuss my background if asked directly and to couch any significant accomplishment with self-deprecating humor. I found this to be a very effective tool which ultimately bolstered the quality of my data.

Religious Affiliation: Almost without exception, I was asked by each member of the clergy about my personal religious affiliation. Initially, I felt awkward being asked this question because I am an atheist and did not want to be negatively judged so I simply responded that I was "raised Catholic." I was happy to discover that none of the individuals I interviewed seemed to mind this answer judging by their demeanor following my response. If they did have concerns or were made uncomfortable, it was well masked. I believe that it helped many to know that I was

raised Catholic and thus understood basic religious principles such as prayer and confession as I had once practiced them. While this is speculation I don't think that it is too distant from the reality of the situation. Ultimately, I believe that I benefited from my cultural capital in that it allowed me to relate to each individual by demonstrating that I understood what they meant not just theoretically but in a practical sense as well. This seemed to work quite well and in my estimation contributed to the high quality conversations that I had with each member of the clergy.

Chapter 4

Academic Faculty

"What's your email policy?"

This simple question helped trigger a set of ideas that would eventually become this dissertation. "Well," I thought, "I give them my email address and they send me emails…" To this flippant answer he responded, "Yes, I know that, but what days and times do you respond to email?" I still didn't understand what he was asking me.

Eventually, after a lot of back and forth I realized what he was asking me. He wanted to know when I would "be in" to respond to students email in the same way that faculty list their office hours on their syllabus. Evidently he had always included these parameters in his syllabi. Even though I had taught for several years, I had never considered limiting my email communication. Why? Because that's how I live my life.

Realistically, I am never really away from my email, as I nearly continuously use either my laptop, desktop, tablet, or smartphone throughout my day. This lifestyle was drastically different from that of my older professor.

Since that conversation I have been captivated by the differences between myself as a graduate-student in his late 20s and my older professor. What else had I never considered? Was the reason that I hadn't considered the inclusion of an email policy due to my lack of experience, my age, the rapid integration of ICT into every facet of my life, or something else that I could not perceive due to my relatively limited supply of cultural capital?

Using technology to teach is what I was taught. What this simple interaction with my professor did was force me to confront how much I take advantage of my technical capital to help me succeed as a teacher. Moreover, it forced me to look at the older faculty in a new light. No longer were they a group that just could not or would not adapt. No longer were they a group that could not see the benefits of ICT that were so plain to me. I was forced to consider a number of questions that are at the heart of this project: What can older workers shows us about being professionally successful? Do they have skills to offer that could be combined with technology? How can we better integrate these workers and their skills into the cultural milieu instead of seeing them as a nuisance that can't "keep up with the times"? In this chapter I investigated these questions and many others to better understand how the professional world of academic faculty have been affected by technology.

Over the past 20+ years, universities around the country have welcomed the integration of ICT onto the college campus (Sahin and Thompson 2007; Selwyn 2007). These technologies, which include personal computers, tablets, and the internet, have been sold to the academic community as important tools to "enhance the teaching and learning experiences of faculty and students" (Brill and Galloway 2007; see also Tang and Austin 2009; Gibson, Harris, and Colaric 2008; Nicolle and Lou 2008). However, while ICT may provide important benefits for faculty and students, there is also evidence to suggest that the integration of ICT has negatively affected the learning experience for students (Rockwell and Singleton 2007; McCabe, Butterfield, and Trevino 2006; Mayer and Massa 2003; Lim 2002; Mayer, Heiser, and Lonn 2001; Austin and Brown 1999) and the teaching experience for faculty (Tang and Austin 2009). Selwyn (2007: 1) even goes so far as to note that the use of technology in higher education has been "sporadic, uneven, and often 'low level'" and has called on the research community to "account for the distinct 'digital disconnect' between the enthusiastic rhetoric and rather more mundane reality of university ICT use." In the present study, I examined how the rapid integration of ICT onto college campuses over the past two decades have affected the work experience for academic faculty, particularly older faculty. I elected to investigate the perceptions of older faculty because they could relate first-hand how ICT have changed, for better or worse, the workplace experience. More specifically, I built on the established literature that examines how faculty are really using technology in the classroom (Brill and Galloway 2007; Selwyn 2007; McAlpine and Gandell 2003;

Fass 1998) by also examining how the research process and communication with colleagues have changed as a result of ICT. I was particularly interested in highlighting the various methods these faculty have employed to remain effective at their job even if they may lack the technical capital to fully benefit from all that the new ICT has to offer (Snoeyink and Ertmer 2002). The results of my interviews with 33 older academic faculty (and five technical consultants on campus) suggest that the introduction and integration of ICT have had the most dramatic effect on three key areas of academic life: research, teaching, and non-teaching communication. These effects ranged from enhanced communication with colleagues and students to a reorganization of established work routines. Older faculty have been asked to make sometimes subtle and oftentimes sweeping changes even after years of work experience.

Changes in the Research Experience

For most faculty members, being in the office meant using the computer in some capacity. Several tasks are managed on the computer including writing manuscripts, checking email, creating lecture notes, grading papers, etc. In this regard, ICT, and particularly the personal computer, have become an indispensable tool for the modern faculty member. This is noteworthy because most of the older workers interviewed related that they have only made this transition over the last decade or so. For much of their career they had either never used a computer or

they had only used it for specialized tasks (analyzing data, word processing, etc.); however, working on the computer has now become "working":

> *So, my day to day work as a faculty member, I would spend, probably, a 6 to 7 hours on my computer. I spent 10 years as editor of the journal and everything was processed online. I read e-mail all day every day. I put together power points for classes that I [was] teaching, so I spend most of my day working on some application on the computer.*

Another example that further characterizes a "normal" work day for many faculty members:

> *The normal work day for me means juggling my teaching responsibilities with my research agenda, which once in a great while actually goes together actually, you know, I can use one with the other, but normally that's not the case. So, it's a matter of, you know, disciplining my time, focusing on one and then the other.*

These examples illustrate that a normal professorial responsibility is the balancing of teaching responsibilities with publishing and researching responsibilities. Technology has both helped and hindered the completion of all of these responsibilities. Advantageously, it is now possible to execute almost all work related tasks with little inconvenience, including conducting literature reviews, editing proposals, and constructing lectures. However many have noted the resultant hindrance of being considerably busier than before:

> *So a normal workday would be, get up in the morning, review my email, so I'm on the computer first thing before I get dressed. If I have a class that morning then I'll go for my notes that I've usually prepared the night before or refresh the night before and get up and go. Then a typical day, uh, would involve, besides teaching a class, um, maybe a meeting which could be maybe department faculty which happens about twice a month, or, I'm on several departmental committees so it might be one of those meetings...*

As noted above, for most faculty, the work day began as soon as they awoke. For example, in response to when they start checking email, one faculty member in the education department stated:

> *The bad thing is that it's usually before I have my coffee…the problem is that sometimes I reply to it before I have my coffee and that really is a bad idea. So I should try to avoid that, but generally I take a look at it when I get up in the morning. And you know, I'm never very far away from it.*

In order to refrain from doing this, many of the faculty noted rules or guidelines they had incorporated into their personal life to protect themselves from the possible infringements of their work life. For example, when asked if she checked email when not at work one faculty member from the chemistry department responded:

> *Yeah, I do on the weekends some. 2 days is a long time to go without it but, unless I'm expecting an important message or something I try not to log on, because I only use my [university] email address. I don't have a second personal one so if I log onto my email I will see my work messages and they will either stress me out or you know or I feel like I have to deal with them. I do like to differentiate my work from my home time.*

The purpose of these self-imposed rules was to propagate the concept that there is a time when one should be working and another when one should not be working. Many faculty members stated they had difficulty separating "work" time from personal time. Although this problem was common even before the increasing presence of ICT, new technological innovations over the last 20 years have made it much easier to work constantly and much more difficult to detach from work. In the past, a break in the work day could arise as easily as with the need to visit the

library to collect a necessary work-related article or with not having the equipment or capability at home to examine statistical data for work. However, this has changed with the development and spread of the internet and with the production of powerful portable computers. Before ICT the tools necessary for work were found only at the workplace, whereas today those same tools are available wherever the worker is located: at work, at home, almost anywhere. As one faculty member in the chemistry department stated, "Now you stop because you want to and not because you have to." In response to whether she believed that she had more time to work now due to ICT:

> *I don't know. I would think it actually takes more time now than it used to because you can't separate it. Because you go home and you have your computer and everything's there. Whereas in the old days, and I mean the old days cause I've been here for a while obviously, uh, you know, there was more of a differential. You could read the journal articles but you couldn't take your presentations home to work on them. You couldn't deal with email with a student at home. Now you're expected to do that.*

The feeling that they were "expected" to always be in contact or working was a noted change within the culture brought about by modern ICT. One possible reason why faculty might choose to sacrifice the work/personal life boundaries of the past was to maintain social status among their colleagues and to stay current with the expectations of their profession. This was supported by the fact that many older faculty interviewed did not feel pressured to adapt ICT changes from the university administration or department but instead to "save face" among their colleagues. However, having tenure may insulate these older faculty members from external

pressure that non-tenured faculty may feel from the administration or a department head, which may have promoted this result separately from ICT. As will become clear later in this chapter, the social pressures not to 'misstep' do not always extend to teaching duties.

One faculty member from the psychology department in particular likened the variegated ways ICT has changed work for the academic with the various ways that the invention of common household appliances affected homemakers:

> *I once read an article about housework, washing machines and vacuum cleaners and it actually said that in the old days people didn't clean their houses much, it wasn't that it made their work easier, they just did more work with them, they did more cleaning, so it's a bit like that. Before everybody worked very hard and they did what they could do with what they had, now I think standards are different, standards for, you know, what you can send out in a piece of paper. In the old days people had a typewriter, and you could cross things out and nobody cared. Now it has to be formal, all laid out and look beautiful. So, publishing and stuff has raised the standard and expectations of what will be done and there's an expectation that, you know, that the same thing is doable now and those expectations, our lives aren't easier. You can certainly accomplish more, it isn't easier, it's just deciding what to do.*

Again the combination of the "always working" mentality and ICT join causing negative consequences for some faculty who used to not feel burdened because they had a clear understanding of the cultural expectations within their field. Academics, for the most part, have traditionally worked long hours and are accustomed to demanding work. The difference now is they are expected to accomplish more during those hours. Instead of producing the same amount of work in less time,

faculty felt as if they are expected to work the same long hours as in the past but they should produce more than before.

Besides the cultural changes related to professional duties, expectations regarding communication have also changed. Because it is now possible to contact anyone anywhere at any time, many faculty noted the feeling that they *must* respond from anywhere all of the time. Several faculty members noted difficulty deciding whether to take personal computers or tablets along on vacation, knowing they might be tempted to check their professional email or work on a project. This represented another major cultural change resulting from ICT. For many, simply learning when to unplug had become a new burden with which they have only recently had to deal with but that is dictated in large part by new cultural expectations within their department and field:

> *It's a good news/bad news situation: On the one hand I can do my work anywhere I want. That's the good news. The bad news is that I can do my work anywhere. I can email anywhere, I can contact students anywhere and people expect it. I mean, you know, if I go on a vacation to Europe, which I'm going to do in a couple of weeks, I'll have a computer with me, and it will be enormously tempting to respond to email. I might even be tempted to work on an article or something like that. My wife finds it intrusive, the fact that I can work anywhere.*

This individual from the economics department illustrated very real problems that have become a burden for many academics: 'How do I use technology and not get caught up in work? If I take time off will I still retain my social position and relationships? How do I convince my superiors and peers that I am not apathetic, lazy, or incompetent by simply taking a vacation?' Once again, the drive to save face

in the eyes of internal and external colleagues was made ever more difficult because of the "always on" mentality that was often linked to ICT. However, whether these were new problems brought about by technology or old problems that have always been a part of being an academic was not entirely clear, as illustrated by one faculty member from the education department who noted that they had been thinking about these considerations for some time:

> *If you ask my wife* [if he separates his work time from his non-work time] *she'd state…regrettably no. But I think, the issue thereof, is somewhat of an occupational hazard of being an academic engaged in research. And this is a point that was never fully comprehended by my ex-wife. Which may have something to do with the situation that you can't, you know, it's not like, it's not like you walk in and you punch a time clock and I'm here at 9 o'clock and I punch out at 5. Not only is being an academic not like that...But you can't turn it off. You can't stop yourself from thinking about the solution to some thorny problem you're having in your research while you're taking a shower. You know, or while you're watching an episode of something on TV, or you know, out to dinner and you know…you just can't, at least I've never found it possible to compartmentalize those things in my head. So in one sense you know, sort of you're always, you always have that kind of stuff in your mind and you may manage to put it out of your mind for a while and do something enjoyable and not think about it at all, but it is not as though you can say well, it's Friday afternoon, now I'll just turn this stuff off until Monday morning. For one thing* ***if you're serious about getting some research done, you probably don't want to take two days off*** [emphasis added]. *Most of the time, but I think it is very difficult and I don't think this has anything particularly to do with technology. I think it's just, if you're engaged in research it's hard to you know, compartmentalize things like that and say you know, this is work time, this is fun time, or this is let's do something else time. I think it's very hard to draw that line when you're sort of always thinking about something you were working on that perhaps you didn't figure out entirely or you thought "I didn't really need to say more about this when I explained that just something like that" or "I need to go looked at that article that somebody mentioned to me that I forgot to pick up at the library." That's one of the things that are sort of always on your head.*

Ultimately, most faculty believed that at the very least ICT had exacerbated problems that already existed within the academic culture, most notably, overwork.

The complexity of this particular issue is compounded when one contemplates whether technology has made faculty more productive and if the quality of their work has improved. Many faculty members responded with considerable ambivalence when asked to reflect upon how their work had changed over time pertaining to technology. While most agreed that ICT has had at the very least some degree of positive impact on their productivity, it was not always apparent that technology had improved the overall quality of the work. For example, when asked to comment about how their productivity had changed over time, one faculty member from education department responded:

> *You know, in the old days I did not have to spend 2 hours a day on email which is probably what I do. Is that productive? That's a question. You know students nowadays think nothing of writing "Hey Prof.," and ask these questions that they would never have asked in person. They ask a one sentence question and then expect a 3 page answer…"How do I study for this exam?" or whatever and when you have a big class you get a lot of those, and in the past they would come to office hours or not ask those questions, so I'm not sure everything's more efficient. Some things are, yes: preparing talks at scientific meetings, I mean it used to be you had to draft everything in hand, take pictures, and that was very laborious and time consuming. Now you can use the computer to do that and you can save things and make minor changes and there was a time when you couldn't do that.*

In response to whether their work had gotten more sophisticated:

> *Yeah, I mean, well it's not just having computers but having more sophisticated software and statistical packages that can do a bit more complex models. I certainly have taken advantage of that, uh, so yeah*

> *depending on productivity, "Are you writing more papers now than you would of?" Maybe a little bit but I think it's correct that one hopes that the quality of what's done is better because you have the facility to explore more extensively what you're doing and your models may turn up anomalous results so you're using more sophisticated graphics, things that you might have missed before you can pick up now. In that sense, but I think that you have to distinguish productivity from quality. So I think there's a slight increase in productivity but one hopes there's a more discernible increase in quality.*

These responses demonstrate that technology affects the workplace experience in very nuanced ways.

The literature, in contrast, consistently characterizes ICT as a benefit to both the efficiency and productivity of the workplace (DiMaggio and Bonikowski 2008). One major finding of this study was that there were marked disadvantages to the integration of ICT in academia for older workers. Specifically where the literature suggests increased ICT generates increased TC, this was not always perceived by older faculty as an improvement to the quality of their work.

The replacement of library visits with online database technology is a primary example of this complex influence of ICT on the scholarship of older faculty. Many of the faculty stated that with the use of database research on the internet, they no longer visited the library anymore. Almost every person interviewed stated that going to the library used to be a major part of research and teaching but that this previously standard activity no longer held a central place (or any place at all) in their work lives. Many stated that this change brought a significant boost in productivity and efficiency, as they were now able to find exactly what they needed

quickly and with minimal effort. However, these same faculty noticed that, as part of their research process, they had stopped browsing in books, journals, articles, and research documents for affiliated information. With ICT, it was so simple to use keywords and/or phrases to find relevant information on targeted subject matter that many older faculty have stopped reading as much concomitant and ancillary material as they did before. A few mentioned that this may have negative influences on the academic culture since, being so focused, they encountered fewer opportunities to stumble upon undiscovered connections that could expand their research into new and previously unconsidered places or directions. This new cultural reality was elucidated by one particularly contemplative faculty member from the chemistry department:

> *I guess, I mourn the passing, like many of my generation do, of sitting and just combing through journals and I think books are going the same way because I think there is a lot I can certainly remember as a student and for many, many years of turning the pages in the premier journals and looking for what has been published this week…Chemistry is pretty graphical so [there are] pictures of interesting molecules or interesting reactions and you could turn the pages and you could almost see one every second or two, if your eyes are good enough, catch stuff that you might not catch just by reading the table of contents.*

In this regard, the advantage gained by utilizing database searches was actually a disadvantage to work quality that was only appreciated by older individuals that understood the way things used to be.

A second drawback of ICT in the workplace, according to older faculty, was the growing expectation within the academic culture that presentations, most notably at professional conferences, be created and delivered using a digital

presentation application tool. In fact, many noted that PowerPoint was now standard when presenting at conferences or seminars. One interviewee, for instance, stated that they would "look twice at someone who doesn't do [it]." The mandatory application and use of technical knowledge and skills during work was a clear change in the cultural expectations of modern academia and, once again, demonstrated the importance of cultural capital as it relates to understanding the evolution of workplace technology over the last 20 years. However, whether presentations have actually gotten better as a result of increased technology was not always evident:

> *I think many people overdo it. They've gone beyond best. They've got better and it's not as good as it would've been if it hadn't been enthralled with technology.*

Once again, technical capital did not really benefit its users. It simply made them think that it did. This was of benefit for older faculty who for years presented materials without the use of modern ICT like PowerPoint, and may be better able to understand the subtle nuances of quality oratory.

It must be noted that this use or, more appropriately, misuse of technology should not be attributed to technology, as professed one faculty member. He saw a clear parallel between the ways ICT are used now and the past use of ICT. More explicitly, he noted that people who were terrible at delivering PowerPoint presentations today (particularly at professional conferences), were equally bad delivering presentations using overhead projectors:

> *People just read their PowerPoint. They put too much text on them. The things I tell my students not to do. I mean they are supposed to augment*

> *your presentation. Help organize things for the purposes of your audience, maybe be able to use things like video or other images or whatever, never repeat your presentation. That's not what they are supposed to do….People weren't very good at using overheads either…It's a fancier way of using it badly.*

However, similar to the effects of email on productivity, several faculty members noted the incredible presentational flexibility afforded to the modern ICT user compared to presentations in the past. For many, the benefits available now significantly outweighed the few drawbacks that accompany new technologies. This appreciation of the benefits of ICT was evident in the following quotation:

> *When I had to go give a talk somewhere at a conference it used to be that I had to have all the graphics, chemistry is very graphics oriented, you had to have all the graphics ready, which are all drawn by hand with pen and ink and you had to give them to the photographer two weeks ahead so that they can make them into slides so you could get the slides ready and proof-read, so I had to be prepared weeks [in advance]…Now people change their PowerPoint on the airplane right before the conference or in their hotel room the night before, halfway through the conference. In fact, I just got back from a speech on Friday that made references to something from Wednesday in their PowerPoint. You can do that. It shortens the turnaround time.*

A final drawback commonly noted by faculty members pertained to expectations during the review process. One of the professional responsibilities expected of academics is to review research articles within their field; this allows for the maintenance and enforcement of scientific integrity, as well as to inform the reviewer of new developments in the field. Many faculty members noted that before journals moved their operations online, expectations were fairly straightforward: receive an article, review it, and return it. This process generally took between 1 to 4 weeks per article, and a faculty member could expect to review roughly 12-36

articles each year. However, with the creation and expansion of list servers, journal editors have been known to send out review requests to multiple (10+) potential reviewers simultaneously, anticipating that at least 3 would agree to review the article. Regrettably, this reality was not widely known, and many older faculty only became aware of this "spamming" method by journal editors *after* they had reviewed significantly greater number of articles than they were comfortable critiquing. In other words, they had not been privy to altering cultural expectations brought about by technological change, and they did not realize it had become acceptable to decline to review. The old paradigm where it was expected that all reviewers asked would accept the responsibility no longer existed, and this had changed the research experience for older faculty. For example, one faculty member noted her adaptation to the new journal review cultural expectations by relying on personal, social, and cultural capital:

> *I try to keep track of between 60 to 80 manuscripts a year and more grant applications from editors and program directors to review and I just can't keep up with the number as the number of journals keeps growing. I send some back and I say that I can't do it because it is the third one to arrive today or I am going to be traveling and I will not have the time to finish it on time, but I try to do the ones for which I think that my expertise is especially important. If it is a general chemistry thing that 150 other people could do then I send it back. Same with grant applications, so if they are not in my fields I figure somebody else could do just as good a job. In fact, if I have other things on my desk I will send it back, but I do probably one a week on average and that takes a while. You edit these things and comment on them…so it just takes to set a few several hours a week. On the upside, of course, you get to see the latest research from people working in your area before it even shows up in the journal's so that's something that pays from doing it.*

This faculty member went on to note that she felt little discomfort rejecting applications to review work because of her social status and standing within the department. In this case, because she is a tenured professor with a wealth of social contacts and experiences (social capital), she felt no obligation to do extra work because she knew that it would not do much to benefit her social status or to improve the work of the authors of those 60-80 manuscripts, since she most likely would not be able to devote as much time and effort to each as she would have liked. In addition, this individual benefitted from her considerable understanding of the needs of the academic field (her cultural capital) to maximize her time management while simultaneously also serving her community through review. In this faculty member's case, technical capital alone was not sufficient to improve her work; only a balance of technical, social, and cultural capital enhanced her work performance.

ICT and the development of technical capital have had a dramatic effect on academic research in both positive and negative ways. On the one hand, ICT and technical capital have streamlined the work process by making literature review and collaboration much faster and easier. This has in turn led faculty to investigate subjects and samples that they otherwise might not have had the time, energy, or money to explore. While modern ICT and the ability to use it effectively have been positive for faculty for the most part, which supports the literature expounding the advantages gained by increased technical capital in the workplace (DiMaggio and Bonikowski 2008), a major result of this study is that all who were interviewed also identified problems that they did not have before the implementation of ICT. These

ranged from learning how to manage their time in a world where one was expected to always be working to adapting how to initiate and complete their research. The most significant lesson learned from these exchanges was that to be successful in academia today, one must be willing and able to adapt to change and, for the most part, older faculty have shown a clear ability to do just that.

Changes in the Classroom Experience

In addition to research duties, another major component of the faculty's job is teaching. While ICT has become a common presentation tool for many, several faculty members noted they still used the same teaching methods today that they used twenty years ago and therefore saw no advantage to gaining technological proficiency for use in the classroom. The main reason for this continuity was quite simply because many did not see any significant advantage to changing. Further, they noted that there had been little pressure from within their field (i.e. other teachers, department chairs, university deans) to adapt ICT in their teaching methods. This belief was particularly common among faculty in the natural sciences (biology and chemistry), mathematics, as well as those who taught primarily graduate level courses. In fact, one mathematician even asserted, "We've been doing it the same way for 2,000 years. Why stop now?"

This persistence to maintain traditional instructional delivery methods was easier said than done, as many noted that technology in some form or another had

slowly found its way into the curriculum and into the classroom. The reason – it is just too useful:

> *I'm pretty old school still, in part because I sat through as an audience member talks that were all done on PowerPoint and it's pretty hard if you are trying to take notes and keep up and at times impossible. Being a presenter is about making things accessible and there's a danger in instruction that started even back in the overhead [projector] days when people would make their lecture notes on overheads and transparencies and shuffle around them for 10 seconds [before moving on], and PowerPoint just makes it even easier still. I still do chemistry lectures mostly on the board. I don't post copies of my notes on the web. I do use blackboard vista as a website for putting up practice exams before our exams and after the exam I put up a copy of the most recent exam and post an answer key that students can…and I guess I've also started posting not only a syllabus at the beginning of the semester but a running syllabus of where we are in terms of topics covered. The first thing that I do when I come back from a lecture, which is usually at 10:30am is note where we started and stopped so that anyone who missed a class will know what they missed [and] they can find it in the book or they can just use the book as a secondary source.*

There are many ways to employ technology in the classroom. Learning when and how to employ a teaching tool requires one to understand the cultural expectations of both students and the department. To use a new technology simply because it's available does not make it useful. In fact, it may actually detract from teaching students how to make use of older yet still useful methods. What became clear during the interview process was that because older faculty have been exposed to both older and newer methods they were in the prime position to best judge when and how to implement them.

Additionally, due to the extensive classroom experience of each faculty member interviewed (many with more than 30 years' experience), several noted that while they saw clear benefits to using technology in the classroom, that did not mean that they felt entirely comfortable using it. This was due in part to the continuation of inveterate cultural norms and ideologies among some academics that equated individuals who regularly used technology in classroom with those instructors who were lazy or incompetent:

> *I used to think of that using media, this is a crazy thing, that I was being lazy as a professor, that it was my job to help the students to learn, and if I use media, I used to hear of faculty that who would show a whole video in class, and I thought, the students can see the video on their own, the professor should teach. And that was I guess old school, growing up in New York, and having my father be a hard worker, you do a job and you do it well so I've changed over my thinking, I mean my thinking was clearly antiquated, so that I have different forms of learning in class, it's changed dramatically and for the better.*

Regardless of discipline, demeanor and exposure, almost every individual interviewed mentioned one significant technology aggravation in the classroom: laptop use in class by students. Most faculty members were adamant in their dislike of student computer use during class; many considered it an intrusion, and refused to embrace that particular cultural change because of its invasiveness:

> *I can give you a lot of pros but I'll give you a couple of cons and one of them, and to me it's a big one, and its student use of laptops during class. The people can fool themselves all they want, but they are on social networks sites!*

Many noted that while potentially beneficial, laptop use was regularly abused by students who checked email and socialized on websites when they should have been

paying attention to the classroom instruction. Most faculty noted that they would be more comfortable having students use gadgets (e.g. laptops, tablets, smartphones) in class if they, the teacher, could restrict the devices to provide only classroom instructional content and applications.

These comments were especially insightful when examined within the context of generational differences between the older professor and younger students (Ertmer and Ottenbreit-Leftwich 2010; Russell et al. 2003; Snoeyink and Ertmer 2002/2001; Mumtaz 2000). This individual had spent the bulk of his career teaching students using a particular technique, and his students dutifully took notes during class while he lectured or wrote on the board. Then students began bringing laptops to class with the purpose of being more effective note takers. Initially, this was acceptable because of the limited nature and focused educational purposes of early devices (i.e. no wireless internet, few games, etc.). This situation rapidly changed following the emergence of wireless internet connections, the growth and blossoming of the internet, and the launching and amplification of social networking sites. The presence and application of these tools, which were originally used by a limited number of students to increase productivity and efficiency in the classroom, transformed from novelty items to ubiquitous accessories availing students to purposes of their own. This dramatic change was undeniably startling to anyone caught in its wake as many faculty members remembered quite vividly this culture change in the classroom and few recall it fondly.

Changes to Communication

Undoubtedly, ICT's most significant impact on older academic faculty has been on the various ways that they interact and communicate with their students and colleagues. Email has become the preferred communicative method for everyone, including older workers. This transition away from face-to-face interaction and even telephone calls has notably influenced the academic culture both within the various faculty departments and in the classroom.

One of the most discussed benefits of ICT and technical capital among faculty was its ability to aid collaboration between faculty, particularly those who work great distances apart, thus bolstering and maximizing the benefits of their social capital. Technology had enhanced collaboration by allowing faculty to collaborate with individuals around the country and/or the world. This had the advantage of increasing overall production, since collaborators on one side of the world could work while their collaborators on the other side of the world were asleep:

> *One of the things which technology has enabled and this has been documented in academics at least is a far greater propensity of many people to collaborate with people elsewhere. And this sort of indelibly means that you're likely to be dealing with people in different time zones and so if you're going to get something done, along those lines, you can't be sort of rigid about 9 to 5, Eastern daylight time. For I've, my most widely cited article was written with one co-author in Scotland and a second in New Zealand…If you think about it, it's like you know, the sun never set on the British, well one of us was always, you know, up and running while the other two were, or were not. And so, back and forth with that I mean, that article was thirty-some pages long. With about 100 equations, a follow-up article which was supposed to be a brief update and it ended up 40 pages long. Both of those articles were completed during a period when I had never met the co-author in New Zealand. I met him after eight years of collaboration and I had lunch.*

Many faculty members also noted a significant expansion of their professional network as a result of ICT:

> *I think it builds stronger collaborations and [we are] a lot less isolated, not working alone, so we can exchange ideas, science ideas, in these correspondence. He was at this conference two weeks ago that I attended also and as a result of getting to know each other and communicating like this, one of his students, he is at the university of Japan, one of his students applied for and qualified for a three month study abroad fellowship for graduate students and he [the student] came to the conference…and came home with me. For three months now he is working in my lab running experiments…We can't have that kind of collaborative discussion without the technology.*

This example demonstrates the impact of ICT and technical capital on the expansion and strengthening of social capital as an advantage. In this particular case ICT was utilized both to collaborate on work and to strengthen bonds between colleagues. This feature was seemingly important to older faculty, as many had developed an extensive worldwide network of colleagues. ICT and TC eliminated three of the largest obstacles barring collaboration with distant colleagues: cost, time, and effort. In so doing, it provided academics with significant advantages that heretofore they could not fully use.

Additionally, a number of older faculty commented that with increased communication capability they could delegate many of their most time-consuming tasks to others they deemed to be "best-suited" (meaning younger and not yet tenured) to the job. This was due to their high social standing and their familiarity with the cultural norms common in academic circles (their cultural capital). Older faculty relished this opportunity because it allowed them to do more critical

thinking about the research at hand instead of needing to do the "grunt work". An older faculty member from the physics department detailed this process which I call "playing old," where he used his social standing as well as stereotypes about his age to coerce his younger colleagues to handle the more laborious technical tasks, in this case statistical analysis:

> *The papers that I write are mostly with two [former] graduate students who have long since graduated [and who are in tenure-track positions]. It has a lot of technical stuff in it but they do it all. They know stuff I don't know [smiles widely].*

He confirmed that his wry smile was meant to indicate that he was not as confused by the technical work as indicated he was, but instead he chose to use his resources to keep from having to do "grunt work." In this case, his perceived lack of TC was actually beneficial to him, since he could simply claim ignorance of the more technical work and instead concentrate on answering the overarching questions, which judging from his reaction, was significantly more desirable to him. However, in his estimation this claim would not likely have been acceptable to his younger colleagues had it not been for his social standing and understanding of the established cultural norms. While it is possible that his younger colleagues might have actually enjoyed doing the "grunt work," it was clear that the older faculty member interviewed certainly did not perceive it that way, choosing "playing old" instead of asking them with full disclosure of his technical skills. This "playing old" process was not limited to just this one faculty member but was used by others both in academia and in the other occupations observed (see Chapters 5 and 6).

As for research, older faculty also perceived disadvantages to the integration of ICT and the cultivation of TC in their communication with peers, again a departure from the literature that routinely equates ICT with increased communication (Castells 2007). A common refrain from faculty referred to the negative impact of ICT on peer communication on campus. ICT has changed the cultural norm and expectations within departments: now, faculty tend to only come into the office when they must, which reduces the sense of camaraderie among colleagues as well as the strength of social capital within departments. In addition, many faculty observed a marked decline in the collaboration within departments. In fact, this enterprise, which was formerly quite common, had become rare:

> *It is certainly true that with faculty, we were here much more and we met face to face, and there is a level of communication, conversation, that goes on when you meet face to face, than via email. And a lot of people aren't here anymore. I would say that the norm is to work from home, and to be someplace else, and to come here occasionally.*

Moreover, because faculty now collaborate with essentially whomever they want, they tend to rely even more on their previously developed external social network as opposed to relying on the social capital afforded to them by their institution and colleagues who work there. This can be seen as having both positive and negative repercussions. Increasing technical capital has allowed researchers to collaborate outside of their institution with ease. This can be problematic however, particularly for younger faculty who undoubtedly have significantly fewer social connections than older department members do. So, the adoption of technology as the preferred method of communication among departmental colleagues, while beneficial to

some, can and does negatively impact others, with older faculty likely to benefit the most. In short, technical capital can be regarded as most effective when combined with an established and well cultivated never replace social network.

The dearth of faculty on campus also had a noticeable impact on teacher-student communication. For example, when asked to describe the effect modern ICT has had on their work life, one faculty member stated:

> *There's the communication aspect and the more professional work aspect. The communication aspect, it's clearly a positive because communication is much more effective and even though I spend what I feel is an inordinate amount of time answering emails, uh, I would say the existence of email probably prompts more communication than we would have had otherwise, but I think overall it is still efficient even though you can probably just call someone up on the phone and get somebody rather than having a series of 9 emails. That's just the way the culture has developed. But overall I think from a communication point of view it's been very helpful…I regard technology as a positive and the negative is just a little too much time on email and also I think the, the other thing is, I think there's this expectation now that everybody is always on so that you can send them an email 15 minutes before a meeting and expect them to read it and be at the meeting or whatever it is that they want or that there is a meeting. And I try not to get into that mode. I don't want to feel beyond. I want to spend an hour working on something and not be constantly distracted by going back to the email.*

This dual view of technology was very common and is regarded by many as a necessary evil when bringing ICT into the workplace.

Final complaints that were brought up by many faculty was an increase in informality between themselves and students and a marked increase in the amount of "inane" communications from students faculty had to deal with regularly:

> *I hope that I don't sound too cynical, but I think students tend to ask more questions of professors now with the email, some of the questions they could answer from spending more time figuring them out on their*

> *own. And I think it takes up a lot of time…I think it might have reduced a student's inquisitiveness and capacity to explore literature on their own.*

Many recalled that in the past a student would come to faculty office hours only with a question the student simply could not answer on his or her own after considerable effort. Today, not requiring a face-to-face student-teacher encounter, email has removed the fear and anxiety that previously accompanied asking the professor a question. That barrier removed, students are taking full advantage by asking questions for "any little thing" to the disgust of many older faculty interviewed. Furthermore, the informality of email interaction negated many of the noted social benefits and privileges often granted to faculty, particularly from students. For instance, most faculty interviewed stated that an increasing number of email communications completely lacked headings or formal structure. Instead, students simply launched into their query without any the deference/respect (e.g. "Dear Dr. X,") that was common in the past. Many faculty, it should be noted, were not willing to relinquish this social difference, even if it limited their communication.

To counteract the anonymizing that accompanies email communication, a number of faculty made it a point to see and speak with students and colleagues regularly:

> *I like to have a TA meeting with [my graduate assistants] every week…And I would never replace that with something electronic.*

In this example, while the faculty member used email regularly to communicate with students and colleagues, she still made a point of meeting with TAs in weekly

meetings because she believed that this level of interaction was too valuable to abandon.

The primary finding of this extensive review of the experiences of older academic faculty was that ICT has infiltrated almost every major area of the academic work life. From research to teaching, ICT has changed expectations of academics, forcing older faculty to adapt and in some cases completely change established work patterns developed over a career. These changes included adjustments to workload and time management, to mechanisms of idea cultivation and development, and to communication with colleagues, staff, and students. While some of these expectations are simply modifications of past responsibilities (such as reviewing the literature using online databases vs. hard bound journals), others are completely new and require time and thought in order to be effectively integrated into work life.

In regards to the specific questions under investigation, namely (1) to what degree does technological competence affect continued success and (2) how have faculty mitigated negative consequences when lacking technical capital, some interesting findings were discovered. While all of the academic faculty interviewed were already successful in their job in terms of job security and status (i.e. all associate professor or professor), this did not necessarily mean that they would continue to be successful (produce high quality work) in the future. As noted above, the drive to remain relevant and productive was a major driving force for those

interviewed. The academic literature that regularly surround older adults references an inability to acclimate to or even see the benefits of new ICT (Wagner, Hassanein, and Head 2010; Blaschke, Freddolino, and Mullen 2009; Eastman and Iyer 2004; Irizarry et al. 2002; Melenhorst, Rogers, Caylor 2001). These data have illustrated that these older faculty are absolutely able to adapt to this new, ICT-rich environment. They acknowledge the role that ICT is playing in promoting better scholarship.

There is also no reason to assume that older faculty would not continue to be valuable members of the workplace moving forward. Those interviewed were able to benefit from the skills and resources available to them as older employees, namely their social and cultural capital. Their deep understanding of the culture in which they work allowed them to make informed judgments about which technologies to use and which to eschew. In some cases, this process even involved a bit of acting in the form of "playing old," which expands on the ageism literature (Roscigno 2010; Roscigno et al. 2007; Butler 2005) by demonstrating that the prejudices that are regularly projected onto older workers can be used by the older workers for their advantage. This act, which was completely unavailable to younger faculty due to their youth, allowed older faculty to deflect any technological demands that they did not want to engage in, either because of inability or lack of interest. To do this well the older worker needed to make use of their deep organizational knowledge and social status.

Another major result of this study was that older faculty also found technology to oftentimes limit the quality or production rate of their work. This result differed from the prevailing literature, which suggests that the introduction of ICT, particularly computing technology would lead to increases in productivity and efficiency (Brynjolfsson and Hitt 2000). My findings into the matter suggested that while technology did not reduce the quality or production of work for older faculty it was not the panacea that it was often promoted to be.

"We used to need a clergyman, but now we just use Google"
- Muslim, Prayer leader for over 30 years

Chapter 5

Clergy

On December 12, 2012, Twitter, the massively popular social media network, welcomed one of its newest and most esteemed members: Pope Benedict XVI. In an effort to engage with a new generation of Catholics around the world, The Pope and the Vatican began "tweeting" daily prayers and messages (Pianigiani and Donadio 2012). This move was met with waves of praise and criticism. On the one hand, many championed this as a bold step for the generally conservative Catholics toward direct communication with its over one billion followers (CARA 2013). Supporters argued that the Vatican's presence on one of the most influential social media platforms in the world provided a powerful tool for uniting and mobilizing Catholics around the world. Using Twitter, the Pope and other important Vatican officials could nearly

instantaneously deliver their opinions on a wide-range of topics important to the Church including poverty, birth control, and the sanctity of marriage without any fear of distortion from what they considered more biased mediums like radio, television, newspapers, and magazines.

In contrast, critics derided the move as a weak attempt by Church officials to win back former members who had abandoned the church following its many recent scandals and provocations. Moreover, detractors argued that this unfiltered access to the Pope could only hurt the public perception of the Church in the long run. Many pointed to the recent actions surrounding World Youth Day as a prime example. In July 2013, the Guardian substantiated that the Vatican was prepared to offer "indulgences" to any penitent Catholics who followed the Pope on Twitter during World Youth Day (Kington 2013). A relic from the Middle Ages, indulgences reduce an individual's time in Purgatory. Not everyone saw this incentive as a good thing. Archbishop Claudio Maria Celli argued that indulgences should require some form of legitimate effort by the faithful to deserve relief in purgatory. Upon hearing about the indulgences quid pro quo he quipped, "You can't obtain indulgences like getting a coffee from a vending machine" followed by "What really counts is that the tweets the Pope sends from Brazil or the photos of the Catholic World Youth Day that go up on Pinterest [a popular social media website] produce authentic spiritual fruit in the hearts of everyone."

Contrasting opinions regarding the benefits of using Twitter to engage with followers was further complicated by the fact that most senior Vatican officials, including the Pope, had only recently engaged with these technologies. Twitter, and

the many other popular social networking mediums, simply did not exist for most of their careers. When it comes to modern ICT, these clergymen were playing catch-up in terms of use and appreciation. Their perceived success provided a fascinating backdrop for this current study.

The dramatic rise of ICT, particularly the internet, over the past two decades has had a considerable effect on the discussion, debate, and study of religion (Campbell 2012). Additionally, scholars have noted that the rapid integration of ICT into our lives has played a major role in shaping and reshaping our religious institutions and religiosity (George 2006; Hojsgaard and Warburg 2005; Dawson and Cowan 2004). Surprisingly, the literature on how the lives of clergy had been affected by ICT was quite limited (Cowan 2004; Dawson and Hennebry 2004). It was to that limitation I hoped to contribute with my current study. In this chapter I examine the perceived changes ICT have had on the work life of older clergy. I chose to examine older clergy because many of those interviewed were trained and began work long before the introduction of modern ICT like the internet. As with many other workers, work life for clergy had gotten busier and, in some ways, chaotic because of ICT. In addition to an increased work load and stress, many noted that this technologically-induced change had negatively affected their spiritual responsibilities such as prayer and contemplation, and relegated them to building and website managers. With the help of their established social and cultural capital,

clergy had been able to carve out some ICT-free areas without damaging their social status in the present.

Normal Workday

"*What is a normal workday like for you*?"

Each interview began with this question because knowing the daily duties and activities of each clergyperson was vital to understanding how ICT had changed their jobs and responsibilities. As most faith-based individuals were aware, priests and ministers conducted services on the Sabbath day, but many people knew little about their activities during the rest of the week. Surprisingly, many clergy perceived the Sabbath as a day off from their "real" work:

> *Well, I guess when I talk about workdays I need to differentiate weekends from weekdays. Weekends, obviously, I have weekend Masses. I have three Masses in a weekend…There may be baptisms that take place after Masses on weekends…Weekdays are a little different setup. I have a morning Mass at 8:00am, and then my workdays are Monday-Tuesday-Wednesday. Usually I'm off Thursday-Friday. I'm usually off the premises…on my days off…My weekdays, after 8:00 Mass, most often I'm usually on the premises doing paperwork, and that kind of thing, in the morning. In the afternoons I'm usually out… doing sick calls, visiting parishioners in hospitals, visiting shut-ins in their homes. There might be meetings that I have to attend in* [a neighboring town]*…In the evenings I often am [at] meeting with people one-on-one for counseling, or sacramental preparation, or other parish projects.* – Catholic

For many interviewed, the work done on the non-Sabbath days, including visiting parishioners in hospitals and shut-ins as well as the counseling sessions, were some of their most cherished responsibilities as members of the clergy. This was because they believed this work best allowed them to improve the lives of their followers by

helping them deal with some of life's greatest questions and most emotional moments:

> *We don't produce a commodity that's traded in the markets. People pay me to read, to pray, to be in the presence of God, to understand God. People pay me to, with them and on their behalf, handle the mysteries of life and death, good and evil, mercy and justice, time and eternity…[My job] brings me into people's lives at the best moments and at the worst moments…*– Unitarian Universalist

Ideally, the bulk of a clergy's time is devoted to prayer, contemplation, and counseling. However, that was not the case for many of those interviewed. In fact, for many, the work of the modern clergy offered a striking resemblance to the duties of white collar workers, with a religious twist:

> *I spend the bulk of my day actually communicating by email whether I choose to work at home, or whether I'm actually here in the office. I go through everything from email communications to … meetings and interviews…Apart from the parish, I'm also involved with numerous other organizations…I'm involved in a number of anti-gun violence campaign coalition initiatives and task forces, as well a great involvement with the Diocese of* [My State]*…All of that is communication via emails and/or conference calls, as well as running after the Diocese for meetings.* [My Church] *is a relatively small parish in terms of the numbers of people. But the program is a program of a very large parish. It means that we offer what a large parish would offer, even though we have a very small staff, which makes for a very, very busy week.*– Lutheran

As illustrated in this quotation, the day-to-day responsibilities of the clergy were more than just prayer, contemplation, and counseling. Clergy, especially senior clergy, were generally also responsible for a myriad of other duties.

In order to help manage these responsibilities, they had turned to ICT:

> *When I came here* [over a decade ago], *there wasn't a computer in the senior minister's office. The senior minister had been here for 28 years,*

> *had written out his sermons by hand and had his secretary type them for him. When I came here and I told the minister I needed a computer, I kid her that she got me a toy computer, like it didn't do anything. Within weeks she realized, "Oh, you really use the computer?" "Yes, I really use the computer! I really need a good computer." Then she gave me something much better. I had to convince her that the sexton needed one in his office, and the front desk needed one. This wasn't in the budget, that's the other thing. Because the senior minister had been here for so long and was operating on an old model, there was some of the younger staff that they just did it on their own. They just brought their laptops or whatever and did it, and it wasn't integrated. The database wasn't that well used. We are now, everything is completely different. Everybody of course has a desktop or a laptop…Nobody is without a computer. We're all connected.* - Methodist

In the past, the minister, who was in charge of this particular parish, benefited from his social and cultural capital as they helped him to manage and maintain the church. He and his assistants engaged in the church's upkeep without the aid of modern ICT, most notably a computer. However, according to the Methodist minister above, today this was completely unrealistic because the technology and the ability to use it effectively had simply become too ingrained in modern church administration to be without.

Similar to older academic faculty, senior clergy relied regularly on ICT of all forms: computers, tablets (e.g. the iPad), the internet, email, and phone. The results of these interviews showed that they had used the technical capital that ICT afforded to increase communication with their congregants and to organize their increasingly busy schedules:

> *I have a laptop and an iPhone 5. I don't check work emails on that. I do text. I use it for texting, and I actually use that phone which is synched to my card. I live [almost three hours away], so I oftentimes use that commute time to be in verbal communication with people, setting up*

> *meetings, setting up Eucharistian visitors for shut-ins, and those kinds of things. One time I actually did have my work emails on my phone, and it absorbed so much time. More often than not, even when I go home, I go right to my laptop and I check my work emails at home, just to make sure that I haven't missed something...My cell phone is published, so the entire parish has access to the cell phone. The entire parish has access to the home phone. They have obviously access to my phone here. I'm pretty much 24/7 available already. They also have my professional email address…They also have my home email address…I have electronic calendars in both. I'm constantly trying to keep these calendars going as well as my hard copy calendar.* – Catholic

This final quotation again highlighted that many older clergy truly accepted the benefits of using ICT in their workplace, and they had proactively worked to acquire this technical capital. They also appeared to do this without fear and intimidation

> *I actually… had my wife put my email on my phone. The advantage for me to this is there is a certain compulsion to want to check your email. It's such a major communication root for me anyways, that you don't want to be too far away of it, in terms of the day. So, I can turn on my phone, and check my email in like a moment, and just see what's there* – Baptist

Thus, while the literature suggested that older workers may be intimidated by ICT (Hogan 2005; Karavidas et al. 2005; Laguna and Babcock 1997), it was clear that older clergy still sought out technical capital because they acknowledged that it was necessary for the improved quality and success of their work.

However, that did not come without cost. As was also seen with academic faculty, ICT use by senior clergy had also become somewhat of an intrusion to their productivity. This was especially troubling for some older clergy who learned and developed their professional practices and acumen from within the traditional clerical work schedule (9 to 5) but in recent years had been forced to deeply

consider how much of themselves and their time they can or should make available to the community. For instance:

> *I have a laptop. I have a smartphone. I actually resisted having a cell phone for many years, because of some boundaries with the congregation around my availability. I sometimes remind them I'm not a brain surgeon…I'm never going to be an emergency person. Sometimes I need to not be available. I resisted having a cell phone for a long time, and actually got one for family reasons and not for church reasons, because I have a school-age child…Again, I'm not the governor; I'm not the brain surgeon. If somebody needs me they can wait. I spend so much time either at home or at my office or if I'm off-site at meetings I do check, if I'm working, I'll check it every hour or two and see if there's anything that needs a quick response…The thing I like about the move to email and text over phone calling is, I feel like if there's something urgent going on I'll see it without having to actually have people calling me on the phone…I hate the fact that on the phone the ringing doesn't differentiate…There's no way of screening the importance of it…* - Episcopalian

Additionally, some clergy had issues with parishioners similar to those issues experienced by older academic faculty with their students: because ICT has made it so simple and intimidation-free for individuals to contact clergy, through email (and other mediums) parishioners now ask questions they would never have asked in the past. For example:

> *People…email you, they copy you on things. So, it may not be something they would call you about, but they'll copy you. Sometimes that is worthy of some thought or consideration. That's why they copied you. In another era, they wouldn't have bothered you at all with it. They wouldn't have made a phone call to do that…* – Baptist

Increased communication was most certainly a boon for clergy and the individuals they serve. However, as the above quotation highlights, ICT makes this quick and easy contact with clergy easy to abuse. Again, because technology has made it so

convenient to ask questions it was up to clergy to develop a routine that allowed them to circumvent these abuses so that they did not waste the time they could spend helping people. Despite their age, many older clergy were capable and willing to make these arrangements because they acknowledged the benefits of their increased technical capital on net quality of their work.

However, not all who were interviewed were as enthusiastic about these technologies. Part of the reason, as disclosed by the following participant, was directly related to their age and training. All individuals interviewed (with one exception) were ordained long before the invention and popularization of most modern ICT. Accordingly, some simply preferred their tried and true methods and tools over the technological replacements:

> *One other thing that technology does is that it opens up the Bible to people in a new way. Like, I have software on my computer that is Bible-based software. I found myself in the divide between the printed and the digital age Bible …But I found that I try to use it and I just don't use it, and I try to use it and I just don't use it.* ***So I realize that I am 54 and I'm a transitional generation person and some people might just fly with technology and I don't seem to*** [emphasis added]*… I couldn't have told you like if you asked me 35 years ago that, "Would you run with stuff?" I guess I don't know. I don't know what I would do and I have it and I have seen some of my friends run with it. Some even don't…Some are even worse than me, like about technology, like even less more versed in certain "middle of the road" in certain "middle age." But that Bible thing is one that I have been unable to make the jump. At one point, I stopped getting books…and I am like "No, I'd actually like to have the book." So I order the book.* - Baptist

The technical capital afforded by ICT to clergy also expanded beyond communication with parishioners. Other more clergy-specific technology had also integrated itself into the normal work life of many of those interviewed:

> *Textweek.com. I religiously go to that website every single solitary week. I preach every week. On top of the bazillion hours that I work, I am also spending probably 15 hours a week on a homily. Even then, I am editing and editing. At 6:00 on Sunday morning, I'm editing and revising. Textweek.com, what I typically do is I go and I'll download five, six, different commentaries or five or six different sermons from other people…As I am praying to the scriptures throughout the week, then I am also reading what other people have said. That helps me to hear what other people have actually said about these texts. There are particular people that I admire and respect that I will go to almost every week to say well, "What did he say about this?"…We couldn't do that before. We would have access to commentaries and books, and "Biblical Commentaries of the Medieval Period ," and all these high-end things, which most people in the pew could give a rip about, by the way…As a good teacher or as a good preacher, the idea is that you are communicating yourself as much as anything else. If it isn't yours, you know it's not yours. Textweek.com…is an amazing resource for pastors…It's an absolutely phenomenal resource.* – Lutheran

This pastor's enthusiasm for clergy-specific technology was not unusual. While fewer than half of the individuals interviewed relied on these technologies, the ones who did found these resources essential. By reducing time spent seeking information they made work time more productive and enhanced time spent acquiring or working with congregants. This was a significant advantage to clergy with technical capital, especially when, as discussed next, responsibilities were increasing for senior members of the clergy.

ICT and Administrative Responsibilities

Technology had super-charged the daily duties of the clergy by forcing them to handle more responsibilities than ever before. The end result was many interviewees noted that they were, with each passing day, becoming more like

administrators than they were religious and spiritual leaders. Technology in this way had not only empowered them to handle more work but had also forced them to handle more work.

Because of technology, clergy were asked to oversee not just a handful of boards and groups but as many as 10-15 groups. In the pre-digital age that would have been absurd since a single individual could visit only so many places in a given time. However, due to technology, a member of the clergy could be kept up to date on meetings even if she/he could not physically attend. This increased participation by senior clergy in institutional groups was facilitated by the rising use of digital recording technology, video-chatting technology (e.g. Skype), and the digital calendar:

> *The church has its own Google calendar...Since I've been here, I've established a Google calendar. There are actually layers to it. There's the layer that everyone can see on the website which is events…There's another layer of more detailed building use, which is mostly used by the church administrator who does, internal and external building use. I can use that. I hardly ever look at it…Then there's a third layer which has more information about where the staff is, who's on vacation, who's where which day. I don't really use that but other people like it. I asked that we also have a paper calendar at the desk up front…There's a paper calendar with all the building information because there was a big argument with the last associate pastor. He left at Christmas because he doesn't believe in paper. It should all be electronic.* - Episcopalian

The stress of this additional workload was further compounded by institutional by-laws which most oftentimes mandated that the senior member of the clergy (which was everyone in this study) vote in all major decisions. In this way, being able to use technology, especially as it related to organizational management was not only

useful but practically necessary. Strangely, as the Episcopalian priest quoted above noted, she did not possess "any technical training so it's always just a challenge" to manage the ICT that has become so integral. In other words, she could clearly perceive the benefits that one could gain from ICT yet her lack of technical capital made it frustrating to use and limited the efficacy of the ICT overall.

In addition to increasing the leadership presence required of the senior clergy for institutional groups, two other issues specific to religious organizations have made the transition to the digital world more difficult for clergy who lack technical capital: (1) reduction of stay-at-home moms; (2) the elimination of office staff. The reduction in the number of stay-at-home moms was mentioned a number of times as a social change that has had a negative effect on church life, particularly for the clergy interviewed:

> *But I have to say, I spend unfortunately most of my day online. If we didn't have internet access and access to emails, and access to communication with emails -- particularly in parishes now because so few people are actually physically around during the day, because everybody works. And…gone are the days when there were lots of women, mothers that didn't work. Everybody works now, for the most part.* - Catholic

In the past, these women were relied upon to handle many of the rote but essential administrative duties of the institution, so clergy could focus attention on their spiritual duties such as prayer and contemplation. These administrative tasks ranged from simple clerical work such as taking down messages and organizing/scheduling meeting times and places to creating and sending the church

bulletin. However, these responsibilities had been passed on to them as these volunteer women had become scarcer:

> *I said to a new parishioner I said, "I feel more often than not…like a director of operations."…In part because of all the programs that we have and the facilities that are required to support all those programs. Plus we lease out to someone else 9,000 square feet of our property…Plus here beyond our Episcopal community there is...we host an Ethiopian Christian community as well as a Haitian Baptist community. I meet with those two pastors once a month and they use the space in different times…Once we finish on Sunday morning the Haitian community comes in. Once the Haitian community leaves then the Ethiopian community comes in. They are here until about nine o'clock at night. That's what our Sundays look like…Being able to communicate with people through technology...and another instance is that we're getting ready in the Fall to have a resident brass ensemble and we're also going to have a weekly concert series which started out at another parish…If we couldn't communicate via email to start setting all this stuff up and then communicating with the parish administrator to make sure that the calendars are all in sync with one another…That the parish calendar, my calendar, her calendar, the calendar that has to deal with the common care ministry, etc…If we didn't have access to electronic technology I don't know how we would [manage all] of that.* – Episcopalian

The above quotation illustrated how senior clergy need to possess some form technical capital to survive the increased responsibilities required of them in today's world. While some of these responsibilities were new and could perhaps be attributed to increased ICT itself, even traditional responsibilities of these senior clergy were better handled with increased technical capital:

> *The other thing is we have to fund all of this, and this congregation can't afford this building. This is a national historic landmark building, if I understand, 1875. It's like if you're a blue collar family that owns a Jaguar, and every time you get a ding it's a major event. Every time something happens here, you practically need to bring in masons from Italy. That's not quite true, but the stonework, the tower, the campanile*

> *we have, the decorative stonework, the age of the building, the congregation can't afford it. That's why we have an endowment. I'm the major fundraiser here. I make the case and work on helping people to support the ministry, and part of the ministry is the building as a platform for our mission and ministry…The communications business is absolutely where we are. This stuff is, I think it's a sweet spot for the church…Sitting in meetings when, I'll say to somebody, the receptionist or somebody, "I've got this meeting, I've got to be in it, but if you need to tell me something, text me." It's like, wow. I'm sitting in a meeting, I'm getting a text, and I can decide whether I need to address it or not, or I can give the quick answer back, and we're all good. I can do it under the table so it doesn't look too bad.* - Methodist

This technical capital, when combined with the advantages granted to them by their social and cultural capital, could be used to more productively manage and maintain the religious organization of which they lead.

However, this is easier said than done, as the modern church is dramatically different from the one in which they began their careers. For example, each interviewee mentioned that in order to attract new parishioners, as well as maintain communication with current members, it was almost a necessity to have a digital presence. This meant at minimum a website and oftentimes also a Facebook account and/or a Twitter handle were required:

> *Another [important part of the job is] needing to advocate, and educate the church leaders about budgeting for communication…Because they're used to thinking of the furnace, roof and staff salaries as part of the necessary equipment. It's a selling job that often falls to me to convince them that it would be a good idea to have all the staff's computers networked to one printer/copier place that you can scan documents… They got a great deal on the website actually, because they were kind of a test case for a new company working specifically with churches, to create and design websites…I tried to convince them to purchase Constant Contact [a company that provides digital resources like email, website construction, etc.], and to spend the $500 to $1,000 it would cost for our web team to design a nice template so that it looked not just like a Word document but it looked like our website design…The*

> *church council which is the decision-making board and also the ones in charge of budget has been a slower, steadier sell to understand the value of it. It's been really challenging, even showing them examples and explaining…They love getting this information but trying to convince them that it's worth money and really a pretty small amount of money...But that it's worth that and to think of that as one of the facilities of the church like having a sanctuary, like having a photocopier, like having a furnace...Those things they all understand like buying coffee and having coffeemakers…That's just accepted as necessary. The technology is challenging because it keeps changing. I think sometimes the lay leaders feel like we keep asking for more and more and more and more. They can't imagine it before they see it…* - Unitarian Universalist

> *Did you look at our Facebook page?...**That's managed by some of the younger folks on staff and on the communications committee. I send stuff that they post, but I don't actually post myself*** **[emphasis mine]**. *I've got so much to do. I don't want to get too much into that. We have people who, is it called Foursquare?... A bunch of our people do that. We have different cultures in the congregation. When I came here nine -ten years ago, we had two cultures. We had the email culture, and the not-email culture. Now we have many more. It's a big enough church. We want all of that to be happening, but I'm sure there's people in our members who've never been on our web page, but they're still my members. I send out messages to the congregation periodically called "Messages from the Senior Minister." We have a group of people, right now it's less than 30, who we send the hard copy to. We try to keep track of people who are not in the same...We have some really old people. We try to be aware of that.* - Methodist

According to those interviewed, modern religious organizations today rely on having a digital presence. This digital presence is not simply a luxury but could make or break a church, synagogue, or mosque, as it is a powerful tool for drawing new worshipers into the community and for keeping happy and retaining the ones already there.

Maintaining this digital presence was a responsibility of the senior clergy, and they had to either develop the technological skill required to do this themselves

or make use of their cultural and social capital to advocate for the money and resources to develop and manage these various tools. Many clergy interviewed noted that they coordinated at least one volunteer from within their congregation to manage these various virtual arenas for them:

> *We had a member who's the leader of the* [website development] *team who's brilliant…Right now she's a stay-at-home mom but before this she worked in nonprofit communications. As a volunteer, she's donated about half the labor of creating that website…That was a gift of love from that member, and a lucky break of being at the right place at the right time of a company that's trying to establish its footprint in* [our city]. - Lutheran

This volunteer work that was so important to the present and future well-being of the church can be seen as a benefit of the senior clergy's social capital. This clergyperson was able to make use of her social network to find and persuade a volunteer to help do the work. While she could have acquired the technical skill herself to complete this goal, it was not clear that she would have had the time to develop this online presence herself given her numerous responsibilities. Additionally, more than half of the clergy interviewed stated that this reliance on volunteers was not necessarily because they lacked the technical skill or the ability to adapt with modern times. Instead they simply were not interested in the technological aspect of the job as it brought them no pleasure:

> *I don't get joy from using the technology. I know people who do, who really love their phones and don't want to put it down, or love playing online. It isn't fun to me. It's just work, but I like the effect. I like having websites and wind blades, and things that connect people. It's not like I'm not going to do it, but it's a labor of love and not a hobby.* - Unitarian Universalist

These technical skills were simply not satisfying for clergy who were more invested in the spiritual and altruistic aspects of religious institutions. Given that social and cultural capital has been of great benefit for clergy for centuries, senior clergy today may draw advantage from this capital to delegate the more technical (although still important) tasks.

Many senior clergy also used the opportunity to do what I described for academic faculty as "playing old". In short, this is the act of feigning ignorance of the technology to get out of using it. In multiple interviews, this was said to be an effective method because it was generally met with little to no resistance. The limited resistance could be attributed to a number of factors including the social status of the clergyperson or that these older clergy members simply could not "get" the technology. For instance, one clergyman chuckled when he recounted sending out requests for help on how to perform basic functions on Facebook such as accepting a friend request or posting new information. He noted that he knew how to perform the operation but that he simply "didn't want to," so he delegated the task without making it look as if he was delegating. While it was true that the vast majority of those interviewed did not use any social networks, neither personally nor professionally, they often scoffed at the idea they could not learn how to use the technology. Many actually mocked the assumption that an educated person would not be able to manage to learn a skill that many young children easily master. Not only was this a clear demonstration that these older workers were not at all intimidated by ICT, in contradiction to the literature (Wagner, Hassanein, and Head

2010), but it also asserted that ageist stereotypes, so traditionally deemed negative by researchers (Roscigno 2010; Roscigno et al. 2007; Butler 2005), can at times be advantageous.

Technology and Spiritual Duties

The purpose of ICT in the workplace is to make workers more productive and effective in their jobs. This could be difficult for older members of the clergy as they tend to lack technical capital and rely on outside help to manage their busy lives. As these interviews illustrated, clergy can and do mitigate the negative effects of low technical capital quite well benefitting from their extensive social and cultural capital which allow them to focus their attention on other required job duties about which they feel and are adequately skilled. However, this did not mean they had been entirely successful at eliminating the intrusion of technology into their lives.

For many older clergy, ICT had interfered with the most basic aspect of their jobs: prayer, contemplation, and writing weekly sermons. For example, when asked, "Would you say that technology has actually helped in making you a better member of the clergy?", responses highlighted some of the hazards of "too much" technology within the church:

> *My work, my vocation, is about mindfulness and I'm supposed to be a spiritual leader…People want me to be a calm, peaceful, wise presence and I'm supposed to show up at classes and worship services with some deeper thoughts. In order to make space for the deeper thoughts as well as the one-on-one time with members who are in crisis or thinking*

> *about something while I'm with someone, I want my phone to be off and people to feel like they have my full attention…I do have colleagues who have phones that ring in the middle of meetings, and I find that rude, or to check their phone if they're in a pastoral visit. To me, that's a boundary…It's a real juggling act because I feel like, on the one hand, communication is important and all the new technology is making the church more available and open to the world, which is exactly what it's supposed to be, but it has to be balanced. I feel like that's often my role to help as a staff and as church leaders, to find the right balance in the moment of how are we being really present where we are...Church doesn't work if you're not present.* - Unitarian Universalist

> *Yeah, I'm a mom of a young child. That's really tricky. I pray with other people. I sometimes pray with my son. On a weekday, that probably doesn't amount to more than half an hour to an hour of time for some kind of meditation or contemplation. I do definitely have mindfulness about different activities as spiritual discipline, walking and exercising and cooking and breathing…I think my way of managing my vocational role and my other pieces is, to have mindfulness about activities that I go about, doing things in a mindful way. Sometimes that means turning off all the noise while I'm cooking. As far as sitting, praying, doing nothing else, it's not actually that much time, but trying to be mindful is something that's woven through the day…That does hook into communications, though, of times when I turn communications on and off, and where I take things and where I don't take things and what I look at. I have a portable phone and a portable computer, not looking at emails during certain times when I'm intentionally focused on my family or something like that.* - Baptist

Because of the clergy's multiple responsibilities, as well as the "chaotic atmosphere" generated by technology, many noted that sometimes they "just have [sic] to fit God in" when they can. For example, one clergyman noted that he wrote all of his sermons on Sunday mornings, just hours before delivery to the congregation. On the Monday before his performance he spent some time reading over the prescribed lesson for the week as dictated by the church. He then spent the rest of the week thinking about the lesson whenever he had a spare moment, which was not very

often as he is also married with three children, all under the age of twelve. On Sunday, he would rise at 4:00 a.m. and spend the next 3-4 hours (on a good day) composing his sermon. While this man was an outlier among the group interviewed as most do not wait this late to complete their work, he highlighted that for many their duties have expanded so greatly, due in part to the presence of ICT, that their spiritual responsibilities were oftentimes relegated to a lower priority than their other more pressing administrative duties. In this way, technology was seen to have a negative influence on the operations of religious organizations.

ICT and the Future of Religion

One of the most interesting questions at the outset of this project was whether or not clergy ever feared being replaced by technology. The inspiration for this question came from a short article that described a brand new app for the iPhone dubbed "The Confessional App". The app would allow a Catholic to confess sins to a priest through text message rather than in person as is the traditional manner. Like the Pope's presence on Twitter, this app was meant to attract a new younger generation into to the Church. However, after some time and deliberation, the Vatican decided not to endorse the app, choosing instead to continue using the traditional mode of confession.

One might hypothesize that this and other similar incidents would at the very least have produced some apprehension among members of the clergy, especially older clergy who were less knowledgeable about the effects of technology on the

day-to-day lives of the younger generation. However, with only one exception every clergy member gave the same response when asked whether they feared being replaced by technology: absolutely not. In fact, most were unconditionally emphatic in their response:

> *You can't replace me with a computer or a website or a smartphone. Obviously, the sacramental life of the Catholic Church is so important. God calls us into relationship. Church is all about relationship, Priest, parishioner, parish communities coming together and praying together supporting one another and helping one another…Though technology is a tremendous asset…it can't replace the human relationship. You're not going to have a robot baptizing babies or performing weddings. I've joked with people…I can remember a number of years ago a grand joke we had about an ATM that, you go to an ATM for confessions. Instead of punching your pin number you punch in your sin number...In as much as we joke about that...You tell the ATM your sin and it spits out your penance for you. It's not going to happen because again, it's the human relationship. It's the human interaction. It's through that that we encounter God. It's through that that we understand a little bit about who Jesus was and who God is in our lives.* - Catholic

> *My job is face-to-face communication with people. My primary responsibility is worship and liturgy on a Sunday morning, is leading the community in prayer. That's my primary job. That can never be replaced by a non-human being. The Episcopalian church is relatively traditional, even though we have lots of resources and we try to be as energetic and things as possible…The human element is always going to be part of this tradition, at least as I foresee it…Only a priest can absolve sins in the church, both in the Roman Catholic tradition and the Anglican tradition. That's done with the gesture of the Father, the Son, and the Holy Spirit…My personal experience of God is that God is a personal being not an electronic being. That's not to say that much can't be explored or even discussed electronically, but the physical act of reconciliation would, by its very nature, have to be present…It would be like trying to do baptism online. It's the same kind of thing. There is a symbol, the baptism symbol's obviously water and anointing, and the symbol of confession is absolution with the sign of the cross. You couldn't very well do that electronically, at least as it's currently laid out…It's like Eucharist. You couldn't celebrate Eucharist electronically.* – Episcopalian

I think church won't be replaced by technology because I think people inherently need community and relationship. That inherent human need will trump technological advancements…I know you can cite numbers of people who sit and watch [a] *television service rather than go to a church. In our understanding of church, church is actually a community experience. It's not you just hearing something and having either a learning moment or a spiritual moment. That it's actually very important that you're part of a group of people that are seeking together to follow the Lord… I don't think you can ever replace it because I don't' think you can go virtual and still get it. It won't be it any more.* – Baptist

This is very human work. Showing up in the hospital and touching somebody's hand and bringing the anointing oil is pretty amazing. I don't fear [technology]*. Maybe I'm wrong…It's a calling. The things that we communicate, we're not communicating delivery times. We're communicating stuff of great weight and gravitas and import. It's amazing. Just thinking about communication, if you think historically the church has been in the communication business. God says, "Let there be light," and there was light. Communication is everything. "In the beginning was the word and the word was with God and the word was God," from John's gospel. Communication has been always a great deal. Jesus was a great communicator, the stories, the parables…* - Methodist

I think there's lots of other reasons why there won't be as many jobs for clergy as there are now. I think it's entirely possible that Christianity is going into another sort of medieval period, where it sort of hunkers down and it's not... I think it's possible that the church will grow smaller, and that technology will be one of the ways that the church stays effective and connected…There are jobs in the church (sic), because of lack of funds and smaller numbers, may disappear. Technology may help fill those gaps…But the work I do of actually being a minister in community, I think you can't have Christian community without some actual people contact. I think the technology is a way of keeping us more connected, and more aware of invitations and things, but I don't think that it will be a substitute… I worry actually that a lot of people, when we talk about this in this congregation, spend time in relationships that aren't deeply feeding, spend time doing Facebook, texting, and things like that, and that it's not as spiritually nourishing… We have talks in this community about whether it's possible to have deep relationships without spending time together, and that those relationships can be nurtured sometimes with emails and things like that. I think a lot of us

> *question whether it's really possible to have deep relationships that way.* – Unitarian Universalist
>
> *While technology is wonderful, it doesn't replace our being face-to-face. While I'm in the confessional with someone face-to-face, or even behind the screen, I catch the nuance of voice. If it's a face-to-face confession, I see the emotions on a person's face. And I can read that, and respond to that. Technology doesn't always allow you to do that.* - Catholic

A possible reason for their lack of fear may be due to the fact that they were taught to believe that true spirituality was, at its most fundamental, a sensual experience. And, for Christians, especially Catholics, there is no substitute for the Eucharist or confession with a priest.[15] Regarding the latter, confession was noted as being especially "tech-proof" for two main reasons: First, according to church law the priest must perform absolution in person unless absolutely impossible.[16] Second, it was noted many times that confession must be in person to protect the anonymity of the confessor. This was noted by a significant number of interviewees. Most likely, desire to protect the anonymity of congregants was due to recent news events regarding the NSA and privacy concerns in the United States.[17] Many argued

[15] The Eucharist is a ceremony that celebrates the events of the last supper through the consecration and consumption of bread and wine (Vatican 2013)

[16] According to Herbermann (1913), "Absolution is an integral part of the Sacrament of Penance, in Roman Catholicism. The penitent makes a sacramental confession of all mortal sins to a priest and prays an act of contrition. The priest then assigns a penance and imparts absolution in the name of the Trinity, on behalf of Christ Himself, using a fixed sacramental formula" that ends with a priest making the sign of the cross over the individual (cf. Wikipedia: Absolution 2013).

[17] In 2013, after a series of leaks by former NSA employee Edward Snowden, it became clear that the United States government was monitoring the private communications of domestic citizens (Greenwald 2013). This generated a wave of criticism from the media and from the public (Ellsberg 2013). It was in this environment that I conducted my interviews.

that the sanctity of the private confession was very serious and they would never allow something as fallible as a smartphone or email to interfere with the sacred confessional act no matter how convenient or novel.

Interestingly, the only person who said he could see clergy being replaced, at least lower-level clergy, was a Muslim prayer leader with over 30 years of experience in that role. When asked why his mosque did not have assigned clergy, his response was surprising: “We used to need a clergyman, but now we just use Google.” Additionally, he noted that the members of his mosque also relied heavily on three smartphone apps: “iPray”, “iKoran,” and “iQibla”. The first provided an alarm to remind one when it is time to pray. The second was an electronic version of the Koran with a variety of translations. The final app aided in prayer by providing a three dimensional map of the world that allowed the user to locate Mecca from anywhere on the planet with only the push of a button.

Another interviewed clergyperson very clearly stated the necessity of face-to-face interactions across religions:

> *I'm thinking about an area where technology doesn't really work that well? That's with **interfaith relationships** in a time of Muslim, Jewish, Christian, in times of tension **you have to be in the room with each other** **[emphasis mine]**...It's all about relationships, trusting each other. There's been a whole lot of, in recent years, I don't know if you've been following, or if you've been around long enough to follow the* [local] *Mosque controversy. That's been huge. It's pulled, it's nearly fractured JCRC, Jewish Community Relations Council, from the inside, because some Jewish folks were like, "They're not all terrorists, just get over it," and then others were, "They're all terrorists, we can't trust them." It practically went asunder…Then Christians reaching out to Muslims, and the only way to overcome that, or to work with each other, is to sit down with meals. I hosted a lot of meals here that have been*

> *halal and kosher. We sit down and talk. We talk, we ask about your family, your children, then we get down to the really hard work of trying to understand each other and it's not easy…The ones who stay at the table, in the room, are the successful relationships that then, going forward, and, say something like the marathon bombing[18] happens and our Muslim friends are feeling very paranoid and afraid because of the word "terror" and "Muslim" is all of a sudden the same thing again…We had the relationships built, so we had Christian and Jewish clergy who went to the mosques…to worship with them..Sometimes you have to be in the room, to be present…That's all relationships.* ***Sure we communicate, we set up dates with technology, and we communicate, but, that stuff, you have to be there*** [emphasis added]. - Methodist

This observation highlighted that, since so many wars and violence are fought over religion, both today and throughout history, it is of supreme importance that individuals of different religions sit together to share, relate, and discuss their beliefs, interests, and needs. There is no technological substitute for this discussion.

The primary finding of this chapter was that ICT had infiltrated many aspects of work for older clergy, including communication (email, phone, texting), administrative management (Google calendars), and even spiritual duties (online sermon databases/discussion boards and Muslim prayer apps). These technologies had greatly enhanced the effectiveness of the church activities, but also came at a cost for the senior clergy, namely overwork and separation from their spiritual duties. Despite the pervasive nature of ICT in religious institutions, there appeared

[18] This reference to the "marathon bombings" is in relation the bombings that hit the 2013 Boston Marathon (Eligon and Cooper 2013).

to be no fear that ICT would or even could replace clergy regardless of the sophistication of the technology.

While technological capital may be useful, it was not necessarily the only or even the most important path to success even in today's technologically-driven workplace. Ultimately, most members of the clergy interviewed decided where and when technology played a part within their religious institutions as they could draw on their large stores of organizational knowledge. This cultural capital was a major advantage for the older clergy interviewed as they tended to select those technological additions with which they were most comfortable while eschewing the rest thus contradicting past findings within the literature demonstrating a clear understanding of the benefits of the technology (Wagner, Hassainen, and Head 2010; Blaschke, Freddolino, and Mullen 2009; Eastman and Iyer 2004; Irizarry et al. 2002; Melenhorst, Rogers, Caylor 2001). Like academic faculty, this generally involved strategic use and planning based on their cultural capital (i.e. organizational knowledge) and social capital (i.e. status). For example, clergy too "play old" in order to mitigate those duties that they found uninteresting or a distraction from what they considered to be important work. They did this by using the ageist stereotypes (e.g. that they are unable to learn new ICT) generally associated with older adults to their favor (Roscigno 2010; Kallenberg 2009; Roscigno et al. 2007). This type of maneuver was generally effective and was met with very little resistance from younger co-workers and the community at large because as one clergyman noted, "Who's going to argue with a priest!?" These data

demonstrated that older clergy, while trained in an environment long since passed, possessed the resources necessary to support their continued presence within the workplace. Through the advantages gained from their social and cultural capital, older workers could traverse the seemingly insurmountable digital divide with relative ease.

"*The way I look at things is, I don't get paid for what I do. I get paid for what I know*."
– 62 year old, Plant Instrument Tech

Chapter 6

"And Other Duties…": A Study of Older Government Employees

The expansion of ICT over the last two decades has permeated virtually all of our major social institutions. Three interrelated institutions that are very interested in the opportunities afforded by ICT are local, state, and federal governments (Kvasny and Lee 2011; Gichoya 2005; Pavlichev and Garson 2003). Technologies such as email, smartphones, and video conferencing provide government employees with a variety of ways to better serve the public (Cegarra-Navarro et al. 2012; Ferro and Sorrentino 2010; Brewer, Neubauer, and Geiselhart 2006; Kamal 2006; Landsbergen and Walken 2001; Pavlichev and Garson 2003; Lehr and Lichtenberg 1999; Pratchett 1999). However, while there are many purported benefits of ICT in the government, some obstacles remain before the full use of these tools can be

maximized. One bottleneck identified by researchers has been a lack of technical expertise among many citizens, including vulnerable populations such as the poor and older citizens (Pavlichev and Garson 2004). Little research, however, has examined how these dramatic technological changes have affected government employees in their workplace, particularly older workers who went through much of their professional training and development before the integration of ICT over the past 20 years (Hsu 2013). To fill this gap in the literature, I conducted 22 semi-structured interviews with older government employees from a state Department of Transportation (3 interviews) in a Northeastern state and from a local Department of Water & Sewer (19 interviews) in a Southeastern state. The major finding of these interviews was the strict departure of the experiences with increasing ICT usage in the workplace of older government employees from the experiences of older academic faculty and clergy. In short, older government employees felt more disadvantages from their reduced technical capital compared to younger workers than older clergy and academic faculty, largely due to differences in how these different groups were able to mitigate insufficient technical skill/competence through their social and cultural capital.

Technology Enters the Workplace

Among the older government employees interviewed, the issue most repeatedly discussed was the abruptness with which modern ICT was introduced into the workplace. Most workers had been with the government in some capacity

for at least a decade, with many having completed 15-20 years of service. They were confident in the requirements and duties of their jobs until suddenly, with the integration of ICT, they felt out of their element:

> *Let me give you my take on how I see technology…I think what you have in the country, right now, is an older work force. Most of the people that are holding down jobs are people that are like myself. We've been at it for 30 years plus, and we're getting ready to retire. They cut the communications. The technology is good for the younger people because they are getting introduced into that from a school level. Whereas, when I grew up, computers just weren't around.* ***It seems like even here, in this place, it was like overnight when they implemented the use of the computer*** **[emphasis added].** – 59 year old, Pump Mechanic

The divide between "the younger people" and older workers was a common narrative theme. To this worker, and many interviewed, the divide wasn't simply a theoretical device used by social scientists (van Dijk 2006) but a clear split experienced by day-to-day workers with real ramifications.

Many older government employees claimed they simply did not feel prepared to adequately compete with "younger people":

> *To a lot of us older guys, it was hard to try to pick it up and make it useful for us. It's taken a bit. It's been a battle. I fought it for a while because I wasn't used to actually having to do all that stuff. I think that's a big reason why you might be seeing a problem with people absorbing it. I think as the* ***younger people*** *now come up, because the older guys are getting ready to retire or move on. It'll be easier that way because they're more already involved in it. Whereas us older guys, it's just kind of shoved at us* [emphasis added]. – 60 year old, Plant Electrician

The above quotation illustrates that learning and embracing the new technology was not the first reaction of older workers to the introduction of ICT in the workplace. In fact, more than a few noted how they actively "fought it" before

ultimately trying to play catch-up. This typically involved individual protests such as continuing to use the older non-ICT methods or *ad hoc* informal group protests during which workers might gather in the break room or outside the supervisor's office and loudly proclaim their dislike or even distrust for the newer mechanisms and procedures. These protests rarely, if ever, explicitly cited that the reason for their dislike and distrust was their unwillingness to adapt to technological change or that it was due to their age.

Common workplace politics aside, most older workers understand job and career culture well enough not to allow their inadequacies to become widely known. Fearing it might make them appear incapable of performing their jobs, they use their knowledge of the workplace landscape and relationships with co-workers to obfuscate their true motivations, since discovery of their incapability might lead to their reassignment, suspension, or termination. Several individuals mentioned that they were forced to rely on covert means to use the newer technologies and procedures to complete their work. For example, most of those interviewed used their cellular phones as a work-around to supervisor-monitored email or walkie-talkies[19]:

> *A lot of times, what we find is that there are guys that have a question or a problem and they don't want to put it out on the air. They call you*

[19] When I questioned the employees about their use of cell phones many responded positively. I thought that this was strange considering the vitriol that many had towards other technologies. When I voiced this apparent contradiction many noted that they owned "dumb phones" and only used them to make calls. By "dumb phones" they meant that their phones had limited capabilities compared to smartphones like the iPhone and that they limited the functions even more by only relying on very few features.

> *directly on your own cellphone. We're at the point where we're all friends, we all know each other, so we all share our phone numbers with one another.* – 51 year old, Instrument Tech

Simply put, they did not feel comfortable voicing their lack of technical capital in public. These feelings are in direct contrast with what was observed with older academic faculty and clergy. However, the faculty and clergy interviewed for this project all enjoy the benefit of either tenure or life-long job security. They, for the most part, do not need to fear being terminated or marginalized so they may be more able than less secure government employees to voice their displeasure and difficulty with ICT in the workplace. While we will see later that government employees do benefit from being a part of a union, this affiliation does not seem to be as effective at assuaging their concerns over job security as tenure is for faculty and clergy.

A distinction between pre-new ICT work and post-new ICT should be considered. Every government employee interviewed, particularly those who could be described as "blue collar workers," noted few objections to handling the mechanical technology needed to do their actual jobs such as maintaining pumps, meters, tanks, etc. They clearly differentiated between trade- or skill-enhancing technologies and administrative technologies such as digital record keeping, which are recent work duty additions. This distinction persists because, historically, data entry was not the duty of the field plant employees. In fact until recently data entry was its own job with its own department and group of specialized workers. What changed was the introduction of new ICT including tablets and laptops (see Example

1). These new tools have become central to the work experience of the employees interviewed and are now the main method of record keeping, detailing every facet of the job including time taken to complete a task (including start and completion times), cost of instruments used to complete task, and a written account of the task itself. In short, work that had previously been the purview of the data entry specialist had now become the responsibility of non-data entry specialists (i.e. the field workers).

Example 1: Above is an example of a tablet/laptop that has now become commonplace for workers at the water & sewer plant.

Though required, the transition from paper to digital data entry was not simple for workers, particularly older workers. For example:

> *Me and my partner use a laptop….We used to do the paper. But for some people like me, I'm getting better, computer savvy, but when you're older and you're not so much into computers like your generation is, you guys live, breathe, eat by your phone and computers and stuff like that. At 50, 60 years old, we don't do that. At first, it was a little trickier, but pretty much, I think every day you can learn something on the computer. Something that you didn't know, some other guy knows it. An instant shortcut, you can work those things through a lot of things. Even though they sent us to classes, it's not all hunky dory great stuff.* – 62 year old, Systems Tech

This 62 year old systems tech with 34 years of experience further noted that part of what prolonged his difficulty learning the new technology was a lack of complete, timely, and accurate instruction by supervisors or the administration, in that "They give you the basics, but they don't give you the whole thing." When asked about the training for the new data entry procedures, another employee stated, "It's a sore subject with a lot of guys because it's basically another [level of] training." Learning and using this technology is a skill set invisible in the job description but an essential new form of "capital" (technical capital) in the workplace. So, many of these older blue collar workers feel as if they have to put in double the work without being properly compensated. And, if they don't comply with the changes mandated by the county or state they can be penalized or suspended.

Additionally, when discussing government work, a number of respondents also highlighted the increased bureaucracy that maintaining digital records created. According to one 53 year old plant electrician:

> *In the old days, it was like, "Hey, go do that job" and you did it and you left. You didn't have to fill out no paperwork, no nothing. You see something broke, you call the supervisor and say, "Hey, this pump over here broke." Supervisor says, "Hey, go over there and fix it." When I got*

> *done, I'm done. No paper trail, no nothing. That was the only thing. In the old days, you just went, fixed it, and moved on. You didn't have to worry about even filling out paperwork, how long it took you."* – 53 year old, Plant Electrician

This kind of story was often repeated with equal parts nostalgia and frustration for a time long past. For many, these additional record-keeping duties make them less productive because such chores don't maximize their skill strengths. They feel as if they are being forced by a group of out-of-touch overseers who champion the advantages of increased ICT without acknowledging or even considering the possible downsides. These managers simply force lower-level employees to "figure it out" and reprimand them if they don't.[20]

Proactive employees striving to gain this technical capital and "figure it out" became very frustrated when progress was impeded by the very bureaucrats who demand the use of new technology. For example, one human resources employee with over 22 years of experience described how difficult it was to acquire authorization from her superiors for new work equipment that would improve her productivity with the newly-mandated ICT:

> *It took me close to a year to get two screens. I need two screens because if I'm doing payroll and pulling up [worker's] hours on one I can do payroll on the other screen...when you're doing the stuff, you're usually using two screens. But it took me close to a year to get approved, to have two screens. Why? It's the red tape of getting it approved. Because they*

[20] Reprimands generally take the form of reduced duties and/or maintenance and organizational duties. Within the plant workshop there is something known as "The Cage". 'The Cage" is where many of the tools and parts needed to do work are housed. Employees generally take turns cleaning and organizing "The Cage" as it's considered by many to be very boring and alienating. However it is not uncommon, according to a few reports, for employees to find themselves doing duty in "The Cage" when it isn't their turn and it's understood that this is because of some kind of indiscretion.

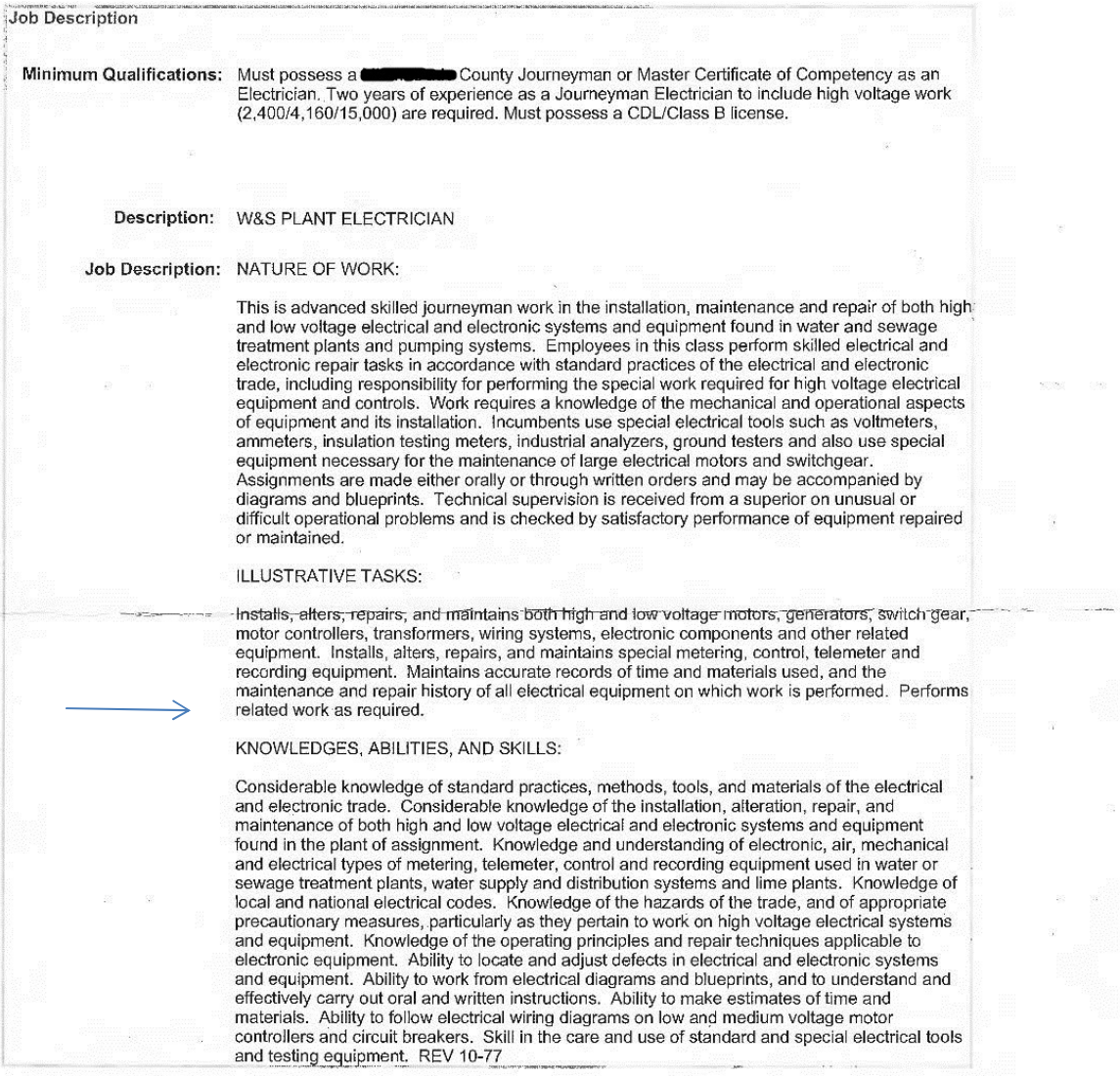
> *didn't feel like my title needed two screens. It's the red tape, there's a lot of red tape. It has to be signed off by everybody in the world. Close to a year to get that second monitor.* 60 year old, Human Resources

This experience of dealing with red tape is by no means exclusive to government employees, as academic faculty and clergy both noted similar frustrations. However, because of their social capital, namely their higher status within their respective organizations, faculty and clergy were generally more effective at accomplishing their goals, even if only marginally so. This difference will be explored in more detail in the occupational compare/contrast in Chapter 7.

For the older workers interviewed, there was little response to complaints that data entry was not a part of their job description, as each job listing commonly ended with the line "performs related work as required" (see Example 2 for a sample job listing). This simple yet important addition was used by management to justify having employees perform data entry duties as a normal part of their daily responsibilities, despite the exclusion of details outlining the required skills. One worker briefly described her hiring experience:

> *[You arrive with] a job duty and it says these are the things you're going to do. You are going to do inventory, and you have to drive a forklift. There were two lines when I got hired, and* ***other related duties****...If you take the other related duties there, that's more than what they put on that little piece of paper that says you do, because those are all the extra things they give you to do, and it's part of your job.* – 68 years old, Storeroom worker

For the most part those duties refer to data entry on newly mandated technological devices.



Job Description

Minimum Qualifications: Must possess a [redacted] County Journeyman or Master Certificate of Competency as an Electrician. Two years of experience as a Journeyman Electrician to include high voltage work (2,400/4,160/15,000) are required. Must possess a CDL/Class B license.

Description: W&S PLANT ELECTRICIAN

Job Description: NATURE OF WORK:

This is advanced skilled journeyman work in the installation, maintenance and repair of both high and low voltage electrical and electronic systems and equipment found in water and sewage treatment plants and pumping systems. Employees in this class perform skilled electrical and electronic repair tasks in accordance with standard practices of the electrical and electronic trade, including responsibility for performing the special work required for high voltage electrical equipment and controls. Work requires a knowledge of the mechanical and operational aspects of equipment and its installation. Incumbents use special electrical tools such as voltmeters, ammeters, insulation testing meters, industrial analyzers, ground testers and also use special equipment necessary for the maintenance of large electrical motors and switchgear. Assignments are made either orally or through written orders and may be accompanied by diagrams and blueprints. Technical supervision is received from a superior on unusual or difficult operational problems and is checked by satisfactory performance of equipment repaired or maintained.

ILLUSTRATIVE TASKS:

Installs, alters, repairs, and maintains both high and low voltage motors, generators, switch gear, motor controllers, transformers, wiring systems, electronic components and other related equipment. Installs, alters, repairs, and maintains special metering, control, telemeter and recording equipment. Maintains accurate records of time and materials used, and the maintenance and repair history of all electrical equipment on which work is performed. Performs related work as required.

KNOWLEDGES, ABILITIES, AND SKILLS:

Considerable knowledge of standard practices, methods, tools, and materials of the electrical and electronic trade. Considerable knowledge of the installation, alteration, repair, and maintenance of both high and low voltage electrical and electronic systems and equipment found in the plant of assignment. Knowledge and understanding of electronic, air, mechanical and electrical types of metering, telemeter, control and recording equipment used in water or sewage treatment plants, water supply and distribution systems and lime plants. Knowledge of local and national electrical codes. Knowledge of the hazards of the trade, and of appropriate precautionary measures, particularly as they pertain to work on high voltage electrical systems and equipment. Knowledge of the operating principles and repair techniques applicable to electronic equipment. Ability to locate and adjust defects in electrical and electronic systems and equipment. Ability to work from electrical diagrams and blueprints, and to understand and effectively carry out oral and written instructions. Ability to make estimates of time and materials. Ability to follow electrical wiring diagrams on low and medium voltage motor controllers and circuit breakers. Skill in the care and use of standard and special electrical tools and testing equipment. REV 10-77

Example 2: Above is an example of a normal job listing for a Plant Electrician. Notice that the statement "performs related work as required" is a catch all phrase used by management to justify having workers maintain their own records electronically.

However, one data-entry worker highlighted that while the transition to digital data entry was seen by many older workers as an unnecessary burden, this was by no means a universal opinion. For instance, because all work reports can be audited by the state or federal government at any time, there must be a clear record of all work done. This includes records for any action performed while on duty, from

changing a light bulb in one of the water treatment facilities to updating the wiring on an entire building. Things such as the worker's name and badge number, time spent completing the task (including start and stop time), and materials used must be recorded and filed. While this is seen as tedious to some (described often as a "pain in the ass"), it serves a clear purpose: to hold each worker accountable. Moreover, as the data entry specialist mentioned, this increased accountability made her job much more efficient and productive. By making it easier to multitask, what used to take minutes or hours to complete is now accomplished with a few quick clicks of the computer mouse.

The single most important problem with the integration of ICT into the local government was insufficient training: even data entry specialists need explicit training to maximize the utility of the new ICT. While it was expected by government management that some older workers, particularly blue collar workers, would have little to no experience with new ICT, the same benefit of the doubt was not typically extended to older white collar workers. It was assumed, by those interviewed, instead that all office work is the same for the white collar worker, so no real learning curve was deemed necessary to reach maximum efficiency. However, these expectations did not match reality. A 64 year old data entry specialist with 34 years of experience was asked the question, "Do you feel like you are more productive now because of all of the new technology (e.g. Microsoft Excel, email, etc.)?" Her response: "No way!" She attributed the lack of increased

productivity to an absence of training as well as a dearth of co-workers with whom she might go to for help:

> **Interviewer:** How did you actually learn all of the software that you have to use?
>
> **Interviewee:** *Trial and error! The County doesn't give you [training in] Excel, Word, all of that...I sat down clicked on the little dog*[21] *and he told me what to do. You get no training from the county.*
>
> **Interviewer**: But they expect you to know how to use it?
>
> **Interviewee**: *Oh, yeah! You got to know how to use it! I never received any training. At the main office I was doing the billing for all the Municipalities and stuff. We had a girl as our entry person. She would do all our forms, our invoices, everything. When I got to other places it was like if I wanted to do it I needed to learn how to do it myself, but nobody's here except for me. Just playing with it and making forms, stuff like that.*
>
> **Interviewer**: Did they compensate you for learning...
>
> **Interviewee**: *They don't compensate me for anything...not a thing! When you wonder why people stay at the County, because what is going through your mind is "Why do you stay, you don't get a pay worth the dime and you won't get compensated for anything you do? In my case, insurance and benefits, accurate health insurance with family…That's my reason for staying.*
>
> **Interviewer:** You said that you have more work to do though, because of technology?
>
> **Interviewee**: *Yes. It used to be I just did one specific thing. Now they've gotten rid of so many people, just by layoffs and everything, that one person is usually doing the job of like four people now. Before you weren't so stressed out and you didn't have so much to do, but they've just piled everything on. They just keep piling it and they keep cutting*

[21] Here she is referring to a Help feature that Microsoft Word 1997 used to have in their software to help individuals learn how to properly use their Microsoft Office programs. The helper would come in the shape of a dog or a paper clip named "Clippy."

> *our pay. Our pay's been cut last year by 25 percent. Then they still want us to do more work….The work will never go down, it goes up.*

This extended quotation reiterates a number of important ICT implementation issues including: (1) the lack of necessary education and training when new technology is introduced, (2) a disconnect between upper management and lower level employees relating to the purposes and goals of the new technology when introduced, and (3) a premature reduction in staff following the introduction of new technology due to the promise of increased productivity and efficiency that has not yet been fulfilled. While this does not mean that the introduction of ICT was a bad idea or that older workers were incapable of using it efficiently, it does demonstrate a clear disconnect between the theoretical applications of ICT and its implementation in a real world environment. One of the key components for bridging the gap between the theoretical and the real world application is open communication between employers and employees.

Communicating the Advantages of New ICT

The number one reason why it is difficult to illustrate to older workers, particularly blue collar government employees, how advantageous new ICT can be is communication problems brought on by power differences in the government hierarchy. Specifically, many interviewed government employees felt they were being forced by superiors to do things a new way while using unfamiliar equipment they had not previously used, all without being consulted. This, they felt, was a slap in the face from management who presumed to know how to do blue collar jobs.

Moreover, some felt that this approach by management diminished the value of one of the most powerful resources that they had as long-time employees, their cultural capital, which had helped them navigate the rigors of the job for years before modern ICT was introduced.

For instance, over the last 15 years or so, there was a major push to integrate email as the preferred method of employee communication. Politicians and citizens encouraged this change to create a paper trail providing a record of communications for all workers, a record that could be reviewed to pinpoint where problems were initiated and how those problems evolved. This initiative was met with significant resistance by many plant workers. As culled from interviews for this project, this form of communication did not mesh with every day work and job realities. According to one lead worker at the water & sewer plant, who is the acting middleman between regular employees and supervisors, attested that the most efficient and effective mode of communication is, without question, face-to-face communication:

> *I have to constantly be checking it all out. I run into the operators. I see where they're at, what they need to be done. I tell them what they need to be doing. As a lead operator, you have to be in touch with everybody, and not just the operations guys. Electricians, maintenance guys. There's a lot of interaction...The advantage of* [face-to-face interaction] *is that you get a feel for what the other person exactly is going through, what parameters do they have in being able to do what we need done. Sometimes, technology is a little cold, distant.* 51 years old, Lead Worker

He noted that he prefers to stick with face-to-face communication while "younger guys" might be more comfortable with email and texting. This was a reoccurring

theme, particularly among workers tasked with especially dangerous or challenging duties. Moreover, it was noted several times that supervisors who proactively consulted with workers revealed the potential problems *before* they become problems, making potential email records moot. However, workers were not consulted in the decision to mandate email communication, and likely many easily-avoidable problems occurred because of a lack of effective and proactive communication and trust.

An additional reason why older workers interviewed preferred face-to-face communication over administrator-prescribed methods was that workers do not understand the rules necessary to use effectively the new communication technologies such as email. Over their career they had developed a valuable store of organizational knowledge that informs them of the most efficient and effective means of communication, and they now benefit from that system to survive. Office politics, and the advantages gained from social and cultural capital acquired over years of experience in these offices, is very real for these employees. In this environment, in order to survive and thrive, one must be able to negotiate the political minefields common in many workplaces, where snubs between co-workers are often exaggerated, cliques are formed, and battle lines drawn. Unlike with academic faculty and clergy, the ramifications of one wrong move can cause a series of problems for the government employee. For the senior employees interviewed, anything can hurt or help their ability to get ahead. Creating a paper trail in which each comment, however innocuous, is recorded and filed away for future use,

possibly by an enemy, is deemed a major disadvantage and generally avoided if possible. This hesitance to fully embrace digital communication was best exemplified by one plant manager who refused to write an email if it was longer than two sentences. Instead, he relied on his younger secretary to complete the work for him, providing himself with plausible deniability should a problem arise later. In essence he used her to translate his dictum into a digital record in order to always have a patsy to take the fall. He noted on more than one occasion within his interview that whenever she takes vacation or is off on a sick day he never sends out any messages lest he "fucks it all up."

A final reason why the integration of new ICT has been such a challenge for older government workers is they do not believe that the new technology does or will make them more productive. Distrust in the wondrous advantages of ICT proposed by management was lucidly articulated by a 51 year old lead worker with 31 years' experience within the electrical department at the water & sewer plant. When asked whether he and his colleagues are more productive today because of new technologies than they were in the past, he responded:

> *I don't know. That's a tough question...See, in our field, it's a question of wrench time or computer time, and the more time that I'm spending in front of a computer screen trying to decipher what the hell this work order means or "what are they trying to say," it's less time that I spend turning a wrench. In our field, either electrical or maintenance, you want the people who you're paying as maintenance personnel to be turning wrenches. You don't want him sitting on a screen hitting keys. We, unfortunately, end up doing a lot of that.*
>
> *It depends on what do you want to get. You want to get somebody who now becomes a data entry kind of person more than anything else or do*

> *you want a guy turning a wrench, and actually working on the equipment.*
>
> **Interviewer:** Wrench time hasn't gone up because of new technology?
>
> ***Interviewee**: No. That's gone down, because now we have guys who [hesitant pause] they were turning a wrench, and then they put down on their paper, "Completed this job, blah, blah, blah," and it would take them 10 minutes. It's what they were used to. Now, they got to sit down in front of a computer, and they got to [hesitant pause] again, most of them are like me. They don't type very good. They don't. They take very long to do these things, and they also got to familiarize themselves with these codes that they have to know.*
>
> *What it is they're trying to train actual maintenance personnel who, all their lives, basically pull wires or install switches, worked on gear, did motors, did this. Now, they want them like, "Yeah, we want you to continue to do that, but now we also want you to put the data into the computer system." By doing that, they were able to get rid of a lot of data entry people who that's what they did. Now, they got rid of those people, and they are getting more out of the worker or they're trying to get more out of the worker. Like a jack of all trades definition that before wasn't like that.*

Wrench time or computer time? In this worker's world, they are simply not valued the same by all parties. This is a piece of organizational knowledge that was learned over years of work and has thus become an important part of his cultural capital. To the older workers at the water & sewer plant, the most important work is the "wrench work" because it is "wrench work" for which they were initially hired and trained and that they consider their specialized skill. However to management, "wrench time" is only validated by paired "computer time," and thus "computer time" is most important. Until these decoupled perspectives are resolved or until older workers retire or receive appropriate ICT training, new ICT will continue to be less effective than is possible.

The Advantages of Being an Older Worker

"I'm in the union."

This simple reply by a 51 year-old Department of Transportation employee was the only response to the question "do you ever fear being replaced by technology?" Its frankness does not mask its power. For this man, his greatest advantage is the social capital afforded to him by being not only a member of a union but a member of the union with years of experience and many dues paid. While this remark was repeated by almost half of those interviewed, two other responses were almost as common and just as illuminating.

First, almost half the individuals interviewed knew exactly how close they were to retirement. When asked whether or not they feared being marginalized or replaced by automated technologies, more than a few replied they were retiring soon, "So, no!" Typical responses included both vague replies that alluded to retirement in the near distant future "about two years away" to "53 days and counting" from a clearly elated plant electrician. This response was noteworthy in particular because it was not commonly heard among the academic faculty and clergy, many of whom seemed to be content to continue in their work for years to come, despite increasing technological requirements. The varying distance to retirement across the three groups may also explain to some extent why older government employees are less inclined to cultivate their technical capital than older academic faculty or clergy: they deem their investment unworthy of their

efforts, given their short time of outstanding service. So “why change now? Let [us] do it the way [we’ve] always done things.” This was a surprising approach but evidently extremely effective, as more than a few workers used it with great success with their supervisors. Follow-up questions concerning why they thought this technique worked on their bosses produced just as enlightening a response: “They’re old too!” Clearly this shared shortfall of technical capital as well as the companionate old age of management provided a convenient escape for more than a few older workers. It also demonstrates the importance of cultural capital, as the workers knew they could win arguments with their "old" bosses based on their shared experiences. This is a defense that, by definition, cannot be used by younger workers to mitigate capability shortcomings with technology, invariably putting them at a relative disadvantage if they did not enter the workplace with sufficient technical capital.

A second common response among older workers when asked if they feared being replaced by newer and possibly automated technology was more nuanced but demonstrated a long-term cultivation of understanding of the workplace ("cultural capital") that new workers could not take similar advantage of. The response: “The machines are old. You need old, experienced workers who know how to handle them.” For instance, here is an example of a normal occurrence from a 68 year old storeroom worker with 23 years of experience:

> *I've been here long enough that I know what the manufacturers are, some of the parts, and where they are. They may not have been used in 20 years, but I know where it is because I've been here longer.*

> *The new guys won't know that. I've been there a long time. That's why when I leave they're going to be at a loss for coming in here and saying, "Oh, I need Tuthill stuff," and the other guy is going to look at him and go, "What's Tuthill?"*
>
> *I know what Tuthill is because I've been here longer. That's all. That's just because I've been here a long time.*

This quotation demonstrates that older workers can and do benefit from their cultural capital. Regardless of how many updates and upgrades are made in the workplace there will always be lots of old stuff lying around, from furniture to files to old equipment. Interestingly, when asked why the state doesn't just get rid of the older equipment and rely instead on the newer, presumably better equipment, she chuckled and said, "That's not how the government does it." In other words, the reality for government employees is to figure out a way to make the equipment in place (i.e. already paid for) work with the newer stuff. This understanding of governmental inner workings has allowed more than a few older workers to prove themselves indispensable because they are the ones who know how to properly manage and make use of the "old stuff." Again, this is a situation where enriched cultural capital more than compensates for reduced technical capital.

This same argument was also made by a 63 year old IT specialist within the Department of Transportation. Over the past 10-15 years most local and state governments, as well as the federal government, have begun digitizing their records. This involves taking tens of thousands of files previously stored in one format and converting them to another that fits within the digital world. This individual, along with several of his similarly-aged peers, has taken advantage of this initiative to gain

more power (and money) from their bosses. They have leveraged their acquired skills, knowledge, and experience regarding how to use the now antiquated equipment to elevate themselves above their younger counterparts in the office hierarchy, who only have experience with "new" ICT. When asked why he didn't take the time to train his young colleagues to perform the same tasks he replied, "Why would I do that?" with a look of confused disbelief for the naïve interviewer. His long-term experiences as a government employee forced him to see his job as a zero-sum game where there is only so much power, money, and recognition to go around. If he trains someone who is younger and cheaper than himself, he runs the risk of being marginalized, even if he can't be fired (because of his union membership), resulting in reduced power and responsibility for him within the work hierarchy.[22] In this case, this older worker's enhanced technical capital actually referred to his ability to use antiquated equipment, and for now this places him in a position of power over younger colleagues holding more traditional forms of technical capital.

Another tactic used by many older employees, particularly the blue collar employees interviewed, was to verbalize loudly the decoupling of the proposed theoretical advantages of using a new technology, touted by their bosses and

[22] Interestingly, this feeling of being in a "zero-sum game" is known within the aging and work literature as "the lump of labor" theory (Munnell and Wu 2012). At its most basic, it describes an environment in which younger and older workers compete against each other over a limited number of jobs. It was first described by Henry Mayhew in 1851 and has become a common talking point over the last 150+ years for "opponents of free trade, technological advance, and immigration" (cf. Munnell and Wu 2012).

politicians, with the true experiences using that technology. For instance, here is an example of the start of each day for a 64 year old plant electrician with 31 years of experience:

> *You go in, you get your computer, you sit down, you log on. It takes 5 to 10 minutes.* [The supervisors] *come in and take roll to see who is there. Then it takes a couple minutes. Part of the problem with our system, is what it takes you to get into it. You've got to put your password three times to get into our system. It's too long. Instead of logging in one time, and you're done. You've got to log into the county website, then you've got to log into the* [the data entry program] *by putting in your password…and by the time you're all said and done, it's 7:30, and you started at 7:00. You've wasted a half an hour. At 2:15, we're logging time. It takes almost up to a half hour because you've got to elaborate* [what you did all day]*. Then you finish at 3:10. We're changing and we're out the door by 3:30. You just lost two hours' worth of work, so you're only working six hours a day but getting paid for eight."*

This same or similar story was repeated over 10 times by those interviewed. It contradicts the common belief that the integration of ICT will increase productivity and efficiency and thus reduce costs to the tax payer while increasing the standard of living. While this is not a surprise in the literature of ICT in the workplace (Fagerberg, Mowery, and Nelson 2006; Bresnahan, Brynjolfsson, and Hitt 2002; Brynjolfsson and Hitt 2000), these results are in opposition to the narrative sold to the taxpayers supporting these departments. This narrative *would* be the truth if it weren't for one corrupting detail: if workers don't know how to use the new ICT productively and efficiently, then it simply won't increase productivity. More than a few older employees made it a priority to emphasize this shortcoming as often as possible to their superiors.

The fundamental hurdle in the development of technical capital by older government employees was that they do not know how to touch type. For some who have been government employees for over 30 years, they simply never needed to possess that skill. They spent the bulk of their careers keeping records by hand while relying on others whose sole job was to type up the information for posterity. Then, abruptly they are expected to add to their regular work another whole set of duties with which they have little to no experience. As one can imagine, this is a frustrating position, especially considering a job is supposed to get easier, not harder, over time as one becomes familiar with the job responsibilities, community, and culture.

Interestingly, the older workers interviewed could rely one major advantage to level the playing field: seniority. Among government employees and other unionized workers, those individuals who have been at the job the longest are generally afforded certain additional privileges as a payment of sorts for their years of service. Each of the employees interviewed for this project admitted using their age and seniority to their advantage to help make up for their technological shortcomings by "playing old." For example, the common practice for most employees interviewed was to wait until the end of the day to record the day's activities. Because many labor out in the field, they take this time at the end of their shift to wind down. Toting their laptop to the break room or some other quiet location, they take a seat and get to work. Previously workers simply filled out work orders by hand which took only about 5-10 minutes. Today, however, many have

learned to milk the experience to their advantage. As previously mentioned, because of the lower quality of the technological devices provided, simply accessing the data entry software takes 5-10 minutes. Inputting the information takes another 20-25 minutes for those individuals who must use the "hunt-and-peck" method of typing. In other words, because many of those interviewed did not remember where each letter was found on the keyboard they had to search for each letter individually as they wrote. This process is incredibly slow and inefficient, which was exactly why older workers used it. They could not be said to be not performing their duties because they were doing their work. They were simply doing it slowly.

Some have taken this unique opportunity afforded to them by their age, seniority, and knowledge of the work culture to tilt the process even more to their favor. To protect workers in case of injury, incapacitation, or the need for an extra pair of hands, work teams of two are common at the water & sewer plant. A number of older workers took to partnering up with younger, more technologically inclined colleagues. At the end of the day when they would need to track what they did, these older workers convinced their younger partner to do the brunt of the work "because it's easier for them." The younger workers generally did not put up a fight because it *was* easier for them since many did type much faster than their older counterparts and, in general, were much more confident with the technology. The younger workers also did it to ingratiate themselves with their older and more experienced co-workers and because they too desired a one hour "break" especially if it meant doing only 15-20 minutes of simple clerical work. In summation, older workers, far

from being penalized for their lack of technological competence or skill, benefited from their knowledge of the workplace and office hierarchy (their cultural capital).

As some of the most important and influential institutions in our country, the integration of ICT into the local, state, and federal governments has received significant attention from scholars from a variety of disciplines (Kvasny and Lee 2011; Gichoya 2005; Pavlichev and Garson 2003). While much of this research focuses on the various ways that a technology-aided government or 'e-Government' can "provide public services…and empower citizens and communities through information technology" (Ho 2002; see also Cegarra-Navarro et al. 2012; Ferro and Sorrentino 2010; Brewer, Neubauer, and Geiselhart 2006; Kamal 2006), this study instead examined the experience that this implementation of ICT has had on the people tasked to carry out the services: government employees, and more specifically, older government employees.

The results of this study suggested that the integration of ICT had not been exclusively beneficial, as is generally touted by the media and politicians as well as the literature (Gichoya 2005; Pavlichev and Garson 2003). The reason can best be characterized by the difference between "theory" and "practice." For example, for years, the only tasks that many of the workers interviewed were asked to complete involved fixing and maintaining water & sewer systems, in other words, jobs that required very specific skills to complete successfully. Over the last decade or so, they have increasingly been asked to incorporate newer technological skills outside

of their previous skillset. This has generated a considerable amount of apprehension and anxiety among older employees. However, the anxiety does not stem from any perceived inability to learn how to use the technology as the literature would suggest (Hogan 2005; Karavidas et al. 2005; Laguna and Babcock 1997) but an understanding that while they are busy gaining experience and mastery over the technology, their younger counterparts are surpassing them in the eyes of their employers. As a result, the reported anxiety and apprehension that became common among older government employees upon the introduction of ICT was a response to possible negative consequences that could arise.

Additionally, while seeming to support the literature that identifies a difficulty for older adults to perceive the benefits of ICT in their lives (Blaschke, Freddolino, and Mullen 2009; Eastman and Iyer 2004; Irizarry et al. 2002; Melenhorst, Rogers, Caylor 2001), my findings suggest that this was not entirely the case. Many interviewed for this project understood how the ICT would make work more efficient in the abstract; they simply did not believe that the benefits translated into the actual workplace as they presently understood it. Many noted that the ICT would *eventually* make workers more productive, efficient, and effective at their jobs but that would require a number of significant changes both in policy and personnel.

Finally, this study of government employees, particularly of those older plant employees, provides the most significant contrast to what we have already observed with academic faculty and clergy in regards to the mitigating abilities of cultural and

social capital. According to the literature (DiMaggio and Bonikowski 2008; Williams 2006; Lin 2000; Portes 1998), an individual with high social and cultural capital would in theory be able to use those resources to gain advantage over others. For the government employees interviewed, the advantages afforded to them by these resources were much more muted than with faculty and clergy. For many, the benefits gained from these different forms of capital did not help them free up time so that they could do more important work as it did with faculty and clergy. Instead it simply leveled the playing field a bit between themselves and their younger co-workers, many of whom had little to no problems with ICT use. This contrast in experience between academic faculty, clergy, and government employees in regards to the integration of ICT into the workplace is the subject of Chapter 7.

Chapter 7

A Comparison of Older Workers

The integration of ICT into the modern workplace has had a significant influence on both institutions and employees. However, the effects of this transition have by no means affected institutions and employees in the same way. Throughout this research process it has become clear that there are similarities and differences between these groups that extend beyond just the ages and occupations of each group's members. Moreover, older workers, even those within the same cohort, differ in many important ways and by no means should be perceived as a monolith. In this chapter I compare and contrast a few of the most salient similarities and differences between older faculty, clergy, and government employees.

Real-World Changes brought on by ICT

One of the primary concerns of this work was to understand how the day-to-day experience of work, as perceived by older workers, has changed over the past 20+ years as a result of modern ICT. For many interviewed, one of the most significant effects that technology has had on their work life has been in its re-shaping of the workplace itself. Among all three occupations the most obvious change brought about by the integration of ICT into the workplace has been change within the physical workplace itself. In each group this manifested itself in the removal of large pieces of furniture, like filing cabinets and shelves filled with binders, books, and old journals. I conducted my set of interviews with faculty during the summer of 2011. For many, the summer was the perfect time to revamp the office area to convert the limited working space into its maximum functional condition. This included the removal of filing cabinets filled with old papers as well as boxes of old academic journals and books. Eliminating these items was possible because present faculty could now peruse any journal any time by simply going online to the many hundreds of various available databases and resources. To the mirth of many faculty, they no longer needed to store away journals of limited worth on the off chance that one day in the future it just might become useful and in fact many had already stopped receiving hard copies. In its digital format ICT had made the information much more convenient and usable, so the hard copies could finally be discarded. “I felt like a hoarder sometimes” claimed one 63 year old chemistry professor who had kept every notebook he had ever used since he was an

undergraduate student. He noted that through the encouragement of his younger colleagues and with the help of his lab assistants he was able to digitally scan every page of his over 500 notebooks, thus allowing him to throw them away.

Here we see just a few casualties of ICT in academia. Not shown: several recycling bins filled with old papers and files that are no longer needed by academic faculty.

He was further elated because the scanning process brought him into contact with some ideas of which he had long forgotten and was excited to use the opportunity to quickly and easily take stock of what he had been squirreling away for 45+ years. Similar stories were related by faculty from every department. Each felt genuinely happy to be get rid of the clutter which included items that were made obsolete long ago like transparencies of old lectures that had been converted to PowerPoint

presentations and, in the case of one biology professor, thousands of slide projector slides.

I witnessed similar processes taking place when I conducted interviews with clergy and government employees. It was fascinating to take note of what was kept and what was ultimately discarded. Some of the people interviewed had been at their place of work for decades and had accumulated plenty of "junk," quoting a soon-to-retire 68 year old priest. This particular priest who had gone through the cleaning process a couple of years before told me during our interview that the only thing he lamented was the minimization process during which he give away his older texts from when he was just starting out. He unloaded them because he could just look up the content online if he wanted it. But what he had not taken into account, until it was too late, was all of the comments and notes he had written in the margins of his books. He forgot that they even existed, he said, until he wanted to figure out why a passage that had come up recently during the regular course of his work was so powerful to him when he was younger. This was distressing to him because it had been over three decades since he had handwritten an explanatory notation in the old text adjacent to the passage. He could not remember the notation and now it was lost to him forever. This accumulation of a career's worth of "notes to self" ultimately kept a handful of clergy and faculty from getting rid of their old stuff. It was not due to sentimentality or a fear of advancing technology. There was just too much that could not be replaced.

Unlike the faculty and clergy, government employees did not generally have the same connection to their documents and collections. This is because, for most, the decision to keep or discard documents or files is not within their control. Most interviewed had boxes of old records they wished they could dispose of that the government simply would not allow them to destroy. Oddly, if they were asked to discard the old and unneeded materials some might still complain because of how long it would take! This congestion issue was mentioned quite often as a cohort problem unique to older workers since, unlike their younger co-workers, many of whom began working *after* data entry went digital, older workers simply had more accumulated physical materials.

Here we see just a few of the many binders that one lead worker with the electrical department at the water & sewer plant is mandated by law to hold on to. When asked how often he references any of the documents in the folder he said "Never."

Along with changes in the physical spaces within the workplace, ICT had also had a dramatic effect on the people within the workplace, specifically the number and types of workers. In most cases, the introduction of ICT had led to the complete elimination of positions that had once been important within the workplace. For example, in the previous chapter on government employees, I discussed the disappearance of data entry specialists. This was caused by management adding data entry work to the duties of its other employees. I discovered that this was not a unique story as similar changes were made at universities and within churches. One pastor in particular was particularly infuriated by this process and eagerly agreed to talk to me specifically in order to discuss this point. The reason: the day before the scheduled interview he had been forced to fire his office manager of 10 years. According to this 50 year old pastor with 17 years' experience, because he had demonstrated so much initiative and success in learning basic computing skills, such as how to create and manage spreadsheets in Microsoft Excel, the elders felt that the church could save some money by terminating his assistant and the position. It was decided that he would take over the office duties in addition to his other duties. What made it especially galling for him was that he had acquired the computing skills to better help his assistant! He ranted:

> *I guess I felt like I kind of inherited all this. In this job you don't get paid much so it's all of a sudden here I am trained to do one thing, suddenly you're doing this and you're not getting paid much. Before, I was happier than a dog with two dicks because I was getting paid not much but I loved what I did, do you know what I mean? Talking to people about God, listening to people with their pastoral concerns, running the*

> *church, and that kind of thing…Then it kind of morphs all into the technology so heavy. Now it's like that old Woody Allen thing. The food is terrible in this restaurant. Yeah, it's such small portions. It's like I'm doing this and I'm not getting paid much.. It's not lined up with my values anymore.*

A final noticeable change stemming from ICT was in the day-to-day routines of each worker. Every single person interviewed was asked what a "normal" workday was like for them. They were then asked to compare their current routine to one from 10-15 years prior. In almost every case, there was a dramatic change between the two routines even for those who had not changed jobs or been promoted. They attributed much of the change to ICT. For example, as recounted in Chapters 4 and 5, many academic faculty and clergy now quite literally started their day checking email. This new addition to their work routine was wholly independent of job promotion or duty. Many contended that the most difficult part about the introduction of ICT into their work lives was that they had to re-learn how to do the things they had successfully been doing for decades thus encouraging them to augment their already expansive stores of cultural capital. For example, academic faculty who were trained to use the library to conduct research were now researching from practically everywhere but the library by using the internet. Clergy who used to make it a priority to travel around the community each day were now increasingly contacting more and more church members than ever before through a variety of social media websites such as Facebook and Twitter. Furthermore, government employees, like those at the water & sewer plant, were now recording detailed notes on their daily actions in order to properly complete

paperwork to the degree required by the county. These are all actions that are similar to those that had always been performed but the addition of ICT changed them just enough to warrant older workers augmenting their routines and skills to better fit the demands of the new workplace. As some older employees discovered, this change was easy for some but certainly not for all.

Older Workers: Similar but Not the Same

The reason I found variations of adaptability among the three groups interviewed was due to basic demographic and power differences. In other words, those older workers with culturally advantageous attributes were generally better able to adapt. The three characteristics that were found to best predict difficulty with ICT are: education, class, and to an extent, gender.

One of the most glaring points of contrast among the occupations examined was undoubtedly the education level of the average employee. The entire academic faculty interviewed had PhDs. Additionally, every member of the clergy had attended a religious institution (e.g. seminary) for formal training and instruction. This training included instruction in research, oratory, and in a handful of cases, foreign language acquisition such as Latin and/or Hebrew. In contrast, fewer than 7 of the government employees interviewed had any college level experience at all. Many had instead attended vocational schools and programs to develop the skills needed for their jobs as electricians or mechanics. This difference in education was most apparent when speaking to the water & sewer plant employees. For many,

their biggest ICT obstacle was relatively basic: typing up their work each day took too long. Not only did few possess basic touch-typing skills but many also had difficulty translating what they did each day into a coherent record to be filed away. In the past, these workers would simply give the data entry specialists a "cliff's notes" version of what they did that day. They then expected those specialists to turn their rough notes into prose. Now, it was their job to do this and according to one plant supervisor with 30 years of experience, "you can barely understand what they write." These workers had no problem doing what they were trained for and considered to be their "real job" but who had difficulty now with the added work that had become their responsibility.

For some, it was not just education that posed the biggest challenge. A handful of interviewed plant employees, in addition to never completing high school, also did not read, write, or even speak English fluently. Their inability to communicate in English was never a problem for them in the past because, again, they would simply provide the data entry specialists with a rough outline of the day's work, except that the notes would be in Spanish, and they would expect the specialist to translate it for them. However, the reduction in data entry specialists was now forcing them to figure out a new system.

For some, this meant cajoling younger co-workers into doing the typing and composing tasks for them while for others it meant finding a woman. Historically, women have performed the bulk of the secretarial duties in most offices. This association explained why many of the men interviewed who had difficulty writing

up their daily work, either, because of a lack in technical skill or because of an inability to compose in English, relied on the women around the office to help them. The men saw nothing wrong with this because some of the women, particularly those at the water & sewer plant, used to do data entry but had since moved to other departments rather than be laid off. I spoke to a few of these women informally to learn more about why they did the extra work for these men. There answer was simple: "Because I want to help them out." Many of these individuals had been working together for over a decade or more. They had functional office relationships and when one person needed help, the other was generally happy to oblige. Moreover, these women mentioned that the men would make it up to them in other ways ranging from getting them candy and soda to performing some of the women's more despised duties like moving around furniture and equipment. In all, it was a symbiotic system that benefited everyone involved.

A final cause that further influenced the variations in the use of ICT by older workers was the difference in power held by each occupation. Every member of the academic faculty interviewed enjoyed tenure. This type of job security greatly reduced the influence of outside pressure regarding their decision to integrate ICT into their lives. Many noted the reasons they adapted to the technological changes were largely due to internal pressure to keep up with peers and to do great work, which for many meant embracing at the very least the technological basics such as email, video communication, and online database research. While it was still possible to perform most professorial duties without these tools and the technical

skills needed to perform them, it was deemed to be much more difficult, ultimately resulting in less productivity and effectiveness.

Members of the clergy also mentioned experiencing little influence from outside sources, but this was due in large part to the occupation itself. Clergy could cite an affinity for the older methods by simply stating that the "old methods" were a "tradition." This one reason allowed many to stay in their comfort zone without being seen as old or out of touch from the modern world. In addition, anytime one would venture outside of her/his comfort zone, they would be lauded by others as "innovative" even if they did something only as simple as sending out an email attachment of the monthly newsletter. One 59 year old pastor noted that he told his board that he was considering creating a Twitter account for the church in an effort to better communicate with his younger and more technologically-inclined members. At the mention of this proposition he received in his words "a wave of positive support" that he found shocking and altogether silly considering thousands of businesses and institutions as well as tens of millions of private citizens already use the service. "I was being praised for just keeping up with everyone else!"

In contrast to faculty and clergy, most government employees interviewed did not have the luxury of doing what they wanted. They described on several occasions that there is always a battle between what is best for the employee and what is best for the institution. For those government employees interviewed, while protected from termination and discrimination by their union membership, they did not enjoy the same freedom of choice available to academic faculty and clergy of the

same age and experience. This implied that older government employees had less ability to benefit from their social and cultural capital because they had someone to whom they must answer. External pressure from supervisors, other government agencies, politicians, and even citizens made the changes brought about by ICT stressful for older government employees and are a far cry from the autonomy available to academic faculty and clergy.

Fear of Being Replaced

"*There's always going to have to be some guy to fix the robot. Always.*"
– 51 year old Plant mechanic

One of the most fascinating discoveries of this project has been the general lack of fear of replacement by older workers from all three occupations. No matter how many facts, statistics, or observations I brought up, most were not phased at all.[23] Not only did those interviewed not fear being replaced by technology but they also did not fear being replaced by younger workers. Interestingly, the reason why they did not fear either was the same: "They can't do what I can do." This striking response from older workers from all three occupations most likely stemmed from an unwavering belief in the advantages afforded to them through the accumulation of cultural and social capital over the years. Each group noted that experience within the workplace, along with their social relationships, was what made them

[23] For example, it has been argued that up to 47% of jobs currently performed by humans are likely to become automated in the next two decades (Frey and Osborne 2013; Ford 2009; Levy and Murnane 2004)

invaluable within the workplace in a way that no amount of technical capital could completely replace. This, combined with the fact that most of the workers interviewed were in positions of power or at the very least had seniority over their co-workers, provided a great buffer against any fear that may creep up. And, of course, as was mentioned by many government employees, "I'm going to retire soon so they can't touch me." Strangely, this attitude was common even amongst those that had many years before they planned to retire in itself demonstrating a surprising amount of confidence by a group of workers that are popularly characterized as inconsequential by the young.

Along with this confidence in their own indispensability, workers from all three occupations noted a fear for the long-term success of their younger co-workers! The overwhelming concern was that their younger peers had overestimated the value of technical capital to the detriment of developing their cultural and social capital. For example, many clergy mentioned that one of the most valuable skills, regardless of religion, was the ability to communicate with your followers. This was understood to mean that the ability to reach another human being on an intimate level necessitated face-to-face contact and communication:

> *A lot of my parishioners are in touch with me through email. Rather than picking up the phone, they use email. We have a parish website, so we can disseminate information through our parish website. Most of the members of our choir are on Facebook. So, if we need to get something out to the choir, they have a group setup on Facebook, and we communicate through the group…Just in terms of being accessible to people, and just using the technology that everyone else uses. I think we need to keep up with what our people are doing and using, and how they communicate, and how they do business…The one downside of*

> *email is that you're looking at words, but you don't catch nuance, obviously. If you're talking with someone on the phone or in person, it's a lot easier to pick up sarcasm. Unless they're doing things like using emoticons, or doing something to indicate their emotions or nuances, you don't always pick that up…So, it depends. If someone calls me and I sense that they're distressed, or that this is a pastoral issue that has a lot of dynamics to it, it's more difficult to go back and forth with emails than I might recommend. We really need to call or set up an appointment, if its business or just a reminder or a heads up about a meeting or a "Can we schedule a meeting"?...Those kinds of things, email works really well for...if it's more of a personal, pastoral need, or some kind of emotional issue, nothing takes the place of face-to-face, in-person stuff.* - Catholic

Today's popular communication mediums lack nuance. This is important because clergy are in the communication business. Using communication forms that don't rely on their wealth of experience interpreting vocal and body language clues caused many to feel limited in their ability to perform their jobs, especially when compared to past forms of contact. Older clergy noted that the importance of interpersonal skills had been marginalized by many younger clergy who instead elected to maximize their "superficial communication skills" such as constructing a flashy website, maintaining their Facebook page, or constantly updating their Twitter account.

Additionally, the government employees interviewed noted that while technological skill was undoubtedly an advantage in some cases, it was not always an advantage and without older workers around to help guide them, younger workers could be at a major disadvantage going forward. For example, as previously noted, many government employees at the water & sewer plant were forced to work with equipment that was several years old due to budget constraints or

bureaucratic recalcitrance. Can younger workers use "old school" equipment/methods if they need to? How advantageous are touch-typing skills when the computers go down as is common? Does work simply stop in that case? A number of those interviewed were not convinced that their younger counterparts had the skills or experience necessary to deal with work-related problems that did not rely on their technological skills. Because of this, these older government employees felt confident that they would not be replaced anytime soon. As one 62 year old Department of Transportation IT specialist put it, "I'll fear being replaced the day that the computers stop malfunctioning. Until that day comes I'll be alright."

On the surface, the question of how technology has affected older workers may seem simple and straightforward, yet this project demonstrates that the benefits and drawbacks can be substantial yet subtle. The reality is that older workers, regardless of their occupation, have to contend in a world that is in many ways dramatically different from the one into which they were first socialized. While the degrees to which ICT and its consequences play a role in one's work life depend on a great many factors, for the most part it is a world in which the norms, values and expectations have changed, largely as a result of new technology. However, as we have seen, this does not mean that older workers are incapable of adapting to this new environment. As individuals get older, they tend to focus their energy and attentions on those areas they feel they can best contribute and succeed. For many, this means relying on their wealth of social and cultural capital.

Chapter 8

Discussion of Findings

In this dissertation, I examine how the rapid integration of ICT into three different occupations (academic faculty, clergy, and government employees) has affected the workplace experiences of older workers. Understanding the experiences of older workers is especially relevant because they have been portrayed as more technologically averse compared to the young (Fenwick 2012a; Fenwick 2012b). This characterization is derived from a common belief that older adults are incapable of adapting to modern technology, which itself stems from a wide variety of observations by scholars including decreased ownership of technology by older adults (Blaschke, Freddolino and Mullen 2009; Selwyn et al.

2003), increased anxiety and intimidation by older adults towards modern ICT (Hogan 2005; Karavidas et al. 2005; Laguna and Babcock 1997), and/or a perceived lack of ICT benefits by older adults (Eastman and Iyer 2004; Irizarry et al. 2002; Melenhorst, Rogers, Caylor 2001).

While these past studies are useful for understanding the perceptions and experiences of older adults in general, they leave much to be desired in regards to the workplace (Wagner, Hassanein, and Head 2010). In this dissertation, I found that while older adults may be less likely to own and use ICT in their personal lives, every individual interviewed had regular access to technology (i.e. material access) in the workplace. In the case of academic faculty, who regularly dissolve work/non-work boundaries, the use of ICT at work has to various degrees affected their personal use of technology. For example, a few faculty interviewed noted that their decision to "finally" purchase and use a smartphone stemmed from their desire to be more productive, be it in the form of answering/responding to emails from students or colleagues or reading articles/documents, from anywhere and anytime.

Previous research on the use of ICT by older adults indicates that they may experience increased anxiety in the face of new technology (Hogan 2005; Karavidas et al. 2005; Laguna and Babcock 1997). Instead, I found that in the workplace, most older workers embraced whatever technology was necessary to accomplish their work most efficiently. This was certainly true for older academic faculty and clergy, both of which had incorporated several technologies ranging from the simplest (email) to the more complicated (website maintenance) in their everyday work. The

government employees interviewed, in contrast, were most likely to feel anxiety from ICT. For those interviewed, their anxiety stemmed less from actual ICT utilization and more from the changes in workplace culture resulting from ICT. For example, there was some degree of perceived threat that younger workers would gain a competitive advantage due to ability to deftly perform the data entry tasks asked of them. The different response by older government employees than by academic faculty and clergy may be related to power/status differences between these groups in their respective work environments; this will be explored further in the Limitations section below.

In addition, I found that most of the older employees interviewed could very clearly perceive the benefits of ICT, which stands in contrast to some previous literature that suggested that older adults could not perceive how ICT would benefit their lives (Blaschke, Freddolino, and Mullen 2009; Eastman and Iyer 2004; Irizarry et al. 2002; Melenhorst, Rogers, Caylor 2001). I contend that there are five main reasons as to why my research contradicts these findings:

1) Many of the previous studies conducted on older adult use of ICT took place in the 1990s and early 2000s before many modern forms of ICT had become popular thus making it more likely that older adults would be less likely to perceive the benefits to them.
2) My focus is specifically on the workplace while many others simply look at personal use of technology.

3) A number of these studies on older adult's use of ICT were performed on individuals who were already retired and as a result did not have the same access to and experience with ICT as an older adult who still uses them every day for work. Reasons two and three are especially important because I found that older workers were more likely to perceive the benefits when there was a big and obvious incentive for them. In this case, they might not have to work as hard, which is for many the biggest benefit that you can have at work.
4) The professions I selected have for the most part fully embraced technology as a positive. When the idea "ICT will make you a more productive, efficient, and effective worker" is repeated enough times workers tend to agree with it.
5) I examined ICT use in general which includes personal computers, the internet, email, etc. and not simply one of these technologies by themselves. Previous studies into the older adult's use of technology generally focused on just one of the technologies which make the likelihood that they would detect a feeling of usefulness and value in regards to technology significantly less.

My findings support the growing literature (Zickuhr and Madden 2012; Olson et al 2011; Mitzner et al 2010) that finds that older adults are increasingly viewing ICT in its many forms as not just a novelty that they can make do without but as a valuable resource that can truly benefit their lives.

I found that the older workers interviewed in this study regularly praised the benefits of ICT in general. Many fully embraced ICT into their work routines and very clearly benefitted from its presence. For example, most older academic faculty interviewed had made the switch to online databases to conduct research. While some lamented the loss of a few benefits of using hard bound journals, not one of them said that they would choose to return to previous methods. In fact, many had taken to throwing out many years' worth of physical documents and journals in favor of their digital counterparts. In addition, while some clergy noted feeling "overloaded" from using email as their main communication method, most, without question, acknowledged how effective it was as a tool for communicating with colleagues and congregants alike.

However, many of those interviewed were quick to point out the difference between the benefits of ICT "in theory" and "in practice." This distinction was quite clear to these older workers because each had a wealth of cultural capital with which they could properly contextualize ICT within a more complex and expansive set of organizational knowledge of their workplace, which is not as readily available to younger workers. For example, older academic faculty saw the introduction of PowerPoint not as a revolutionary presentation device that would automatically improve conference and classroom presentations but more as a tool whose effectiveness depended on the user's input of effort, just like everyday communication and writing. Furthermore, the older clergy interviewed noted that while email and other communication mediums (i.e. Facebook, Twitter, Instagram)

may be effective tools in certain contexts they should by no means be thought of as a complete substitute for face-to-face communication. Government employees showed the clearest divergence of "in theory" and "in practice" when they clearly articulated how a lack of training on newly required ICT prevented them from most efficiently utilizing the new technology. The older workers of all three groups replied generally that the benefits ICT are often trumpeted by individuals or groups looking to increase productivity and efficiency without considering the additional costs and/or consequences.

In addition to a desire to understand how ICT integration has affected the workplace experiences of older workers, I also investigated whether a lack of technical capital by older workers could be mitigated through the use of other resources (i.e. social and cultural capital). According to Bourdieu (2005), the ability to use and understand ICT is a valuable skill in our technologically-centered culture. Furthermore, individuals who rely on this resource should be more likely to succeed in a variety of settings, including the workplace. While this may be true, can employees who may not possess much or any technical capital be successful in a technologically-centered workplace, and if so what skills could those individuals rely on? I found that older employees, many of whom admitted to possessing little technical capital, were able to still benefit from the social and cultural capital cultivated and accrued over years of work to help them survive and even thrive as more and more ICT has become integrated into their work lives. These findings support past literature on the advantages of social and cultural capital (Tondeur et

al. 2011; Mouw 2006, Lin 2000, Portes 1998; Lamont and Lareau 1988) by demonstrating that there is an interplay between different forms of capital constantly being enacted in our daily lives. One form may be more valuable than others in certain situations, but no one form is most important at all times. This was most clearly expressed by the older government employees interviewed in this study, who clearly identified that their extended experience with the tools and products of their trade made them indispensable in their departments. Thus, while their younger colleagues may be more apt at completing their newly mandated reports that are to be submitted daily by computer (technical capital), the older workers may maintain their power and prestige because they have a better native understanding of their work (cultural capital), and they strategically emphasize this gap in knowledge (social capital).

One piece of literature this contrasting use of capital can be used to give perspective to is the recent study by Heidkamp, Corre, and Van Horn of the Sloan Center on Aging and Work at Boston College, who published an article in 2010 titled "The "New Unemployables": Older Job Seekers Struggle to Find Work During the Great Recession." In this issue brief, they present two major findings. First, they found that "unemployed older workers are less likely to find new employment than employed younger workers" (Heidkamp, Corre, and Van Horn 2010: 5). Second, they found that one of the main reasons for this problem was because employers do not believe that older workers possess the skills that they need to be productive in the modern workplace. The authors ultimately conclude that older workers felt as if

they were at a disadvantage in the current job climate due to their real and perceived lack of technological training and skill and as a result had become “The New Unemployables.” While my study is inherently different from Heidkamp, Corre, and Van Horn's because of the relative job security of my interviewed groups compared to those of their study (see further discussion of the implications of this in Limitations below), it is clear that when given the opportunity, older workers can and will use whatever form of capital they have (most often social and/or cultural capital) to succeed in the workplace, and they are open to and even seek out cultivating their technical capital when its benefits on their work quality and/or efficiency are clear.

One of the most unanticipated findings of my study was that some older workers could and would use ageist prejudices to their advantage within the workplace. While the ageism literature which generally characterizes older workers as passive victims of ageism, my findings indicate that they actually do possess some agency in regards to how harmful the stereotypes actually are (Posthuma, Wagstaff, and Campio 2012; Roscigno et al. 2007). By "playing old" they can and do demonstrate strength. This process, which I have dubbed “playing old,” is when an older employee feigns a lack of technical capital in an effort to get out of tasks that they find menial or tedious. For example, a major change brought about by ICT for government employees has been the rise in data entry by workers who had not before been tasked with that responsibility. This was troublesome for older employees who would rather have spent their time doing other things ("wrench

work"). So, they would use their social capital (i.e. seniority) in combination with the ageist stereotypes to convince their younger and more technologically-adept colleagues to do the data entry work for them. This technique of "playing old" was also used by clergy to get out of creating and maintaining the organization's various digital responsibilities (e.g. posting photos to the church Facebook page). In each case, older employees were very selective about how and when to employ the technique. This seems to indicate an understanding of the fine line between taking advantage of ageism and simply perpetuating harmful stereotypes within the workplace. Most felt that they were accurately able to make this adjudication based on their cultural capital (i.e. organizational knowledge) and their social capital (i.e. social relationship and status). This finding demonstrates that even in an environment where their abilities are dismissed, older workers are not without strength.

Finally, my in-depth interviews contribute to a well-established set of literature on the use of technology by older adults that regularly utilizes surveys (Braun 2013; Chung et al 2010; Pan and Jordan-Marsh 2010; Hogan 2005; Morris and Venkatesh 2000) and experimental studies (Karavidas et al. 2005). Not only did the interview approach support and oppose different facets of these historical studies, but it also enabled me to provide valuable and nuanced insight into the "underlying reasons and motivations contributing to technology use" (Chen and Chan 2013: 4647). This insight provides a more complete understanding of the

work experiences of older adults, which ultimately provides researchers and employers better resources to help and serve older workers.

Limitations

As with any study there are important limitations that must be addressed in order to properly contextualize the conclusions gleaned from this work. Probably the most serious limitation of this study is that the older workers in the three occupations selected enjoy a remarkable amount of job security, either through tenure or membership in a union. These 70 interviewed employees do not have to worry about how their lack of technical capital will affect their job security, which is quite different from the "New Unemployables" of Heidkamp, Corre, and Van Horn (2010). The older workers in my study can afford to take chances and make decisions about their relative available capital and whether it is worthwhile to acquire new technical capital, which may be anathema to someone seeking a new job or fearing the loss of their current job. For example, would so many older workers “play old” if there was a chance that exposing their weakness with technology may allow them to be marginalized or even fired? Nonetheless, by seeking out the experiences of older workers in the three secure occupations of this study, I was able to determine initial similarities and differences with the established literature on the general experiences of older adults with ICT, which importantly will be used as a comparison to future studies of the experience with ICT by older workers in less secure jobs (such as accountants).

Following this, when considering the conclusion of this study that older workers can rely on or substitute a lack of technical capital with their social/cultural capital, it must be remembered that older workers can only acquire and benefit from social and cultural capital if they have been employed at the same workplace or at least in the same industry for an extended period of their career. To benefit from a social network (social capital) one must have a social network already established. Similarly, the advantages derived from cultural capital require an understanding of the norms, values, and expectations pertinent to a specific work environment, which take time to cultivate. However, the severity of this limitation may be tempered by an adage oft repeated by the older workers interviewed: "It's all the same shit." In other words, older workers may gain generally from the cumulative experience over their whole careers, regardless of numbers and types of jobs accrued, with the manifold personality types and work styles in existence Thus, even workers who change jobs/fields mid-career are likely still empowered with some social and cultural capital that can aid them in mitigating the negative consequences of poor technical capital in a new job.

Another limitation of this study is that little to no attention was paid to the influence that gender, race/ethnicity, or geographic location played on the findings. Evidence from the digital divide literature (van Dijk 2006) has found that minority groups are commonly at a disadvantage in regards to technology use. Moreover, because each of the interviews for this study were conducted in one of two major metropolitan cities (one in a Northeastern state and one in a Southeastern state) it

is reasonable to assume that the findings may have been different elsewhere. Evidence from the literature suggests that rural populations are especially limited in their access to technology and as a result have little opportunity to develop their technical capital (van Dijk 2006). In the future, it would be valuable to investigate how consequential geographic location is in affecting the experience of ICT integration for older workers, perhaps first in a study across these same occupations (keeping the job security variable constant) and then across occupations, especially those more specific to rural areas.

Additionally, because no younger workers in any of the three occupations were formally interviewed, I have had to speculate about their perceptions of their older co-workers (which I have often done in my own voice as a relatively younger adult). It would also have been valuable to examine the experiences of workers in midlife that fall in the gray area between the technologically-adept young worker and the experienced and highly situated older worker. A key component of my future work will be to interview younger employees (again, first in the three occupations of this study, then expanding to others) in order to confirm that the experiences of older worker as described here are not simply the same as those of everyone else, i.e. that the conclusions drawn in this study are not occupation- or 2014-specific but are actually a result of the age of the workers interviewed.

Another limitation of the present study is that there was no effort made to differentiate the older workers interviewed into specific birth cohorts. A common refrain within the literature (Hsu 2013) is that there may be important differences

between those older workers who are different ages, such as 50-59 or 60+. For example, are those in the latter group more likely to discuss physical limitations such as declining memory function, which is common among older adults (Van Gerven, Pass, and Schmidt 2000), when describing their perceptions of ICT? Are those in the younger group more likely to experience pressure to change because they are further away from retirement than the latter group? These are important concerns that deserve attention in the future and can only be answered if proper attention is paid to better operationalizing the term "older worker."

The implications of this project are also limited by the fact that almost none of the individuals interviewed worked in positions that require high technological literacy (i.e. IT professionals, computer scientists, engineers, etc.). It might be expected that older employees in these occupations would better be able to rely on their technical capital because of their regular exposure to and use of ICT in the workplace. Moreover, it is important to note that when the older academic faculty were interviewed the university did not offer any online courses. It is reasonable to assume that faculty who regularly teach in a digital classroom would have different experiences with technology as well as different levels of technical capital. Future research should address this limitation and investigate if there is a difference between the work experiences of older workers in these two types of teaching environments.

Finally, because the label "government employee" is so broad, future research should be undertaken within this occupational group, as the results of this

study only investigated the experiences of older workers in two departments at the local and state level. For example, are there differences among older government employees at the local versus the state versus federal levels? Are there differences between older government employees who regularly interact with the public such as teachers, police officers, and political representatives and government employees who are insulated from public scrutiny like those interviewed for this project? It should be clear from this limited research sampling, there are a number of fruitful directions that can and should be explored by researchers interested in a better understanding of the experience of older workers with modern ICT.

Conclusion

The purpose of this project was to try to understand how technological changes over the last two decades have affected older workers from a variety of occupations. In this regard, I discovered that many older workers have successfully integrated modern forms of ICT (e.g. email, the internet, database research) into their daily work. They show little intimidation to technology, and when technically limited, most of the older workers interviewed were able to successfully mitigate these shortcomings using their amassed status and prestige. Far from being dispensable or inconsequential as is commonly thought, these aging workers relied on a combination of long-acquired social and cultural capital and growing technical capital to make themselves integral to the success of their respective institutions.

These nuanced conclusions will be very important for individuals and institutions alike. Older workers, while currently more limited technically than their younger counterparts, still offer many useful pieces of knowledge and skills that not only enhance the quality and productivity of their department's work but also serve an important role in training employees from younger generations. Examples of these include historical knowledge of their respective fields, enhanced networking and interpersonal communication skills, and a detailed understanding of the inner workings of their department/institution. This time-earned experience can help reduce inefficiencies and boost the productivity and effectiveness of all workers.

Appendix A

The following sample of questions are by no means exhaustive. In addition, I provide much more clarity during the interview including rewording questions as necessary to make them as clear as possible for the interviewee. I adjusted and augmented this list of questions during each interview.

General Questions

- Describe for me what a normal workday is like for you, if there is such a thing?

Technical Capital

- What modern technological devices do you regularly use for work?
    - How comfortable are you with them?

- How do you feel you match up, technologically speaking, with your co-workers?

- How do you learn about new technological techniques and gadgetry?

- How do you learn how to use new technology?

- Who do you rely on for technology-related issues?
    - Do you prefer step-by-step instruction or general instruction?
    - Do you ever "Google" issues on your own?

Social Capital

- Have you ever felt pressure to learn about technology from others (e.g. University administration, parishioners, etc.)? Examples?
    - How much agency would you say that you have to not adapt or change?
        - Any repercussions?

- Who do you rely on for technology-related issues?
    - Do you prefer step-by-step instruction or general instruction?
    - Do you ever "Google" issues on your own?

Cultural Capital

- Would you say that you have more time now than before the popularization of email/internet databases/smartphones/etc.?
    - Are you more productive?
    - How important was technology for you before the introduction of ICT such as email, smartphones, the internet, etc?
        - How has this past experience with ICT affected your current use of ICT?

- How has technology affected the way you interact with colleagues both inside and outside of the workplace?
    - How has technology affected the way you interact with patrons?
    - How has technology affected the way patrons interact with you?

- What would you say are the benefits of technology in the workplace?
    - Drawbacks?
    - What would you say are the benefits of technology outside of the workplace?
        - Drawbacks?

Appendix B: Sample Recruitment Letter

Dear [Insert Name Here],

My name is Alexander Hernandez and I'm a graduate student within the Sociology Department at Boston College. I'm currently working on a research project that examines how [insert occupation] have been and continue to be affected by technological change within the workplace. Would it be possible for us to arrange a meeting? I have a flexible schedule and would be happy to meet at whatever date/time/place is most convenient for you. I would only need about 15-30 minutes of your time.

I hope that you are having a good day and I look forward to your response.

Best,
Alexander Hernandez

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