

HOW TO DELETE THE DEAD

HONORING AFFECTIVE CONNECTIONS TO POST-MORTEM DATA

by

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When a person with a Facebook account dies, two options exist for reflecting that death within the social media platform: memorialization or deletion. Through almost 150 hours of interviews with 76 participants over five years, the four studies in this dissertation describe discoveries, analyses, and insights of people’s experiences with Facebook’s post-mortem account options. Three studies involved people who had gone through processes of post-mortem profile management on Facebook. The findings of these studies reveal expectation gaps that could be addressed through an intentionally friction-filled setup process for post-mortem account management. The fourth study walked through the post-mortem management process alongside people who had recently lost a loved one, and discovered the rich details of difficulties rooted in computational misunderstandings of core elements of human relationships (norms, expectations, and trust). Following these empirical findings, I discuss what might be done to bring our online behavior closer to our deepest relational needs during times of grief. In a meta-analysis, I present the concept of identity as an “affective constellation”, to supplement what is typically understood as a “user” for HCI during sensitive life experiences. This work concludes by suggesting a path forward for post-mortem data management that involves collaboration with the growing movement of community death care workers.

DEDICATION

To Erin Szalapski, who leans into grief, joy, and life with everything she has,
To Kayla Vix, my sister-at-heart who has honored me with her honesty and support since 1996,
And to Vicki and Mickey Hines, my parents and my friends, who have always made a
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1 | Introduction

The one thing all humans have in common is that we will die. Each of us has likely experienced the death of a loved one, and some of the necessary work that occurred in the wake of that person's passing. Planning memorial events, organizing possessions, and gathering photos are common efforts toward telling the story of who a person was and why they matter. Consider how many people were involved in that work, and who was charged with making decisions. Remember the time it took, and how people supported one another through it. For deaths that occurred in the past 15 years, post-mortem memorial work likely involved online content that the person had created during their lifetime. It is also likely that working with the deceased person's online content presented unexpected complexities. It is this work to define and remember the dead, in the context of social media, that will be the focus of the research I present here.

In considering our own experiences of death and grief, different kinds of loss may come to mind. We tend to understand that the majority of the work to be done after a death will happen among the deceased's closest loved ones, which may or may not include us. However, to illustrate the decisions and work related to social media and death, I find it helpful to consider a more widely impactful type of loss that extends beyond close loved ones to their larger communities: a public tragedy. Shortly after completing the final study for this dissertation, my community experienced such a loss. A gunman opened fire at my neighborhood supermarket in south Boulder, Colorado, killing 10 people — 10 of my neighbors. In the days following the shooting, the parking lot around the store was fenced off; a site of everyday necessity and casual

friendly encounters abruptly became a sacred site of remembrance and community. Observing COVID-19 precautions, people gathered to weep, light candles, leave flowers, and pray. Four days after the tragedy, the Denver Post ran an article detailing the meaning of the King Soopers store to the residents who surround it. The article recounted how the King Soopers of south Boulder had been a “nexus of community,” a “home away from home,” and the first taste of freedom for teenagers at the nearby high school (Burness 2021). In the perspective offered by a tragic event, it became clear that the store was simultaneously an essential resource and a community hub, along with being one part of a large national business chain. Each group — the victims’ families, the community, and the business — have been working together to maintain the memorial along the fence, and to derive a plan for the store’s future.

Imagine, for a moment, if the involvement of families, community, and corporation were different. What if only the corporate board of The Kroger Company, the parent company of King Soopers, had any agency in managing the site of remembrance? Imagine if their sole concerns were about their legal obligations to their assets, with little or no acknowledgement to the bereaved community. What would the memorial look like if the Kroger Company could only view the bereaved people as employees and customers, rather than complex humans? It would be similar to a funeral director deciding who may attend a memorial service, or a cemetery staff deciding what should appear on someone’s gravestone. Among the entities involved in a person’s death and remembrance — the deceased, their closest loved ones, their community, and the professionals with whom they work — it is important that the balance of decision-making reflects the deceased’s values.

Yet when social media account holders die, a strong imbalance of agency in decision-making is present. As methods of communication, social media platforms are experienced as similar to phone calls or written letters, but with complexity and automation that remain under the management and control of a technology company. Though Terms of Service (TOS) agreements explain the complexities of the relationships between the technology company, their product, and users, people rarely consider issues of ownership, management, and control over their personal expressions and communications. The complexities of the TOS agreement, in combination with the non-tactile nature of data, provide no prompts for people to consider how their social media data might differ from other media of communication and self-expression. Death brings issues of ownership, management, and control to the forefront of all matters related to the person who has died.

Though Facebook has led social media in building post-mortem account management options, the platform itself retains a disproportionate amount of agency over what happens to their users' digital remains. The imbalance of agency is evident in the process of managing deceased people's profiles, which is typically unfamiliar to the surviving loved ones and subject to platform policies over which the survivors have no control. While Facebook's post-mortem management options — Legacy Contact, memorialization, and deletion — do offer more agency to account holders and their loved ones, those options remain unfamiliar and unused by a majority of Facebook account holders (Bischoff 2019). When an account holder does not configure their memorialization settings during their lifetime, what ultimately happens to their profile after death depends entirely upon the platform's default functionality.

The platform's default functionality influences people's experiences beyond the deceased person's profile. Death is larger than a single-user problem. The presence and function of

Facebook's post-mortem options (described in detail below) demonstrates that post-mortem data management is not a socio-technical problem (Ackerman 2000). Ackerman asserts that the issues we study in the fields of human-computer interaction (HCI) and computer-supported cooperative work (CSCW) are often defined by human needs that technologies cannot yet meet. The research I present here demonstrates that Facebook's post-mortem social media stewardship system is adequate when used as designed. Yet the work of managing a deceased loved one's online presence remains difficult because death itself is difficult. Therefore, the aim of the work I present here is not to make post-mortem account management easy or pleasant, but respectful and fitting to the affective connections people have to post-mortem data. Affective connections consist of each entity mentioned above — person, family, community, professionals — and their relationships, all of which require varying levels of agency in the fate of a deceased person's data. Therefore, platforms should consider modeling death as a community-level event rather than an individual one. By considering online memorial practices beyond the level of the individual, social media platform designers may find a wealth of opportunities to create honoring, beautiful experiences for grieving communities on their platforms. One way of doing so would be to collaborate with community death care workers to create compassionate resources for loved ones of deceased account holders.

In this dissertation, I will position the current state of post-mortem profile management on Facebook as a case study of the role of online data in human identity. I will draw from research in social computing and related fields to theorize what profiles are for people who use them to interact and maintain relationships throughout their lives. Finally, I draw from findings in each of my four studies to consider what post-mortem data interactions may reveal about the importance of relationships and community in examining human identity.

An Overview of Life and Death on Facebook

Facebook profiles serve many purposes for people in their everyday lives, from staying in touch with distant loved ones to finding local connections in a new city. Many features on Facebook attempt to connect people in existing relationships and to facilitate new connections. But when a person with a Facebook account dies, only two options exist for reflecting that death within the social media platform. The first, memorializing the profile, with the possibility of stewardship by a legacy contact, allows a deceased person's varied communities to reminisce and maintain one form of connection to them. The second, profile deletion, removes all content and connections created by the deceased person throughout all of their time using Facebook. The work I present here evaluates and critiques the process and affordances of each option, framing death as a key example of a difficult life experience that often requires digital interactions and digital tasks, yet currently lacks adequate tools to facilitate meaningful interactions for all people involved in a digital context.

Familiar online spaces like Facebook and Twitter facilitate a huge variety of interactions. In creating spaces where people interact with one another, the spaces influence the interactions. The social impact of a built environment is acknowledged in the engineering, design, and even decor of physical spaces. Winner tells us that things built by humans will carry out the politics of the humans who created them (Winner 2004). I build on Winner's idea by offering that our artifacts can carry out our awareness and expressions of human emotions in the same way. Our default to delight and positivity on social networking sites (Ruberto 2011) currently restricts other types of human emotional experiences: the more complex and (I argue) more important ones. Facilitation (rather than dedicated prompting) is a matter of holding space for more to be

possible, not to force any experience in a particular direction, but to let people's experiences wander or fluctuate as needed. People, not the platform, must be able to maintain control of their emotional experiences in digital spaces.

To recognize the influence of the digital environment upon human experiences in that environment, is also an acknowledgement of how human biases influence design and architecture of platforms. With an awareness of my own biases toward healthy emotional expression and honest acknowledgement of life's difficulty, my work considers how interactions related to life's most difficult moments can be carried out according to people's varying needs and preferences in those moments. Specifically, my work addresses the manner in which people consider and make decisions about their own digital legacies, as well as how people who are grieving a lost loved one engage with the digital remains of the deceased. I explore how those people might engage with digital remains with more accurate recognition of both the meaning of those digital remains, and their significance in the context of the survivors' existing social and cultural practices.

Dissertation Structure

I preface my original research with an overview of the academic related literature about death and grief on social media. I begin by contextualizing my work within Western concepts of human life and afterlife, which is typically individualistic and dominated by Christian traditions. As I am writing primarily to the HCI and CSCW audiences, I discuss research on the role of technology in facilitating ongoingness and memorial practices, as well as how technology has

influenced human experiences of death and bereavement in the Western world. In each of these sections, I specify how the theoretical lens of affect shapes my interpretations of participants' experiences. From there, I further narrow the scope of my area of research to that of decision-making and work that involves social media in times of death.

Following the literature review, I describe the epistemological decisions and research methodologies that I employed throughout my studies. I conducted in-depth interview studies that sought to understand people's experiences on their own terms. I then analyzed the interview data using a grounded approach as described by Charmaz (2006).

Chapter 4 provides a thorough description of the Facebook Memorialization options and processes that I examine throughout this dissertation. Although the page name only indicates "Memorialization," the options available there do include "Delete After Death," as well as more granular options to inform a loved one about your decision, and a checkbox to allow the legacy contact to download a data archive.

To examine Facebook's memorialization options, I pose the following research questions:

1. How do people think and communicate about their own social media legacies?
2. What are the experiences of people who have to manage a deceased loved one's profile?
3. What makes post-mortem profile deletion desirable for account holders but difficult for their survivors?

4. Could ritual-based guidance for post-mortem data management and disposal create adequate space to articulate and meet expectations for surviving loved ones?

Each question and study examines one of four facets of post-mortem data interaction:

1. Advanced planning for eventual post-mortem data management (one's own, or for a loved one)
2. Active, ongoing management of a deceased loved one's post-mortem data
3. Expecting versus experiencing deletion of post-mortem data
4. Making informed decisions about a deceased loved one's post-mortem data

The first three studies involve people who had already gone through the process of post-mortem profile management on Facebook. Three studies were needed in order to acknowledge the different options that Facebook account holders have, and to acknowledge duality of all death-related planning and work: one person must act on behalf of another, who may or may not have provided instructions or wishes for those tasks during their lifetime. Throughout these studies, I refer to the “account holder” (AH) as the person whose profile is being considered, and the “legacy contact” (LC) as the person who is managing the profile post-mortem. When I use “Legacy Contact” with capital letters, I am referring to the Facebook options, rather than a person.

The fourth study walked through the post-mortem management process alongside people who had recently lost a loved one, and thus included the complexities of decision-making after a death, as well as the technical setup process. Capturing each of these facets provides a holistic

and in-depth understanding of what post-mortem profile management is on Facebook, as well as what it can be on any social media platform.

My first completed studies, discussed in Chapters 5 and 6, evaluate Facebook's Legacy Contact feature through in-depth interviews with two groups of people. Study 1, "Getting Your Facebook Affairs in Order," focuses on people who interacted with the feature's setup process by choosing their own legacy contact, being chosen by a loved one, or both. Study 2 then investigates the lived experiences of active legacy contacts. Study 1 found misalignments in expectations between what people want their legacy contacts to be able to do, and what the system allows. I argue that the expectation gaps could be addressed through an intentionally friction-filled setup process based on principles of Slow HCI (Odom et al., 2014). A slower, more intentional setup process would be beneficial for users of any post-mortem profile management system, because it would prompt the person to identify how their content might affect the emotions and memories of their loved ones.

I describe the additional importance of an intentionally slow setup process for post-mortem profile managers in the subsequent study, "Experiences of Trust in Post-Mortem Profile Management." Most participants in this study described difficult or painful experiences managing their deceased loved one's profile. I found these difficulties to be rooted in a computational misunderstanding of human trust, which resulted in participants holding inaccurate expectations about their role as a post-mortem profile manager.

Difficult and emotional experiences were even more intense for participants who experienced the deletion of a deceased loved one's profile, as I describe in Study 3. Taken together, Studies 1-3 led me to questions of how core elements of human relationships (norms, expectations, and trust) manifest online, what may be missing from those manifestations, and what might be done to bring our online behavior closer to our deepest relational needs during times of grief. Questions of possible interventions led me to the ritual-inspired work of Study 4.

Following the four empirical study chapters, I reflect on the overall findings of my work through the lens of Sarah Ahmed's brand of affect theory (2013), drawing examples from each study to demonstrate how the online content of deceased people can interplay with the survivors' senses of the person's presence, as well as the survivors' own perceptions of reality. I then use this perspective to examine HCI's understandings of the ways that digital presences of the dead are interacting with survivors' formations and experiences of their grief. I present the concept of identity as an "affective constellation" of people, relationships, emotions, data, platforms, and other entities, in contrast to what is typically understood as a "user" in HCI.

To conclude, I provide an overview of the main empirical findings of each study, and suggest a path forward for post-mortem data management that involves collaboration with the growing movement of community death care workers. Through the work I describe here, I argue that the management of and interaction with post-mortem data and profiles should be designed to mimic or be part of the known funeral rituals of the deceased and their community. Creating ritual-based practices to form expectations around post-mortem data will honor the experiences people have of the presence of the deceased within that data, while maintaining the necessary

control or closure of accounts that may be preferred. I explain the nature and importance of people's connections to data in the next section.

The Centrality of Emotions in Each Study of Post-Mortem Data Management

Affective experiences — those involving strong emotions — in digital contexts are frequent and varied in online platform design (e.g., Pinter *et al.* 2019, Kelly 2019, Zaveri 2019). Rather than viewing emotionally intense experiences as anomalies, my work explores how we might recognize and validate them not as extra, but as essential, to digital interactions. The Related Works chapter describes studies that indicate the power of social media to connect people with support during difficult times, while other studies show ways in which digital encounters with death are exacerbated: whether they are heightened, extended, or otherwise worsened by the platform affordances.

Though there are different definitions of affect and emotion among the theorists I describe below, I use “emotion” throughout this dissertation in reference to the conventional labels and displays people employ for their experiences (sadness, anger, joy, etc.), while I use “affect” according to Sara Ahmed's definition to describe the more complex concepts and realities that are surfaced in emotional moments.

My background in cultural anthropology informs my HCI-focused research with knowledge about existing practices of meaning-making and healing during times of grief to examine what might be missing from our technologies in accommodating human emotions during times of grief. Anthropological perspectives often describe social media platforms as

tools that structure human interaction. As a result, my work here offers both platform solutions to known interactions that exacerbate the negative experience of digital disposal, and where technical solutions do not exist, suggestions for social interactions that can enable people to mitigate harmful interactions in their digital spaces. I honor intense emotional experiences related to grief by offering a path through slower, more intentional interactions that allow people to move through their grief-related emotions rather than avoid them.

Our interpersonal communication platforms are designed assuming that positivity is the goal of each person's interaction with the system, or with others through the system. Each study in my dissertation focuses on Facebook as an interpersonal communication platform that connects people through all stages and events of life. Facebook's ubiquity across cultures and demographics makes it an ideal research site to explore the effects of sensitive communication. I examine emotional experiences on Facebook through the lens of death because death is a universal, and universally difficult, affective experience (Pearce 2019). Computational systems refer to the infrastructure behind the sociotechnical systems that mediate interpersonal communications, especially databases and categories that attempt to capture identity at a technical level (Brubaker & Hayes 2011a). When key, formative experiences of people's lives are mediated by digital platforms, researchers and designers have an ethical obligation to design and engineer these mediations with care.

In recognition of the complexity of studying human emotions, I use affect theory as a lens through which to view intensely emotional experiences as a co-constructor of reality for people (Ahmed 2013). Approaching emotional experiences with affect theory contrasts with

psychological interpretations of emotions as either culturally constructed, or biologically determined. This approach recognizes how entities beyond the human body (like an image or a memory) can have a strong influence over one's interpretations of a phenomenon, which is in turn connected to others' responses to that entity (Ahmed 2013). I use Ahmed's definition of affect — “what sticks, or what sustains or preserves the connection between ideas, values, and objects” (Ahmed 2010) — as a way to understand how people interact with their technologies, and each other through technology, in the midst of the emotionally difficult experiences that post-mortem digital interactions can create. In applying this understanding of affect theory to the findings of my empirical research, I offer a view of identity as an “affective constellation” to further expand human-centered computing beyond the individual user.

Through four studies, my dissertation articulates some of the complexities of managing and interacting with the Facebook data of a deceased person, from perspectives of advanced planning for one's own death, and experiencing the loss of a loved one. The studies I describe here address the above questions through qualitative inquiry, and contribute new and deeper understandings of how Western humans interact with death and the digital presences of deceased people.

2 | Review of Related Literature

It is a fact of modern life that people experience their connections to one another through data. Every technological tool that we have at our disposal is used for self-expression, creativity, and interpersonal connection.¹ The uses and ensuing experiences of internet technologies and their communication platforms are well documented in many fields of academic literature. Yet among scholars of human interaction online — labeled as human-computer interaction (HCI), computer supported cooperative work (CSCW), human-centered computing (HCC), among others — intense emotional experiences tend to be discussed in terms of measurability (as in affective computing, Picard 2000), or in terms of harm (e.g., Blackwell et al 2017, Pater et al 2019, Scheuerman et al 2018). Generally, my work focuses on people’s perspectives of and experiences with the social media content of the deceased, how those experiences are challenging and emotionally charged, and how online platforms might better accommodate emotions related to grief. This chapter will provide an overview of the general background of the topic, while more specific background information for each study will be provided in those respective chapters. In two subsections of this chapter, I specify the particular theory of affect that I employ throughout this dissertation, explain what grief looks like through that lens, and identify similar concepts in HCI that are already shaping human-centered computing.

Throughout the research I present here, I describe the experiences of English-speaking people who were located in the United States or United Kingdom. To contextualize their

¹ Our tools are also used for harm, exploitation, and trolling, but I will not directly address those uses here.

experiences, this chapter will 1) define the general cultural context of death and grief for my participants, 2) give an overview of death and grief on social media within this particular cultural context, and 3) discuss how this predominantly Western view of death and grief is currently visible in the management of deceased people's data on our largest digital platforms.

Death and Grief in the Western World

The studies I conducted represent distinctly American and Western European worldviews of death and grief, as all 76 participants were in either the United States or the United Kingdom. In this section, I describe the common experiences of death and grief in Western culture. I focus on end-of-life planning and final disposition of bodies (i.e., burial or scattering of ashes), which are the practical equivalents of post-mortem account management and deletion. I will address the practical legal structures that exist for people planning for the end of life or experiencing a loss.

Existing Structures for Mortality

Life expectancy is fairly high among Britons and Americans (ages 81 in the UK and 79.5 in America, WHO 2020a), and the leading causes of death are cancers and heart disease (WHO 2020b). Therefore, the most common experiences of death among these populations are those of older people in medical facilities. The prevalence of medical settings in death reflects the “medicalization of death” in the Western world: the process by which death shifted from being a familiar family affair in the home, to a medical emergency confined to sanitized hospital rooms and access-restricted morgues (Ariès 1974). However, a long life does not guarantee that people take time to plan for their deaths; 63% of American adults do not have a will (Hewson 2016). Legal scholarship and practice stress the importance of having a will to handle issues such as

bequeathing property and instructions for burial (Hewson 2016). However, wills are also a sufficient tool for handling other preferences and wishes that extend beyond estate law. These preferences may address complex issues that arise in blended families, exceptional wealth, or multi-national assets. Even without complex issues, most American adults agree that making end-of-life preparations is important (ibid.). But, again, about 63% of American adults do not have a will. One law review article acknowledges that “the creation and execution of a will is the contemplation of the testator’s own death,” and therefore difficult (Sneddon 2011). Because of the emotional and relational work involved in creating a will, it makes sense that there is reluctance among Americans to address and prepare for death unless their circumstances (such as age or illness) make it urgent to do so. Fortunately, many resources exist to guide and advise people in making end-of-life preparations. Common recommendations include preparing documents like wills, trusts, or advance directives, as well as informing a trusted person about those documents and where they are stored (NIH 2018).

When a person in the US dies *without* a will, the way the work of laying them to rest happens reflects the default norms of the society: legal and transactional structures determine what can be done with the person’s body leading up to final disposition, who must make decisions about final disposition, and who may inherit assets. Laws about death and disposition vary widely across states, counties, and cities. The work of laying a deceased person to rest involves medical professionals, funeral directors, morticians, religious leaders, government agencies, and estate lawyers — but always with the explicit permission of the legal next-of-kin. When no legal next-of-kin may be identified, the structures and professionals involved in documenting the death and caring for the body must still do their work. Government entities

make a significant “good faith effort” to find the person’s legal next-of-kin to make decisions about the body’s disposition, but when none is found, unclaimed bodies are cremated and kept or scattered (TalkDeath 2020). All of these structures exist to ensure that the legal next-of-kin and surviving loved ones may put their person to rest and reconfigure their lives around that person’s absence. While digital social media platforms emerged from this cultural context, platforms that have developed features and policies around user death have not created similar structures to prioritize surviving loved ones, but have instead focused on data privacy and account security. To understand the trade-offs of these decisions, I will now discuss the common cultural perspectives that Western people have about their dead.

Perspectives About the Dead

The participants across my four studies expressed views of the dead no longer being able to directly influence the world. This is in contrast to some Eastern and Indigenous practices that recognize the agency and responsiveness of deceased relatives (Heng 2020). Thus, activity that appears to be performed by a deceased person is a violation of Western understanding, and not a desirable experience for the people whose stories I tell in this work.

While religion or religious practices are not a focal point of my research, I do note that my participants identified with the dominant religious affiliations of the Western world: the majority were Christian of various denominations. Other represented worldviews included atheist or non-religious, Muslim, Buddhist, and nature-based spirituality. These worldviews differ in their perceptions and teachings about death, afterlives, or the ongoingness of human consciousness, but they find common ground in Western cultural practices for remembering deceased loved ones. As my work maintains a focus on relationships and legacy, I only address

participants' religions when it is related to a notable difference in the digital memorial practices of the majority culture.

Elaine Kasket describes post-mortem digital footprints as “a posthumous virtual self that is relatively visible, vocal, and nimble” (2019, p. 18), which contrasts with Western expectations of silence from deceased loved ones. Furthermore, Kasket acknowledges that early participants in social media began to notice that “it wasn’t just their lives being logged, but the lives of anyone else they interacted with or encountered” (Kasket 2019), complicating notions of privacy and ownership of content. That is to say, the tensions and difficulties of social media expose that the concept of “individual” is inadequate for our networked, relational lives and identities. A singular person may die, but their digital remains may persist, may continue having interactions, and may be indistinguishable from the data of living people. Psychologically, there are benefits and drawbacks for bereaved people who interact with the digital remains of the deceased.

Psychological understandings of grief have coincided with the medicalization of death. Caroline Pearce describes how “particular ways of understanding grief as an individual intrinsic emotion” have come to dominate Western psychological perspectives of how people experience death (Pearce 2019). Linear and stage models, such as Kübler-Ross’s five stages of dying (Kübler-Ross 1969) gained popularity as they enabled psychological practitioners to practice grief care by labeling their individual clients’ experiences. Responses to death moved from being a community practice to “an individual action” (Pearce 2019). With this shift toward the individual in mind, we see how grief on social media complicates the Western perceptions of individual grief by returning memorial practices to a more public sphere.

The work I present here discusses grief not as the distinct emotion of one individual, but as a collection of varied emotional experiences related to the loss of a loved one, and circulating among the people and objects that make up the connections to the deceased person. A relational view of grief is increasingly present in more recent research on bereavement and grief, such as Klass's continuing bonds theory, which holds that it is good and normal for people to maintain and nurture their relationship with the deceased person over time (Klass et al. 1996). Social media is now one of many tools people may use to continue their bonds with deceased loved ones (Kasket 2012), and to engage in restoration-oriented behaviors. The Dual Process Model of grief accounts for both types of behavior, loss-oriented and restoration-oriented, explaining that bereaved people will "oscillate" between the two over time (Stroebe & Schut 1999). Though these models both maintain a focus on individual actions and behavior, they are useful tools for understanding behavior, which enables people to care for one through the journey of grieving. The next section diverts from individual views to consider how the emotions of grief exist communally.

How Affect Theory Views Grief

Intense emotional experiences and the events or stimuli that cause them are neither unexpected nor problematic; they are an essential part of the human experience. In her book *The Cultural Politics of Emotion*, Ahmed refers to David Leder's book *The Absent Body* to describe how our bodies disappear out of view when functioning normally, but "seizes our attention at times of dysfunction" (Ahmed 2013, p. 25). Just as our bodies' pain receptors are made to alert us of physical dysfunctions that need our attention, emotional responses "return us to ourselves," in Ahmed's words. When one experiences the emotions of grief, they become more aware of

themselves in the absence of one they love. Within this view, awareness of self is also awareness of others who are impacted by the same event. Their embodied emotions influence how they interact with others, and in turn, shift how their loved ones respond to them. As their emotions circulate, the affect of grief becomes part of their reality, and shapes their shared identity. Grief itself is a presence among them that they are shaping, and being shaped by.

Ahmed focuses not on what affect is, but what affect does. She differentiates her work from the paradigmatic divide between the two most common epistemological views of emotion—biological determination and social construction—and offers “sociality” in recognition of both. Ahmed’s perspective on affect theory integrates embodied experiences with their socially constructed interpretations, while other approaches, like Brian Massumi’s, separate affect from our interpretations of it (Massumi 1995). Ahmed defines affect as “what sticks, or what sustains or preserves the connection between ideas, values, and objects” (Ahmed 2010). In her distinction from biological determination and social construction, Ahmed says that emotions allow us to understand and intersubjectively define objects we come in contact with (Ahmed 2013). As grief sociologist Caroline Pearce summarizes, “emotions produce the very surfaces and boundaries that allow the individual and the social to be delineated as if they were objects” (Pearce 2013). Emotions and their objects “impress” upon one another, both determining and defining their shapes and boundaries. This means that our affective response to a text, event, or person is physiologically intense due to the socially constructed meaning we recognize in it. For a death, the socially constructed meaning is the loss of the entirety of another human life with which one is intertwined, and thus the loss of part of one’s self.

Ahmed's sociality emphasizes the importance of relationality in any social configuration. Emotions matter to human interactions because they circulate, spread, and become part of reality for other people. A circulation model of emotion is different from a transmission model of communication, in which a person thinks of an idea, speaks it, and it is understood by another. While informational transmission is technically what happens, emotional circulation recognizes that communication is more relational, includes the other person, and is constantly adjusting and readjusting to the interaction. In this model, affect refers to emotions in all of their communications, interpretations, and sensations as more than a byproduct of human interaction. Affect is a character in the scene that takes on a life of its own.

Consider a practical and specific application of affective sociality in the case of a person who has lost their spouse. These two people have defined one another for themselves and for their world; their family and friends know them as a pair, and also understand themselves in relation to the pair. Their two bodies have taken shape "through the repetition of actions over time, as well as through orientations towards and away from others" (Ahmed 2013), and now one body is gone. Because the deceased person can no longer engage in any action, the surface upon which their spouse had formed their own sense of self will also begin to disappear. Their daily actions with and around their spouse can no longer be performed in the same way. Their physical body's familiarity with and responses to their world will be different, and so, over time, will they. Such a change in one's sense of self and in one's daily reality will cause embodied responses that are socially recognized as emotions. Others will respond to or even share the person's emotional expressions because of the shared history and meanings they maintain about the deceased person and about one another. Sadness may circulate among them in recognition of the deceased spouse's absence, but humor and joy will circulate as well, prompted by

maintaining good memories of the beloved person. The affect of grief will hold the surviving loved ones together over time as they reconfigure themselves around the person as an entity held in memories and objects rather than a body.

Meaningful memories and objects take time to recognize, manage, and distribute after a death. The process of doing so is complex for digital memories and objects. As technologies do adapt or emerge to allow post-mortem data to be passed on or managed, research in HCI and CSCW can move alongside technology to shape its development and understand its effects on people's real-life experiences, as well as to inform the design of new systems that meet the needs that emerge when account holders die. To specify what difficulties should be prevented, the next section outlines the state of HCI's knowledge about death and social media accounts.

Death and Social Media

The intersection of death and technology has been a consideration of CSCW, HCI, and new media scholarship over the last decade. A central contribution of my work is empirical research about death-related experiences on social media, which apply to all three disciplines. Previous studies on the topic have ranged from changing grief practices that involve social media (Walter et al 2012) to the design of social media profiles for the express purpose of memorial practices (Brubaker & Callison-Burch 2016, Moncur & Kirk 2014, Mori et al 2012). Beyond descriptive work, cultural analyses describe how social media may be changing the very experience of death in Western cultures (Brubaker et al 2013, Walter et al 2012), as "pictures of the dead, conversations with the dead, and mourners' feelings can and do become part of the

everyday online world” (Walter et al 2012). My work examines the intersection of death and technology in the context of data that people create and share during their lives, which become their “digital remains” that must be managed after their deaths. This section will provide an overview of online memorial practices, followed by how recognition of such practices has given rise to dedicated features for advance data management planning. The section concludes with a summary of new theories and frameworks for considering what post-mortem data is in contexts of death and identity.

Memorial Practices Online

Internet technology has been adapted for memorial practices since the early days of the Web (Roberts 2004). Websites like cemetery.org began appearing as early as 1995, allowing people to create digital gravestones and leave messages for the deceased (Gamba 2018). The emergence of social media sites in the early 2000s made it even easier for people to connect online, and in doing so, leave records of their interactions that would outlive them. Studies have covered the preservation of online memorial spaces (e.g., Acker & Brubaker 2014), the types of community that memorial spaces support (Carroll & Landry 2010), and their impact on well-being (Isaacs et al 2013). Yet, beyond Facebook’s memorialization and Legacy Contact (Brubaker and Callison-Burch 2016), social media platforms have not directly designed features for the meaningful memorial practices of surviving loved ones. Brubaker and Hayes observed touching condolences and cathartic connections on deceased peoples’ Myspace profiles (2011), and similar healing interactions have been noted to take place on Facebook (Carroll & Landry 2010, Massimi & Baecker 2010). These studies each note the widespread catharsis of maintaining connections in digital spaces with deceased people and others who love them, while

also considering possible negative effects of such practices (Baglione 2018). In most cases, online profiles are being reappropriated as memorial spaces, sometimes only enabling a semblance of community (e.g., Gach et al 2017) that is easily disrupted (Haverinen 2016). By considering the widespread, consistent, emotional significance of online bereavement, my work extends “thanatosensitivity” (Massimi & Charise 2009) to consider how we might online spaces might better support communal memorial practices.

Though some technologies have been found to ease or adapt to death traditions (Moncur et al 2012), other technologies are changing the most basic ways that people encounter death. Brubaker et al. (2013) claim that social networking sites like Facebook expand death “socially, temporally, and spatially,” meaning that social networks cause a larger number of people over more distance to be impacted by more deaths over longer periods of time (Brubaker et al. 2013). For example, before social media, someone who would have lost touch with a kindergarten friend from their hometown after moving to a new city. On Facebook, they would instead have a daily view of the old friend’s life, and be more impacted by their death. Walter argues that this phenomenon is a return to patterns of community mourning that defined the pre-industrial era (2015). “The world comes to feel a bit like a pre-industrial village,” Walter writes, “in which mourners are visible to all, and tolling bells heard by all. [...] the whole range of both main and marginal mourners encounter one another through their (online) mourning behaviour.” Along with increasing the community involvement surrounding a person’s death, social media accounts may also affect experiences of grief because they can perpetuate the perceived presence of the account holder (Carroll & Landry 2010).

While Brubaker’s work is both theory-rich and highly implicative for practical platform strategy regarding user death, other work at the intersection of death and technology has been more experimental. For example, Uriu and Okude designed an experimental technology that combined digital images of deceased family members with Japanese Buddhist traditions of praying for the dead (2010). Such studies examine and push the boundaries of what technological interactions with death can be.

But when it comes to technology assets and digital management, the few solutions that exist rely upon pre-planning by account holders, which remains uncommon. Massimi and Baecker refer to this oversight as the “Desirable-to-Inherit Problem” of technology, one of ten problems they identified in death-related considerations of data (2010). When an account holder’s death cannot be recognized or accounted for in a social media system, the result is unexpected or painful encounters with the deceased’s content (Brubaker et al 2013). It remains unclear whether surviving loved ones, already tasked with much in the wake of a death, find more comfort or burden in post-mortem profiles and online memorial practices. The next section covers pre-planning solutions that have emerged for online accounts.

Post-mortem Management in the Digital Age

Among the corporations that dominate the digital landscape, only Google and Facebook have made advance planning tools to prepare for account holder death.² Google’s Inactive Account Manager, and Facebook’s Legacy Contact both rely on pre-planning and interpersonal relationships, allowing users to select an individual who can have some management capabilities for their account once they pass away. Beyond systems that were designed explicitly with death

² On June 7, 2021, Apple announced that iCloud would include an option for account holders to select legacy contacts, beginning in the fall of 2021. At the time of writing, the feature was not yet available to the public.

in mind, other systems such as 1Password or LastPass exist for general account and password management, but contain valuable affordances for post-mortem data management. These products allow subscribers to collect and store account credentials, notes, and links for their own reference, and can be easily bequeathed to another person. However, in cases where the user did not bequeath any access to these systems, no options exist for retrieval of the information that surviving persons may need. Managers of 1Password, for example, attribute the lack of “backdoor” options to the prioritization of active account security (Agilebits 2016), as described in (Jakobsson 2016, Kim 2014, Micklitz et al. 2013). What all of these systems have in common is the need for a representative to implement the expressed wishes of the deceased. Choosing such a person to manage digital assets is still not commonplace, so solutions remain convoluted. In its novelty, the setup of post-mortem data management systems contains highly consequential yet often unspecified expectations for the person charged with that management (Micklitz et al. 2013). Because people use post-mortem data to maintain bonds with the deceased (Getty et al. 2011, Kasket 2012), and to engage in other known online grief practices (Lingel 2013), the management of Facebook profiles is an extremely sensitive design space. Going forward, it will be important to further these efforts by analyzing their quality and effectiveness, and adapting the systems accordingly.

A number of systems and frameworks for post-mortem data management have been proposed to address the complex problems for social computing systems when account holders die (Deadsocial 2017). Much of the complexity stems from a lack of awareness of death in HCI design (Massimi & Charise 2009). Complexities include issues of privacy and access, such as whether the deceased would have wanted to disclose certain sets of their data, and whether digital artifacts are different from other assets (Brubaker et al. 2014). In earlier work, Locasto et

al. discuss post-mortem data issues in the context of a “digital identity footprint,” to inform design frameworks that enable shutting down accounts when a person’s life has ended (Locasto et al. 2011). Measures by western society’s primary social computing systems, as described above, are a positive indication that post-mortem data management is no longer being ignored.

Massimi & Baecker (2010) identify ten problems in design for bereaved individuals. The Attitude Spectrum Problem describes circumstances in which “people hold a variety of attitudes towards how their assets will be distributed, with the majority of them unaware that it will even be an issue.” Two of these are directly relevant here. First is the Attitude Spectrum Problem described above. The second is the Reconciliation Problem, in which “bereaved people have to face uncomfortable situations when they handle the digital legacies of those who die, [...] and if that representation will cause discomfort for the bereaved.” These two problems highlight how the key differences between everyday design and design for the bereaved are found in the unknowns: 1) if people do not know that digital asset management could be an issue for survivors, they may not be invested in the setup process of a management tool, and 2) if a person *does* prepare their own legacy to be handled by another, they cannot know what their chosen proxy’s needs will be in that future. Deriving inspiration from these two unknowns, my research turns to new theories and frameworks that could better accommodate and prepare for community and individual practices in post-mortem data management.

New Approaches to Post-mortem Data

In working to better accommodate human experiences of death and grief on social media, it is important to consider new approaches to both what data is, and how online processes and

interactions can happen. My dissertation work builds first and foremost upon Jed R. Brubaker's approach to death in sociotechnical identity systems. Brubaker frames death as a "natural breaching experiment" within a system, which positions death as the most marginalizing experience, in which identity is most fundamentally misunderstood and misrepresented. Brubaker's work is best known as the foundation of Facebook's Legacy Contact feature, but it also speaks to the importance of enabling pre-planning measures for individuals to control what will happen to their own digital remnants after they die. Taking significant guidance from Brubaker's work in both its focus on large-scale social network sites and its qualitative methods, my work here diverges from Brubaker's in my framing of death and grief as examples of intense affective experiences humans often have when connecting with one another online. By framing death and grief experientially and affectively, I focus on a different category of human experiences that our current online interactions are built for only minimally, if at all.

Recent research contextualizes technology use during bereavement among other "sensitive life experiences" that may require different standards for design (Herron et al 2016). Work toward this goal has described how negotiations about social media norms following a death can be argumentative or even toxic, especially in cases of celebrity death (Gach et al 2017). Wagner (2018) summarizes that "norms for mourning in social media are in flux and consistently negotiated between users." Conflicting grief norms demonstrate the variety of ways that communities handle death and grief online, and even suggest that new technologies necessitate new approaches. Brubaker et al. (2014) distinguish between post-mortem data management models of configuration, inheritance, and stewardship. Stewardship contrasts with ownership in prioritizing the deceased's pre-mortem choice of a proxy person to care for their memory and their loved ones, but maintains the goal of balancing those choices with the

emerging needs of the bereaved (ibid.). Building on this work, Brubaker and Callison-Burch (2016) implemented stewardship principles in the design of Legacy Contact. However, inheritance remains the primary mental model regarding social media data and profiles, as evidenced in a German court decision that ruled, “online data should be treated the same as private diaries or letters, and pass to heirs” (BBC 2018). Yet the academic works cited here indicate that models like stewardship might be more appropriate for handling post-mortem social media profiles due to the variety of needs and experiences among people connected to the deceased. My studies consider Legacy Contact as a case study of the stewardship model for post-mortem data management in a popular online setting.

Along with post-mortem data, the processes and interactions that exist to make decisions or configure settings about data need reconsideration. One promising approach is that of Slow HCI, or “slow technology” which was coined by Hallnäs & Redström in 2001, and adapted for reminiscence and other thoughtful practices by Odom et al. (2012a). Slow technology research describes design principles that stand in contrast to typical “fast technology: efficiency in functionality with respect to a well-defined task” (Hallnäs & Redström 2001, p. 203). Additionally, slow technologies “can aim to invert values of efficiency in the service of supporting experiences of pause, contemplation, and reflection” (Odom 2012a, p. 817). To contrast efficiency, slow technology involves first considering **time**: to be aware of it as one is when listening to a piece of music, a practice which may “supply time for doing new things” (Hallnäs & Redström 2017). The second consideration in creating slow technology contrasts **use** with **presence**: awareness and consideration of an artifact. The design challenges are substantial, as slowness that is seen as *unintentional* is frustrating to users, and thus requires transparency

that lets the user know that the unfamiliar pace of the interaction is intentional. Here, Hallnäs & Redström emphasize that the design of slow technologies should focus on slowness of appearance or materialization, and very basic materials to be considered.

Related to Slow HCI and alternative understandings of digital artifacts, the concept of Seamful Design finds benefits in the divisions between certain types of technology, or between the particular contexts in which a technology may be used. Chalmers et al (2004) discuss how “people accommodate and take advantage of seams and heterogeneity, in and through the process of interaction,” and as such, the goal of disappearing those seams does not always make sense. They argue that seamfulness is a catalyst for deeper understanding of tools that must be thoughtfully woven into one’s everyday life.

In designing and testing new artifacts with the principles of slow technology, Odom et al. add that “embracing values alternative to the more dominant focus of efficiency in HCI can nurture and expand future research and practice in our community.” Odom’s work further demonstrates that slow HCI is useful for “better supporting reflection on the past” (Odom et al 2012a), “how the invocation, experience and putting away of inherited objects—digital and physical—appears central in supporting meaningful, self-determined interactions with them” (Odom et al 2010), and understanding “future practices surrounding the inheritance of digital content” (Odom et al 2012b, p. 337). Most relevant to my work, Odom’s studies reveal how “families desired to treat their archives in ways not fully supported by technology” (Odom et al 2012b). While it is exciting to imagine future technologies that would creatively support data archives, my work addresses the more immediate, present need to support people who must do the work of transforming digital accounts and assets to digital remains that may be passed on.

My work will build upon slow HCI principles and uses for post-mortem management of digital remains by suggesting new metaphors and new behaviors that can empower people to understand and manage their loved one's digital remains, and incorporate those remains into their existing meaningful bereavement practices.

Affect in HCI

The work I present here is a continuation of work in the HCI and CSCW communities that has focused on the complexity of the human experience in the context of technological interactions. Embodied interaction in particular recognizes human behavior as being more complex than Cartesian models, which presume linear and logical actions, would allow (Dourish 2004a). Yet, embodied interaction maintains a Western focus on individual acts, presumably the result of HCI's traditional focus on single users. Some work in HCI has already begun to expand human-centered computing beyond the individual end user (i.e., Baumer & Brubaker 2017, Branam *et al.* 2012, Nansen *et al.* 2015). Baumer and Brubaker critique the substitution of the human as a "user" in their paper on "post-userism," describing how HCI researchers might better understand problems and breakdowns with a wider variety of agents beyond a single human, such as delegates and non-users (2017). Perspectives like post-userism are working to subvert single-user focus in design; my research also works toward this goal. Sub-disciplines in HCI such as tangible and social computing do address technology and human interaction beyond the individual. Dourish writes that tangible and embodied computing approaches "exploit our familiarity and our facility with the everyday world — draw on the ways we experience the everyday world. They share an understanding that you cannot separate an individual from the world in which that individual lives and acts" (2004, p. 17). Yet in the process of system design,

HCI professionals are often thinking specifically about an individual using a device, rather than a community making decisions together on behalf of many, with priorities or goals that may be difficult to articulate.

Because the emotions of grief are central to the processes and experiences in the studies I present below, theorizations of emotions that consider humans beyond the individual are useful lenses. Affect theory in particular asserts that emotions are foundational to humans' understandings of their shared reality, and include the dynamic influences of outside stimuli, bodily responses, and social interpretations of particularly powerful emotions. For scholars who study humans, emotion is fundamental (D'Ignazio and Klein 2020). This holistic view of human perception blurs the line between the individual, other people, and their environment.

Consider yourself, and me: I exist independently of you, and vice versa. But we have a relationship, a connection between us, which is a separate, third entity that plays a part in our every interaction. Additionally, each of our interactions shapes and is shaped by our shared history and our shared emotions about the things we come in contact with together. Models in human-computer interaction struggle to account for this dynamic, relational entity between people. Yet affect theory offers tools to reify emotions and the perspectives they are connected to, and how they shape people's realities.

Though there are differences among theorists about what affect is, all agree that affect exists as a separate, yet connected, entity between individuals (e.g., Massumi 1995). HCI theories tend to think beyond the individual in terms of interactions within particular environments, such as ambient displays or context (Dourish 2004b). Yet Sara Ahmed describes

the sociality of affect, which positions people’s intense emotions as an entity *among* them, rather than *within* each individual (Ahmed 2013, p. 8). Sociality is arguably ignored in HCI, as affect is mostly acknowledged in “affective computing” — a computational sensing of emotions as static biological states. My work here focuses on the aspects of affective experiences that are beyond bio-sensing, and necessary for understanding and analyzing HCI experiences during times of grief. I discuss affect as the entity among human beings that binds together their relationships, emotions, and perceptions of reality that are dynamically shifted by words, actions, and interactions. With this perspective of grief as a present entity among people, it is possible to consider why existing online processes that must be completed for post-mortem data may be falling short.

How Death Work Happens Online

When a person dies, there is a variety of general labor that occurs around their death. Death-related labor includes the care, transport, and preparation of the body for final disposition, planning and facilitation of funeral ceremony, the regulations involved in all these, as well as the practical support of those who are tasked with all of the above (Institute of Medicine, 2015). The tasks that involve digital assets and networked content created by the deceased may be seen as under the umbrella of death-related labor. Traditional anthropology, death studies, and more recently media studies all have a history of articulating how death-related labor happens across cultures, so I use existing vocabulary and frameworks from each of these disciplines to contextualize the work presented here.

Anthropology would classify the management of a deceased person's accounts and content in religious terms, describing particular actions, articulations of meanings, and exchanges of value in each action (i.e., Carlson & Frazer 2015). They would talk of afterlife beliefs, myths and legends that make their rituals necessary, and environmental factors that identify logical reasons for those things to be taking place. An anthropological perspective of post-mortem data management would acknowledge that the lack of physical remains may reduce or even eliminate the survivors' need to take any action related to the data. Cultural beliefs about the connections between one's data and one's presence or personhood may influence what needs emerge among survivors. In this sense, a need to manage a deceased person's data may only emerge when that data violates people's expectations about the dead.

Death & dying studies would classify the management of a deceased person's accounts and content as "disposal," likening it to burial, cremation, or other terminal methods of handling corpses. Phillipe Ariès describes how the Western world had historically entrusted the dead to the care of the church before industrialization sequestered death to professional, medical settings. However, applying sequestration of death to social media platforms has resulted in either a complete lack of options, or in deletion of content by default. Where attempts have been made to computationally offload anything adjacent to death work, like automated memorial videos, they have been a disaster (Lambert et al 2018). For managing digital legacies, prior work has recommended that social media "develop services that facilitate passing on particularly important aspects of a person's digital materials, and creating systems that help survivors and future generations of people engage with the rest of a person's digital materials without their direct instruction, assignment, or stewardship" (Gulotta 2017). The work I present here,

especially in Study 4, may indicate that new technologies who follow Gulotta's advice are helping us return to death work as community work, integrated and personal and present in people's everyday lives.

Given that Americans are hesitant to dive into the basics of end-of-life planning, it is not surprising that it remains uncommon for people to consider everyday technology and online accounts in their end-of-life planning. When no planning occurs for one's online accounts, surviving loved ones remain unaware of the importance of any person's digital end-of-life planning only after it has become impossible. Additionally, any options that survivors may seek to manage their deceased loved one's post-mortem data are subject to corporate technology policies that focus on data privacy. In short, when post-mortem data management is not accounted for during someone's lifetime, their surviving loved ones are at the mercy of the platforms that hold their person's data. The trade-offs of these decisions may disrupt online memorial practices in which survivors expect to engage.

My work states that improving post-mortem profile deletion should involve re-imagining the experience of online account deletion as something more akin to a temporally anchored funeral, rather than an immediate and invisible action. In the next chapter, I describe my methodological approach to compassionately understand and work with people who are tasked with post-mortem data management.

3 | Methodological Approach

This chapter reviews the methodological choices and perspectives for my dissertation as a whole. I begin by describing my research objective to gain a deep and rich understanding of my participants' lives from the entry point of their experiences with Facebook and death. Next, I outline the guiding research questions for my overall course of work, as well as the specific research questions for each of the four studies I present here. Finally, I discuss my approach to this work, and the motivation for and value therein.

I employ an interpretivist approach throughout this work, grounded in a social constructivist lens. This approach allows me to encounter a depth and complexity of human experiences, and to describe those experiences with the contextual terminology of the people with whom I worked. Where I achieved depth and nuance, I sacrificed scalability, and thus cannot speak to how common my participants' experiences might be among any given population of people who use Facebook.

Objective

My work consists of qualitative, interpretive, theory-building work about post-mortem account management on Facebook. Through almost 150 hours of interviews with 76 participants over five years, I have discovered, analyzed, and improved upon four aspects of their experiences in post-mortem management of Facebook accounts: decision-making about one's own account during their lifetime, experiences of active legacy contacts stewarding the account of a deceased loved one, the experiences of both intentional and unintentional deletion of a

deceased person's account, and finally, decision-making about a deceased person's account through a combination of kind tech support and ritual practice.

My work describes both the setup processes and active management experiences related to Facebook's post-mortem account management options. I identify how the many sides and stages of the experience may be related, from pre-planning to after a death, and from individual settings to the involvement of loved ones. In doing so, my work contributes deeper understandings about what changes and improvements can be made to set standards for post-mortem data management across platforms and services. Additionally, my work provides new perspectives of where computational systems may be falling short in understanding human identity. The work below follows existing practices of learning from breakdowns in technological infrastructures through ethnographic inquiries that include knowledge of the technology's intended functions (Bowker & Star 1999). This approach allows me to account for deeper considerations of people's experiences with social media profiles and online data that will be necessary for improving HCI during sensitive life experiences.

At a lower level, I maintain a long-term goal to normalize empirically grounded best practices for post-mortem digital management and disposal, and empower people to honor their loved ones' lives, and their own grief, through making those practices meaningful. This long-term goal is one part of my larger vision of pushing interpersonal communication platforms to handle emotionally charged content like that of deceased people's profiles with the contextual sensitivity it deserves. Support and sensitivity may be beyond design and engineering solutions,

but it matters that technology not be a barrier to support and sensitivity, especially during times of death.

Research Questions

Study 1 asked, **How do people think and communicate about their own social media legacies?** To address this question, I evaluated the setup process, decision-making, and communications between Facebook account holders and the people they chose to be their legacy contacts. This study engaged 30 participants in remote voice or video chat interviews.

To understand the outcomes related to the decisions made in pre-planning, Study 2 asked, **What are the experiences of people who have to manage a deceased loved one's profile?** I engaged 28 participants in remote voice or video chat interviews to evaluate people's experiences managing a deceased loved one's Facebook account.

Study 3 turned to the second post-mortem option that Facebook account holders have, asking, **Why do people want their social media profiles deleted after they have died?** and **What is it like for people when a deceased loved one's social media profile is deleted?** To address this question, I focused on both the motivations of people who chose to have their Facebook accounts deleted in the event of their death, and on the experiences of people whose deceased loved ones' Facebook accounts had been deleted. This study engaged 12 participants in remote voice or video chat interviews. I uncovered serious problems and pains in post-mortem profile deletion, which led me to considering a wider variety of possible improvements to the deletion option.

The fourth and final study asked **how ritual-based guidance might create adequate structure to form and meet expectations in the post-mortem social media management experience**. I engaged 6 participants in making decisions about a deceased loved one's Facebook profile, guiding them through making and carrying out those decisions in a ritual-based format. Some interactions were over the phone or video chat, and some were in person. Though I had initially sought to examine the post-mortem *deletion* process, my study shifted with participants' needs to address the full spectrum of post-mortem Facebook management options.

By framing death and grief as information to be shared, experienced, and managed in a social context, I was able to focus these studies on technology's role in the human affective experience, and consider design implications and solutions both at scale, and at the level of individuals and their communities. I maintain Facebook as the site for my case studies described below due to the platform's scale (providing wide relevance and prevalence of people's experiences), and because Facebook continues to be the only major social networking platform with dedicated post-mortem data management and memorialization tools.

Qualitative Interviews and Thematic Analysis for Emotionally Difficult Topics

The works I present in each chapter used qualitative interview methods in combination with thematic analysis (Charmaz 2006, Seidman 2006). Qualitative interview methods presented as the most useful for my research context because, as the old adage states, "everyone grieves differently." Qualitative interviews invite unique and storied experiences that become rich data.

In recognizing the complex and subjective experience that is the loss of a loved one, each individual's description of their experience offers rich and applicable data that furthers the understanding of HCI during difficult life experiences. Due to the sensitivity and variety of human experiences in the context of grief, employing qualitative methods allows me to hear people's stories and articulate the nuances of some of our most common and most significant interactions with the digital world. However, subjectivity and unpredictable variety still offer connections and patterns for interpretation that can be applied to actionable problem-solving, as exemplified in Brubaker et al.'s description of five "orientations" that people may take in evaluating the grief of others (2019).

In addition to capturing unique and storied experiences, sensitive qualitative interviews are a unique skill set that I have acquired throughout my academic and professional career. Since 2008, I have engaged in anthropological and ethnographic studies that involve vulnerability, intimacy, and otherwise sensitive discussions that require the creation of safe and understanding conversation spaces for participants. My training in cultural anthropology and my lived experiences in more than a dozen countries have given me a deeply internalized recognition of how a rich variety of existing cultural practices contribute to people's sense of connection and well-being. My particular understanding of people's affective responses to digital presences has grown from five years of research work in the death and technology space, with four of those years involving partnership with Facebook's Memorialization team. My research training in an academic lab setting focused on identity in computational systems, combined with an insider's understanding of the particular technology I was studying, uniquely informed and prepared me to guide people through understanding their particular connections to their loved ones' data.

Some previous qualitative studies in HCI and death have focused on prototypes and hypotheticals for how people want their own post-mortem data to be managed (Odom et al. 2012b, Gulotta 2017). I also use hypothetical questions in Study 1 with people who configured their post-mortem Facebook settings. While these studies capture living people's perspectives about what their digital footprints could be after their deaths and why, hypothetical scenarios are not able to capture the mental state the people carrying out post-mortem data management are actually in, having just experienced a significant loss. I chose to interview people experiencing grief in order to capture authentic experiences with familiar technologies. My approach offers deeper and more applicable empirical findings than studies that had asked for participants to imagine the needs of their loved ones after they have died, or even for people to imagine their own future grief over someone who is not dead. Every human dies, so there are always legitimately bereaved individuals who may offer true, lived experiences of technological difficulties that may stand as cautionary tales for us as researchers and designers. Of course, receiving and honoring the stories of the bereaved is a complex and sensitive task that not all are suited for. Some exemplary research in HCI that has used similar methodologies include Andalibi and Forte's work on pregnancy loss (2018), and Walker's work on maternal mortality (2018). Andalibi, Forte, and Walker each employ qualitative research methods in the sensitive spaces of difficult life experiences, with distinct ethical consideration and deep respect for their collaborators and participants. Having learned from their examples, I am suited for emotionally difficult research, and thus have completed the work I describe in this dissertation.

Personal Motivations and Non-Academic Skills

In each of the studies, a primary challenge was to discuss death in a way that evoked the honesty of my participants' experiences and needs while achieving an understanding of the technical processes of the system they were using. Training in cultural anthropology allowed me to incorporate ethnographic methods to engage with participants on their terms, and create a space of safety and comfort. However, the topic of death, whether it is one's own eventual death, or the death of a loved one, requires a different perspective and an additional level of experience and particular skills beyond traditional qualitative methodologies.

My personal perspective is that Western expectations surrounding emotions are stifling and detrimental to healthy responses to our most intense experiences. Emotional expression is often positioned in opposition to logic and reason as a weak or incorrect approach to complex situations. Throughout my research, I have sought to incorporate feminist principles and non-Western knowledge systems that value embodied emotional expression and communal experiences as essential to being human. Trauma and grief are not new human experiences, but Western society *is* relatively new. I believe the best way forward for us involves resurfacing wisdom and practices that may have been buried in the name of colonization disguised as progress. In other words, I believe it is worth re-examining what is considered "necessary" in death work beyond material practicality and sequestered medical processes. As I discuss in Chapter 8, customs and practices around death work may have disappeared over time as the Western majority culture's spiritual beliefs have changed, and we may have lost some of the more subtle necessities of those practices that may have involved emotions and communal experiences.

To gain the skills to care for participants in death-related research with the values described above, I turned to the emerging field of “death doulas”: non-medical, holistic assistants to people who are preparing to die. Death doulas are part of a worldwide cultural movement toward death positivity, death acceptance, environmentally conscious burial, as well as social and racial justice issues that undermine what a “good death” can be (Beech 2020). Death doulas are not currently regulated by any governing body, though some large organizations exist to establish and encourage best practices and standards (i.e., NEDAlliance.org). One of the most prominent voices in the death doula community is Alua Arthur, who is interviewed in the previously-cited article. After attending an online seminar in which Arthur spoke about racial disparities in death care with five other Black professionals, I chose to take the 12-week training course through her company Going With Grace. The 12-week course covers topics such as ethical wills, local burial options, and how to engage with and support people through death-related fears and anxieties. Alua’s course prepares students to pass the NEDA proficiency exam, which is currently the only internationally recognized merit for death doulas (Going with Grace 2021). Completing the Going With Grace death doula training not only deepened my vocabulary and capacity to engage in death-related conversations, which is the core skill of my research, but welcomed me into a network of peers working toward good deaths in their communities all over the world. The benefits and insights from combining death doula skills with the qualitative research skills described above will be discussed further in Chapter 10.

4 | Research Setting: Facebook's Post-mortem Account Options

This chapter details Facebook's memorialization settings that I examine through all four studies, including the background research they are built upon, and what information and options people see in each option and process. The details of the options and processes I describe here are subject to change without notice; updated details may always be found in Facebook's Help Center.

Foundational Research

In 2015, Facebook launched Legacy Contact to address the post-mortem management of user profiles. Legacy Contact's primary design objectives were to care for the needs of bereaved communities and to enable people to make end-of-life choices about their Facebook profiles and data, both of which influenced the design of its functionality as well as the setup process (Brubaker & Callison-Burch 2016). The goal of balancing account holder agency with care of surviving loved ones is rooted in Brubaker et al.'s concept of stewardship (2014), which I examine in Chapter 6.

As with any online platform, the user interfaces of Facebook's post-mortem account settings are subject to constant change, from cosmetic redesigns to completely different workflows. Here, I describe the workflow for Facebook account holders making post-mortem decisions for their own accounts, as it appeared at the time of writing. I note in each subsequent chapter where the process was significantly different at the time of the study. As I conducted this

research as a research partner with, and at one point full-time employee of, Facebook’s Memorialization Team, my research directly influenced iterative changes in the features and functions in their purview. I will describe such changes in detail in Chapter 10.

Memorialization Settings As Designed

Facebook’s options for post-mortem account management are currently available to every account holder worldwide. Images in this section are from the Facebook mobile app, which works slightly differently than the

Facebook website. I focus on the mobile app options as Facebook follows a “mobile-first” design strategy, meaning that the newest updates and major changes are always implemented in the mobile app before other versions of the Facebook product.

To find post-mortem account options, account holders must access the Facebook Settings menu, then select “Settings and Privacy” [figure 1], then “Account Ownership and Control” [figure 2], then “Memorialization Settings” [figure 3]. Following a short description of Memorialization [figure 4], the two options on this screen are Legacy Contact and Delete Account After Death [figure 5].

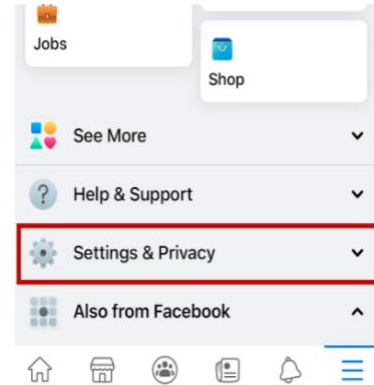


Figure 1. Facebook Settings Menu.

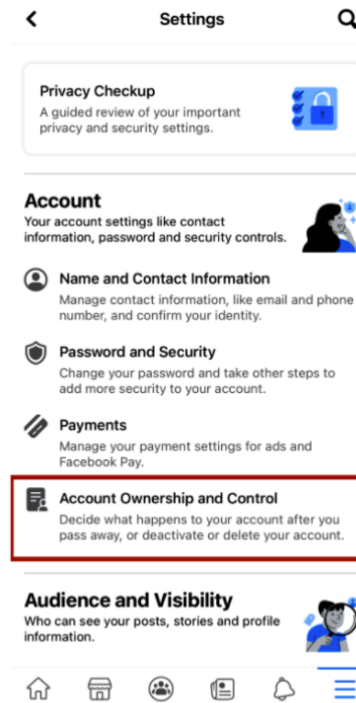


Figure 2. Account Ownership and Control

Selecting a Legacy Contact.

The Legacy Contact option is described thus:

“Choose someone to manage your profile after you pass away. They can help let friends and family know about details like a memorial service. You can also tell them your wishes about how long to keep your account open, and they can delete it after that time.”

Tapping “Choose a Legacy Contact” reveals a screen with details about what the legacy contact may do [Figure 6]:

“They’ll be able to

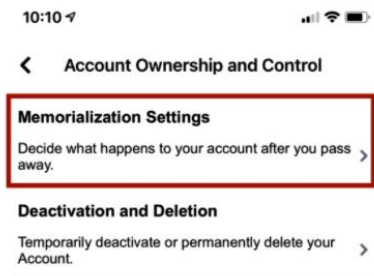


Figure 3. Memorialization Settings.



Figure 4. About Account Memorialization.

- *Manage tribute posts on your profile, which includes deciding who can post and who can see posts, deleting posts, and removing tags*
- *Request the removal of your account*
- *Respond to new friend requests*
- *Update your profile picture and cover photo*

Your legacy contact can only manage posts made after you've passed away. They won't be able to post as you or see your messages."

The subsequent "Next" button allows the user to search among their Facebook Friends and select the person they want to be their legacy contact. As described by Brubaker & Callison-Burch (2016), one strategy adopted in Legacy Contact's design was to promote interaction and conversations between the account holder and their chosen legacy contact. As such, when the user chooses that person's profile card, Messenger is activated with these instructions and pre-populated note [Figure 7]:

Optional: Message [Name]. Sending this message will start a chat in Messenger with [name] to let them know that you chose them as your legacy contact. You can use the text we've provided here, or edit the message. You also might want to talk in person.

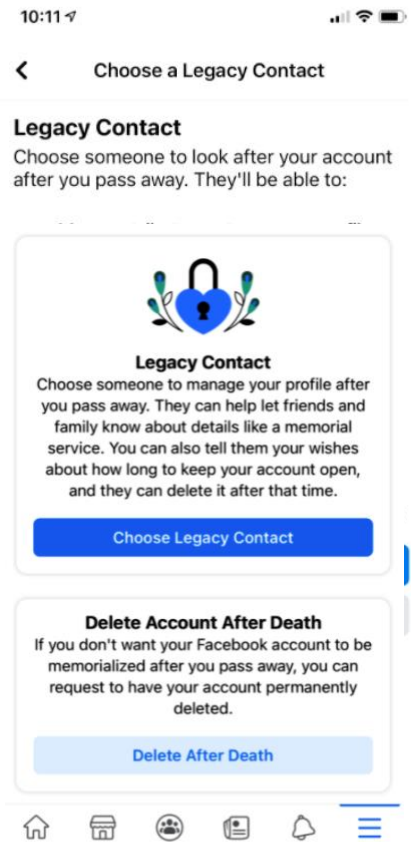


Figure 5. Choose Legacy Contact or Delete After Death.

Optional: Message Kyle

Sending this message will start a chat in Messenger with Kyle to let him know that you chose him as your legacy contact. You can use the text we've provided here, or edit the message. You also might want to talk in person.

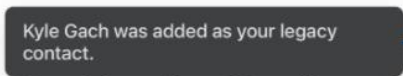
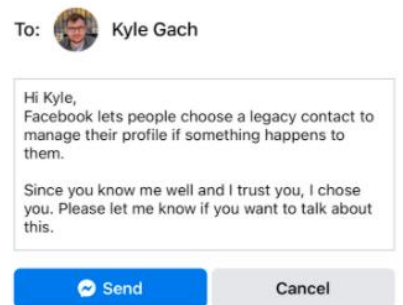


Figure 7. Confirmation and an optional message to your legacy contact.

“Hi [name], Facebook now lets people choose a legacy contact to manage their profile if something happens to them. Since you know me well and I trust you, I chose you. Please let me know if you want to talk about this.”

The account holder may send the message as it is, modify it before sending, or decline to send it at all. If a message is sent, the selected legacy contact will receive it via Messenger, a design decision made with the hopes of encouraging communication between the account holder and selected legacy contact (Brubaker & Callison-Burch 2016). Upon returning to the main Legacy Contact screen, the user will see the profile picture and name of their chosen legacy contact, verifying that the setting has been saved [Figure 7]. Below that, a “Learn More” button links to the Help Center with more extensive information about the post-mortem options. A “Remove” button reverts the user’s settings back to having no legacy contact. Below these buttons, there are two options for “Data Archive Permission”, which allows the chosen person to download a complete copy of the account holder’s Facebook data, and “Message Your Legacy Contact” which re-opens the pre-populated text box [as seen in Figure 7]. The “Data Archive Permission” screen [Figure 9] explains that the data download “will include posts, photos, videos, and info from the About section of your profile” followed by radial buttons “Yes, Allow” or “No, Don’t Allow” for the

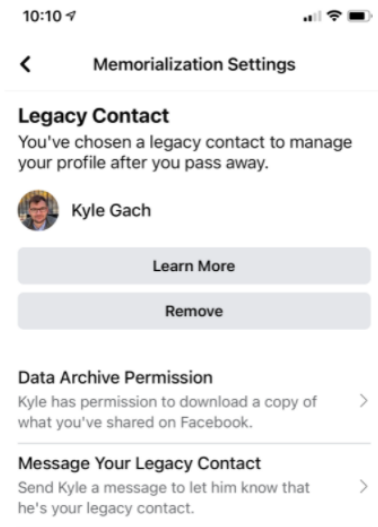


Figure 8. Settings page after selection.

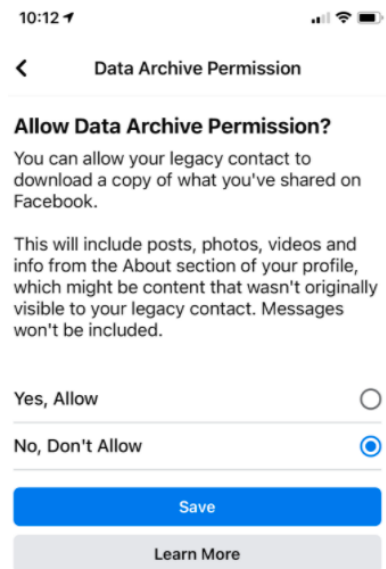


Figure 9. Option to allow data archive permission.

user to select. Since its launch, many people have set up or activated Legacy Contact with varying experiences, which I describe and analyze in Study 1 and Study 2.

Selecting Delete Account After Death

The option to delete one’s Facebook account upon their death appears beneath the option to choose a legacy contact [as seen in Figure 4]. When users choose that option, they see a screen with this information [Figure 10]:

“If you choose to delete your account, when someone lets us know that you’ve passed away, all of your messages, photos, posts, comments, reactions, and info will be immediately and permanently removed from Facebook. We’ve heard that memorialized accounts can be a comforting place for people to remember the deceased. We strongly suggest discussing the decision to delete your account with family and friends.”

Radial buttons let users select “No, Don’t Delete After Death” or “Yes, Delete After Death.” Upon selecting one and clicking save, a confirmation window appears with an additional bit of information:

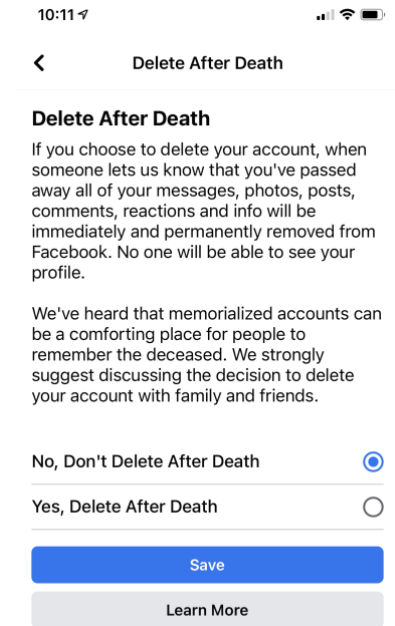
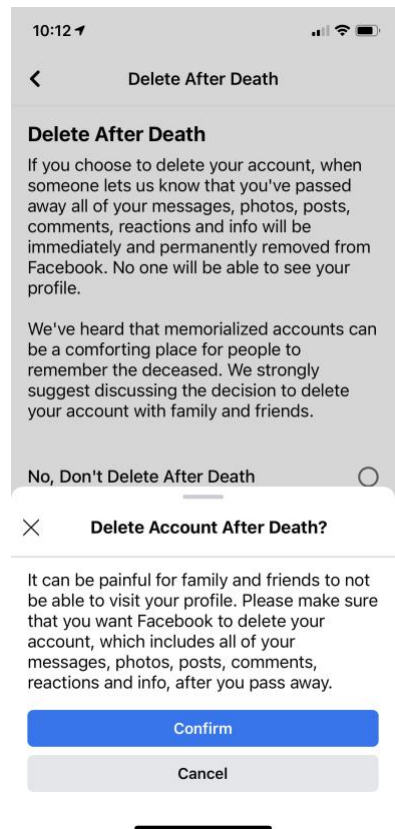


Figure 10. Delete After Death information.



“It can be painful for family and friends to not be able to visit your profile. Please make sure that you want Facebook to delete your account, which includes all of your messages, photos, posts, comments, reactions, and info, after you pass away.”

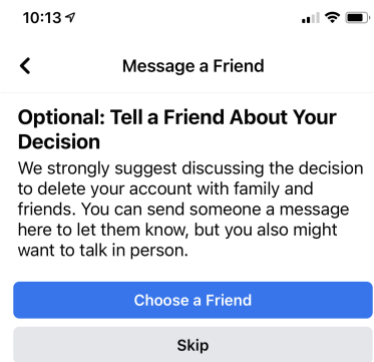


Figure 12. Option to choose a friend to tell about deletion.

Buttons to either “Confirm” or “Cancel” deleting after death follow this information [Figure 11]. If the user confirms that they do want deletion after their death, a messenger prompt appears [Figure 12]:

“Optional: Tell a Friend About Your Decision. We strongly suggest discussing the decision to delete your account with family and friends. You can send someone a message here to let them know, but you also might want to talk in person.”

As with the message prompt after selecting a legacy contact, the user can edit the pre-populated message or skip sending it, which returns them to the Memorialization Settings screen showing a confirmation of their choice.

No Legacy Account Configurations

If a Facebook account holder never discovers or configures their Memorialization Settings, their account is subject to the default functionalities of the platform. After the account holder dies, their account may continue to appear in algorithmically-curated activities for that account’s Facebook Friends. Continuing activities might include birthday reminders, On This Day memories, new tagged photos, or the deceased person appearing in event invitation lists. Algorithmically-curated

Figure 11. Delete After Death confirmation.

activities that display content from a deceased person's account may continue unless one of two things happen.

First, a combination of undisclosed indicators, likely a lack of login activity and condolence-related posts on the deceased person's timeline may trigger AI to recognize that the account holder has died (Zaveri 2019). The AI's recognition of a likely death does not cause any visual changes to the deceased person's account, but does prevent the account from appearing in the types of algorithmically-curated activities listed above. In cases where surviving loved ones continue to use a deceased person's devices, the deceased person's Facebook account may remain logged in, providing the survivors with account access. While such access may be useful to surviving loved ones, in ways that some participants described to me in the studies below, logging into an account would prevent any of Facebook's proprietary AI from discerning that the account holder has died.

The second possibility for a deceased person's Facebook account is that their loved one may submit a request form to either memorialize or delete the deceased person's account. The process to request memorialization or deletion requires documentation that verifies the account holder's death, typically a death certificate, and may require further documentation that would be requested via email directly with the person who filed the request. Because the account holder did not configure any legacy settings during their lifetime, their profile would be memorialized: the word "Remembering" would appear above their name, and a Tributes section would overlay their timeline, which would then appear in a separate tab on the profile. Because no legacy contact had been selected, no one would have the ability to curate the posts on the Tributes section, nor make any other adjustments to the profile that are described in the section above. Regardless of what documentation a surviving loved one may have, it is not possible for

Facebook to grant full account access, or even legacy contact privileges, to a deceased person's account. There are rare exceptions, such as that of a deceased German teenager whose parents had to obtain a federal court order to read their child's private messages (BBC 2018).

Each of these post-mortem scenarios for Facebook account holders — selecting a legacy contact, selecting deletion, and making no selection — is represented in the experiences of my participants through the four studies I describe below.

5 | Study 1: Getting Your Facebook Affairs in Order: User Expectations in Post-mortem Profile Management

When personal data outlives the person it represents, surviving loved ones may be left searching for ways to shut down accounts for which they may have no information. Prominent password managers may provide some access to survivors, but for accounts that are an everyday part of people's social communication, a different approach is necessary: survivors must manage data along with social media profiles that often become memorials to the deceased. Profiles that become online memorials therefore take on great significance for the deceased person's surviving loved ones. Post-mortem account management systems have been designed based on research in which users discussed concerns like privacy and hypothetical post-mortem uses for their data. As hypotheticals are limited in their ability to surface potential difficulties, building on previous research with empirical evidence from people who set up such systems can verify how well the setup process works to prepare the chosen person for the responsibilities they would have in the event of the account holder's death.

The interview study I present here, a collaboration with Jed Brubaker and the Memorialization team at Facebook, asked, "how do people think and communicate about their own social media legacies?" The results describe how people set up a post-mortem data and profile management system, including who people choose as their legacy contacts and why. Our study design explores the setup process from two perspectives: that of the account holder (AH) and that of the person selected to manage the AH's profile post-mortem (on Facebook, the legacy contact: LC). As such, I examined what discussions people had, the expectations for what

managing a post-mortem profile would entail, and how perspectives varied between AHs and LCs.

I found that AHs chose the person they are closest to, which is not necessarily their legal next-of-kin. I also found that while they did not have extensive discussions about it, both parties were strongly aligned in their expectations about what post-mortem profile management would entail. Alignment between AHs and LCs points to the trusting relationships between active LCs and their deceased loved ones that I will describe in the next chapter. However, we also found critical misalignments between what our participants expected of the system and how it would actually work. Misaligned expectations ranged from small details, like how many months to leave the profile available after the person's death, to large differences, like whether an online memorial would be desired at all. I conclude this chapter with a discussion about why our participants' expectations and misalignments from the Legacy Contact setup process could be setting them up for painful social disruptions, like losing a way to communicate with people the deceased AH primarily kept up with on Facebook.

The painful disruptions that are possible from misaligned expectations of Legacy Contact are exemplary of the key design challenge in all post-mortem data management systems: how can a system have an effective setup process when expectations for the system are never articulated, and it cannot be used until after the person who set it up can no longer be consulted? I present the challenge of divided control alongside potential solutions that may guide effective setup processes for any online platforms that wish to implement a post-mortem data management system.

Advance Planning and its Challenges

I position this study in relation to two challenges for death and system configuration: 1) end-of-life preparation tends to be a sensitive and avoided topic of conversation, and 2) effectively onboarding people to a new system is an ongoing challenge in HCI. Post-mortem data management features on social media face both the challenges of discussing death and pre-established expectations about how settings on these platforms work. Given these challenges, I first review common approaches to the difficulties of end-of-life preparation, which reveal the common socio-cultural perspectives Americans have when addressing death. Next, I review recent work on social issues surrounding the perpetuity of data beyond human lifespans, to contextualize end-of-life planning within the constraints of an existing social media system. I conclude this section with typical considerations in creating setup processes, including the functions that designers currently prioritize, and what people expect when using a new online feature or system.

General Challenges in Advance Planning

As the medical field holds a central role in death and dying in the Western world, medical research rightfully acknowledges that conversations between loved ones about end-of-life wishes can be difficult, but emphasizes the benefits: “[Creating a living will involves] the patients having a chance to consider and have some control over their last chapter of life; the proxy decision makers being ready for their roles; and the families having a chance to talk about issues relating to end of life and to resolve personal matters” (Emanuel 2000). Generally, medical

resources identify consideration, control, choosing a proxy, and important conversations as the most critical things to enable or communicate during advance planning. In short, advanced preparation makes the logistics—bank accounts, debts, subscriptions, and inheriting possessions—easier for grieving loved ones when someone dies because people have taken time to consider specific options and articulate specific instructions. Note that identifying heirs and executors is a matter of recognizing, defining, and reifying one’s closest relationships, and being able to discern what those loved ones are likely to need and want during a time of grief. While taking stock of assets is part of the estate planning process, the assets themselves are less important than the people and/or entities that will come to represent and carry on the deceased person’s legacy in the world.

Alongside their particular planning resources, legal and medical entities often have conversation guides on their websites (e.g., Fidelity 2020), acknowledging that social and emotional resources may be needed to have logistically important conversations. Mental health professionals, especially social workers and grief therapists, are often employed to provide sensitive support when people are actually making decisions for the end of a life. Psychology research cites multiple hypotheses about why denial or avoidance of death as a topic is prevalent in American culture. Terror management theory — the idea that human beings’ ability to know they will die one day is constantly at odds with our instinct to survive — is one of the most well-established possible explanations of why people struggle to discuss their own deaths (Schimel et al. 2019). Yet psychological or psycho-therapy resources are only presented as support options when a person is actively dying rather than for advanced planning, so the relevance to this study is minimal. Other factors that guide people’s end-of-life wishes include culture, religion, and

family, from who may lead funerals or memorial services, to how bodies are prepared for final disposition. Each socio-cultural factor represents a possible professional who possesses unique understandings of what decisions may be difficult or emotional for particular individuals and families to discuss. Social media technologies have touched each of these factors, easing or adapting some death traditions (Moncur et al. 2012), but also complicating the most basic ways that Americans encounter death (Brubaker et al. 2013). Though the digital complexities around death are new, mental health professionals maintain that it is helpful to focus on what one may control and plan for (e.g., Menzies & Menzies 2020).

Further Work on Advance Planning and Social Media Accounts

Recent research contextualizes technology use during bereavement among other “sensitive life experiences” that may require different standards for design (Herron et al. 2016), but how exactly deeper knowledge and design interventions can be beneficial remains unclear. Work toward this goal has described how negotiations about social media norms following a death can be argumentative or even toxic, especially in cases of celebrity death (Gach et al. 2017). Wagner agrees that “norms for mourning in social media are in flux and consistently negotiated between users” (2018). Conflicting grief norms demonstrate the variety of ways that communities handle death and grief online, and add strength to suggestions that new technologies necessitate new approaches.

As described in Chapter 2, Brubaker et al.’s concept of stewardship prioritizes the deceased’s pre-mortem choice of a proxy person to care for their memory and their loved ones, with the goal of balancing the wishes of the deceased with the needs of their surviving

community (Brubaker et al. 2014). However, inheritance remains the primary mental model regarding social media data and profiles, as evidenced in a German court decision that ruled, “online data should be treated the same as private diaries or letters, and pass to heirs” (BBC 2018). Yet the academic works I cite here indicate the variety of metaphors that are more appropriate for post-mortem social media profiles. For example, if post-mortem data is only considered property (Fiesler & Brubaker 2016), the loved ones of the deceased would not continue to interact with that data in the form of messages to the deceased, as in (Brubaker & Hayes 2011).

Though Facebook launched Legacy Contact in 2015, a 2017 study of Facebook users found that “none of the participants” had selected a legacy contact, as they “would rather just have it shut down” (Gulotta et al. 2017). That study stands in contrast to the importance of memorial interactions with data described in (Brubaker & Callison-Burch 2016), which describes a reliance upon metaphors of presence, place, or sacredness when designing the setup process for Legacy Contact.

Building upon existing models of grief and bereavement, such as Kübler-Ross’s five stages (Kübler-Ross 1969), Klass’s continuing bonds (Klass et al. 1996), and Stroebe and Schut’s Dual Process Model (Stroebe & Schut 1999), Baglione et al. proposed a distinctly digital-age model for complicated grief that includes a “grief loop”: while turning to online support groups could initially be helpful, one’s “capacity for connecting with others, combined with the depth of the pain of grief, often pulled complicated grievers into a seemingly endless cycle of mourning” (Baglione et al. 2018). While Baglione’s model suggests that the ways

people turn to social media following a death might exacerbate the more difficult aspects of grief. In one relevant study, Gulotta et al. focus on people's handling of digital accounts and assets that are left behind with no clear instructions, and find sharp contrasts between desired legacy and actual digital remains (Gulotta et al. 2017). Gulotta et al.'s study seems to suggest that the problems they identify may be solved by advance preparation or dedicated data delegation tools. The study in this chapter evaluates Facebook Legacy Contact in the context of Gulotta et al.'s contributions to understanding what people need from technology after a death. These studies are informative to the technological body of research because they display the value in preserving online content after a death, and may inform people's wishes for their own digital legacies by showing what is possible.

The summary of relevant work presented here outlines how logistical decision-making in advance of death is being applied from legal and health fields to social media accounts, but with some vague awareness that interactions with social media data may require different considerations than physical assets. The study I present here aims to identify specific areas where alternate considerations may be needed, as well as what alternate considerations could be used. As the designs and functions of every platform tend to follow trends and advances in technology, the next section addresses the current state of design and development in introducing people to new digital processes.

Design Priorities in Setup and Onboarding Processes

Any data management tool requires a setup process where the tool is configured and preferences are set. However, death presents some challenges to many of the common

conventions in technology design. New features or software products typically conform to familiar best practices in design, as well as existing limitations of how everyday people understand technologies to work. Many studies in the field of HCI have evaluated what makes good interaction design in a setup or onboarding process, such as Cardoso's 2017 study, which identifies major moments of understanding and success as important (Cardoso 2017). Another example is Obar and Oeldorf-Hirsch's 2017 paper, which focuses on the implications of how frequently people ignore critical information embedded in "clickwrap options," which are setup processes that consist of pop-up windows requiring new users to click "Yes" or "Agree". Obar and Oeldorf-Hirsch confirms what one may already suspect: people tend to ignore the text of privacy agreements, and click through to their content as quickly as possible (Obar & Oeldorf-Hirsch 2017). Research has also identified intuitiveness as key to ensuring a person completes an online process. Intuitiveness may be understood as containing four subcomponents: "effortlessness, gut feeling, verbalizability, and magical experience" (Ullrich & Diefenbach 2010). These subcomponents articulate what users appreciate, value, or expect in their interactions with a new digital system, and fall in line with industry standards of creating technologies that integrate into people's daily lives without frustration or disruption (e.g. Krug 2006).

As is evidenced by how rarely people read privacy policy or Terms Of Service clickthrough agreements (Obar & Oeldorf-Hirsch 2017), sign-up and onboarding processes are often seen as an obstacle to using an online service. For Facebook specifically, Nadon et al. note the burden of super-granular and always-changing privacy controls, and describe how difficult it is for people who use Facebook to configure their privacy settings the way they truly want them

to be (2018). One subfield of HCI research even outlines how project managers of digital products might mitigate their “most common risk”: failure to manage user expectations (Petter 2008). The consequences of failure discussed in Petter’s research include the reduced likelihood of customer retention, engagement, or repurchasing — all of which are major issues that permeate the tech industry (Cardoso 2017). If an onboarding process is slow, frustrating, or work-intensive, users will not complete it, and the product’s success will suffer. In combination with the common reluctance to complete advance planning, as described above, it follows that technical and legal information about post-mortem data management options would be doubly difficult to convince people to complete.

Additionally, the context of designing for death and grief contains different risks and stakes. Massimi & Baecker identify ten problems in design for bereaved individuals (Massimi & Baecker 2010), two of which hold particular relevance to setup processes for post-mortem profile management. First, the Reconciliation Problem, describes experiences in which “bereaved people have to face uncomfortable situations when they handle the digital legacies of those who die, [...] and if that representation will cause discomfort for the bereaved.” Second is the The Attitude Spectrum Problem, in which “people hold a variety of attitudes towards how their assets will be distributed, with the majority of them unaware that it will even be an issue.” The two problems correspond to two key differences between everyday design and design for post-mortem data management: 1) because the results or consequences of digital legacy management are unknown to people, they may not be invested in the setup process of a management tool, and 2) if a person does prepare their own legacy to be handled by another, they face unknown, varying possibilities of what their chosen proxy’s needs could be in the future.

So far, research at the intersection of death and technology has largely focused on issues that occur after a death. In contrast, the research I present here focuses on the planning experiences that occur prior to death. As such, I address a gap in the literature by identifying causes of difficulty as well as preventative measures.

Methods and Analysis

I conducted 30 semi-structured interviews with adult Facebook account holders (11 men, 19 women, aged 19–55) in the United States who were involved in the setup and configuration of Facebook Legacy Contact. Our participants had either configured their own settings (n=29) or had been chosen as a legacy contact by someone else (n=17). In 15 instances, participants reported having both experiences, and were interviewed accordingly. The time period between when our participants had selected or been selected as a legacy contact and when they participated in our interview ranged from 1 day to 1 year. Participants were initially recruited through a screener survey administered on Facebook to qualifying individuals who had configured their Legacy Contact settings, followed by snowball sampling from those participants with a goal of interviewing both the choosing account holder (hereafter “AH”) and their chosen legacy contact (hereafter “LC”) in every case. Ultimately, we were able to interview 9 complete pairs, which allowed us to hear both perspectives involved in a single Legacy Contact setup process, and analyze the similarities and differences in perspective that could be attributed to communication between the two individuals.

Interviews ranged in length from 30 to 60 minutes, and were conducted over video communication services such as Skype or Google Hangouts (n=24), or over the phone (n=6). During each interview, we discussed participants' actions, expectations, hopes, and questions about the feature. We began each interview by inviting the participant to tell us about when they had configured their Legacy Contact settings or when they had learned they had been chosen as a Legacy Contact to evaluate the timeline and experience of enabling the legacy contact setting. Then, we asked participants about their awareness of each specific management capability, including anticipated need of the feature, any specific expectations about how it might be used, and their responses to hypothetical scenarios in order to examine how participants felt each feature met their perceived needs. Some of these hypotheticals included, "In the event of your friend's death, what is your hope or best-case scenario for yourself and their loved ones on Facebook?" and "What responsibilities do you imagine having in the week after the death?" Sometimes, participants were unaware of certain features. In those cases, we described the feature, and asked them to explain when they would or would not make use of it. Our interview questions on this front evolved over the course of the study to probe deeper on technical expectations, solicit feedback on specific features, and to ask participants to speculate about the use of these features in various scenarios. In order to capture the breadth of possible needs, we also asked participants for suggestions about how each feature could be improved to meet their specific needs.

With Dr. Brubaker, I conducted preliminary analyses of each interview, and continued interviews until we agreed saturation had been reached (Charmaz 2006, p.113). Upon completion of all interviews, we performed a thematic analysis of the interview transcripts and

accompanying interviewer notes, which included details of the conversation not communicable in transcripts, such as tone of voice or emotional expressions (Charmaz 2006, p.34). I re-read and coded each transcript using an open coding process, writing detailed memos describing the major categories of experiences and thoughts described by the participants. Preliminary codes included, who is chosen, why they were chosen, length of AH-LC discussion, expectations of feature, expectations of LC, and caring for loved ones in the future. Next, I isolated all quotes that were coded as expectations among dyad pairs, and analyzed the alignments or misalignments of expectations in the cases where both AH and LC were interviewed. We reviewed the codes and memos over three rounds of analysis, combining similar codes and identifying the concepts presented below. To maintain the privacy of our participants, all names are pseudonyms and personal details in the quotes below have been obscured. Quotes have been edited for clarity.

Legacy Contact Selection and Communication

Through our analysis, we identified 1) who account holders chose as their legacy contact and why, 2) what discussions those people had, 3) the resulting expectations for what managing a post-mortem profile would entail, and 4) how those expectations aligned among AH-LC pairs. We then analyze whether participants' expectations align with how the system works. These four areas identify an effective or successful Legacy Contact setup process because they reveal participants' priorities regarding both their profile and their loved ones. I discuss each key finding in the sections that follow.

Who Was Chosen and Why

Participants represented a variety of relationships between account holders and selected contacts, including spouses (n=10), romantic partners (n=4), friends (n=8), parents and children (n=5), and siblings (n=3). Full details can be seen in Table 1.

PAIRS		RELATIONSHIP		INDIVIDUALS	RELATIONSHIP (did not interview)
P1 Holly		spouses	P2 Greg	P4 Amy	friend
P3 Debbie		mother/son	P9 Patrick	P6 Ally	mother
P5 Blake		spouses	P8 Kelly	P7 Claire	friend
P12 Laura		best friends	P19 Kyndra	P10 Jess	husband
P14 Rasha		sisters	P13 Adila	P11 Jenna	friend
P15 Hannah		couple	P23 Ben	P16 Louanna	sibling
P21 Bryce		best friends	P26 Chris	P17 Sherry	daughter
P22 Trent		spouses	P25 Susie	P18 Pete	spouse
P28 Drake		spouses	P29 Nelly	P20 Jacinta	daughter and son
Table 1. A list of participants and their relationship to the account holder or legacy contact. The left half of the table				P24 Andre	friend
				P27 Judy	friend and husband

includes participant pairs where both the account holder and legacy contact were separately interviewed. The right half of the table lists participants whose counterparts were not interviewed. All names are pseudonyms.

P30 Shane	girlfriend
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When asked why they chose who they did (or believe they were chosen), all 30 participants reported choosing (or being chosen as) the LC because of the closeness or depth of their relationship with that person:

I actually picked my mom. It said something like, pick somebody that you know and trust. And so I picked the one person I'm closest to. (Ally, P6)

Here, Ally refers to the setup instructions and describes how they influenced her choice. Her descriptions of her choice, along with similar comments from every participant, allow us to frame each relationship in the table above as one of the closest relationships in each participant's life. This explains why, among our married participants, most chose their spouse:

Your spouse generally has access to everything in your life, and is the person who you trust more than anyone else, and so that seems to be the most appropriate person to make as a legacy point of contact with Facebook. (Pete, P18)

Pete's reference to a spouse's "access to everything in your life" likely refers to the legal and logistical rights that spouses have, and explains why spouses were the typical choice for married couples' legacy contacts, even if they were not especially Facebook-savvy. It was common for

people to consider the Legacy Contact a role that could be bundled with other end-of-life responsibilities:

[I chose my husband] because if anything happens to me he would be the person that would take care of everything for me. (Louanna, P16)

Louanna expressed a common sentiment among our married participants, that it made sense for them to include Facebook with “everything” a spouse would manage after their death. Even so, some married participants did consider their spouse’s disinterest in Facebook as a reason to choose someone else as their LC:

We started talking about how we wanted to be each other’s Legacy and not our husbands, because they would never think about that, and it would be years later the profile would still be there. Like, her husband would be working and taking care of the kids and doing things... her page, I don’t think, would be necessarily a priority. (Claire, P7)

Claire’s being chosen as her friend’s legacy contact implies an expectation that some technical duties would be involved in her role. Yet our participants rarely discussed technical duties, and instead described what social responsibilities their chosen LC would have. The social responsibilities our participants described were usually broad, as in Louanna’s “take care of everything.” The lack of specificity in such statements are consequential because it is connected to AHs choosing LCs that would have other, similar social responsibilities in the case of their death. Grouping a Facebook memorial with other responsibilities, without any detailed understanding of how memorialized profiles work, means that there was not any consideration of a person’s comfort or capability with the tool itself. Greater considerations were given to understanding of the person and relationship:

I chose [my husband] because he's my best friend. You know, he would always keep my sense of humor alive. He knows my sense of humor better than anybody. That way, you can still see folks in other circles, what they'd also like to remember of me. (Judy, P27)

Judy's preferences are distinctly social: her first thoughts are of how her personality would come through on her memorialized profile, and how her various groups of friends might connect there. The mechanics of how Facebook would work were generally an afterthought for our participants; their choices were much more about who knew them well enough to make choices they would approve of:

Actually we even talked a few days after that and we didn't even bring it up. I think it's pretty straightforward. Maybe 'cause I know her so well so if anything were to happen I know exactly what she would prefer, what she would want. (Adila, P13)

In asking our participants about how they discussed the selection process with their closest Person, most responded like Adila, explaining that they had very short conversations if they had one at all. I found that the lack of in-depth conversations was tied to the closeness of the AH-LC relationship: AHs selected people that had an established understanding of their deepest values—someone they felt they did not have to explain their wishes to.

Conversations About Choosing a Legacy Contact

In the quote directly above, Adila and her sister did each mention some technical specifics later in our interviews, but they had not discussed those specifics with one another. The relationships between AHs and LCs guided how our participants understood what they were doing during the Legacy Contact setup and notification process. I discuss conversations in detail

here. Over half of our participants (n=17) reported having conversations in Facebook Messenger that only consisted of a few sentences after they set up LC. These conversations typically followed a simple pattern of informing and agreeing, exemplified by the matter-of-fact and transactional account that Amy shared with us:

I picked my sister because she's my little sister. Obviously, I care about her and I trust her. [We didn't talk] until after I already chose her because I know her, and we know each other. [I sent the message,] and she was like, 'Yeah, I got that the other day. That's cool.' I was like, 'All right.' So we're pretty chill about that.

(Amy, P4)

Notice that Amy cites her and her sister "knowing each other" as the reason that they did not need to discuss her choice. Her explanation refers to a foundational understanding that exists in close relationships, in which one's familiarity with the other person allows one to infer what the other would prefer in unknown situations. Married participants referred to this type of practical intimacy in how their spouses expected to be responsible for all of their post-mortem affairs, even if online accounts had not been specifically referenced in those past discussions:

I chose my husband because he probably expects that. He feels as though he has access to something, and that seems to make him happy. I think I would offend him if I chose somebody else. (Holly, P1)

In commenting about the offense her husband might feel, Holly indicates how choosing a legacy contact can be an expression of confidence in the relationship. All but one of the 14 spouse/romantic-partner participants reported previous discussions with their partner about their end-of-life wishes that were unrelated to their Legacy Contact selection. Referencing other

conversations about end-of-life preparation indicates that our participants saw Legacy Contact as belonging under the umbrella of decisions that had already been discussed. Sibling and parent/children pairs reported similar assumptions of understanding and closeness. Friends among our participants described one another as like family:

[I chose] a family friend who I've known for quite a few years. And she actually handles all of—not power of attorney, but our healthcare stuff. She covers all of that. She's just somebody who is very trustworthy and somebody who would do exactly what I requested. (Jenna, P11)

Within these family-like friend relationships, all eight participants reported a sense of understanding without any thorough discussion of the feature or setup process:

I picked my best friend. I've known her since I was 12. I mean she's really the only person in my life that I trust right now. I read through [the message] and I think it had a link for help on that page. I'm not sure, but I guess it said that she was going to be my legacy contact. And then she sent the sticker with the face with the real big heart on it. She understood what it was. And she knows why I picked her. Real simple. (Andre, P24)

Andre's message-sticker exchange with his LC could hardly be qualified as a conversation, but seems to have communicated what the two friends considered necessary.

A general assumption among these participants was that, because they had provided instructions or wishes in other areas, they did not need to provide additional instructions for Facebook. However, when end-of-life wishes had never been discussed in any context,

participants still expressed confidence that their understanding of the person was sufficient to guide their actions.

In fact, eleven of our participants reported not having spoken at all with their counterpart about the selection process. In Trent's case, the lack of conversation was for similar reasons to the short conversations that others described: the "death conversation" had already occurred in relation to other affairs:

I'm in the military, so we're pretty practical, and have wills and power of attorneys and stuff like that. I've been through several deployments. So she's kind of— that matter is just kind of routine, like, oh, yeah, I updated the will, and you're it. So it's nothing crazy or anything. We haven't discussed it. And really, I don't care what she does, make it a memorial page, delete it or whatever. It's for her, for others. It's not for me. (Trent, P22)

Otherwise, participants who did not discuss LC said they intended to discuss things with their counterpart, and had not yet had a good opportunity to do so. In Chris's case, he only realized his need to ask questions because of the details in our interview:

I guess I'd ask things like would you want me to delete it, would you want me to keep it up. Would you want me to change anything, like the profile picture you were mentioning. I really hadn't thought about it in specific before. (Chris, P26)

We did not follow up with Chris about whether this conversation happened or what it was like, but other interviewees did describe in-depth conversations on this subject. In two cases, the Legacy Contact setup process prompted our participants to have their first serious discussion about their end-of-life wishes with the person they chose. As with short conversations,

participants described wishes that are associated with responsibilities like caring for other loved ones—wishes that are indicative of values rather than specific technical instructions. Shane is a rich example of how significant these social responsibilities can be: he had had significant health issues, and his girlfriend was aware that she might actually need to do the things he was asking for by making her LC. Their tearful conversation included her thanking him for the honor of choosing her, and sincere promises to fulfill the solemn duty she would have:

She had no clue what the hell a legacy contact was. Honestly, it wasn't until I brought it up, 'Hey, did you get any kind of a notification or anything?' She was like, 'Yeah, I got something, but I didn't know what the heck it was.' I guess I was under the assumption that she wasn't going to hear about it until I passed. Once she got a notification about it, we had to sit down and discuss exactly what was entailed in all that and, you know, hopefully to express my wishes of how I wish to be carried forward upon that happening. Like, I have a sister that I haven't spoke to in, I think it's... three years. So I pretty much said that, if I die and she unblocks me and wants to be friends or something, that that's fine. (Shane, P30)

Along with effectively communicating social goals, these conversations proved to be beneficial to the AH-LC relationship overall:

We touched on [the topic of Legacy Contact] a couple times throughout the last couple weeks, initially just a couple sentences. Then we talked about it more because I found out about this interview. I guess, in a way, talking about this has let the two of us grow closer. (Laura, P12)

Though interview questions addressed the technical details of the feature, most participants confessed to not having read or considered those details, and only offered their thoughts on them in the moment. The lack of familiarity with the details suggests that the design decision to prioritize not worrying the chosen LC over providing lengthy, detailed requests may have resulted in this lack of detailed discussions or considerations. Without knowledge of technical details, the conversations that people did have with their AH or LC counterparts were rooted in social responsibilities that led to assumptions about what LCs would be capable of once the profile is memorialized. For all of our participants, AHs and LCs alike expressed confidence that they had communicated (or could communicate) well about their selection and expectations. The next section details more specifics of what expectations our participants described to us, and some technical assumptions about how their social goals might be carried out technically.

Participant Expectations and Social (Mis)alignment

In this section, I detail four of the most common expectations reported by our participants: access and curation, communication, memorialization, and deletion. Because the Legacy Contact system is set up by one person, then used by another, it was important for this study to compare the expectations of the person on each side of the legacy contact request (hereafter, “AH-LC pair”) in addition to understanding each individual’s expectations. We interviewed 9 complete AH-LC pairs to analyze how aligned those 18 participants were with their counterpart, and to consider the possible ramifications of misalignment. The Legacy Contact setup process was designed with the goal of prompting conversations between AHs and the person they had chosen to be their LC (Brubaker & Callison-Burch 2016). That intention is apparent throughout the setup process, especially in the integration of Messenger and the text

suggestion in the message composer interface that “you might want to talk in person.” Brubaker and Callison-Burch detail that the priority in composing this message was to prompt discussion without prompting alarm (Brubaker & Callison-Burch 2016).

In each section below, I first define what expectations participants had of the system and each other, followed by an explanation of how those expectations could break down due to misalignment between people. Alignment of expectations demonstrates the effectiveness of participants’ communications about legacy contact choices. Aligned or misaligned expectations are shown with corresponding arrows between each quote. I include specific examples that distinguish between the social responsibilities and the technical tasks behind participants’ expectations. I conclude by describing some commonalities among the four expectations.

Access and Curation.

The majority of participants expected the LC to have the same level of access to the account that the AH had (n=26). They felt that “super-admin access” (as Trent, P22, said) to the deceased’s profile would be appropriate for the LC to care for the profile. Some participants anticipated this level of access by citing the positive interactions they had noticed on other memorialized profiles, and discussed how a LC’s management could facilitate those interactions:

The reason why I said I would want someone to keep up my Facebook for so many months, maybe up to a year so you can kind of look at it as—I think it’s nice when you see everyone coming together for a person who has passed, their loved ones coming

together, expressing how much love they had for that person and their appreciation to that person. (Adila, P13)

In contrast to the touching expressions Adila described, other participants were aware of how people could interact on the profile in ways that would be harmful. They expected an LC to handle or curate such things:

He should be able to do anything, like if somebody wrote something vulgar, at least he'd be able to delete it. Somebody commented something, and he could delete it. If he couldn't do that, it'd be really upsetting. (Judy, P27)

Jenna (P11) referred to such a situation she had witnessed on a friend's memorial profile that motivated her to set up Legacy Contact:

Our friend who died, he had a marital issue, and unfortunately this female is posting things that the mom had to explain to the kids. They couldn't control who's putting stuff on there. So it's very upsetting because she's trying to protect her children but people will post things that shouldn't be on there. I don't mess around with things. It's very important to me that my profile stuff is staying respectful for my child. (Jenna, P11)

Having seen her friends have a hurtful experience, Jenna expressed relief that a legacy contact would be able to delete hurtful comments that might arise on her own memorial profile. Rather than referring to the available list of Legacy Contacts' capabilities, participants first considered what they wanted to do, then turned to functionality they were familiar with when envisioning how they would accomplish that goal.

Participants' expectations that LCs would have full access, especially for curation, indicates their confidence in the LC's ability to facilitate any tributes or conversations that the bereaved community needed and intervene in any problems that may arise. In short, participants typically expected that choosing a legacy contact meant giving that person the necessary tools to care for their bereaved community.

Most paired participants were aligned in their assumption that the LC would have full access to the AH's memorialized account for the purposes of logistics and community care:

Aligned Expectations:

AH: If I'm gone I may as well let her have full and complete access to it and be able to get at things that she needed to. (Blake, P5)

LC: It allows people to get on the Facebook of people that have passed and to be able to take over their Facebook page. (Kelly, P8)

The words participant pairs used to describe the kind of access the LC gets were non-specific and far-reaching: "full and complete access," "take over," "be in charge," "permission to go in."

In contrast, Susie (P25) was one of four participants who understood the limited access of LCs despite Trent's assumption of more control:

Misaligned Expectations:

AH: She should have super admin control. I'm dead, I wouldn't care, I want her to be in control. (Trent, P22)

LC: It's probably good that we don't get to see all of his personal messages as well. I'm assuming I'd be fine to do it but, maybe if I wasn't emotionally ready, it would just be too much. (Susie, P25)

Even Trent's clear expectation of "super-admin control" was misaligned with that of his chosen LC, Susie. Susie appreciated her lack of complete control in the inability to see his Messages, referring to possible difficult emotions that would inhibit her feeling capable of carrying out some tasks. Their misaligned expectations have two possible consequences. First, Trent may absolve himself of discerning any specific instructions that could help Susie upon his passing. Second, Trent may base some end-of-life preparations upon capabilities that Susie would not have or want, and thus may not complete.

Misaligned expectations among a dyad expose a gap between the AHs' concerns and their LCs' concerns: like Trent, other AHs saw their death as precluding them from perceiving anything happening on Facebook. In contrast, their LCs understood that they, and the AH's contacts, might be pained and possibly not "emotionally ready" to honor the deceased online. Following the wishes of the deceased person matters for the loved ones they leave behind; those wishes being unknown or impossible to follow may add to people's pain and confusion.

Even if emotionally ready to carry out the AH's wishes, LCs may find far fewer capabilities than they expect. Participants' prevalent expectation was that Facebook accounts would function, as Hannah (P15) described, "like a checking account" in which the named person receives unlimited access to what is in the account. Because our participants did not expect limits, they did not discuss specifics. When we prompted them with specific changes the

LC could make, participants discussed photos as important, both as representations of the deceased in their profile or cover photo, and as memories to be shared among the bereaved community.

Aligned Expectations:

AH: My immediate thought was, you know, gee, she'd want to have access to the pictures, like pictures of the land where I grew up. And the reason why is, you know how sometimes people put together those collages of pictures when you pass away? (Blake, P5)

LC: I'd leave up some really important historical things, pictures of the ranch would be super, super important for him. (Kelly, P8)

Our participants discussed sharing and storing photos as a key element of their Facebook interactions, which made photos a common reference point for identifying particular expectations for post-mortem profile management.

Misaligned Expectations:

AH: I don't know what he can do. It's just like, I got a general understanding, but not really deep. (Nelly, P29)

LC: I can manage her profile. I shouldn't be able to read her messages. But other things like updating photos, I can do that. (Drake, P28)

Here, there is no disagreement about photos specifically, but Drake's reference to photos highlights his particular knowledge in contrast to Nelly's reported lack of knowledge. Their different levels of knowledge reflect the lack of urgency AHs felt to fully understand the feature, in comparison to the deep importance that LCs reported. Drake was an outlier in his knowledge

of what LCs can do: only two LCs (Drake and Susie) described their capabilities as limited in any way. Their understanding of specifics may indicate that they read the Help Center information, but neither mentioned doing so. The fact that 28 of our 30 participants had not read all the available information is cause for concern. While I can only speculate on the reasons, possible explanations include a lack of urgency in their minds about the setup process, whether they took it seriously, or whether they assumed they could discuss and learn later. The ability to discuss options as needs arise is a key issue I engage in the next section.

Communication.

The most commonly mentioned LC capability was that of informing the social media world of the AH's death and funeral services, confirming findings from previous research in this context (Brubaker et al. 2014, Mori et al. 2012). However, in the context of post-mortem data management where it might be easy to think in terms of managing accounts and assets, participants instead equated designating a Legacy Contact with choosing the communicator of that sensitive information. AHs we interviewed saw Legacy Contact setup was a way for the AH to be sure that their loved ones would learn of their death through a trusted source, especially for non-mutual friends. In addition to confirming the death, participants expected LCs to engage with people who would expressed condolences:

I'll probably tell her, I want you to keep my Facebook. I want you to respond to the comments of what people say to me. (Adila, P13)

For participants like Adila, acknowledging and validating comments on the memorialized profile is an important way that LCs would be present for the deceased person's loved ones, especially if

physical distance makes communication otherwise difficult. Pete (P18), had a similar expectation for his spouse as his LC, as his social connections were widely dispersed:

For me, because I have friends and family in so many different places, I think it— that purpose of Facebook has more value to me. And I don't stay in regular telephone contact or e-mail contact with all my friends. When there's something to communicate about, we communicate, and that's why Facebook, in the sense that it's like the old bulletin board systems, is very useful. (Pete, P18)

Pete cites Facebook as the easiest way for his LC to inform people of his passing, comparing the communication to a bulletin board: it is public and trusted enough to provide adequate information to more distant connections. Similarly, Debbie, P3, was certain that her LC's act of memorializing her profile would be adequate to inform her Facebook connections of her passing. However, Debbie did not describe what exactly she expected memorialization to entail. Other participants did address the technical and social specifics of the LC memorializing the AH's profile.

The details of each pair's expectations focused on broadly sharing critical information like memorial service details, invitations to other remembrance events, and of course, the fact and details of the account holder's death.

Aligned Expectations:

AH: She should be posting memories, maybe telling people the circumstances of my death and information about the funeral. (Laura, P12)

LC: I'd write a message and kind of tell them what Legacy Contact is, and that we already like had decided it a while before. Or maybe explain it in person and just write 'in memorial' on her wall. (Kyndra, P19)

All participants described Facebook as the easiest way to notify people connected to the AH about their death. Some participants referred to alternative notification strategies of the past, like making numerous phone calls, to demonstrate how Facebook would simplify the process.

Who shared the news of the death also mattered, which is apparent in participants' indications that the LC would be the appropriate person to do so. Yet, more probing questions about this kind of communication revealed that initial notification of the death would not be the LC's only communication responsibility. Along with notifying Laura's connections of her death, Kyndra's comment acknowledged that the memorialized Facebook profile would require some explanation. Participants who referred to explaining their role as legacy contact aimed to avoid confusion for people who primarily keep in touch with the AH on Facebook, highlighting many stakeholders to whom post-mortem stewards may find themselves responsible, beyond the closest loved ones of the account holder. It was common for AH-LC pairs to be misaligned about ongoing communications with the deceased's Facebook contacts. Holly and Greg's discussion of LC communication sticks out both in their misalignment, and in the timeline of their expectations.

Misaligned Expectations:

AH: I hope that they get something out of it, that they find out that they are not the only people who knew me or who cared about me. And that they find some kind of comfort in that, that they see that they're not alone in the world... (Holly, P1)

LC: My role would be making sure that her memory is maintained— that the “brand” of her, for lack of a better term, is still maintained on that level so people can still kind of discover about her and her life and things like that. (Greg, P2)

While both Holly and Greg expressed a focus on the community, their motivations differ: Holly imagines her loved ones using the profile to connect with and support one another, while Greg imagines people staying connected to Holly herself. Their difference could be identified as bereaved-focused vs. deceased-focused.

Misalignments of focus reflect the account holder’s acknowledgement of their loved ones’ potential connections to one another through the death. Concurrently, legacy contacts tend to recognize the continuing bonds with the AH that could be maintained through the profile over time (Kasket 2012). Misaligned expectations about the LC’s communication with the AH’s Facebook friends are most consequential to non-mutual friends and the AH’s more distant connections. If the AH expects Facebook to serve a core communication purpose, they may not prepare other methods of contact for the LC to reach their friends. If the LC is unwilling or unable to communicate about the AH’s death over Facebook, the non-mutual or distant friends may not learn about the AH’s death in time to respond how they wish. In terms of urgent responses, the consequences of misaligned communication expectations decrease over time. The indefinite timeline of activities that maintain one’s memory leads to an interesting discrepancy in the use of the term “memorialization,” which I explain next.

Memorialization.

In a technical sense, “memorialization” refers to changing the profile from a state of active use by the account holder to a preserved state that allows for reminiscence. Most participants expected that their chosen legacy contact would be the one to “press the button” to make that change. It was important to our participants that their online connections understood that a specific loved one had memorialized the profile, rather than wondering how it had happened or assuming it had happened automatically. Debbie discussed seeing this type of confusion on other memorialized profiles, and how she saw setting up Legacy Contact as the way to mitigate that confusion: “Memorializing should be my son’s job, not Facebook’s” (Debbie, P3). No participants could describe what steps to take to memorialize a profile. In fact, some indicated an expectation that the memorialization of the profile, and their ensuing management capabilities, would be automatic:

People would write stuff on my wall... if it says RIP 100 times, they have a crazy algorithm that knows... it would know, just how it’s linked to my Amazon and suggests stuff I just looked at. There’d be a public announcement from family members, then people would post sad faces. (Trent, P22)

The prevalence of participants’ expectation that Facebook can “just know” when a user has died is related to their everyday experiences with the account. Trent had noticed that the system knows he is shopping on other sites, so his perception of Facebook’s omniscience extends to his mortal status. In contrast, others expected memorialization to be a manual request on their part:

I’m assuming that it would have to be me that would activate it or that would put it into deceased mode. (Susie, P25)

Participants' general lack of understanding complicates what Debbie may have meant by "memorializing" being her son's job. All AHs and LCs agreed that making the profile a memorial space would be the LC's responsibility, yet did not clarify whether "memorializing" meant simply requesting that the profile be changed, or the ongoing management of the profile as a memorial space. Participants spoke of that act possibly being part of the features to which the LC has access within the deceased's profile, or of them only needing to confirm the death rather than report it. Given that on Facebook none of the legacy contact's capabilities are available until after someone has requested memorialization, it does not bode well that none of our participants seemed aware of how to make such a request.

Expectations between AHs and LCs around memorialization were almost always aligned. However, there were nuances in their expectations that lead to the social use of the term "memorialization":

[Legacy Contact] gives somebody the option of making it a memorial account or something to that effect, and make it like a memorial-type thing in case something should happen to me. (Amy, P4)

Amy's choice of words, "making it a memorial-type thing," equates the AH's Facebook profile to other memorials: along with verifying the death, memorials may be public, often-visited, or contain an ongoing collection of condolences for those grieving the loss. Amy expected her LC to be in charge of sustaining this memorial, referring back to the access and management capabilities described above.

Patrick, meanwhile, indicated that his mother (Debbie) would have preferences about how she would like to be memorialized. In considering Debbie's preferences, Patrick expected that there would be a way to manage a memorialized profile that would not be to her preferences. He is misaligned with Debbie's expectation that memorialization should be entirely up to him:

Misaligned Expectations:

AH: Memorialization should be my son's job, not Facebook's. (Debbie, P3)

LC: I think my responsibility would be to make sure that my mom is memorialized, as well as I know how she would like it on Facebook. (Patrick, P9)

Laura (P12) had a similar perspective to Debbie, that the LC should be "confirming the person had died," while her LC Kyndra (P19) implied that "making it a memorial thing" would be an ongoing responsibility for her to be in charge of.

Participants' preference for LCs to be the one to trigger memorialization may suggest that, in addition to the communication expectations we've discussed, even the simple task of memorializing a profile has important social meaning. In this way, assigning a legacy contact can be seen as an extension of identifying one's next-of-kin, and memorializing the profile may be seen as a socially meaningful responsibility. Memorialization was not the permanent desired outcome for all participants; we also discussed the preference of deleting a profile after death.

Deletion.

Most participants expected the LC to be able to delete the deceased's account. In fact, most participants viewed the legacy contact setup as a choice of who should be allowed to

memorialize, and subsequently delete the profile. The purposes for memorialize-then-delete expectations involved informing the community of the death, informing the community of memorial services, allowing people time to collect photos or post stories for others to remember, then freeing the loved ones from unexpected interactions with the deceased's digital presence.

I know there's been many debates and a lot of court cases where people want their family member's Facebook shut down. I didn't want that to be on anybody. So I figured if I were to [make her my LC] she could just do what I wanted her to do to begin with.
(Jenna, P11)

Jenna's assumption reveals that her goal in making her friend her LC was to remove legal barriers and make managing her Facebook account easy. While Jenna had specified that having the account

“shut down” was her ultimate expectation, others wanted deletion to be up to their LC:

I would want her to be the one to be in charge of that. I would like her to be— to make the call of whether this account should be closed or if she would need some information from my account that would be valuable, and then she would deactivate it. (Rasha, P14)

It is unclear whether “close” or “deactivate” meant the same thing to Rasha as “memorialize” or “delete.” However, while Rasha did not provide specific technical expectations, it is clear that she felt her LC should have options rather than instructions. Trent, P22, expressed a similar expectation:

It's essentially a way for me to give her the level of control to edit, delete, take it offline, or whatever she wanted to do with it, for the most part. That's my understanding of it, but I didn't really read too much into it. (Trent, P22)

Trent confessed his uncertainty about how LC works, and so was aware that his expectations of what his spouse could do as LC could be incorrect. Even so, his overall desire was clear: his wife should do “whatever she wanted,” rather than need his instructions. He later explained why her preferences should dictate what would be done with his profile:

If I pass away, it’s not for me anyway. Like, I don’t really care what’s on there, but I’m sure my wife will care. That’s really why I put her on. If she decides to turn it into a memorial page or whatever. Again, it’s not for me. (Trent, P22)

In these examples, participants expected deletion to be an option for LCs, but differences emerged among pairs in whether and how deletion should actually be completed. Deletion is the category in which we found the most misalignments between AHs and their LCs. For example, Debbie and Patrick had different timelines in mind:

Misaligned Expectations:

AH: If I pass, my son should memorialize it, wait about a month or so, then deactivate it.
(Debbie, P3)

LC: I’m going to say maybe three to six months, to give people a fair amount of time to go through what they should go through. (Patrick, P9)

In this example, both Debbie and Patrick expected a delay in deletion, but only Patrick explained the purpose for that delay: his mother’s friends would need to “go through” her Facebook profile for personal reasons. Others who expected delayed deletion specified that people would want to post condolences, connect with others who were grieving, or retrieve photos that may not exist elsewhere. A misaligned expectation of the timeline of the memorialized profile’s use is

consequential due to the activities that the AH does not anticipate. This may lead to AHs unintentionally preventing actions that their loved ones would eventually need to complete. Some misalignments occurred because AHs were ambivalent about whether their profile should be deleted after their deaths (as Hannah says below), but some, like Blake, P5, had second thoughts upon realizing that their data, like photos and videos, would be deleted too.

With considerations varying from saving meaningful content to ensuring broad knowledge of the death, all AHs expressed that the decision to delete their profile would be best left up to the LC, and expected a short time frame for the memorialized profile to be needed. In contrast, LCs generally reported reluctance to delete the account, and had a longer timeline in mind for the profile than the AH did (as in Debbie and Patrick's statements above).

Misaligned Expectations:

AH: If I'm dead, then my Facebook account should be gone. And I would want her to be the one to be in charge of that, to get rid of it. (Rasha, P14)

LC: I would keep it. I wouldn't delete it. (Adila, P13)

AH: He can go in and get access to my information and to shut it down or whatever.

(Hannah, P15)

LC: Later on, people may be looking for historical references to my wife, and grandkids could be looking for stories about grandma, doing family history and trying to make some connections. (Ben, P23)

Of all of our participants, Ben considered the longest time frame, discussing how future generations might use a memorialized profile to learn about his girlfriend Hannah. Hannah did

not consider the same time frame, saying he could “shut it down.” Our participants’ misalignments about deletion represent a division between AHs and LCs about time: AHs do not mind (and in some cases even prefer) their profile being deleted, while LCs anticipate valuing it over a longer period of time. AH preferences here indicate again that they feel precluded from being impacted by post-mortem interactions on their Facebook, and thus may consider their profile to be indicative of their actual presence: once they are physically gone, they should be digitally gone too.

Commonalities Among Expectations.

Over all four types of our participants’ expectations, there is a strong theme of selflessness among account holders. No one wanted to declare their own importance, or specify the narrative of their lasting memory. Trent’s statement affirms the reality that our legacies are always written by others. Whether romantic partners, friends, or relatives, AHs chose their LC because of both the honest and/or favorable legacy they would construct, and because of their capacity to care for their loved ones by proxy. Because a care-by-proxy expectation exists for other end-of-life responsibilities that people take on for those they love, it makes sense that our participants would insert Legacy Contact into their existing mental frameworks, as Greg, P2, did:

You know, most people, a part of their life involves Facebook, so... I assumed this sort of thing already existed in a weird sort of way. (Greg, P2)

Though Greg did not specify what exactly he presumed to exist before Legacy Contact launched, he expressed an underlying general expectation that, in taking care of someone’s affairs after their death, Facebook would contain options that would be available to the appropriate people. I

found that, based on each of the expectations described above, our participants had no indications that Facebook's post-mortem profile management options would be drastically different from any other post-mortem management task.

Without thorough communication, one might assume that AH-LC pairs would not have aligning expectations about what the LC's responsibilities would be. Yet our analysis shows that the overall expectations of each pair tend to be strongly aligned. Sometimes, pairs were not aligned or their expectations were too broad or vague for us to reliably determine alignment. However, in all of these cases, AHs expressed confidence that any choices or actions taken by the LC would be appropriate and aligned with the AHs preferences (even if unspecified). Counter-intuitively, misalignments between people's expectations and system functionality become even more troublesome when AHs and LCs are aligned in their expectations. While misalignments between AHs and LCs might prompt discussion and investigation into actual functionality, which in turn could help resolve misunderstandings, ACs and LCs who are aligned might actually result in the exact opposite effect. AHs and LCs who were aligned in their expectations about Legacy Contact but misaligned with the system's actual functionality were often confident in their incorrect view of how the system works. In the data I saw numerous instances of pairs overlooking technical details to instead focus on each other's personal needs. Their alignment may serve to reinforce their understanding of the system, even when incorrect.

Having established what expectations our participants had as individuals, we proceeded to analyze how expectations aligned between participants and the system's actual capabilities,

with special consideration for sets of expectations that might prove problematic—or even painful—in the event of the account holder’s death.

Technical Misalignments and their Social Consequences

While in the previous section I discussed the expectations and responsibilities, here I revisit those findings with an eye towards technical capabilities the system actually provides. Participants tended to expect that an LC would receive full access to the AH’s account once memorialized. However, the design of Legacy Contact explicitly adopted stewardship as a model given the issues that inheritance presents for social media (Brubaker & Callison-Burch 2016). The differences between our participants’ expectations of Legacy Contact and the actual experiences with Legacy Contact documented in prior work (Gach & Brubaker 2020) suggests possible difficulties that our participants may face based on the current understanding of the system. In Table 2, I summarize our data by comparing the realities of how Legacy Contact works (as described Chapter 3, and further described in (Brubaker & Callison-Burch 2016) and (Facebook 2019)) with the expectations our participants reported during our interviews.

Common Expectations	Actual System Capabilities
The LC will get full access to AH’s account after the AH dies.	The LC is not granted full access to the AH’s account. LC capabilities are limited to the actions listed in Chapter 4.
The LC can delete inappropriate content posted to the memorialized profile by others.	At the time of these interviews, LCs could not delete any posts on the memorialized profile. Friends of the profile could report harmful posts (as on any active profile), which does not guarantee deletion.

<p>It is the responsibility of the LC to inform the AH's network of the AH's death.</p>	<p>Legacy Contact does not provide any way to directly communicate with individuals in the AH's network. The LC can pin a public, informational post to the top of the memorialized profile, which retains its prominent position even when subsequent timeline posts are added.</p>
<p>Memorializing the profile is the LC's job, and the capability to memorialize the account is uniquely available to the LC within the AH's profile settings. In cases where deletion of the AH's account was desired, the LC can first save photos for offline use.</p>	<p>Anyone in possession of a death certificate can request that an account be memorialized by completing an online form and providing documentation. Requests are reviewed by a member of Facebook's Community Operations team who verifies the account holder is deceased prior to memorializing the account.</p>
<p>In cases where deletion of the AH's account was desired, the LC can first save photos for offline use.</p>	<p>The AH's photo albums and tags remain intact. The LC can (if the AH had allowed) download an archive of all the AH's Facebook data. At the time of these interviews, it was not possible for a memorialized account to be deleted.</p>

Table 2. Comparison between participant expectations and system capabilities.

Of the expectations and capabilities listed here, LC's lack of full access to the account to be the most consequential. Our participants expected full access in order to care for the AH's community in the ways requested or imagined. Furthermore, in cases where the LC had the AH's username and password, memorialization presents an additional challenge. Signing into an account is not possible after it has been memorialized, which could leave LCs feeling unjustly locked out of the AH's account. For these specific participants, it is only possible to know that they felt hypothetically capable of stewarding the memorialized profile post-mortem, as they had no hands-on knowledge of the management tools. At a granular level, participants expected the

system to allow them to curate posts on the timeline (which is not possible)³ as well as pin informative posts, changing the profile and cover photos, and accepting new friend requests (which are possible). The specific circumstances of bereaved individuals and communities vary widely, and the actual needs of those who would be grieving the AH could not be known until their death.

The unknowability of the community's needs made answers to specific questions difficult for participants to articulate. The expectations people had of Legacy Contact as a feature, and that AHs and LCs had of each other, were typically discussed in broad, even vague terms. Vagueness is cause for concern because it means that even when AH and LCs are aligned in their expectations, LCs may not be exposed to unfamiliar and specific decisions to be made until after the AH has passed away, and consulting them has become impossible. It is also concerning that participants' expectations were reinforced by their brief communications, and nothing within the system had indicated that their expectations might not be accurate. While these broad expectations might provide some leeway in other contexts, when considering post-mortem systems they present a serious problem. After a profile is memorialized, settings cannot be adjusted over time as issues arise and needs change.

Legacy Contact functionality is only activated post-mortem, meaning that LCs will only encounter issues after the AH has died and when settings can no longer be changed. Moreover, the expectations AHs and LCs have of each other are emotionally charged, making it all the

³ As of April 2019, it is possible for LCs to curate Tribute posts and request the deletion of the memorialized profile they manage (Facebook 2019).

more important to avoid misalignments between people's expectations and system capabilities. The finality of activating a legacy contact's capabilities makes it all the more important to ensure that the pair's accurate and mutual understanding is confirmed while they are still able to make changes. Aligned expectations for something as sensitive as managing someone's memorial reflect shared values between the two people, making it all the more critical for alignment to be achieved and respected in the context of post-mortem designs. If the LC were to find their value-based expectations impossible to meet within the system capabilities, that impossibility positions the system as contrary to the values in that relationship—an especially serious and personal violation for someone who has just lost a loved one.

Both existing post-mortem management setup processes by Facebook and Google are currently framed as hand-offs from an account holder to a designated contact. A simple hand-off would be unproblematic if the AH-LC pair's expectations are aligned with one another and with the system: both people know how the system works, and the AH has specified what the LC should do with their limited capabilities. In situations where the AH and LC are misaligned in their expectations, the LC may feel some frustration, but would be able to fall back on the AH's trust in them to make different decisions than what was specified by the AH. Misaligned technical expectations may be compounded by the alignment (or misalignment) of expectations between AHs and LCs. The most painful consequences would arise in situations where the AH and LC are aligned in expectations that are not possible within the system's capabilities. I find that misalignments between LC expectations and the system's technical capabilities are likely to be the root cause of the difficulties that will be described by active legacy contacts in the next

chapter. Misalignments present the challenge of how post-mortem data management setup processes might be redesigned to ensure both social and technical alignments.

Recognizing and Reconciling Misalignments in Post-mortem Profile Setup

In this section, I start by considering the simple answer to this study’s research question: people simply *did not* form expectations or communicate about their digital legacies. The setup process of Legacy Contact, while achieving many of its design objectives, does not adequately encourage in-depth consideration about memorialization, and as a result, may be the cause of the misalignments described above. Next, I suggest that a departure from focus on efficiency in design, toward known alternatives in HCI, could address general end-of-life planning difficulties described in the “Benefits and Challenges” section, as well as difficulties specific to technology described in the “Advance Planning” section. Finally, I discuss open design challenges for post-mortem profile management systems demonstrated by our work here, and possible paths forward for both research and design in HCI for sensitive life experiences.

Achieving an Aligned Setup

Post-mortem data management systems should allow loved ones to attend to the deceased’s digital affairs. Ideally, account holders and their digital stewards have a shared understanding of the account holder’s expectations and that those expectations are developed in relationship to the functionality the system provides. However, this study demonstrates numerous and often subtle ways that misaligned expectations — between people, or between people and systems — can present significant problems that are unsolvable post-mortem.

Informed by research at the time, implementation of Facebook’s Legacy Contact system was built with two design objectives: 1) “care for the needs of the bereaved community,” and 2) “enable people to make end-of-life choices about their profile and data” (Brubaker & Callison-Burch 2016). Central to their efforts was facilitating conversations between AHs and LCs. Yet as the findings above show, many of our participants “hadn’t really thought about the specifics” (Chris) around post-mortem data management even though they had set up Legacy Contact or been appointed as steward. The lack of awareness about the specifics presents issues for how to design post-mortem data management systems, as well as for how to encourage users to both configure such systems and engage in appropriate conversations with those who will eventually use them.

I find that the alignment framing of the setup process may help explain some of the root causes of the painful experiences surviving loved ones may have with post-mortem profiles, and provide insights for designers aiming to prevent similar experiences for others in the future. If LCs understand that their management capabilities are limited before they ever need those capabilities, they avoid any overwhelm or confusion that might result from unrecognized meanings within data that might arise alongside the grief of the AH’s death.

A simple inclusion of screenshots of the post-mortem steward’s management interface could contribute to people’s understandings of what the platform’s memorial management entails, as it would make the limited functionality evident. This may need to be clarified because the expectation of full access is likely based on the only type of Facebook access that people are aware of: their own. Explicitly disclosing the LC’s limitations may also help prompt in depth

conversation between AHs and LCs by presenting what specific decisions there will be for the LC to consider. While providing detailed information might help to clarify expectations of the system, such instructions are only useful if people engage with them. For that reason, it is important for us to consider the architecture of the setup and onboarding process in post-mortem systems, which I detail next.

Alternative Design Priorities for Setting Up Post-mortem Data Stewardship

At first glance, it might appear that the answer to the research question, “How do people think and communicate about their own social media legacies?” is that people do not do so. Their experiences were efficient and simple. The use of a conventional setup and on-boarding process in the design of post-mortem data management systems would be found adequate by conventional standards. Participants reported little difficulty when selecting a LC and no participants felt overwhelmed by a complex system with too many options. Yet our analysis shows that participants had limited understanding of the system’s functionality and often made inaccurate assumptions.

Meanwhile, coordination between AHs and LCs during setup also initially looks promising. Despite the choice to use an intentionally light-hearted message to facilitate communication between AHs and LCs during setup, AH and LC expectations were generally aligned. However, a closer look at the interactions between AHs and LCs during setup, and the vague expectations they held, point towards some familiar challenges for end-of-life planning, especially regarding technology. In line with the Desirable-to-Inherit Problem (Massimi &

Baecker 2010), participants had trouble articulating any future importance their memorialized Facebook profile could have. They rarely reported any urgency in making specific decisions about it. Prompting meaningful conversations was the goal of using Messenger, supported by a pre-written message that was light and approachable. Yet only two of our 30 participants had any substantive conversations. Moreover, both of these participants had life circumstances that made end-of-life planning more immediately pressing.

Implementing Principles of Slow HCI.

When we consider the unique challenges in existing work on designing for death (see section 2 in this chapter) alongside the findings presented here, we begin to see limitations of designs that prioritize intuitiveness and efficiency. Turning to work on “Slow HCI”, however, provides us ways to reimagine how setting up configuring post-mortem systems might be improved. Slow HCI is an extension of “slow technology” (originally coined by Hallnäs & Redström in 2001), and has been adapted for reminiscence and other thoughtful practices by Odom et al. (Odom et al. 2012). Slow technology describes design principles that stand in contrast to typical “fast technology: efficiency in functionality with respect to a well-defined task” (Hallnäs & Redström 2001, p. 203). Additionally, slow technologies “can aim to invert values of efficiency in the service of supporting experiences of pause, contemplation, and reflection” (Odom et al. 2012, p.817). Slow HCI expands upon Hallnäs & Redström’s work to address interactions that may take place over years rather than seconds (Odom et al. 2012, p.817). Slow HCI design principles provide room for users to take a technological pause for more intentional contemplation of the future, and reflection on the past. Our findings strongly

confirm Odom's research, suggesting that designers can do better to support the bereaved as they perform the hard, heavy work of coping with digital remains.

Consider the objective of promoting meaningful conversations between AH-LC pairs. Applying principles of slow HCI, one might imagine replacing the open ended chat-based approach with a structured conversation process that requires iterative back-and-forth interaction between the account holder and their chosen steward. For example, one prompt might ask each person to choose their favorite photo of the account holder. The system would then prompt the pair to compare their responses, and discuss whether the photo would be fitting as the centerpiece of a memorialized profile.

Slowing down the process of reading and responding to details of the functionality may be a feasible approach to increasing people's presence with one another and awareness of the decisions they are making with each click. Requiring iterative responses would emphasize that each decision should be made thoughtfully and communicated well. A specific choice, followed by a prompt to justify that choice, could reveal each person's motives or values for making those particular choices, in turn revealing potential misaligned expectations between the parties while limiting their discussions to choices the system actually allows.

Design Tensions for Thoughtful Setup

Priorities for interaction design of post-mortem management setup are conflicted between ease and efficiency, and slowness and reflection. Legacy Contact specifically had to work within users' existing expectations of a platform they use for everyday communication, but with some

key differences: setup occurs in the present by a person other than the eventual user, and with long-term ramifications. As Brubaker & Callison-Burch note, there is more at stake in not meeting users' expectations than failing to provide a "magical" experience (2016). A post-mortem management setup process may be one step away from sensitive HCI, as pre-planning for a hypothetical or eventual death is quite different from handling logistics in the aftermath of a death. Yet the considerations for design in advance planning for social media should be the same as those in the area of sensitive HCI, as it involves making decisions for people who will use the technology in the midst of grief.

There are also legal implications to consider when rethinking profile delegation after a death. Any post-mortem data stewardship system is likely required by law or platform policy to focus on the account holder, as the account holder is the legal owner of their data. Yet the active engagement and sense of presence in a person's social media profile complicates metaphors of ownership (Brubaker & Fiesler 2016). The combination of high stakes and limited controls, in combination with the misalignments I describe in this study, indicate that post-mortem systems should reconsider (or at least be skeptical of) using typical setup and onboarding practices. Likewise, our work highlights a difficult tension when attempting to be considerate of sensitive issues: there is a trade-off between simplicity and comprehension in post-mortem interaction design.

Design decisions around Legacy Contact seem to have centered two separate humans in two separate use cases: the account holder before death, and their legacy contact after death. That might work if the account holder is aware of their specific wishes and communicates them to a

steward. In our data, this is rarely the case. Yet further focusing on the preferences of the steward is likely to not be sufficient. The lesson to be learned for post-mortem data management systems is to have both parties engage with the details and become knowledgeable about the platform-related priorities of the deceased. Alignment of understanding can be verified through detailed conversations. Our job as designers and technologists is to set up both parties to know what details they need to discuss.

The findings in this study, when viewed through the lens of Slow HCI, highlight a post-mortem design space with tensions and trade-offs to which designers must attend. While introducing friction to a system may reduce adoption, it can result in a more accurate understanding of a system. I would argue that designers must strike the right balance based on the social consequences of the actions being taken and how long they will endure.

Post-mortem Paradox of Control

In misalignments between our participants and the system, I find a paradox of control and impact: the people who will feel the most impact from the system's configurations will also be the ones with no control over that system. Consider the circumstances that could emerge from the paradox of post-mortem data control: all of our participants expressed at least one expectation that was misaligned with either their counterpart or the actual system functionality. Misaligned expectations are poised to be violated in the event of the account holder's death, resulting in active legacy contacts feeling that the system does not allow them to be adequate stewards of that person's digital memorial. Furthermore, the LC will only discover the misalignment of their expectations in the wake of the AH's death. Specific needs that arise post-mortem (like informing the community of the death) may not be achievable in the way the LC

thought. The direct consequences of a community not being informed are severe: people might miss the funeral, or even not learn that the person has died. Experiencing a lack of information alongside grief will create an extremely negative experience and even affect users' overall well-being. Ensuring communications that could resolve the paradox of control will be a key difficulty in post-mortem data management.

To address the paradox of control over post-mortem data, designers of post-mortem data management systems should consider how to expose people to examples of the system's function during the setup process. In the absence of extensive conversations between the AH and LC, or independent research by either person, the way Legacy Contact functionality was explained during setup may be partially at fault for misalignments: the information focuses on what LCs can do, rather than on what they cannot. At the time of this writing, lists of LC capabilities are the only available information on Facebook's Help Center. Creating a system that specifies what the post-mortem steward's controls are and prompts conversation about those granular decisions is in line with mental health professionals' practices for death-related conversations as described in the Related Works section of this chapter.

Overall, our findings indicate that setup processes for post-mortem social media account stewardship need to be different from typical onboarding that can be finished quickly. I recommend a slow, iterative, interactive, and thoughtful process that engages all relevant parties with specific options that will be available to the steward in the event of the account holder's death. One option, for example, might include a test profile that would allow both the account holder and their chosen steward to test and comment on various post-mortem management

capabilities together. I recommend that post-mortem profile stewardship systems be designed with setup processes that consider the constellations of people who come together and rely on one another in both advance planning and in technological tasks post-mortem.

Though platform solutions to post-mortem data management may widely vary, people taking time for contemplation with practices that are independent of the platform may lead to better choices. For decision-making around post-mortem management of social media accounts, people must first understand what is possible within the system, then have a guiding structure to discuss what their specific might be with their closest loved ones. In the absence of declared wishes from an account holder who has already passed away when management needs to happen, surviving loved ones may turn to existing ritual patterns in their cultures and communities to slow themselves down and take time to consider their choices together. This concept is further explored in Study 4.

Conclusion

Legacy Contact is an important and illustrative first step in enabling people who use social media to care for the bereaved, especially when something like a mundane photo album becomes a site of sacred remembrance. The people we talked with were able to choose (or be chosen by) a close, trusted person to care for their post-mortem profile, and all of them felt confident in their communications with that person. However, most participants had mutually formed incorrect expectations about what management capabilities the legacy contact would actually have, and thus were set up for failure if the account holder did die. Misaligned expectations indicate a broken setup process. In order for people who set up post-mortem data

management systems to form and communicate expectations that will successfully enable their chosen person to care for their profile and their loved ones, the setup process may need to confront American cultural reluctance to discuss death, and emphasize the ways that a post-mortem steward's access may be different from normal account access. I suggest that the design of post-mortem management setup processes for social media accounts should implement slow HCI's principles of presence by requiring both account holder and steward to take iterative actions in the process together. In setting up post-mortem managers with accurate expectations, people who do steward a loved one's account will feel more capable to achieve their most important goal: honoring the deceased's wishes by loving who they loved. The next chapter builds upon this study by engaging with people who were actively stewarding a loved one's memorialized Facebook profile as their legacy contact.

6 | Study 2: Experiences of Trust in Post-Mortem Profile Stewardship

While extensive literature has documented some benefits of social media when memorializing the dead (e.g., DeGroot 2018, Lingel 2013, Sofka 2017), the data left behind by deceased people can present challenges as social media platforms continue to weave this content into people’s daily lives (Brubaker et al. 2013). The bereaved may even encounter photos of their lost loved ones as a result of algorithmically curated content (Meyer & Wachter-Boettcher 2016). In a shift from the more private grief of the past century (Walter 2015), families now wrestle with a lack of established etiquette when using social media to notify others of a death (Thrasher 2016), let alone how to handle the persistent social media presence that the deceased themselves created (Carroll & Landry 2010). As new systems are developed to enable people to care for post-mortem profiles, those who care for these profiles do so in uncharted digital territory and alongside other important post-mortem tasks like funeral planning (Brubaker et al. 2014). In the second section in Chapter 2 (Review of Related Literature), I reviewed how designs for online memorials or data inheritance rely on prototypes and hypotheticals about people, their data, and their relationships. This study will examine how well the applied findings from those studies are working in authentic lived experiences.

In this study, also done in collaboration with Jed Brubaker and the Memorialization team at Facebook, we asked, “What are the experiences of people who have to manage a deceased loved one’s profile?” As a case study, we cover the experiences of those “stewarding” post-mortem profiles on Facebook. The stewardship framework focuses on the relationships and

responsibilities that accompany the management of post-mortem data, and stands in contrast with other approaches that focus on ownership (Brubaker et al. 2014). Stewardship has proven useful for post-mortem data management, and was the key framework in the design and implementation of Legacy Contact at Facebook (Brubaker & Callison-Burch 2016). While Brubaker et al. identified the relationships and responsibilities that were formative to the design of Legacy Contact, their research was based on hypothetical designs (2016). In the absence of a deployed system, research has so far been limited by the inability to evaluate these systems with people's actual lived experiences. This study addresses that gap. The experiences of active legacy contacts speak to the specific challenges of stewarding post-mortem profiles, while also reflecting known difficulties that people face when handling the digital affairs of their deceased loved ones.

I report on an analysis of 28 in-depth interviews with people acting as legacy contacts for the memorialized Facebook profile of a loved one. I describe their experiences, with a focus on the responsibilities and challenges of managing post-mortem profiles. While Facebook's Legacy Contact feature is often helpful to those stewarding profiles, they still experience difficulties. I found that legacy contacts' priorities—and frustrations—stem from their views of trust, particularly when the responsibilities with which they felt entrusted were limited by the functionality of the system.

Building on this finding, I examine trust in two ways: its implementation in existing post-mortem data management systems, and its role in emerging digital grief practices. I pose questions about how interpersonal trust is operationalized within data systems and about the significant points of tension and breakdown when these systems fail people.

I conclude that the current difficulties in post-mortem data management are due to a disconnect between how systems technically implement trust and people's expectations that are based on an open-ended form of trust within their relationships. In the context of post-mortem data and digital memorials, I argue that trust is the assignment of managing ambiguity to an individual who is perceived to be capable of balancing the values of the deceased with the needs of the deceased's social network. I offer this definition to guide designers of post-mortem data management systems in considering the social significance of stewarding a digital identity. Finally, I consider how the current affordances of social media systems may be unsuited for the needs of digital heirs.

Trust and Stewardship

Our study builds on previous work that approaches post-mortem data management as a form of "stewardship." As Brubaker et al. describe, "stewardship focuses upon carrying out responsibilities *entrusted* to the steward" (Brubaker et al. 2014, p. 4158) (emphasis added). Brubaker et al. situate trust as essential to stewardship, yet do not provide an explicit definition. In our study, we found that both the designs around stewardship and our participants discuss responsibilities in terms of "trust," but these definitions of trust were almost always implicit. Our current analysis highlights the role that trust, in its multiple forms, plays in the work of stewarding a post-mortem profile, and elaborates on the nature of trust within the context of stewardship. To ground our analysis, I first address scholarly definitions of and problems regarding trust in social and computer sciences. I then connect this scholarship to post-mortem

data management and the design of related systems, as those technologies and techniques are what people must be entrusted with after a death.

Understanding and Implementing Trust

While there is an enormous body of work regarding trust across many disciplines, social computing scholars most often address trust in terms of interpersonal trust and impersonal trust. Interpersonal trust is concerned with delegation to and reliability of another person (e.g., “if I ask something of this person, will they follow through?”), while impersonal trust focuses on the reliability of systems and organizations (e.g., “If I send an email to this person, will they receive it?”). Both types of trust are avenues for managing expectations and reducing complexity in interactions, but have key differences in practice.

Interpersonal Trust in Social Computing

HCI and social computing scholarship have attended to interpersonal trust since their beginnings. Previous research generally describes interpersonal trust in line with Li et al.'s definition: “the willingness of accepting vulnerability or risk based on expectations regarding another person’s behavior” (Li et al. 2016). Interpersonal trust has been of particular interest within the CSCW community. In the context of email, for example, Rocco found that people struggled to establish interpersonal trust when tasks were coordinated over email, but that in-person communication could establish and repair interpersonal expectations, thus increasing a sense of trust (1998).

Beyond email, researchers have studied many communication systems to address virtual trust in work environments. For example, Knowles et al. researched “the difficulties of trust surrounding remote work activities” (Knowles et al. 2014, p. 328), addressing the problem of the “unseen person” (Handy 1995) that an employer must entrust with tasks across time and distance. Meanwhile, in the context of e-commerce, Greenspan et al. found that trust is more easily achieved between businesses and their customers when real-time interaction is possible (2000). In each of these studies, it is evident that trust is best established when communicating persons are visible to one other and communication is synchronous.

HCI scholarship has also found connections between interpersonal trust and control. In extreme situations like civil unrest, Semaan and Mark found that trust offers a sense of control, and that technology can facilitate recovery of interpersonal trust among neighbors (2011). However, Birnholtz et al. find validity in concerns about issues like dishonesty when communicating via technology: people do lie, but in efforts to maintain social cohesion (2010). It is important to know of such nuanced behaviors because the opportunity to lie is part of trust. The necessity of that opportunity makes sense when we understand trust as “a tool for complexity reduction” (Abdul-Rahman & Hailes 2000).

Systems Approaches to Interpersonal Trust

Designers and HCI scholars have made specific efforts to design for trust, but their efforts have varied. Erickson and Kellogg’s seminal paper on social translucence argued that designers should “make social information visible” with accountability, visibility, and awareness (Erickson & Kellogg 2000). Social translucence is present in systems that communicate social

cues, enabling clearer context among participants. To this end, researchers have used “trust models” (Knowles et al. 2015), reputation measurements (Abdul-Rahman & Hailes 2000), and visual indicators (Marwick & boyd 2011a) to communicate elements of interpersonal trust in systems. For example, Marwick and boyd examined verification on Twitter and found that perceptions of authentic intimate disclosure from verified accounts gives people a sense of trust in those celebrities (2011a). A Twitter verification badge is a design solution that communicates accountability, and therefore supports user trust in celebrity communications.

Impersonal Trust

In the broader ACM community a conceptually different set of questions focuses on impersonal trust, or how people trust the technical systems with which they interact. There are two sides to impersonal trust: Does the system behave as expected? And is the system guarded against the interference of malicious actors? Impersonal trust is most notably associated with trustworthy computing (Mundie et al. 2002), and is a system-centric approach to designing technology that is secure, private, reliable, and responsive. Authentication, encryption, and access control lists are quintessential strategies for impersonal trust.

In the context of social media and system design, impersonal trust is often managed through configurations of account settings and personal data, from login credentials, to privacy settings, to accepted friend requests. The management of impersonal trust on social media finds its foundation in work from computer security that focuses on identity verification, account credentials, and authorizing access to resources (Jakobsson 2016, Kim 2014). Trust in social media has also been extended to recent issues of news credibility, an area in which indicators of

trustworthiness may be able to help readers distinguish between accurate information and misinformation (Zhang et al. 2018). Just as Knowles et al. addresses whether coworkers trust the accuracy of data produced within task tracking systems (2014), impersonal trust extends to social media in users' trust that the system accurately represents their privacy and relationships. Framing impersonal trust as "technology trust," Lankton & McKnight finds that Facebook specifically "may demonstrate either interpersonal or technology trust characteristics" (2011). The result is that people may trust Facebook as a "quasi-person," further muddling distinctions between interpersonal and impersonal trust (ibid.).

Combining Trusts in HCI

Though "interpersonal" and "impersonal" are respectively recognized as social and technical approaches to trust, the systems we build and study in social computing research constantly deal with both approaches in combination. In the context of HCI and social computing, Knowles et al. tells us that a primary indicator of distrust between people is micromanagement (2015). For a system to both work well and communicate trust to a person, it must provide the ability to make choices, mistakes, and corrections: "give them opportunities to fail... and then make sure they don't fail" (Knowles et al. 2015, p. 332). While establishing trust is central to any relationship, trust is further complicated when interpersonal interactions are mediated by technology. As Handy wrote, "E-mail and voice mail have many attractions, but they are not the same as watching the eyes of others" (Handy 1995).

Pervasive yet undefined references to trust in HCI work speak to the complexity and importance of relationships between people and systems. Throughout HCI literature, we see that

trust is established and maintained through regular interactions in which one party is vulnerable and the other meets their expectations. The key needs of trust interactions — vulnerability, openness, and real-time interaction — are parallel to the principles of social translucence (Erickson & Kellogg 2000). However, as Ackerman highlights, there is often “a fundamental mismatch between what is required socially and what we can do technically,” what he refers to as the socio-technical gap (Ackerman 2000). The context of death and post-mortem management presents an additional design challenge: how might a computational system support nuanced forms of interpersonal trust when one of the trusting parties is deceased? Supporting these forms of trust is further complicated by the ambiguous and underspecified expectations that constitute this trust.

Trust in Death

Trust is a foundational aspect of familiar offline practices related to death. Final wishes and funerary preferences shared with loved ones are examples of interpersonal trust. Yet preferences can also be formalized through advanced directives, wills, and “Do Not Resuscitate” orders. Formal directives such as these resemble forms of impersonal trust in that they ensure actions are performed according to a person’s wishes. The complexities in how these two types of trust play out are well-known among estate planners, who may rely on impersonal mediation clauses or family court proceedings to settle disputes among loved ones (Love & Sterk 2008).

In contrast to its explicit role in formalized end-of-life wishes, trust has been a predominantly implicit aspect of the systems, studies, and design work in post-mortem data management (Brubaker et al. 2014, Moncur & Kirk 2014). Yet trust has also been an explicit (if

unexamined) part of design, as in the pre-written Legacy Contact message I will describe below. There are important parallels between virtual trust and post-mortem data management. Just as virtual trust in remote work addresses the “unseen person,” trust in post-mortem data management involves a person who is absent: either in death, or in their role not existing until the death of the trustor.

Post-mortem trust is an especially complex problem on Facebook because people are not just inheriting data, but using memorialized profiles to maintain bonds with the deceased and the deceased’s network (Bouc et al. 2016, p. 17). This problem is further complicated for the legacy contact—the executor of this “digital will”—who may not have instructions about how the data should be handled (Micklitz et al. 2013). In the convergence of data and death, we find especially complex issues in how people trust others through technology, and in how they trust in the technology itself.

Methods and Analysis

To understand the experience of managing a loved one’s post-mortem profile, we conducted a qualitative study of 28 semi-structured interviews with adult Facebook account holders (10 men, 18 women, aged 20-65) in the United States who were acting as LCs for a memorialized profile (see the table below for participant demographics). Participants were recruited through a screener survey administered on Facebook to current legacy contacts. One advantage of a screener survey is that it allows people to opt in to the research if they feel willing, able, and interested. However, I acknowledge that selection bias is a limitation in this

study. With guidance from the CU Boulder ethics board, we contacted participants who expressed interest in participating in our study and re-consented them prior to their participation in their interview. Interviews ranged in length from 45 to 90 minutes, and were conducted over video communication services such as Skype or Google Hangouts (N=15), or over the phone (N=13).

NUMBER	RELATION TO AH	SELF-SELECTED	AGE	RELIGIOUS AFFILIATION
P1	Son	Yes	35	None
P2	Grandson	Yes	40	Catholic
P3	Daughter	Yes	20	Christian
P4	Friend	Yes	30	None
P5	Spouse	No	49	Jewish
P6	Spouse	Yes	41	Christian
P7	Spouse	Yes	41	Christian
P8	Friend	No	62	Protestant
P9	Daughter	Yes	28	Christian
P10	Spouse	Yes	65	Unknown
P11	Son	No	18	Baptist
P12	Daughter	Yes	41	Atheist (Jewish Background)
P13	Daughter	Yes	32	Christian
P14	Spouse	Yes	35	None
P15	Daughter	Yes	35	None
P16	Son	Yes	36	Christian
P17	Daughter	Yes	34	None
P18	Spouse	Yes	27	None
P19	Son	Yes	60	Christian
P20	Daughter	Yes	44	None
P21	Son	Yes	30	Christian
P22	Daughter	No	40	Baptist
P23	Daughter	Yes	55	Christian
P24	Sibling	No	38	Catholic
P25	Friend	No	63	Christian
P26	Friend	No	42	None (Jewish Background)
P27	Spouse	No	55	None
P28	Sibling	Yes	34	Christian

Table 3. List of participants and demographic information.

At the time of the interviews conducted in these studies, Facebook users would have found the Legacy Contact option in “Security Settings.” The information on this setting slightly differed from the description in Chapter 4, and was as follows:

Choose someone to manage your account after you pass away. They’ll be able to:

- *Pin a post on your Timeline*
- *Respond to new friend requests*
- *Update your profile picture*
- *They won’t be able to post as you or see your messages*

This part of the setup process also contained a check box to allow the LC to download the account’s data archive (or not).

We began each interview by inviting the participant to tell us about the person whose profile they were managing, and how recently that person had passed away. Participants had been active legacy contacts for anywhere from 4 weeks to 18 months at the time of the interview. They also represented a range of relationships to the deceased account holders, including adult children managing the profile of a parent (N=16), widows/widowers (N=6), friends (N=3), siblings or cousins (N=2), and 1 adult grandchild managing the profile of a grandparent. Religious affiliations did not turn out to account for significant differences in Facebook use after a death. Yet that information did provide context for the authors to be aware of the participants’ worldviews and ask appropriate questions. Even so, I note that our study was limited to Facebook account holders in the US, and thus the American forms of their various religious traditions.

Once we had discussed how the profile was memorialized, we asked the participant questions about their use of each specific management capability (listed above), including practical aspects of its functionality, their motivation and reasoning behind using (or not using) the feature, and others' responses to their actions. Sometimes, participants were unaware of certain features. In those cases, we described the feature, and asked them to explain when they would or would not make use of it. In order to capture the breadth of possible needs, we also asked participants for suggestions about how each feature could be improved to meet their specific needs.

We engaged in preliminary analyses of each interview as they were conducted, following the same analytical process described in the previous chapter. Our analysis included details of conversations not communicable in transcripts, such as tone of voice or emotional expressions. To maintain the privacy of our participants, all names and personal details in the quotes below have been changed, obscured, and edited for clarity.

Being a Legacy Contact

I start by describing who legacy contacts (LCs) are, why they believe they were chosen, and how their relationships with account holders (AHs) shape their views. I then describe LC practices, focusing on how they perform the responsibilities entrusted to them through the available functionality. I conclude by sharing three scenarios in which LCs were unable to perform their perceived responsibilities and thus experienced frustration, hurt, and distress. These difficult scenarios demonstrate what I characterize as mistranslated trust, in which LCs

perceive a fundamental misalignment of the system's capabilities related to their identities and practices.

Who is a Legacy Contact?

We found our participants shared six attributes. LCs were most often self-appointed post-mortem by configuring the deceased's account settings, rather than being selected by the account holder pre-mortem as the system was designed. Whether self-selected or selected by the AH, all the LCs we interviewed were close with the AH, were Facebook users adequately familiar with the platform, were willing to serve, and had an existing role managing the AH's affairs.

Additionally, even though only one person can be designated as the legacy contact on the platform, management often involved multiple people coordinating and supporting each other even as the appointed person executed their collective decisions. I describe each of these attributes in more detail below.

Self-selected.

Legacy Contact was designed to give AHs the ability to make choices prior to their death about how they will be remembered on Facebook. Accordingly, our initial interview protocol included questions about discussions our participants had with AHs. However, our first participant explained that no such discussions ever occurred – P1 had used his father's account to set himself as the LC after his father's death. This practice turned out to be common. In fact, even though self-selection was not part of the design, this workaround was the most common way that our participant became LCs (N=20). In all of these cases, participants obtained access to the deceased's account (either by having the password, resetting the password, or a device

remaining signed in), and used this access to select themselves as a legacy contact. They then signed out and requested the memorialization of the deceased's account:

I figured out his email password, so I was able to reset my dad's [Facebook] password, and that's how I got into his account. Then, from there, I was able to name myself a legacy contact. (P20, son)

While these legacy contacts selected themselves, the selection process they described was often done with input or approval from other loved ones of the account holder:

My brother pretty much just said I was [managing our dad's profile]. So I think everybody pretty much just trusts that I would make at least decent decisions about how to approach things on his Facebook page. (P1, son)

Self-selection presents some risks from an account security and policy standpoint, and presents challenges for user experience. For example, prior research has discussed the unease people feel when a loved one uses the deceased's account, sometimes inadvertently posted as the deceased (Brubaker et al. 2013). Our participants indicated that self-selection (as opposed to the intended selection process) was typically the result of the AH being unaware of the feature and not having selected a legacy contact prior to their death. Likewise, many of our participants reported learning about the feature when searching for information about what to do with a loved one's Facebook account following their death. In P1's description, we see how he justified self-selection by referring to the trust of the AH's other loved ones. Below I discuss the attributes of LCs that resulted in them choosing (or in some cases, being asked by family) to serve as the legacy contact.

Close to Account Holder.

All LCs identified themselves as close to the account holder. LCs demonstrated closeness through either legal, biological, or otherwise official relationships, and always expressed emotional closeness. In cases where multiple people were equally close (as with multiple siblings or children of the deceased), participants explained that, like P3 who described her late mother as her “best friend,” they were seen as being most similar to, or having the closest relationship with the deceased:

We’re a close family and I think that’s the thing. So like with [him], the only reason I thought [the legacy contact] should be me was because I’m the closest to him and I’m into Facebook. (P7, widow)

LCs also expressed their views of close relationships in describing who they had selected to manage their own account. P1 described choosing his brother because they “share views on pretty much everything.” Being close to the AH indicated that the LC would be aware of the AH’s larger network of loved ones. In the absence of the AH, LCs reported wanting to care for others in the network:

I feel that in some ways—because she had asked me, and because people had sort of looked to me with the memorial and everything— that I have kind of a responsibility, or even a wish to keep people connected. (P25, friend)

Keeping people connected was a common priority held by all participants. Many LCs reported relying upon Facebook as their only possible method for connecting with friends of the AH they may not have known in their offline lives.

Knowledgeable Facebook User.

Every legacy contact we spoke with had a Facebook account. This is practical, as the Legacy Contact feature allows only Facebook friends of the account holder to be selected. Facebook usership was consequential in cases where there may have been a “more appropriate” person to be the LC, but that person lacked an account. Additionally, most legacy contacts reported being knowledgeable (or considered knowledgeable) about Facebook:

You know, my other sisters wouldn't know what to do. They're not very tech-savvy.

(P23, daughter)

[My dad] is not on Facebook. I think he takes pride in that. (P12, daughter)

Beyond using Facebook, LCs were selected based on their generally-perceived skill with technology. Being considered knowledgeable about technology indicates expectations from the AH's loved ones that the LC would know how to navigate the platform when needs arise.

Willing to Act.

LCs reported that their selection involved being emotionally prepared and willing to perform the expected duties. If the “most appropriate” person for the role of LC did not want to perform the duties, the “next-best” person was chosen. P3, when considering their own wishes, highlighted how 'willingness' was important:

First off, I'd want to know if they'd be willing to [manage the profile], 'cause if they're not willing to do it I don't want to force it on them. (P3, daughter)

As the experience of grief varies greatly between people, whether one would feel “forced” to manage a memorial profile may not be knowable until after the AH has passed away. Even when there had been an opportunity to explicitly discuss selection and willingness with the AH, every LC in these cases reported brief conversations in which they did not discuss specific responsibilities:

We just said that we were each other’s legacy contact. [...] and that’s about it.(P5, widow)

The lack of a detailed discussion about how to handle one’s Facebook profile post-mortem reflects additional realities we learned from our participants. Namely, they were not aware of the actual functionality they would be handed upon memorialization of the AH’s profile. As the AH cannot know what others will need upon their death, they seem to have chosen the LC as someone to whom they could entrust unknowable things. The open-endedness of this kind of trust was evident throughout the LCs’ descriptions of their relationships.

Existing Role in Account Holder’s Life.

In all instances, the LC was someone who had a default role in the AH’s life, meaning they described themselves as the first person the AH had turned to for significant needs. Having built a foundation of trust throughout the relationship, LCs held confidence that AHs would trust them to manage their Facebook profile.

She’s the person I run to. She’s my person. (P3, daughter)

My mom has always trusted my judgment. She could have picked my dad but she wouldn’t have. My dad is actually a very active Facebook user, but... I don’t know, the relationship was just different. (P13, daughter)

LCs viewed their role in the broader context of their relationship with the AH, rather than in terms of specific tasks. In at least nine cases, the self-selected legacy contact was also managing the will, estate, or other end-of-life affairs of the deceased, and saw taking on the role of legacy contact as an extension of these responsibilities. Having such a role justified the LC's self-selection in the absence of the AH's choice. The participant's default role in the AH's life (whatever the nature of that role) resulted in their selection as LC to feel natural, as it was an extension of their role in the offline logistics that surrounded the person's death:

I just was in there [on Facebook] managing all of this at the time, so I just put myself as the contact. And I felt like that was fine, 'cause she had expressed to us that she... you know, that this is what she wanted. And she had given us sort of a whole list of things, both online and off, all of her life-ending wishes. (P4, friend)

Even though we both knew she was terminal, [the Legacy Contact feature] is not something we talked about at all. Just, in very general terms, that I would take care of everything. And I had all her passwords, her will, all that kind of stuff, all her tasks and everything. (P13, daughter)

When the AH did have the foresight to select their own LC, other responsibilities were also discussed in comparison:

His brother was his Power of Attorney, but he trusted me to pay bills and stuff while he was ill. (P8, friend)

LCs in these examples use the unspoken trust embodied in related responsibilities to justify what they should be able to do. Matters of Facebook being discussed in "very general terms" indicates

two things: first, that people are not necessarily aware of any specific terms of managing memorialized profiles, and second, that trust in these relationships exists even without full knowledge of what is being entrusted. In the absence of specific instructions, LCs either did not act, or turned to other people for guidance.

Involves Decisions of Multiple People.

Sometimes a Legacy Contact is not one person, but a delegation of collective action within an intimate group. In the case of P4, while she was designated as the official LC in the system, decisions about the management of the AH's profile were made among a group of the AH's close friends:

We called each other 'cousins,' but I would describe our relationship more as sisters. [...] So since she had said she wanted me to write [her last blog post], and we all kind of felt like there needed to be some kind of closure to the blog, [the] group of us that all grew up together, we co-authored it. [...] And I think her husband trusts us to deal with [the Facebook profile and blog]. It's definitely not something he wants to do, so he's happy to have us do it. (P4, friend)

P4 expressed the importance of each woman feeling included and heard as they remembered their friend. Participants regularly reported the need to consult others about the management of the memorialized profile. The specific reasons varied, but all illustrated the limitations of LC responsibilities sitting with one person alone. P3, for example, discussed how each person she was working with knew different people from the deceased's large network, while P16 regularly consulted others when making decisions as LC to ensure that various people, grieving

differently, would not be negatively impacted. Finally, one refrain was shared by many participants: Being the LC is a lot of work. Group consultations about memorial profile activities were one way that LCs addressed the unspoken expectations in being entrusted with the AH's memory. That trust is defined not by specific requests or instructions, but by an open-ended sense of confidence that the AH would approve of what the LC decides to do. Without specific instructions, LCs felt that they should be able to do "whatever." The lack of specifics in what LCs feel entrusted to do indicate that trust, in these relationships, has few limits. Since trust is broad, the LCs' views of their role are broad.

These six attributes describe who LCs are. Though Legacy Contact was designed to be a part of planning for one's own death, I found that it is more commonly set up post-mortem in a process of family consensus. Note that these participants' characterizations of appropriate LCs are consistent with the deep, trusting relationships described in the previous chapter. Though our interview participants have one or all of these attributes in common, they enact their responsibilities quite differently. I now discuss the specific actions available to LCs within the system.

Enacting Trust on a Memorial Profile

Legacy contacts enacted their responsibilities within the context of the interpersonal trust of the account holder. Given the lack of specifics in people's answers in the previous section, we turned to practices to identify how interpersonal trust was articulated and practiced. In our interviews, participants described which features of Legacy Contact they used or avoided using. In our analysis, we found it most helpful to consider these decisions in terms of how LCs

evaluate the appropriateness of various solutions. Specifically, LCs thought back to what the AH valued, forward to how the AH's network might perceive their actions, and inward to what they would want for their own memorial. We found that LCs exhibited multi-directional thinking to consider the possible results of their management actions, and that their skill in such thinking demonstrated their fitness in the role with which they felt entrusted.

Thinking Back.

We found that LCs thought back when they considered what the AH valued during their lives, and what choices they had made on Facebook that expressed those values. Thinking back happened with specific items on the profile that expressed these aspects of who the AH was, including photos, shared posts, and memories encountered through "On This Day". LCs thought back to the AH's life when they considered how to keep the memorial true to the AH's identity, including their interests, their voice, their appearance, and their various relationships. The resulting decisions, however, could differ.

If she had wanted a [cover] photo, she would have put one up there. (P12, daughter)

He loved bald eagles, so I made a bald eagle the cover photo. (P1, son)

In thinking back, P1 used his knowledge of his father's preferences to make a change to the profile. In contrast, P12 avoided acting with her management capabilities to preserve her mother's choice. With similar priorities, these LCs made different decisions. Discrepancies among LC decisions represent the importance of the LC's ability to customize the memorial according to the community's evolving needs rather than the account holder's fixed preferences.

Thinking Forward.

We found that LCs thought forward when they considered the variety of needs of others who were invested in the memory of the AH. Thinking forward occurred when LCs encountered new content that appeared on the memorial profile or in relation to the AH: pinned posts, messages to the AH, or fielding of new friend requests. When LCs described thinking forward, they focused on caring for everyone connected to the AH, avoiding confusion, and preventing additional distress related to their grieving processes.

I also feel that [posting on the profile] intrudes a little bit on people's lives, 'cause there are still some people that are still very torn up about it, and I don't want that to be thrust upon them in the middle of the day. You know, they just check Facebook on break at work, and all of a sudden, they've got some posting about an anniversary or whatever. And that sentiment will spiral. (P14, widower)

I didn't go in and accept anything because I was all, 'how will they feel having a friend request accepted from someone they know is gone?' So I'm just leaving them alone for now. (P9, daughter)

In these examples of thinking forward, the data again demonstrates that LCs often concluded that inaction was their best choice for reasons that reflect care for the LC's larger network of loved ones, including "how will they feel," or who was "very torn up about it." Thinking forward also influenced discussions of who the LC should be in the first place:

I think she would have chosen me. [...] because you want to pick someone who's going to be around for sure after you are, so more likely you would pick someone younger. So I probably would have been her choice. (P16, daughter)

Considerations of the age of an LC also appear in this theme, suggesting that longevity of the memorial matters. As most of the participants were managing the account of a parent, they alluded to a timeline of several years in which the memorial profile would be used, needed, nice to have, or fulfilling its purpose for others who loved the AH.

Thinking Inward.

We found that LCs thought inward when they relied on their own judgment to make choices in the AH's place. Inward thinking involved considering their own preferences, especially when the AH's values were difficult to identify, such as the choice to delete the profile, or add people who were not previously connected to the AH on Facebook.

I feel like it's not so much what I wouldn't want to be able to do as a legacy contact, but I'm thinking more of my own account and the point where I pass away... I don't want somebody going in and deleting it. (P2, grandson)

Thinking inward about what the LC would want for themselves was about enacting trust amid uncertainty. Inward-thinking choices were strong indicators of the interpersonal trust in the AH-LC relationship because those choices involved the LC feeling justified in applying their own core values to circumstances they could not discuss with the AH.

Again, inaction was common. When our participants considered their own preferences as a guide for what actions to take as an LC, participants predominantly spoke in terms of what should not be done. A paradox emerged in participants' discussions of their choices not to act: though LCs do not wish to perform certain actions, they want the ability to do so:

I kind of like leaving it as it is. But it's also nice knowing I do have that ability [to make changes], if need be. (P2, grandson)

Here, P2 finds comfort in his ability to choose inaction and to respond to any unknown future needs.

[Memorializing, then doing nothing] has been perfect for me. It really has. It acknowledges that she's no longer here, but doesn't put me in a place where I have to make her vanish. I don't know if I was trying to hang on to whatever was there... I didn't want it to be like she didn't exist. (P12, daughter)

For P12, we see that her link to her mother's account as the LC makes the difference between her intentional preservation of the profile, and feeling that her mother has been forgotten.

I mostly just want it to be there for people to look at, because Facebook has played such a big role in our lives over these past few years. There's so much on here, pictures tagged of her, pictures she's posted, and I want to keep it there. The thought of being able to delete it and have it gone in a few clicks really hurts. (P3, daughter)

These three examples indicate that memorialized profiles become meaningful to the AH's loved ones, and that maintenance of that meaningful space, even by inaction, matters to them. Through LCs' descriptions of how they maintained profiles through inaction, we came to understand that access to controls — simply having the option to act — represented the impersonal system's trust in the LC. When LCs did use their management capabilities, it was with great care and consideration:

I did add my parents [to my sibling's profile] eventually. But that was a really hard decision for me because I knew he hadn't added them before. But I talked about it with my husband a lot, and he said, 'Hank put you in charge and he figured you were going to make the right decisions, so whatever decision you make is right.' (P24, sibling)

Notice how P24 relied upon the ambiguity of her sibling's interpersonal trust to find a foothold in acting differently than he did. She described her responsibility with a vague "whatever decision," which appeared in other participant descriptions: "whatever comes up," or "whatever is necessary." So, for LCs, acting in the stead of the AH did not necessitate doing exactly what they did. It did, however, necessitate an understanding of the AH's core values, and making judgments accordingly.

Multi-directional Thinking.

In many cases, making good judgments as LC required more complex multi-directional thinking. In these cases, LC weighed and reconciled competing needs:

I know, for me, it's hard to go on [the profile], but I do. [...] Her friends would go on her page and say, 'Oh, we missed you at the party.' Because it kind of— she was a very— she loved life, and I like to see other people interacting within her Facebook. That's joyful." (P23, daughter)

Here, P23 thought inward to what she personally felt, that looking at her mother's profile was difficult. However, she also exhibits forward thinking in her awareness of other people's needs to connect with the profile. Across our interviews, participants mentioned photos as an especially

complex consideration for LCs, both as a representation of the deceased, and part of how people interact with the memorialized profile:

I changed the profile picture within a day or two of her passing because she had a photo of her bald head as her profile picture. And I figured if we're gonna do a memorial page, it might as well be how she was, not how she wound up. (P14)

Profile photos are the most ubiquitous representation of the AH's identity, and thus a sensitive thing to change. At its core, P14's decision thinks back to photos the AH had chosen for herself before her illness, but also implies more inward thinking about P14's personal preferences. Maintaining the AH's choices was the most commonly-expressed factor in how LCs made their choices, but as demonstrated by P14's choice, it is not universally the best when considering the AH's whole identity. LCs must decide what aspects of the deceased to highlight.

The patterns of how LCs think represent the ways LCs care for an AH's loved ones, especially if those people are unknown to the LC. Backward, forward, and inward considerations are the practical ways LCs address the ambiguity of the AH's interpersonal trust in them. LCs act as a proxy for the deceased, while still being importantly distinct from the deceased. Our participants recognized their power to influence how AHs will be remembered by others. How they use that power, or how they think they should be able to use it, is at the core of the concept of interpersonal trust. When our participants found that the limited functionality constrained their ability to manage an AH's profile, they felt the AH's trust in them had likewise been minimized. In the next section I examine three instances of LCs experiencing such breakdowns between the responsibilities entrusted to them and the functionality provided.

Trust-Related Stress Cases

I have shown that participants felt entrusted with a significant and open-ended role among the loved ones of the account holder. Their understanding of their role, in turn, resulted in an open-ended view of their responsibilities as an LC. With a broad set of expectations and perceptions about what they can do within the feature, our participants felt that they entered into a system with narrow management capabilities.

Throughout our interviews, LCs indicated that they expected the ability to fix any problems that might arise with the memorialized profile. In practice, they found that such broad controls were not available to LCs. While a straightforward approach may have been to enumerate the specific functionalities they found absent, our analysis suggests that the root of their issues stem from the failure of the feature to meet their expectations.

As such, in this section, I share three scenarios that demonstrate the challenges LCs face when they attempt to fit their broad expectations into Facebook's specific memorial management functions. In three particular stress cases, we saw that attempts to exercise interpersonal trust in a system that primarily understands impersonal trust results in LCs feeling that both forms of trust have broken down. In most instances, these stress cases are related to intentional design decisions the team at Facebook made based on the research that existed at the time. These stress cases are instructive to designers of post-mortem systems as they weigh the trade-offs in their own design processes.

Stress Case 1: Notifications.

As noted in the previous section, LCs described their role as doing “whatever is necessary” in an unknown situation, demonstrating that trust is characterized by ambiguity.

When “whatever is necessary” turns out to be impossible within the LC management system, impersonal trust between the LC and the system is broken — and this break is painful. Consider the case of P5: her prior experiences with Facebook led her to believe that she would receive notifications about things that were important to her. However, the design of Legacy Contact involved a conscious decision based on prior research to “reduce automation where possible and encourage interpersonal communication rather than rely on Facebook notifications and configuration” (Brubaker & Callison-Burch 2016), P5 described a deep sense of responsibility to her late husband’s profile as a space where many people were remembering him. P5 explained that she was surprised to not receive any notifications about the activity on his memorialized profile. P5’s expectations were important because notifications were what enabled her to maintain communication with her late husband’s friends. Without checking his profile every day, which she reported could be difficult depending on her emotional state, she was still attempting to maintain the responsibility of responding to activity on the memorialized profile. However, many posts had appeared on the profile unnoticed. She became aware of this discrepancy during the course of her interview:

I wish I would have seen [these posts] sooner. And of course it’s very sad. I mean... I would have been able to Like them earlier. It’s almost as if it appears that I didn’t care about other people who cared about him and that’s not even true. So it would have been nice if I was able to actually see these from the beginning. I don’t understand how I didn’t even see these before because they were so far down I guess because they compressed them. You know how Facebook compresses a lot of things? And that can make it difficult to see because, again, I didn’t see them and I’ve been on this page. (P5)

In some cases, Facebook combines similar, frequent posts into a single carousel frame that the user must click through to read. This had apparently occurred due to the high volume of posts on the profile — posts of which P5 had not been notified. Without notifications, P5 felt that she had failed in her social role of acknowledging and connecting with her late husband's online friends:

Researcher: “Wow. Ok. So because people had posted things to the memorial page and you're the legacy contact, you feel like you had a responsibility to reply to those people?”

P5: Yes... Yes. At least if I would just acknowledge them. Now I mean it's six months later. I mean yes, there's a whole bunch on here actually that I didn't see. That is very concerning. [...] 'cause I've liked some of the comments but going back to — god, it's hard to look at pictures of him. It was— I guess his little sister tagged him and me in this one. So I did see it before but scrolling down the wall — yeah, this actually is, the way they have it set up. I wish I would have been notified with everything that was on here or that I would be in the future notified. [...] I mean there should be a notification if somebody does anything, that will have their post show up on his page so that I can make sure that it's not spam, that it's not inappropriate.

In P5's circumstance, the connection between her and her husband was only reflected in her access to a few management features. In describing this experience, P5 used a helpful analogy:

It's like you're going on vacation and you need your friend to come in and take the mail and everything like that. You give them the keys because [...] it's the mutual understanding that they can trust you with their keys to do whatever they need to do in your house. You can't do that with a legacy account. The person gives you a key, but [...] it's like it opens up a certain room instead of the entire house. (P5)

Nothing within the system could reflect the intricacies of what P5 felt her husband had trusted her to do in communicating with his multitude of online-only friends. Technically speaking, Legacy Contact had implemented the fact of their relationship, but not the open-endedness of their trust.

As an exceptionally knowledgeable Facebook user, P5 had no reason to expect that memorializing her husband's profile would change her reception of notifications. In fact, notifications are not mentioned anywhere in Facebook's Help Center pages about Legacy Contact or Memorialization options (Facebook 2018). The Help Center does explicitly describe the interactions in which memorialized profiles do not appear (i.e., event invitations), but legacy contacts do not have choices about these interactions.

Stress Case 2: Curation.

In the previous stress case, P5 referred to a related concern of “making sure things are not spam.” Her concern is shared by others, like P13 and P14.

[My mom's profile is] really cluttered. When, you know, someone dies and you're going to their page I imagine you just want to remember the things she talked about. You're not interested in who she beat in Candy Crush or Pet Rescue. [...] I want to keep anything that she wrote or anything she shared — I want to keep all of that stuff, who she was.

(P13)

Participants may wish to “declutter” the profile so that it can function as a memorial, rather than the hub of interaction that it was during the AH's life — particularly when Timeline content is

not seen as important. When repurposed as a memorial, P13 felt the profile's interactive game posts had become "spam," and were not desirable for the memorial experience her community needed. Similarly, P14 expressed a need to manage new contributions to the memorial by deleting or hiding new posts:

[I need] you know, comment moderation or post moderation — if not outright deleting it, at least restricting its use so that no one can see it. Because I do also understand that people cope in different ways, and they have radically different ideas about what's appropriate and what isn't. So, rather than just say, "No, you can't go to this page anymore" just hide the post and have it be automatically hidden so that no one can see it. That way, they get their outlet and people who are bystanders don't have to deal with it.

(P14)

Here, P14 held the expectation that he would be able to keep his wife's memorial profile "appropriate" to a variety of people. In practice, that emerged as a need to hide what certain people were posting. In his situation, people were posting things that were seen as harmful, painful, or destructive, which he said increased the difficulty of maintaining his wife's memory in an honorable way. P14 was unable to hide those harmful things and thereby feel that he was protecting the AH's memorial. The creators of Legacy Contact described its limited functionalities as an attempt to "reduce the workload on legacy contacts, who are grieving themselves," as well as "to keep the profile intact, while still facilitating the community practices happening on the profile Wall" (Brubaker & Callison-Burch 2016). Yet in these stress cases, the lack of ability to curate, clean, or otherwise maintain a respectful memorial profile violated the LCs' expectations and reduced their feeling of capability to enact their person's trust.

Stress Case 3: Functionality Not Working as Expected.

Technical solutions are not always easy or even possible. In the case of P21, his late mother's settings were implemented exactly as P14 wanted in the previous example: no one could see new posts on the memorial profile.

“I started trying to get information out to people about my mother's memorial service. ‘My mother's memorial service will be here at this place.’ And I pinned it. I'm supposed to be able to pin a post so everybody can see it. Unfortunately, I put the post up there, and I pinned it [to her profile], but then we found out that nobody could see it.” (P21)

What P21 felt would have fixed this problem was full control over the AH's settings, to disable the preference that required the AH to approve posts. P21 described a situation in which the needs of the AH's community were not being met, and according to all available information about the Legacy Contact feature, should have been met. The result was him feeling powerless. In both cases of P14 and P21, our participants were trying to protect and care for the community, and were unable to do so. For P14, he was unable to protect the memorial from inappropriate posts. For P21, privacy settings of the deceased prevented the LC from connecting with the AH's network. These situations both represent ways the system violated the expectations of these LCs. When we recall that (Li et al. 2016) relates trust to meeting expectations, and distrust to violating expectations, P21's feelings of broken trust make sense:

“I was making medical decisions for her for the past few years. I was making financial decisions for her. And then Facebook says they can't trust me to manage her Facebook account? So it's like well, I can do all these other things, but I can't do this? I can

understand — I understand the reasoning. But if somebody is a legacy contact, then you have to assume that that person is trusted enough to administer the account fully.” (P21)

In these negative feelings, we found that P21 had expected Facebook to fully enable the open-ended trust the AH had in them as exemplified in the gravity of his related responsibilities. Essentially, P21 expected not just a few capabilities, but the full confidence of the AH-LC relationship to be enacted within the system.

The negative experiences LCs described to us were all moments of encountering their limits within Facebook’s functionality. LCs do not always discover their limitations because, as we see above, inaction is largely considered a good choice. When LCs do encounter limits, it is during moments of need that could not be anticipated. Because the LCs we interviewed were mostly self-selected, they did not have clear instructions from the AH regarding the management of the memorialized profile. LCs had an open-ended role within the AH’s life and community, so they experienced distrust from Facebook when that open-endedness was not reflected in the system. As explained in the section on Related Works, two kinds of trust are apparent in this system: interpersonal trust and impersonal trust. Both forms of trust are visible here. LCs have impersonal trust in the system to enable them to do whatever is necessary for the bereaved community, or to do whatever they feel the AH would have asked in the context of their interpersonal relationship. How LCs perceive what is expected of them stems from the open-endedness of trust that the AH held in the LC throughout their relationship. In describing the varying expectations among LCs, we find that their expectation to do “whatever is necessary,” while typically opting not to act, means that the system’s trust in the LC is a symbolic need rooted in LC’s desire for agency.

The Trust of the Dead in Ongoing Systems

The core finding of this study is that the experience of stewarding a post-mortem profile is characterized by broken trust. It is not yet common for legal documents that specify or formalize post-mortem tasks to include social media accounts or online memorials, and so post-mortem data management remains challenging. Moreover, our data suggests that even if more robust formalizations existed, participants would continue to find them problematically restrictive. In many ways, Legacy Contact adequately meets peoples' needs in communicating that the AH has died, protecting the account, and maintaining a space for the bereaved to maintain bonds with the AH and the AH's network. Yet, Legacy Contact could be considered a work of experimental design on Facebook's part: there were many unknowns in its implementation because no large-scale management system for social media memorials had ever existed before. Therefore, the findings I share here provide valuable insight for any social media platform in which loved ones of deceased account holders may find enduring value in the content one leaves behind. Such platforms must construct appropriate options to maintain that content securely, while providing loved ones with adequate access to and control over their loved one's persistent presence. What follows are two major concepts based on our findings that could guide any social media platform's implementation of any system in which interpersonal relationships with deceased persons must be represented and enacted. I conclude with guiding questions for the future of post-mortem data management systems.

Mistranslated Trust

Throughout our findings, we saw how the design of Legacy Contact relied on both impersonal and interpersonal forms of trust. While the interaction design of Legacy Contact focused on interpersonal forms of trust, impersonal trust plays a role in how permissions and delegation are operationalized in the system's functionality. In the context of post-mortem data management, identifying the role of both forms of trust highlights how the challenges of supporting stewardship practices are less about specific features, and more about how people feel the features align with the roles and responsibilities with which they have been entrusted (see Fig. 5). Just as Semaan & Mark found that trust provides a "sense of control," (2011) trust for LCs is related to expecting controls — functionality — that the system does not allow. In the three stress cases, participants reported that a lack of control feels like a lack of trust. Ultimately, the negativity of the experiences described in our stress cases is the result of two fundamentally different trusts being conflated. Just as some languages do not have adequate words for certain concepts from other languages, computational systems do not have a way to understand or communicate trust in its vulnerable, interpersonal form.

The ramifications of mistranslated trust are complex. When LCs' expectations of the system were unmet in ways that prevented them from performing their responsibilities, LCs did not feel untrusted by the AH or their network; LCs felt untrusted by Facebook. When we review the depth of consideration that LCs described for each possible decision (see Findings, section 2), the insult of distrust is especially sharp. Feeling distrusted, best demonstrated through P21's stress case, recalls Lankton & McKnight's argument that Facebook may be seen as a "quasi-person" (2011). In this regard, LCs describe expectations of Facebook being able to reciprocate

the trust of a social relationship. LCs' expectations of Facebook align with interpersonal rather than impersonal forms of trust. They expect Facebook to trust them the way AHs did: generally, open-endedly, and adaptively. Because interpersonal trust is general, open-ended, and adaptive, participants described anything they could not do as a betrayal of the trust placed in them as the LC.

In the three stress cases I described, participants had no way of knowing that their limited access was a conscious design decision, and considered to be compassionate for grieving people in other circumstances. For example, the lack of notifications about memorialized profiles is a direct result of the design choice to prioritize the AH's agency over system automation (Brubaker & Callison-Burch 2016). Here we see an alternative experience to those described in prior research which indicated user discomfort with automation related to profiles of the deceased. Participants' desire for automation suggests a new need that may be specific to the context of Legacy Contact. Likewise, participants looking to curate content on the AH's profile were subject to design decisions that were intended to be compassionate. The inability to curate posts was one of many functionalities that Facebook designers intentionally excluded: "a limited set of valuable functionality was preferable to a large set of configurations, features, and responsibilities" (Brubaker & Callison-Burch 2016, p. 5).

In the bequeathing of valuable functionality to LCs, I argue that interpersonal trust is being translated into a system that primarily understands impersonal trust. The disparities between the interpersonal form of trust described by our participants and how this was operationalized into the impersonal forms of trust in the system resulted in misaligned

expectations for LCs, exemplified in our stress cases. Though work in HCI blurs the distinction between impersonal and interpersonal forms of trust, the case of post-mortem profile management makes clear how the expectations that accompany interpersonal trust are translated into systems that may be unable to adequately support those expectations. While secure systems rely upon impersonal trust, a focus on LC experiences highlights how such systems also rely upon interpersonal trust among co-users of a system — trust that is only possible through adaptation and workarounds that become impossible after one person in the trusting relationship has died. The challenges experienced by our participants highlight how even technology designs like Legacy Contact that seek to support interpersonal trust are constrained by an infrastructure that privileges impersonal approaches to trust. I argue that post-mortem management should honor the needs of surviving loved ones through design centered on interpersonal forms of trust, rather than simply operationalizing trust into a set of permissions. For example, allowing co-configuration of post-mortem data settings between the account holder and person(s) of their choice would facilitate the specificity required by the system within the context of the trusting relationship.

Once a profile is memorialized and the LC's management is activated, accommodating trust becomes complex: the profile contains digital assets to be handed down, but is also a memorial space for people to maintain bonds with the deceased and connect with others who are bereaved by the death. The continued presence and use of memorialized profiles is a matter of impersonal trust between the LC and Facebook, which is evident in the account security that is achieved when a profile is memorialized. Yet active management of a post-mortem profile is a matter of interpersonal trust among the AH's network. The translation from one form of trust to

another upon a person's death, or the representation of one form of trust within another, is an extreme scenario that highlights a sociotechnical gap (Ackerman 2000). That is to say, we know what needs to be built — a system that effectively conveys a trusting relationship within a useful functionality, and affords actions that are true to the expectations of those in the relationship — there is no single, clear way to build it. System designers should pay attention to the ways people violate impersonal trust, and view people's workarounds, not as "hacks," but as indicators of where the system could better accommodate interpersonal trust-related needs of post-mortem profile managers.

Workarounds as an Exercise of Trust

With an understanding of how mistranslated trust is shaping LCs' experiences, the present challenge is how to improve that translation. This is a significant challenge; after all, how can an impersonal system facilitate trust between people, which we know requires regular communication and adaptation, when one of those people is dead? As interpersonal trust relies upon real-time interaction (Greenspan et al. 2000) and open-endedness (Knowles et al. 2015), post-mortem scenarios present obvious difficulty—interaction with the trusting party is no longer possible. Offline, when formalized wishes fail to meet the needs of the bereaved, people may appeal to social workers, executors, or even the judicial system for flexibility. Online, the inability to make changes to settings post-mortem means that the account holder's trust in their designated manager may now only be enacted within a limited, impersonal system. To communicate a more appropriate level of trust, post-mortem management systems could have a

streamlined appeals process to expand the appropriate person's capabilities beyond pre-set access or permissions.

Recall that the experiences of active LCs I have shared are predominated by self-selection. Twenty of our participants circumvented the intended process of setting up Legacy Contact by accessing the deceased user's account and choosing themselves, then memorializing that account. Each of these participants indicated reasons that their selection was appropriate, despite it not being the AH's choice. Following account memorialization, LCs encountered personal and social expectations based on the particular memorial practices in which they and the AH's network wanted to engage. Our participants often found their management options to be too limited, or that they did not understand the options well enough to act without consulting others. In severe cases, participants reported negative emotions and negative social interactions when a lack of access to the AH's preferences prevented actions that they felt were necessary.

Overall, LCs who had negative experiences reported that a lack of granular controls feels like a betrayal of the trust LCs feel entitled to. This represents a difficult design tension: enabling the nuances of human trust would involve either granting access to the AH's settings or creating more settings for the LC, while previous work states that so many options can negatively overload a grieving person with obligations (Brubaker & Callison-Burch 2016). Especially in our stress cases, LCs felt a variety of obligations to the memorial profile despite their lack of options. One solution may be adding instructions or descriptions in the Help Center, particularly about what the participants in stress cases were seeking: notifications and curation.

In any case, more information or controls may not be a complete solution. Behind their requests for more control is the LC's need for the system to trust them. Open-ended options are not a functional need, but a symbolic need for interpersonal trust, visible in our participants' need to do "whatever." The Legacy Contact feature was initially launched with a focus on responsibilities. In contrast, our findings show that when participants talked about what it means to be an LC, they described open-ended, ambiguous aspects of a close relationship, rather than specific responsibilities. I find that being an LC is not a delegation of responsibilities, but an expression of trust.

Facebook's Legacy Contact feature was designed to focus on relationships, and thus interpersonal aspects of trust. This is why communication practices were so primary in its initial design. Despite these efforts, Legacy Contact is beholden to the underlying infrastructure of a computer system that operates in impersonal terms, and ultimately must be secure. Security concerns expose a challenging design tension, not only in the features provided to LCs, but also in what features are even viable within the infrastructure of the platform. What may have been overlooked is the reality that people "repurpose" systems for memorialization (Walter et al. 2012). Even when the desired memorial action is not clear or possible, people find workarounds. Facebook's privacy and security policies explicitly prohibit signing in to someone else's account. Thus, when a legacy contact was not designated by the AH, LCs violated Facebook TOS in order to gain the needed affordances of memorialization. It is in the limited affordances of the management feature that LCs do not feel trusted by the system. From the perspective of the system, such workarounds make users look adversarial. System distrust in users is understood in terms of hacking, but the unauthorized access characterized by a "hack" rings false to individuals

who embody the closest relationships to the deceased AHs. So, how can we reframe these LC's activities as grief-laden workarounds by trustworthy users who are attempting to enact a relationship that the system cannot recognize? The open-ended trust between the AH and the LC must now be performed between Facebook and the LC. Yet in terms of preferences and controls, LCs are unable to change the account settings or preferences configured by the AH. Data systems cannot recognize the way interpersonal trust extends to unspoken things, as all instructions in computation must be explicit. In this way, post-mortem data management systems may never be able to represent an adequate technical equivalent to human trust.

Mediating Social and Technical Trust

In the context of a post-mortem data management system, I find that trust is operationalized in the affordances of systems that connect trusted person(s) with their loved one's online network. Our participants described a system that does not allow them to fully enact the foundational expectations of their relationship. I find that LCs trust Facebook to be something it is not: an adaptive intermediary between themselves and the ambiguous responsibilities left to them by the AH. Meanwhile, Facebook expects LCs to be something they are not: someone chosen by the AH with specifically communicated duties that are actually possible within the system. When we frame these interactions as mistranslated trust, we can make sense of the data that shows a wide gap between what users need or expect from their role as a legacy contact and their actual management capabilities.

The gap between expectations and capabilities stems, not exactly from any fundamental misunderstanding of either interpersonal or impersonal trust, but from the difficulty of translating interpersonal trust into trust mediated by a system. Trusted persons are trying to perform the

AH's broadly-perceived expectations within a system that does not understand or permit those expectations. The open-endedness of an AH's expectations does not survive the translation process. In other contexts, researchers have found that to engender trust, "systems should... defer decision making to the user particularly when that user has the expertise or competency to be able to make as good a decision as the system or better." (Knowles et al. 2015, p, 332). Software products are designed to rely on some level of user expertise or competency, yet our participants rarely displayed a comprehensive understanding of Legacy Contact's capabilities. The interpersonal trust between AHs and LCs had a strong influence on LCs' expectations, more so than practical knowledge of the system. Such expectations suggest that post-mortem systems should be designed to clarify the entrusted person's post-mortem capabilities during the setup process. In Legacy Contact, this means ensuring that the AH knows what to communicate to their chosen LC. For other social media platforms, adopting a similar set of pre-mortem configurations for a post-mortem data manager should contain communication prompts outlining specific permissions. For Twitter, this could mean allowing or preventing all but certain past tweets to be deleted. For LinkedIn profiles, this could mean hiding detailed work histories while preserving the availability of public references the deceased wrote for others. Ensuring a clear understanding of the specific capabilities of a system would also benefit those who, like many of our participants, select themselves to steward the AH's profile.

Recall the finding in which LCs express a desire for functionality along with a reluctance to ever use that functionality. This seemingly-contradictory desire demonstrates that what post-mortem data managers truly want is for the system to display a core element of interpersonal trust: vulnerability. Vulnerability in this sense would involve the system exposing itself to risk at

the hands of the user. These risks include actions that would have distressing consequences for people who are using their loved one's memorialized profile for various online grief practices (e.g. what if the LC deletes someone else's favorite photo of the AH? What if a post-mortem Twitter manager has deleted the last "happy birthday" tweet one received from the deceased?). One way to mitigate such risks is through social translucence, which imagines systems that support visibility, awareness, and accountability [Erickson & Kellogg 2000]. Supporting social translucence is a matter of exposing certain aspects of user behavior to other users. An incorporation of social translucence could inform the design of post-mortem data management, but prompts questions of to whom might those managers be accountable. The current Legacy Contact setup process does contain an aspect of accountability, but only between the LC and the AH. For future systems to allow accountability would mean making it possible to expose one's actions to another. The predominance of self-selection among active LCs suggests that accountability of the trusted person should include the AH's larger network. Other systems, including the future of Legacy Contact, may meet this need by making the post-mortem manager's identity or actions visible to those connected to the memorialized profile.

Our participants reported difficulties when the post-mortem management system did not align with their expectations, which indicates that some elements of interpersonal trust are lost in translation to impersonal system security. While vulnerability, for example, is an essential element of interpersonal trust, system vulnerability is a negative term, something that engineers work to prevent [Locasto et al. 2011]. Considering the valid and necessary concerns of active account and data security, I present three considerations for designers of post-mortem management systems in the context of user needs that stem from interpersonal trust:

- (1) What would it look like to design systems that are both heritable and secure *without* pre-planning by an account holder?
- (2) What would it look like to acknowledge the digital heirs circumventing a process or system as non-adversarial and build for them?
- (3) How might we design account management in ways that acknowledge that people die, and with respect for the vulnerability and expectations within the interpersonal relationships of their real lives?

Conclusion

Asking a friend or loved one to care for your affairs, your family, or your data is an act of trust. However, the interpersonal form of trust with which people make these requests presents challenges for systems that conceptualize trust in impersonal terms. We found that interpersonal trust is the foundation for how people make decisions regarding post-mortem profile management. In this study, I forwarded a contextual definition of post-mortem trust in HCI as the assignment of managing ambiguity to an individual who is perceived to be capable of balancing the values and priorities of the deceased with the needs of the deceased's social network. This definition roots our understanding of trust in HCI in the open-endedness of trust in human relationships, while acknowledging the necessity of specifying a person and their responsibilities within a system. I suggest that the designs of post-mortem data management systems attempt to better translate open-ended interpersonal trust into systems that primarily understand explicit impersonal trust.

Legacy Contact was built based on thorough research that informed designers of what post-mortem stewards would need to do. Yet I found that participants did not discuss actions as much as their open-ended expectations. In this regard, simply adding functionalities would never do enough, and possibly never could. As further research expands our understanding of the experiences of people managing post-mortem data, it is clear at the present time that declaring the relationship between account holder and post-mortem manager is only one part of what must be accomplished. The primary finding of this study is in how the reciprocal and open-ended nature of interpersonal trust revealed cracks in a system based on impersonal trust.

In our field's ongoing work to improve how humans interact with computers and each other, post-mortem data management systems can stand as critical stress cases. If the overall goal of HCI research is to improve how humans and technologies interact in all situations, we must begin with situations where compassion is most necessary. Online grief practices fit the description. The experiences of legacy contacts as described here can inform the creation of future systems that allow people to enact trust in their relationships with all of the open-endedness that it truly contains. It may seem that no matter what we build in this space, it will not be adequate. After all, how can we design for a reciprocal relationship in which one party has died and can no longer interact? Furthermore, how might core elements of a relationship be acknowledged when an account holder makes an irreversible decision before their death that their surviving loved ones disagree with? The next chapter examines deletion: people's experiences with post-mortem Facebook accounts in the absence of a steward, or any digital memorial space at all.

7 | Study 3: The Deletion Dilemma for Post-Mortem Social Media Accounts

If you were to ask the average American person who uses Facebook, “What do you want to happen to your profile after you die?”, they are likely to answer that they would like it to be deleted. Several informal public polls show that anywhere from 60%-86% of respondents would prefer account deletion after their death (@DEATH_io. 2019). However, previously discussed research has shown that the social media profiles of deceased people often become memorial spaces that provide comfort and connection to surviving loved ones, or at least using the deceased person’s accounts to notify their wider social circles about the death (i.e., Kasket 2019). Despite the documented increase of the usefulness or sentimental value of social media profiles, we know that people who use social media tend to not count their profile among their meaningful creations when considering their own deaths (Massimi & Baecker 2010). Social media platforms are beginning to allow account holders to specify post-mortem wishes for their accounts, solidifying the preference of “just delete it” into a setting that the platform is legally bound to follow upon that person’s death. This means that irreversible post-mortem decisions are being made by people who do not know whether or how those decisions will impact the loved ones who survive them — people to whom their profile and its associated content might be useful or meaningful. In the context of this gap in popular understanding, Study 3 asks, What makes post-mortem profile deletion desirable for account holders but difficult for their survivors?

With Vanessa Callison-Burch, I spoke with people who use Facebook about why they preferred post-mortem deletion for their own profiles. Then, to consider the possible outcomes of such a popular preference, we spoke to people who had experienced the deletion of a deceased

loved one's profile. The resulting interview data is the basis for the dilemma we describe above: people want their own accounts deleted post-mortem, but survivors of account holders reported pain and difficulty upon account deletion, and wished they could have kept the profiles as memorials. We label this problem the Deletion Dilemma: how might we honor the conflicting wishes of account holders who die, and the wishes of surviving loved ones who may benefit from making different choices? To resolve the social media profile deletion dilemma, better guidance is needed for people to understand what deletion will do. Better guidance can and should come from the platform eventually, but as the need is urgent, we argue that community guidance should start now.

The Status Quo of Post-Mortem Online Accounts

In this section, we describe what is known in HCI about what happens to online accounts in their death. First, we discuss research that has sought understanding about what people want for the data that outlives them. Then, we review the status quo of post-mortem online account management. The great divide between intent and impact should be evident.

Account Holder Preferences

It is a standard practice in human-centered computing to ask people what they want, then work with them to make the technology fit. Such research has been implemented for the post-mortem management of online accounts, but continually comes up against the fact that online accounts and the content within them is not of great importance to the account holders themselves.

Gulotta describes how people's wishes for their digital legacies vary widely depending on the types of data they anticipate leaving behind, depending on whether or how those types of data reflect the legacy they wish to have. (Gulotta et al. 2017).

Zhang et al. identified four categories of what people want to happen to their accounts: deletion, forwarding, archiving, or for them to be left alone. In their study, participants who wanted certain accounts to be deleted "viewed the data as 'meaningless'" (p. 3). Their research sought to address how to reduce the burden of work when surviving loved ones want to, for example, access a Gmail account which would require "a court order, proof of death and proof of identity from the requester" (Zhang 2012). Though Gmail has since added the ability to designate an Inactive Account Manager, the arduous process remains for survivors of people who never used that feature.

In fact, for most online accounts and platforms, an arduous legal process is the only option to obtain a deceased loved one's data. Both of the studies described above note that their participants had only considered their digital legacies because of the study itself. At this point in time, people who use online accounts throughout their lives tend to not specify any post-mortem wishes about them. A broad lack of consideration about digital legacies has created a catch-22: because people have very little precedent or prompting to consider their digital legacies, platforms are not seeing a need to prioritize any development of post-mortem options, which leaves people with no options to consider. The resulting legal processes to obtain deceased people's data are themselves an entire issue in legal scholarship (Elliot 2015).

In a case where robust post-mortem options do exist for account holders, Facebook's Legacy Contact and memorial profile options were developed and implemented with a firm

foundation in HCI research (Brubaker & Callison-Burch 2016). The two previous chapters detailed the subsequent evaluation studies of Facebook’s post-mortem options, describing how, even when robust post-mortem options exist, people do not seek a thorough understanding of how they work, and often choose settings that do not reflect what they actually want for their loved ones to experience in the event of their death (Gach & Brubaker 2020; 2021).

Lived Experiences in Managing Online Accounts of the Deceased

Activities on post-mortem social media profiles have been documented in previous research. The lived experiences of people who manage their deceased loved one’s online accounts can be described as good, bad, and ugly.

Good experiences include adapting existing online spaces like profiles or websites into archival memorials (i.e., Walter 2012), having a space to post messages that address the dead (i.e., Brubaker & Hayes 2011), having content like photos to promote reminiscing (Isaacs et al. 2013) and connecting with non-mutual friends of the deceased, as described in Study 2. Because people often value connection with others and the visibility of their messages alongside the content the deceased person created during their lifetime, the value of the profile in its context; moving it offline and away from the network would be inadequate. “User profiles rely on networked resources and many creators in order to provide and maintain contextual integrity. [...] Contextual integrity is related to how records of interactions are networked representations of identity that cannot be cleanly removed based on the individual” (Acker & Brubaker 2014).

Bad experiences related to deceased people’s online presences have come to be known as “algorithmic cruelty” (Lambert et al. 2018). Painful encounters may take the form of birthday

reminders (Brubaker & Callison-Burch 2016), discomfort with how others reminisce as some participants described in Study 2, or as one participant describes below, hacked accounts that may torment the bereaved. Though Facebook has been a common context for algorithmic cruelty, sometimes in highly publicized instances (i.e., Meyer & Wachter-Boettcher 2016), memorialization efforts have targeted these exact experiences and made progress in preventing them with AI, as described at the end of Chapter 4, and in the press (Zaveri 2019).

Being disturbed by activity from a deceased person's profile is not a universal sentiment. Recent research by Abokhodair et al. describes how people in majority-Islam communities often make Twitter accounts for deceased people which are then automated to share Quran passages about hope. People who make these posthumous Twitter accounts find them comforting. (Abokhodair et al. 2020).

Ugly instances involving deceased people's online accounts have made international media headlines. Several court cases in the past 15 years have involved bereaved families fighting large social media platforms to get what they wanted or needed. One early instance in 2004 involved the email account of an American soldier who was killed in action. The soldier's father wished to obtain the contents of his son's email account, which the court ultimately ordered Yahoo! to release to him (Kasket 2019, p. 28). As previously mentioned, the German family who lost their teen daughter and needed information from her private messages were ultimately granted access to her Facebook account. Germany's Federal Court of Justice ruled that online accounts were akin to letters, and could be inherited and accessed by the family (BBC 2018).

These cases matter because they demonstrate how profiles remain undefined and misunderstood by all parties involved. These court cases further constrain platforms to certain forms of post-mortem management, such as transference, or drive platforms to disallow any post-mortem management for any reason (as is the case with iCloud’s “no right of survivorship” (Apple 2021). For people who do not have the means to take their wishes for their deceased loved one’s social media account to court, they must—and often do—suffer through a loss of meaningful content, or find tenuous work-arounds that skirt the system’s intended use to achieve their goals, as described in Chapter 5. This is where the chapter focuses: on the broken parts of post-mortem profile management that could only be seen in the implementation of a dedicated post-mortem profile management system.

Methods and Analysis

Over a period of two weeks, I conducted 12 in-depth, semi-structured interviews with English-speaking Facebook account holders about the option to delete a deceased person’s Facebook account. These interviews took two forms: the first form (N=7) engaged with people who had selected the “Delete After Death” option in their personal account settings, and the second (N=5) engaged with people who had experienced the deletion of a deceased loved one’s account.

The default setting on all Facebook accounts is memorialization without a Legacy Contact. In order to choose “Delete After Death” the account holder must adjust their settings and intentionally select that option. The process takes at least 6 clicks on desktop, and at least 6 taps on mobile. As this study was conducted in partnership with Facebook, internal system criteria only connected us with people whose accounts had activated the “Delete After Death”

setting. For people who had experienced the deletion of a deceased loved one's profile, we referred to reports from people who had reported related problems to the Community Operations team.

Though the interviews from both perspectives were analyzed as a whole, those with people who had experienced deletion contained an element of technical support. In instances where participants needed such support to solve a perceived problem, I delayed the deeper research questions in order to hear their concerns and build trust before asking them to think deeply about their experiences.

To analyze the interview data, I used an inductive, thematic approach to gain both rich and practical insights into the experience of post-mortem data deletion. I began by open coding the data, "through which categories, their properties, and relationships emerged" (Corbin & Strauss 2008), paying attention to commonalities and patterns between participants. Alongside Vanessa Callison-Burch, I created concept maps of the codes, combining them into the themes I present below.

Participant Demographics

- 12 interviews (5 men, 7 women), ages 29–59
- ~45 minutes each
- 7 people who chose "Delete After Death"
 - identified below as "P#" for "preferred deletion."
- 5 people who experienced deletion following a loved one's death,
 - identified below as "D#" for "deleted profile"

Choosing and Experiencing Profile Deletion

In these people's experiences, we discerned the underlying wishes people have when they select "Delete After Death" and gain a deeper understanding of how to make those wishes into reality after Facebook account holders actually die. To bridge the gap between account holder wishes and the post-mortem enactments thereof, we interviewed people on both sides of the experience. We found that people who chose Delete After Death desired simplicity for their loved ones. However, not all people whose settings declared "Delete After Death" had intentionally chosen that setting or were aware that it had been selected. The nature of these "accidental deleters" could lend to the difficult experiences of deletion that loved ones have later, especially if they were expecting to be able to memorialize the profile. I conclude this section by connecting participants' experiences across both types of interviews to draw attention to concerning gaps in what account holders prefer and what surviving loved ones have needed.

Why Choose Delete After Death?

All account holders who *preferred* Delete After Death described their core motivation toward that choice as being the least complicated task for their surviving loved ones. The idea of doing nothing to the account after the AH's death was not ideal because of known complications for survivors, such as birthday reminders, On This Day memories of deceased people, or security breaches that they knew to be upsetting. Participants also reported a sense of closing accounts after death being the responsible thing to do, referring to security concerns like hacking as one possible reason to close an account. Because a choice exists, between memorializing, deleting, or "doing nothing" after an account holder's death, participants were quick to see deletion as the simplest option, or the one that most clearly seemed to eliminate potential problems.

P2 actively tried to facilitate ease for his family in the event of his death. He described a fill-in-the-blank style book that he uses for such instructions, from all of his usernames and passwords, to the location of his will. His work as an insurance salesman has shown him plenty of negative alternatives:

I try to save my family headache, cause I see all this stuff in my lifetime, where, you know, people pass away and their family don't know nothing, don't know where nothing is, don't know nothing about nothing. (P2)

P2 explained the hassle, stress, and confusion that he had witnessed when surviving loved ones lacked the knowledge he has provided to his family, including searching an entire house for a will, receiving past-due notices from unknown creditors, and accounts left active and “bothering” people because of survivors’ inability to access them. He wants to be sure his people have instructions for all of his affairs.

P6 chose Delete After Death because she did not want her account to creep out, bother, or otherwise traumatize her loved ones.

“What's creepy is I think when on Facebook your memories show up and it says, ‘five years ago today’ and so like, if I'm dead, I don't want to be troubling my family members or my friends. That could be traumatic in itself for them.”

While P2 took steps to ensure a less stressful overall management experience for his family, P6 talked more specifically about her loved ones’ possible stresses during their personal everyday Facebook use. P7 put it quite simply:

I would choose to delete account after death, because then I wouldn't annoy anyone. (P7)

The specific phrasing of *what* would annoy them after her death is interesting: P7 says “then I wouldn’t annoy anyone.” Not the profile, but P7 the person, would be doing the annoying. Participants across all four of these studies used personifying language when talking about Facebook profiles. Look back at the previous study and notice where participants referred to deletion as “making **her** vanish,” or to not “keep who **she** was.” Personifying language around profiles reflects participants’ understandings of their profiles as their presences in that digital space: their name, image, and words they write all make up a person’s online self. P7 knew that her name and image would remain visible and continue to automatically appear in friends’ feeds as it does now, in her lifetime. When she stops making it appear on purpose, in her death, she wants her profile to follow her ceasing of activity in the world. This is why Delete After Death made sense to her.

Overall, participants recognized their accounts as a tool they used to engage with others, and that that tool works in a way that makes their presence noticeable to their loved ones. While their presence being noticeable in life facilitates easy interaction, participants recognize that their presence should not be active after their deaths, and that if it is, it would “bother” those they love. By choosing “Delete After Death”, they believed they were choosing simplicity and peace for those who would survive them.

The Process of Choosing Delete After Death

While four participants who chose Delete After Death described doing so through the exact process described above, three account holders who chose Delete After Death were **not**

aware that they had done so. It should not be technically possible for someone to change their settings in that way without being conscious of what they were doing. Either there was some unintentional error within Facebook that automatically changed these users' account settings, someone else signed into their account and made the change on their behalf, or they *did* make the selection and somehow do not remember doing so. The facts of these 3 people's experiences are that Delete After Death was the active setting for their account **and** they were unaware of that.

P1 did not know she had selected Delete after Death, and even specified that she would prefer to select a legacy contact. She named one of her adult sons as an appropriate LC, and imagined her family needing about 6 weeks to do "housekeeping" on her account. She describes housekeeping as "a stepping stone to the complete removal of the account [...] the obvious things are maybe download any photographs that they wanted to keep, and go through the material, see if there's anything that would be pertinent to the estate. You know, like information about things maybe. People they didn't know would want to know about my demise. Basically, just do some housekeeping on it, and then perhaps get rid of it."

P2 reported that, though he uses a lot of smartphone apps and other technology, he requires a lot of help from his adult daughter and does not know how to customize such things. When we asked him to walk through his settings, which he did not know how to do without step-by-step instructions, he said, "it says I've chosen 'Delete After Death' so that must be the default".

P3 did not know she'd selected Delete after Death. When we walked her through the options in her settings, she said would choose brother as LC, imagining he would need about

three months to have “a fair chance to access the photos I have that are *only* on Facebook,” adding that his activities with her account would help to “get everything situated.”

For the four participants who had consciously selected “Delete After Death,” what they believe to be possible as a direct result of that selection is not in line with the technical functionality of what Facebook will do upon learning of the AH’s death. They believed that selecting “Delete After Death” indicated the preference of what they would want their loved ones to do, NOT what they expected Facebook to do on their behalf. I go into what people expect deletion to be in a subsequent section.

Unintentional selection is not how the Delete After Death option was designed to work. It was designed to be a carefully considered choice that gives account holders agency in their data privacy after their death. Yet selecting “Delete After Death” in one’s settings is such a simple act as to have gone unnoticed by these three participants. In a technical sense, the Delete After Death setting is an instruction for Facebook to, upon receiving confirmation of the account holder’s death, immediately delete all data belonging to that person’s account. By selecting Delete After Death, the account holder declines to identify a “legacy contact or a person who you have identified in a valid will or similar document expressing clear consent to disclose your content upon death or incapacity” (Facebook TOS, Section 4.5, 2021). Without such a person, Facebook’s compliance with one’s Delete After Death setting becomes a matter of policy, and cannot be reversed.

In being designed this way, Facebook’s system presumes a few things about the account holder: that they know what content is considered part of their account or owned by them, and they are consciously deciding to hold Facebook responsible for deleting that content. As the

Delete After Death option was unknowingly selected by these participants, no presumption of any knowledge about what Delete After Death will do may be maintained. It should not be possible, technically or otherwise, for an account holder to unknowingly enter into an irrevocable legal agreement that will restrict their loved ones' activities in the event of their death without being aware they have done so. Yet that is the experience these participants reported. For those who were aware of going through the process to select Delete After Death, no such legal information was disclosed in the selection process.

Anticipating Survivors' Work on Facebook

All account holders whose accounts were set to Delete After Death expected that their surviving loved ones would be able to save photos or other content from their profile prior to its permanent deletion. Each person referred to activities that fit the description of what P1 called "housekeeping." Consider what "housekeeping" means in a traditional sense: when a person dies, their surviving loved ones organize, clean, and repurpose or sell their home. Even if the home will not be used anymore, it is expected to undergo some conscious care before any definitive decisions are made in its regard. Housekeeping requires access, time, and many smaller decisions about the contents of the asset.

Participants expected digital housekeeping to be necessary for their Facebook accounts, even if the eventual goal was for it to no longer exist. In their context, digital housekeeping would be any action that involves the retrieval of content from the deceased person's account prior to deleting it. All participants mentioned photos being important. Some mentioned information about those photos being important, for example, as pre-computer photos that people

digitize and post with dates, locations, and stories in captions. P1 mentioned conversation records “pertinent to the estate” that may be helpful in attending to other matters on her behalf.

After he dies, P2 had the expectation that: “[My daughter] would do what I just did: open my Facebook, click settings, and she’d pick delete.” He thought Delete After Death was the option his daughter would click after he had died, because **she would have to sign into his account** to delete it. P5 described the step-by-step instructions he would write down for his surviving loved ones:

I can tell them to go to this settings page, and select Deactivate right here. I expect a 24-hour buffer before it’s gone so they can get whatever they want off there. (P5)

P6 expected that her loved ones would have fair warning about what would happen to her account.

Maybe Facebook could send an alert to like the family members and say like, Hey, we're deleting the account. Like give them like a certain day, with a deadline, instead of right then. (P6)

P7 referred to the variety of people’s grief experiences when describing what she thought her loved ones may do:

I think they’ll download the photos and they can delete after time, because... it's difficult to delete right away. People have different timing, some people accept quickly that someone has passed away, others take longer. (P7)

Most account holders who chose Delete After Death reported no objections to the idea of their surviving loved ones ultimately *not* deleting their profile. P2 anticipated his family being able to download photos and use Facebook to tell people he had died. But when asked how he felt about his daughter never deleting it? “I won’t be here! What am I gonna do, haunt her every night?” Here, P2 expressed a resignation of control over what happens to his Facebook account. P4 actually laughed through the same sentiment:

I’m not in a position to argue, at that point. (P4)

In a deeper thought, P6 acknowledged what place digital assets might have in relation to other post-mortem experiences:

Deleting somebody's account like that, I think that's part of like almost like a healing process. Like you're accepting that, this is happening and like she'll have to let it go at her own time. (P6)

Here, P6 related deleting the Facebook account to other tasks that must be completed after a death for logistical reasons, but also bring closure in their completion. Closure may be understood here as the reduction of unknowns or stressors about things related to the deceased. If the account remains open, it remains an unfinished task related to the deceased, a connecting obligation that keeps the survivor close to the end of their person’s life. Letting the survivor do things “in their own time” gives them control over how connected or distant to the deceased person they want to feel.

Deletion currently places a lot of power in the hands of the account holder for what will be their loved ones’ grief experience. That power seems disproportionate to how much the

account holders here actually care about deletion happening. The existing function of “Delete After Death” does not match what these people want for their profile, even if they intentionally chose Delete. They want the secure closure of their account, for the reality of their death to be reflected in digital space, minimal complexity for their loved ones, and for their loved ones to be in control of anything that is meaningful to them. The option to memorialize the account with a legacy contact would offer each of those things, but was not well-understood by our participants.

In light of participants’ expectations for their loved ones being inaccurate to the actual function of the Delete After Death option, I find that Facebook account deletion is a highly consequential decision in terms of what would become possible and impossible for their loved ones in the event of the AH’s death. Delete After Death is a different action from other post-mortem affairs that survivors would handle, in that both the account holder and their loved ones expect the *survivors* to have control. The expectation of survivor control indicates that these participants view the Delete After Death setting as an expression of a preference that may or may not be followed. Their ambivalence about the deletion preference was evident in each participant’s later-expressed expectations for what their loved ones would do within their Facebook account after their death. While some action by loved ones is necessary for the deletion of the account to occur (i.e., filling out the form to report the death to Facebook with proper documentation), participants described actions by their loved ones that will not be possible because of the “Delete after Death” setting. In fact, their preferences reflected the capabilities that would be possible by selecting a legacy contact, which was not the setting they had chosen. The intention of account holders choosing their settings is important because selecting Delete After Death transfers agency from survivors to Facebook, and may apparently do so without the awareness or understanding of the account holder.

How Deletion After Death Happens

Facebook's current policy for accounts that have "Delete After Death" selected is immediate, complete deletion upon receiving news of a death. Yet none of the five participants I spoke with had expected that to be the case. Four of the five participants who had experienced the deletion of a deceased loved one's Facebook profile reported strong negative emotions (i.e., confusion, anger, regret, sadness) in response to the disappearance of the profile.

D1 reported that he was "pretty shocked" when he notified Facebook of his mother's death, requesting that her account be memorialized. It was deleted instead. He went on to describe his expectation that Facebook would incorporate information from his and his mothers' accounts in the process:

I was listed as her son and she was my mom, and I feel that there would be at least some sort of notification or some sort of period there where I could at least get some photos and stuff. (D1)

Though the email D1 received from Facebook explained that deletion was his mother's choice for her account, he wished he had been asked for permission or verification before the deletion occurred. D2 had a similar experience with his late mother's profile:

I went through that memorialization process, I sent the link to the obituary. And then basically I think it was the next email that I received was notifying that... her account's been deleted. I mean, it was just like the hammer came down. Just like that, all of her stuff was just gone. (D2)

As this occurred in between the days his mother died and when her funeral was held, D2 went on to explain that he had spent most of his time at his mother's funeral explaining to people why her Facebook profile was gone.

In two cases (D4 and D5), participants experienced the "deletion" of a deceased loved one's profile that they perceived to be automatic and decided upon by Facebook. D4 reported that she often visited her late mother's profile to look at the photos of her artwork; she had been a muralist. One day it was gone. D5 had a similar experience, but thought one of her siblings may have deleted her father's profile, even though she was the only one in possession of a death certificate. D5 told me,

I called my sister and told her, Dad's gone. Like, GONE gone. Facebook Gone. It was just... it was devastating. (D5)

The reasons are layered for D5 feeling the "devastating" pain of her father's profile being deleted. D5 had seen a friend's profile memorialized several years after their death, and so had presumed nothing would happen automatically.

I noticed [my friend's] dad's page actually said remembering, and then his name. I thought, well, that's fine. That's great. I'll take that. Because... I'd know I can type my dad's name in and see his face again. (D5)

D5 had been using her father's Facebook timeline to post information for his extended family and friends to see, and, as she mentions here, to see his photo and still feel connected to him whenever she tagged him in a Facebook post. It was especially important that this family be able to communicate online as their father had died from COVID-19, and most mourners would be

viewing the funeral virtually. When D5 went to post the livestream link to the funeral on her late father's timeline, she discovered that his Facebook account was disabled — 20 minutes before his funeral. Furthermore, D5 reported wanting to restore her father's profile and memorialize it so she could continue to share about him with their younger extended family members, which proved to be impossible.

For both D4 and D5, discovering what had happened to their late parents' profiles was only possible with Facebook employee access: their profiles had been disabled due to security concerns. To restore the account would require the account holder to verify their identity and change their password, which is, by definition, impossible after their deaths. Those two profiles, and possibly countless others, remain in a "black hole," still existing in Facebook's system, but unviewable, unverifiable, and restorable by any existing procedure. The profiles have, for all intents and purposes, been automatically deleted.

The one participant who was *not* upset with deletion went through the process about 1 year after his mother had died. D3 and his family had left his late mother's account alone, but appreciated seeing her friends posting memories of her from time to time. He urgently reported her death to Facebook about one week before we spoke because a rogue family member had gained access to the account and was using it to torment others "from beyond the grave," sending mean messages from their mother's account as if it were her speaking. D3 said,

Within a day I'd got a copy of the death certificate, sent it off to [Facebook], and ... I think it took about two or three hours ... it was done. And it wasn't memorialized, it was just closed completely. And Facebook, in the email, they let me know that that was my mom's wishes. She'd click some sort of setting to say that that would be the case when

she died. It was all done fantastically by Facebook. They dealt with it within a few hours, so it was really quick. (D3)

Even when deletion was not a bad experience, it was not the preference of the account holder's loved ones. D3's family had kept the profile active for that year following her death because they liked being able to see who was thinking about her and what memories they had. They wanted to keep the profile indefinitely as that communication hub. But its meaning as a de-facto digital memorial became less important in light of the harm caused by the hacker's abuse. The abuse made immediate deletion the best solution. In all other cases, deletion was unexpected, immediate, and all-encompassing, which compounded the difficult grief-related feelings that participants were already experiencing.

Understanding and Resolving the Deletion Dilemma

In light of these participants' experiences, the core finding of this study is that deletion is desirable to account holders because they perceive it to be kind in its simplicity, *and* that simplicity is precisely what makes deletion difficult for survivors. In this section, I explain the nuances of this finding through a discussion of the elements of the deletion process that were particularly painful, and contrast those experiences with the stated intentions of people who selected Delete After Death. I further discuss what the pain points of deletion reveal about what a profile is to these participants, and suggest methods of implementing post-mortem deletion that necessarily follows account holder wishes while compassionately making space for the bereaved loved ones who go through the process.

The Unique Pain of Deletion

The unique pain and difficulties surviving loved ones experienced in post-mortem Facebook account deletion indicates a similar misalignment of expectations as described in Chapter 5. When pressed for details about *why* they would prefer profile deletion, the 7 participants who had selected “Delete After Death” identified their goal as making things easy or uncomplicated for their loved ones. “Easy” and “uncomplicated” do not describe what these 5 participants experienced. If pressed into less technical, more relational considerations, my participants also expressed that their loved ones should do “whatever they need to do,” including *not* deleting the profile if they did not want to. Their choices were rooted in compassion, but also in a common and understandable reluctance to imagine what one’s loved ones will need in the event of their death. In this way, deletion is not a hardline choice, but (again) an attempt to not burden loved ones. In reviewing the particular pain or burdens that people did experience in deletion, three common factors emerged: the agency of who did the deleting, the timing of when deletion happened, and what was perceived to be lost as a result of deletion.

Agency. After losing a loved one, participants reported that it was painful to not feel in control of something they expected to feel in control of. The control over the profile was expected because “housekeeping” of the profile was considered necessary. Since the surviving loved ones had no control and no warning over the profile being deleted, they perceived Facebook, as a powerful entity, as the primary actor in a situation where it was inappropriate. This was especially jarring for the participants who expected and requested memorialization, not realizing that deletion would occur. They turned over the agency of their loved one’s online presence without any awareness that they were doing so. By comparison, it would be like the

funeral home taking over all of the funeral planning and burial without inviting those who were closest to the deceased.

Timing. If survivors could not control the decision being made about their loved one's Facebook account, having time to adjust to the change would be crucial to be able to shift related decisions and responsibilities to accommodate for their needs being met. Note that deletion was especially painful for the two participants who reported that it had occurred in between the account holder's death and the funeral: this is a time when communication is crucial, and it is common to repurpose the deceased person's content for memorials. Some understanding was present in participants if it was clear that deletion was the wish of the deceased, but that knowledge did not allow for retrieval of any content the family expected to be able to keep.

What is lost in deletion. The post-mortem expectations for a person's Facebook account hinged on what participants know a profile does, and what they want it to stop or continue doing after a death. My participants were concerned that their own profiles would continue to deliver birthday reminders, contact suggestions, and other notifications to their loved ones. Similarly, people who had experienced a loved one's death were familiar with the ways that social media systems might imitate the agency of a person after they have died. Such automated "zombie actions" are what people want to be sure will stop. Deletion made sense as the method to do so. The preference for post-mortem deletion reveals how living people see their own profile as a communication tool, like a phone number. It does not make sense to retain a communication tool once you can no longer communicate. But when a beloved person dies, everything about them takes on meaning and sentimentality. Even a phone number, present as a contact saved in a smartphone list, may be kept as a reminder of the person. So an entire profile becomes more like

a scrapbook or diary that was made in real time throughout the person's life. A person's presence is all over their account, and so it becomes a comforting connection to them and a digital monument to their memory. This finding is in alignment with continuing bonds theory (Klass 1996), as well as Stokes' description of post-mortem data as "a particularly significant material instantiation of persons" (2015).

Participants saw value when they observed someone else's profile become a memorial space. However, when it comes to making decisions about their own digital memorials, they do not seem to recognize that same value in their own content becoming meaningful to their loved ones in their absence. Deletion is appealing in its simplicity, yet the question of "why choose to delete?" carries complex meta-messages about what people think of Facebook profiles.

For people who use social media to document their lives and have daily interactions, they will leave behind data that have become meaningful memories that their families are likely to want to keep. The definition of "meaningful" is the crux of the deletion dilemma: mundane, daily activities during someone's life are what end up being important to people when someone dies, simply because those mundane, daily things will never happen again. In daily life, Facebook may be considered a tool for communication; a place to say things where others will hear you. It is not always considered as the recorder of those things that are said. To use a physical analogy, it is a phone or a meeting space. If you throw out the phone, or meet elsewhere, the conversation still happened. If you were to find a record of the conversation after the person had died, it would be a meaningful keepsake. Facebook is all these physical things at once: it is a medium and a space and an archive. At the same time, the lack of tangible, tactile reality that our data has lets

us imagine it in these really spiritual, ethereal, eternal ways. When we do not see where these things are, we expect them to be everywhere all the time.

For the participants who experienced post-mortem deletion, their person's Facebook account was not merely a collection of content created by the account holder; it was the tangible presence of the person in the digital world. The depth of this (perhaps unconscious) perspective is indicated by the personifying language participants use to describe their Facebook profiles: "I don't want to bother anyone," or "He is gone, gone." To delete the account, in a social sense, is to appropriately remove their presence from the digital world as it has been removed from the physical world. It does not mean that their *content* should disappear. Content and account and profile, in this context, are different things:

- **Content** consists of shared photos, comments, conversations, and messages that are visible on the account holder's timeline, or in their interactions with those same elements on others' timelines.
- **The profile** is that person's presence in the network, the connection point between them and their Facebook friends, and an aggregation of the content they shared
- **The account** is the access point, which becomes the thing to be "closed" or "shut down". It is a logistical entity, subject to security concerns, and hackable.

Each of these terms gives participants a different sense of responsibility about what should be done for each element of someone's Facebook presence. While security concerns may persist about the account, a person's content is contextually intertwined with others' (Acker & Brubaker 2014), and thus holds a weaker sense of ownership by a single person than the space of the profile. One's account is a matter of personal management that others never see, while

content is dispersed throughout others' News Feeds with some profile details accompanying content to clarify who posts what. Because Facebook Friends interact with content, profiles, and accounts differently, it makes sense that people may expect that an *account* would be deleted, while certain *content* from that account would persist. By its current function, the deletion of a person's Facebook account removes all evidence that the person ever used Facebook. For surviving loved ones, this type of deletion is more akin to expecting to surrender a house key, and instead finding the house torn down.

As was evident with D4 and D5, there is no social difference between a profile being "deleted after a death" and "disabled due to a security concern." The social definition of "deleted Facebook account" is "it is not available to us anymore." That hub in the network has been cut away. There are 3 things going on here that are all labeled as "Deletion": what people socially want deletion to be, what deletion is socially, and what deletion is technically. Because of these differences, we must define living people's deletion preferences more broadly: it is about the options and experiences that exist in regard to the Facebook profiles of dead people.

In a social sense, deletion is an action that the survivor will complete by signing into the deceased person's account, doing digital housekeeping tasks, and deleting the profile in the same way that any account holder could do to their own account, all in the survivor's preferred time frame. The deletion of the profile removes the deceased person's presence from Facebook, stops automated reminders of them, and allows their digital absence to match their physical absence. When discussing "profile" deletion, it is possible that people are considering the bounded entity that Facebook was originally built upon: a single webpage containing the photos and words of a person. In discussing an "account," the person's considerations may be expanded

to the larger collection of content produced by the name and photo that travel throughout the Facebook platform: photo albums, comments on friends' posts, event invitations, and discussions in Groups. "Data" expands that definition further still, including the data used in targeted advertising. I use these terms interchangeably by default in describing the data because, when someone requests Delete After Death, *all* of those things get deleted.

Though it may make sense to an individual that their singular profile would disappear once they are dead, people who deleted a deceased loved one's profile were horrified to learn that other content they created had also disappeared: group photos they posted and tagged others in, nice notes they posted on their friends' profiles, even the private messages they sent to others, all got deleted. The expansive totality of deletion reflects the legal and database system recognition of individual data ownership: whoever created the entity in the system, owns it. Yet that definition carries a sense of interference in others' content: they may have been one's creation on their side of an interaction, but they are given to another, and vice versa. The interaction is shared. "User profiles rely on networked resources and many creators in order to provide and maintain contextual integrity." (Acker & Brubaker 2014). To delete shared content creates a frayed, gaping hole in a network already punctured by the death of a beloved person. It removes more from people who have already suffered loss.

Design-Based Resolutions

I propose three possible resolutions to the Deletion Dilemma, derived from inverting the pain points of the current deletion experience. Recall that the things that made deletion painful for survivors was that it was unexpected, sudden, and applicable to all of the content the person

created. Therefore, each possible solution imagines deletion that is expected, slowed down, and more selective.

Delayed deletion. Because timing was a serious factor in painful deletion experiences, after being notified of an account holder's death, platforms could offer surviving loved ones time to take stock of what deletion will remove from the deceased person's account. A delay may also provide a sense of agency, in giving survivors a set amount of time to continue to view the profile before it disappears. The benefits of leaving this choice to survivors is that it could ensure that cherished memories that may only exist (or most accessibly exist) in an online account could be downloaded or otherwise saved before the rest of the deceased person's content is removed. As D3's story illustrates, delayed deletion would not always be preferable. Urgent deletion may sometimes be needed. Because needs and circumstances vary, the timing of deletion should be in the hands of those who were trusted by the account holder.

Informed deletion. In keeping with the necessity of living account holders having control over the data they generate during their lives, it must remain possible for account holders to indicate a wish for post-mortem account deletion. However, the way such a preference is communicated by the platform to the account holder could help people make better, informed decisions about the fate of their data. Truly informed deletion would involve people being able to understand, perhaps on a photo-by-photo level, what would get deleted along with their profile space. Extensive information on deletion could either deter people from choosing deletion in the first place, or confirm that it will work for their loved ones' needs.

On the other side of the deletion experience, surviving loved ones seemed to only consider deletion acceptable if it was the wish of the account holder. However, none of the

participants who experienced deletion had known that deletion was an option for Facebook accounts, let alone one that their late loved one could have chosen. Prompting account holders to inform a loved one (or several loved ones) of their wish for deletion may eliminate future experience of jarring, unexpected post-mortem deletion.

Because it is so important for account holders that their loved ones are cared for and not harmed by their choices, one option for informed deletion could be to have a Q&A workflow involved in the account holder's selection of their post-mortem options. Asking the account holder to express what they want to be possible for their loved ones could then reveal what setting is most closely aligned to that. It is true that the possibility of memorialization, which in Facebook's case would maintain the person's content while blocking any automated actions related to them, remains largely unknown. An avenue for future work should present each option of what happens to a profile, regardless of the current Settings interface (Memorialize, Delete, or Do Nothing) to see if deletion is actually the informed decision that account holders would choose. While a wizard-style process (similar to the infamous Clippy in Microsoft Word) might be sufficient to guide account holders in understanding the outcome of various options, no automated wizard could give someone insight about how their loved ones view their online presence. The personal connections to a person through data become meaningful in particular ways after a death, which is what I focus on in the next chapter.

Dividual deletion is a concept that gives further recognition to the reality that profiles are co-constructed collections of communication and records of experiences that represent, not just the account holder's life, but their shared experiences with people with whom they lived life. This type of deletion contests the view of humans as individual, bounded, singular entities by

recognizing the shared ownership of communications and experiences through a different categorization of online content. For example, photos uploaded by one account holder are currently categorized in databases as being owned by that account holder. However, the ability to tag others who are present in photos links that data to other account holders, but does not give them any rights to the data. A database that shares, or *divides* the ownership of such content would allow shared content to remain even in the event of one owner's account deletion. Divided ownership of data, resulting in "dividual deletion" of content, would recognize the way that the creator of certain content may have intended to transfer ownership of it upon communication, such as a letter delivered, or a framed photo gifted. It would also find a way to categorize shared exchanges like conversation threads in order to maintain the contextual integrity of shared spaces. This is conceptually similar to the "decoupling and disentangling" described by Herron et al. (2017).

While the three design suggestions here apply to the intentional deletion of a deceased person's Facebook account, *unintentional* deletion remains a problem. Unintentional deletion happens in two ways: either a surviving loved one intended to memorialize the account and did not know that the account holder had requested post-mortem deletion, or the account technically still exists but has been disabled. Informed deletion could address the former, but the latter remains a dead end. When a person's account is disabled due to a security concern, it may only be recovered when the account holder verifies their identity. If the account holder is dead, any kind of request to memorialize, retrieve content, or delete is impossible for a disabled or suspended profile, as was the case for D4 and D5. The request form for a deceased person's account requires a URL for the person's profile page that is no longer viewable to anyone. Such instances leave no options for anyone who does not have password access to manage Facebook

accounts. A pathway to appeal must be created for disabled or suspended accounts whose owners are no longer present to confirm their identity.

Post-mortem profile deletion, in its expansive totality, reveals what a profile is beyond a hub of content. A Facebook profile is a networked, unbounded digital entity that represents the networked, unbounded identity of a human in relationships. Representing humans as individuals has never been accurate; this has only become clearer in the past 15 years since Facebook has achieved so many granular representations of our daily lives. Eliminating all representations of one life from one account overreaches into the experiences and memories of others in a way that it should not.

Non-technical Limitations

Though these participants' preferences and experiences inform some needed changes in social media account deletion options, two core questions remain unanswered:

1. When should the account holder's pre-death preferences override the surviving loved ones' preferences?
2. When should the survivors' wants and needs override what the account holder had decided?

Even if we can achieve an accurate social understanding of what a profile is, the legal structures around data could not accommodate it. The technical structures may not be able to accommodate it. The radical individualism of Western white-centric thought might not be able to accommodate it. But it matters to fix our understanding because of how useful and meaningful a

person's lifelong data archive can become. We create technologies to enhance our lives and ease our burdens of cooperation. We do not have to remain subject to the harms of our technologies' current imperfections.

Conclusion

Though it is common for people to wish for their online accounts to be deleted after their death, this research reveals that what people truly want is for their loved ones to not be burdened, and to have whatever options they find meaningful in their bereavement. Though a robust memorialization option for post-mortem Facebook profile management exists and seems to work well when implemented as designed, its use is not yet widespread. Although this study focuses on Facebook, I argue that it carries design implications that will be applicable to any online service that is wrestling with questions of how to handle post-mortem data. For most people, work-arounds and arduous legal processes remain the only options for accessing deceased loved ones' data. As more platforms recognize the mortality of their users and contend with the increasing number of dead people's accounts, the humane and ethical path forward will be to allow their users' surviving loved ones to experience compassion through deletion. I have offered some insight and methods toward such a path for the sake of technology being its best when it matters most. Until Facebook or other platforms begin to implement such solutions, a social process rooted in the emerging practices of community death care may be able to confront the difficulties of post-mortem social media management. The next study explores such a process.

8 | Study 4: Guided Experiences of Memorialization and Deletion

From small confusions to real pain, the previous three studies described instances of difficulty in using Facebook's post-mortem account management settings: misaligned expectations of how the feature would work, legacy contacts experiencing strict limitations, and profile deletion occurring abruptly. It is no small task to consider how these difficulties might be addressed, especially for people who are navigating those difficulties in the sensitive and critical time following the death of a loved one. I formulated the following study to examine what kind of guidance or assistance could help stewards to avoid the previously-identified difficulties in post-mortem data management on Facebook.

This study combined my cultural, practical, and technological experiences, along with my recent death doula training, in a method that was equal parts qualitative interview, tech support, and community grief care. My aim through this study was to guide participants through the post-mortem account management process in a way that consciously avoided the known pain points of post-mortem account deletion described in Study 3. To approach the creation of an experience that would be the opposite of abrupt, unexpected, and inclusive of all data, I turned to existing structures of human interaction in which actions and decisions are slow, expected, and iterative: rituals. This study asks how ritual-based guidance might create adequate structure to form and meet expectations in the post-mortem social media management experience. While rituals often accomplish the completion of a task (like beginning a marriage, or transitioning a person to adulthood), their common function is to create and meet expectations, and articulate meaning (Imber-Black and Roberts 1998).

The core finding of the previous studies were that traditionally understood paths through user experiences and tech support are not sufficient for the post-mortem data management context. Those workflows and established practices presume that the user is aware of their desired outcome of the process, or the specific task they need to complete. The previous three studies demonstrate that neither chosen nor active legacy contacts had any coherent expectations or specific desired outcomes for the deceased person's profile, only vague notions of "take care of it." This study steps back from the focus on task accomplishment or goal achievement and instead focuses on the precursors to the process: evaluating the options and their possible outcomes, then forming, articulating, and meeting expectations. This study finds the five-part structure of rituals to be an effective approach for assisting people through post-mortem data management, and may be similarly effective for technologists who work with people in other highly-sensitive decision-making situations.

In this chapter, I describe my study on how the structure of ritual guidance in a technical context created adequate space for people to evaluate their affective connections to post-mortem data, and thus form and meet expectations for managing that data. As a guide for this project, I referred to functional definitions of rituals from research in cultural anthropology, and structured my interviews to be similar to a ritual process. Through multiple-interview processes with six participants, I discovered what prompted people to think about social media after their person's death, how they made decisions about their person's accounts, and how managing online accounts compares to other tasks that participants engaged with after the death of their person. Walking through the management process with these six participants not only provided insights about what meanings may be contained within people's post-mortem data, but provided a space

for participants to articulate how those meanings could be recognized, verbalized, and honored in community death care practices.

Through our conversations and clear identifications of expectations and possible meanings, each participant was able to see additional facets of their loved one's life through the profile, and thus determine the appropriate management actions. Below, I describe the path of each conversation and identify when each person discovered facets of their person's online life that assisted in their decision-making. I found that each facet of the deceased person understood through the profile contributed to participants' abilities to see the affective constellation that makes up the person as a whole (a concept I describe in the next chapter). Learning the ways that the profile mediated contact with the person during their life was a community process that was essential for each participant to feel confident in their decisions about the fate of the profile.

Instruction Through Settings, Preferences, and Ritual

To preface the study, I supplement the foundational research in Chapter 2 with three additional topics. First, I review issues people often encounter with general social media settings, as that is the primary interface around which I centered my conversations with my participants. Next, as the settings in the study were purely about someone else's account settings and the fate of all of their associated data, I discuss some deeper complexities around digital remains and how those complexities relate to what people want to be possible with post-mortem data. Finally, I discuss the concept of rituals to lay the groundwork for how I interacted with each participant in evaluating the meaning of their deceased loved one's digital remains on Facebook.

General Issues with Social Media Settings

Facebook settings are known to be confusing, as was evidenced in a study of privacy settings (Liu et al. 2011), and have only grown in complexity over the last 10 years. The misalignments between participant expectations and system functionality described in Study 1 are aligned with Liu et al.'s findings that “privacy settings match users' expectations only 37% of the time, and when incorrect, almost always expose content to more users than expected” (p.61). In short, it is difficult for Facebook account holders to discern how to configure their settings to actually reflect their wishes for their content on the platform. The issue of having accurate settings only becomes more complicated when one is making decisions on behalf of another person. Nansen et al. define this scenario as “proxy use,” which is a “mode of digital media engagement that slips between established categories of user/non-user, online/offline and self/other” (2015). Legacy Contact may be understood as a unique double-proxy-use scenario: as described in Study 1, account holders choose legacy contacts based on who they anticipate being able to meet the needs of many loved ones. In the meantime, Study 2 explains how active legacy contacts demonstrated complex multi-directional considerations when discerning what the deceased account holder would have wanted. If normal proxy use “slips between established categories of self/other,” then post-mortem proxy setup and use is beyond slippage — it is a rapid-fire back-and-forth of deference.

The Value of Digital Remains

Making decisions about a deceased person's digital remains is philosophically problematic. How people conceptualize digital remains is difficult to determine, as the physical assets most people are familiar with do not easily apply to digital content. As Stokes says, digital

remains are “disanalogies with offline property” (2019). Just as technological objects themselves are not considered worthy of bequeathing, as described in Chapter 2, data itself is even less considered. Though current laws regulate data as an asset, the way people experience a deceased person’s data bears more similarities to presences, with one exception: survivors must take action to allow data to be managed like remains. Comments from participants throughout each study above reflected a reliance upon the platform to give “proper” controls to next-of-kin, in following with known legal structures about physical assets that may automatically transfer ownership upon death. Yet the three studies above demonstrate how, despite common misconceptions about how much Facebook “knows”, nothing on the Facebook platform changes automatically as a direct result of an account holder’s death.⁴ To even place a deceased person’s profile in the category of “digital remains” takes awareness of the system, and it takes work. Furthermore, the profile itself can be seen as an enduring part of the deceased person’s identity. Such connections are supported by previous research describing how people maintain continuing bonds with deceased loved ones through social media (Getty et al. 2011, Kasket 2012). The next section gives an overview of the form that work surrounding human remains — in any form — often takes: rituals.

Death Work and the Purposes of Rituals

Death rituals are universal, as are their benefits. As Ron Grimes, the scholar of rituals explains, “Cross-culturally considered, the major aims of funerals are to support and protect the

⁴ There is a lot of nuance here. Automated changes do happen to deceased people’s accounts, but are the result of others’ behaviors in combination with a cessation of direct activity by that account holder. Facebook’s system does employ algorithms that can detect a likelihood of account holder death, and then remove those accounts from birthday reminders and other communication prompts without fully memorializing that account (Zaveri 2019). Instances that *appear* to be automated deletion of a deceased user’s account are discussed below.

living; honor the dead; facilitate their exit from the society of the living; and initiate, if not complete, their incorporation into whatever level of existence or nonexistence the dead inhabit” (Hogue 2006). Rituals mark occurrences as significant, and include the actions people expect to be able to perform with the remains of a loved one, regardless of the form those remains might take. A lack of opportunity for meaningful rituals in disposal of digital presences is problematic and painful. In the following theories and frameworks in traditional anthropology, I will draw from the idea of ritual as how communities articulate their most important values and relationships.

Classic works in the field of cultural anthropology provide fascinating descriptions of the most important and formative rituals in various cultures. But even more fascinating are the ways that those descriptions shed light on the cultures of the anthropologists themselves, as they contrast their own cultures with those they deem as “others.” In understanding the Other, anthropologists gained valuable tools to understand and critique their Western ways of life. Building on these works, especially van Gennep and Turner, cultural and media studies scholars have framed some online behaviors as “online rites of passage” and raised those practices to the same levels of social significance as coming-of-age ceremonies or weddings (Brinkerhoff 2009).

Cultural Anthropology holds as foundational Arnold van Gennep’s universal description of rituals or “rites of passage” as containing “preliminary, liminal, and post-liminal” phases in which a person or group is removed from their existing daily roles and routines, prepared for and guided through a (sometimes intense) transformation, then re-introduced to daily life in a new role (van Gennep 1909). His successor Victor Turner deeply theorized this middle phase,

“liminality,” in his work “Betwixt and Between” (1987). Turner’s works describe the sociocultural properties of the liminal period as a way to move someone from one stage of life to the next (i.e., boyhood to manhood, or singleness to marriage). A liminal stage is recognized by Turner as “time out of time” that is wholly separate from the normal day-to-day events of the person’s culture, profession, or otherwise daily life. In a boyhood-to-manhood ritual, the person partaking in the ritual is neither still a boy, nor is he yet a man. He is temporarily something else altogether. In experiencing the separation of a ritual, an experience separate from normal time, one may recognize the transition from one state of being to another, and accordingly change their interactions and practices of existence. In this separate state, the person’s position within the social structure is undone, and must be rebuilt. Turner calls this “structuring and anti-structuring” (1987). Rituals may be painful or awkward for those who witness or participate in them, but they are necessary for the ongoing existence of essential roles in that society.

Some cultural practices focus on allowing the deceased person’s spirit to pass into the afterlife (e.g., Metcalf 1982), while others provide space and time for the surviving community to acknowledge that the person is gone and recognize how their absence will change the life of that community moving forward (Hogue 2006). As many cultures have applied their death rituals and memorial practices to online spaces, it follows that media studies scholarship on such rituals has grown. Consider Gamba’s mapping of online grief rituals, which seems to equate “ritual” with any online behavior related to a death, from memorial slideshows on YouTube and comments on memorialized Facebook profiles, to the first known mourning site in the 1990s, cemetery.org (Gamba 2018). It is noteworthy that such interactions and observable practices do not necessarily fit the anthropological definition of “ritual.” My work in this chapter uses an

anthropological definition to distinguish between patterns in online interaction, and true rituals: structured, scripted social interactions that work to mark significant transitions and changes in people's lives and social relationships.

Though the observable practice of grieving and memorializing the dead online has benefits for survivors, Genevieve Bell describes that the benefits may be thin because being physically present or otherwise embodied makes a difference (Bell 2006). Bell says in her discussion of techno-spiritual practices that public physical acts are significant, and that we could lose something when translating such practices into digital interactions. While the example in Bell's study is particular to religion in its case of the "intent of confession as a semi-public act of contrition," the meaning is generalizable: the physical act of being present is part of the value of the practice (Bell 2006). Bell's arguments are consistent with media philosophers such as Bernard Stiegler, who expressed concerns about the pace of human activity, and what we may be leaving behind when we reach beyond the capacities of our bodies (Stiegler 2018). These critiques not only led me to incorporate principles of slow technology into my work, but clarified the importance of rituals in examining experiences of death and grief. Considering death rituals through liminality, characterized as "time out of time," is useful because liminality articulates the necessary slowness of most activities during the perimortem interval. Applying liminality to online practices of bereaved people has served to guide me toward the chosen methodology in this study.

As with media studies, the term "ritual" is frequently undefined in religion research that addresses it, covering everything from rigid practices in the world's more authoritarian religions,

to simple acts of habit for an individual or a family. Yet liminality is often applied for analyses of cultural death practices. The prevalence of rituals and ritual studies across disciplines emphasizes the ubiquity of intentional behaviors in life's most difficult moments. For example, Hogue (2006) says in his analysis of Christian funerals that it is not always clear "whom the service serves—the deceased, family and friends of the deceased, the church community, the larger society, or God," but the actual practices are predictable, and "rooted in thousands of years of ritual practice." He goes on to identify ritual as a "universal human need", especially for death. However, the reason for humanity's need is debated. In religious context, Hogue describes how "rituals serve as containers for feelings, protecting the grieving from potential chaos or even destructive impulse." This relates to the "sense of control" identified in Norton & Gino's economic study of the effects of ritual in recovering from various types of loss (2014).

Central to the study, Hogue points out that "we no longer really believe that rituals bring about the change they are marking" (2006). My work in this chapter argues that this worldview is one possible reason that death rituals have not been considered in sociotechnical system design for post-mortem data management. Without underlying beliefs that the work of death rituals are necessary in order to let a person pass over to the afterlife, we may have lost the underlying benefits that those rituals could contain for survivors. In a public health sense, "disposal" has always been for the well-being of survivors. Yet, in the wake of the COVID-19 pandemic, many are experiencing the pain of being barred from their funeral rituals. There remains a sense of inability to move forward in time and in life without the occurrence of the ritual.

In considering what functions of rituals might be beneficial for the post-mortem stewardship of digital presences or personal data, I considered the specific benefits and core elements that rituals typically present. In recognizing the pivotal, structural role of ritual in moving a group forward, I consider how rituals are created, and the sociocultural work that can be accomplished in their enactment. I describe these elements below, first from a religious perspective, then a family therapy perspective, and finally the perspective of a death doula who creates ad hoc rituals for dying clients.

In his analysis of the Christian funeral, Hogue identifies six experiences that are evoked in rituals:

1. “time out of time” — Hogue uses Turner’s phrasing for an experience in which time seems to pass differently than it does in one’s day-to-day life. Consider a late-night, intimate conversation with a close friend: it may seem like you just sat down together, but checking the clock reveals that three or four hours have passed.
2. emotional vulnerability — Rituals often create space for people to share things about themselves or articulate deep feelings that would otherwise not be shared.
3. both isolation and community, and community members being drawn “unusually close to each other” — Rituals often have intentional exclusions in order to facilitate safety for the in-group to be vulnerable. For example, men and boys may be excluded from a woman’s coming-of-age ritual.
4. remembering and restructuring memories — A person’s experiences are recounted in the context of their worldview or religion’s core teachings.
5. temporary — Rituals always end.

6. restructuring of social relationships — Rituals move persons into new niches in the social order. For example, following a marriage ritual, the main participants have new titles (husband, wife, spouse) and new responsibilities.

A communal ritual approach to post-mortem profile deletion combines traditional anthropological theories and perspectives (i.e., Turner 1987) with user experience research and design for the purpose of ritualizing stewards' decision-making for post-mortem social media profiles. In moving from life with the person's active presence online, to life without the person's presence online, what expectations should be set, and what meanings might be articulated in that particular liminal space?

According to long-term qualitative research through 25 years in family therapy and psychology, Imber-Black and Roberts (1998) found ritual elements have five functions within a group:

- a. shape, express, and maintain relationships
- b. voice beliefs and make meaning
- c. make and mark transitions for ourselves and others
- d. recover from trauma and loss
- e. affirm deep joy and honor life

To achieve these five ends in a digital context, I find it helpful to understand the social media profile of a deceased person in the context of Unruh's identity preservation strategies (Unruh 1983), and see how an online community reinterprets the deceased's mundane posts as significant to who they were — even sacred to their memory (e.g., Leddy 2019). Informed by

psychological models of grief and bereavement, as mentioned in the related works of Study 1, this study ventures into the role of the deceased's online presence in the grieving process of their survivors. However, as stated above, this study most directly addresses the manner in which survivors engage with the digital remains of the deceased, and how they might perform that engagement with more accurate recognition of both the meaning of those remains, and the significance of those remains in the context of their existing social and cultural practices. I argue that using a similar planning structure to familiar funeral rituals will bridge the gap between options for pre-planning for account-holders, and the execution of those pre-planned wishes (or lack thereof) by surviving loved ones.

Through extensive consultation with a variety of religious and spiritual leaders, and in consistent reference to the anthropological works described above, I find that the building blocks of meaningful rituals include:

1. A fixed time, place, location
2. Beginning
3. Pre-arranged actions
4. Pre-arranged words
5. Both of the above explaining what has happened
6. Both of the above articulating expectations for what will happen
7. Closing

In this analysis, it is notable that the pre-arranged elements directly serve the later explanations. The common vocabulary of the participants reflects a common understanding of what has

happened. More importantly, the expectations of the participants are met with precision. That is to say, a Christian person participating in a Christian funeral is uniquely comforted by the familiar readings and framings of the deceased's life in a context that would not be accessible to someone who is unfamiliar with Christian traditions and narratives.

These elements can be observed across time and cultures, but are most easily understood in specific contexts of particular worldviews. For example, a Buddhist ritual might explain death in terms of the impermanent nature of things, while a Christian ritual might refer to eternity and Heaven. Personalization is generally considered respectful, and even ideal in online contexts.

For guidance and tools in personalizing new rituals, I turned to the work of death doulas. Death doulas are a growing faction of caregivers who work alongside families and hospice to provide emotional support and spiritual guidance to dying people and their families. In her online courses, popular death doula Alua Arthur references Dr. David L. Bieniek's book "At the Time of Death: symbols and rituals for caregivers and chaplains." Dr. Bieniek's step-by-step recommendation for creating a ritual in the moment in which one is needed are as follows:

1. Assess the traditions — Gather info beyond the person's religion.
2. Ground in purpose — Know what the point of the event is.
3. Create space — Consider the environment, both internal and external.
4. Connect elements, senses, and practices — This will be the bulk of ritual.
5. Reflect — Voicing what was accomplished provides attendees with a common narrative.

In her own work, Arthur recommends engaging one of the participants' five senses — hearing, sight, smell, taste, or touch — and a core element of earth, fire, air, or water (Arthur 2020). But the purpose of such rituals retain the functions described by anthropologists: rituals serve to articulate expectations, and then meet those expectations.

In his descriptions of online rituals cited above, Gamba's core claim is that online grief is rooted in a need for personalized grief expressions for individuals. My study contrasts with his focus on the individual, as it does in its HCI perspectives. I argue that rituals and our collective need for them are rooted in a need for communal recognition and for common expectations to be understood and met following a loss. This point is critical to the argument throughout this dissertation, that by considering online memorial practices beyond the level of the individual, social media platform designers may find a wealth of opportunities to create intentional, expected and honoring experiences for grieving communities on their platforms.

Methods and Analysis

To engage in this work, I recruited 6 adults in the United States who were the next-of-kin of a recently-deceased person who had had a Facebook account, and wished to go through the process of managing that person's account with guidance. My approach was inspired by action research methods, in which the focus is, "to create research efforts 'with' people experiencing real problems in their everyday lives not 'for', 'about', or 'focused on' them" (Hayes 2011, p. 3). In accordance with action research, my goal was to find particular solutions and tailored interventions for each participant in a way that could be transferable to others handling post-

mortem social media data. I adapted my interactions as I learned from each of them. In this way, each conversation represents one full iteration of the “action research spiral”: plan, reflect, act, repeat (Hayes 2011, p. 6).

The recruitment information specified that I wished to work with people who wanted to manage the account of someone who had died within the past two years. The two-year increment allowed for the inclusion and discussion of any activity on the deceased person’s profile that may have been sparked by their birthday or death anniversary. Brubaker & Hayes (2011) note that anniversaries of deaths typically see a spike in post-mortem profile activity, which I deduced would provide specific examples of things that may be beneficial or hurtful regarding post-mortem data interactions. I did not require a minimum amount of time to have passed since the death, in order to make the study available to people who might have pressing needs around their person’s profile. I chose to define “next-of-kin” broadly, based on the findings in Studies 1 and 2 about how legacy contacts are chosen. In the context of my study, I defined “next-of-kin” as the person who knew the social-media-related wishes of the deceased, and was recognized among the deceased’s other closest loved ones as the appropriate person to make the decisions about how and when those wishes should be carried out. The study information sheet included criteria to verify that the main participant had the capability and permission to make decisions about the deceased person’s profile, mainly that they possessed a copy of the account holder’s death certificate. The legal next-of-kin holds the death certificate, but they may not be the same person as the legacy contact the account holder had selected. In such cases, only the legacy contact could complete the process at the center of this study. As choosing a legacy contact remains rare, possession of a death certificate was a useful criteria to finding the appropriate participants.

To recruit participants, I dispersed study recruitment materials through a variety of my personal networks, which specified the criteria and contained my contact information. The respondents who completed the study with me consisted of two friends of my personal contacts who responded to a public Facebook post, and four people who responded to the information being shared to a location-based email list. Though the study questions had initially focused on examining new experiences for post-mortem profile deletion, and thus included “wants to delete the profile” as a prerequisite for participation, I quickly discovered that potential participants were not aware of any option *except* to delete their deceased person’s Facebook account and wanted more information about other options. For this reason, I changed the recruitment materials to include people who were uncertain about what to do with a recently-deceased loved one’s Facebook account.

The three stages of participant interactions included 1) an introductory conversation to establish their needs and options, 2) guiding them through the process to memorialize or delete the account, and 3) a reflection on their experience. In my first conversation with each participant, we discussed the person who had passed away, how that person had used their Facebook account, and what activity (if any) had occurred on the profile since their death. All initial conversations occurred over the phone (N=2) or video chat (N=4). My interactions with each participant ranged from 1 to 3 hours per stage, with four participants engaging with me over several different occasions. Altogether, my data consists of 19 hours of transcribed audio.

I held an initial hypothesis that choices about memorialization or deletion would be based on how the account holder used Facebook during their life, so the questions I formed for the first interview invited those descriptions. As a result, all conversations were interspersed with stories of the deceased, as well as details about each participant's life and how it had changed since the death. These details made important social contexts of the participant's life visible to me, and guided my questions about the variety of people and relationships to consider in making a decision about the deceased person's profile. Descriptions of Facebook's post-mortem options were dispersed throughout these discussions, using the context of the participant's relationships and experiences to help them understand what options were available on Facebook, and the potential pros and cons of each.

Due to both distance and COVID-19 precautions, I met with only one participant in person for their second and third stages of participation. However, the widespread use of video chat platforms throughout the pandemic meant that all of my participants were experienced and comfortable meeting over Zoom or similar platforms. For remote participants, I used screen-sharing features to clarify specific things about requesting memorialization or deletion in Facebook's Help Center in order to empower the participants to find information and navigate the process themselves. Some participants requested to add me as a Facebook Friend for the duration of the study to facilitate my viewing of posts and photos that we discussed during our conversations. The digital connection also served to legitimize my identity with participants' friends and family who were invested in the fate of the deceased person's account.

Though the initial design of this study was to include select friends and/or family in the participant's management process, safety concerns related to the COVID-19 pandemic made it more practical for participants to discuss their thoughts about the deceased person's account with others separately and in their own time before reconnecting with me for subsequent conversations and guidance. Two participants concluded their participation at this point, reporting that they had enough information to make a good decision about their person's Facebook account at a later date. Both specified that they were likely to memorialize, not delete the accounts.

For the four participants who agreed to continue participating, we exchanged emails and text messages to coordinate a second conversation, in which we would carry out the decision they made to either memorialize or delete their person's account. These interactions occurred over the phone or video chat, with the exception of Tina, whom I met with in her home. Each second conversation began by reviewing what the participant had discussed with other loved ones about the options that were available for the Facebook account. I used this time to verify that no further actions needed to be taken among the family or community before requesting the change to the deceased person's profile. I then guided each participant through their chosen process which included collecting digital versions of death certificates or obituaries, and filling out the Facebook form to request the desired outcome.

Depending on the time it took to verify that the request to Facebook had been completed (which could be a few minutes or a full day), I either continued the conversation to reflect on the participant's experience, or arranged communication for later once they had received the

confirmation email. This allowed for additional guidance if necessary, especially in cases where Facebook's Community Operations correspondent required more information before fulfilling the request.

For each interview, I recorded audio and/or video of each interaction. The audio was automatically transcribed, so I manually corrected each transcript throughout my coding and analysis. I took handwritten notes throughout the interviews, noting any artifacts or visible representations related to the deceased person, and any emotional expressions by participants. Following each interview, I composed observational memos recounting the experience. With these materials, I conducted a thorough review and thematic analysis. I later compared the themes that emerged to the ritual elements described above in order to evaluate the experiences in the context of death work.

The table below provides a brief overview of each participant's information. Due to the variety and richness of my participant's experiences, I also present each one below as a stand-alone story. Each vignette provides context for the analysis of what made these participants' experiences fitting to their needs, especially by comparison to participants' painful, confusing, or complicated experiences in the previous three studies. All names used are pseudonyms, and personal details have been obscured to respect my participants' privacy.

Participant Name	Age/Gender ID	Contacted via	Managed Account(s)	Decision
Ann	72/F	Personal contacts	mother, brother	memorialize, memorialize
Loni	40s/F	Local email list	husband	<i>deferred</i>
Tina	43/F	Local email list	husband	memorialize
Cora	70s/F	Local email list	husband	memorialize
Whitney	60s/F	Local email list	mother (x3)	delete, delete, defer
Alli	30s/F	Personal contacts	step-father	<i>deferred</i>

Table 4. List of participants, demographic information, decision for deceased's account.

Participant Vignettes

1. Ann is a grandmother in her 70s, who enjoys part-time work and helping to raise her grandchildren in Georgia. Her mother died three years ago at the age of 95, followed by her brother 9 months ago at the age of 63. They were both still living in their hometown in the Midwest, so Ann had to travel back there to handle both of their estates. Both of them used Facebook to keep up with photos of the children in their extended family. Between funeral arrangements and sorting through their assets, Ann never thought anything could be done with her late mother's and brother's lingering Facebook accounts, which had appeared in her

notifications on each of their birthdays, until she saw her childhood friend post about it on Facebook.

Ann wanted to stop the birthday reminders and get rid of the profiles that were no longer in use by anyone. She presumed deleting them was the only option. Ann had many questions about how post-mortem Facebook management would work, so we talked through each option: deletion, making herself legacy contact, and memorialization.

After learning that memorializing the profiles would stop the birthday reminders, Ann saw the possibilities of keeping the profiles as memorials. She does genealogy work and began to see potential in future generations using Facebook to learn about their ancestors. We requested memorialization for both profiles, and received an email response from Facebook requesting additional information. There was no detail in the email explaining which of the two profiles required additional information. However, Ann noticed the following day that her mother's profile had been memorialized. We deduced that their need for more information turned out to be related to information on her late brother's profile that did not match his death certificate: the birth year and hometown he had posted on Facebook were incorrect. Ann replied to the email expressing her confusion, and provided his online obituary with a photo to further confirm his identity. She noticed several days later that the profile had been memorialized at some point without any additional confirmation from Facebook.

2. Loni is a mother of young children in her 40s whose husband died unexpectedly this year. She has been sharing photos and updates from her account to her late husband's timeline to keep his friends and family informed about their children. She worries about it being hacked or deactivated since he has not signed in for a long time, but does not know how to mitigate these risks.

As we spoke about the possibility of deleting or memorializing her husband's profile, Loni expressed appreciation for her late husband's friends who had made an effort to connect with her and post their own memories on his profile. This led to her voicing a long-term wish for her children to be able to know their father through people who love him. She began to see his Facebook profile as a tool to that end. Loni did not make any decisions during our interactions, but found memorialization to be preferable over "just leaving it as it is" because it would provide permanent and long-term account security. She explained that she wanted more time to think and communicate with others before carrying out the memorialization process, which she felt confident to do on her own at a later time.

3. Tina, age 43, recently lost her adventurous and tech-savvy husband to brain cancer. She dislikes Facebook, but she and her husband signed up after his diagnosis in order to quickly communicate his health updates with their internationally dispersed friends and family. She was eager to delete her husband's Facebook account because it continued to send push notifications and emails to his still-active smartphone.

Tina was focused on problem solving, and so wanted things resolved quickly. Yet there was a rapid and clear shift in Tina's preference when I asked about other people who might have interacted with her late husband's profile. She spoke of his mother and sister, and their use of Facebook being very different from hers. In describing her mother-in-law's Facebook use, she began speaking of memorializing her late husband's profile as "a gift to his mother." As the potential for continued connection with her husband and others became clear to Tina, she expressed interest in taking the role of legacy contact for his account. We navigated between one laptop and three smartphones to access Tina's husband's account, review the memorialization request form, take and share photos of the death certificate, and recover Tina's own Facebook password. Ultimately, we were able to access her late husband's Facebook account through his smartphone, make Tina his legacy contact, and successfully request memorialization.

4. Cora is a retired environmental activist in her 70s. Her husband passed away last year after a lengthy decline from Alzheimer's disease. He was also an environmental activist, as well as a documentary filmmaker who was well-known and loved in his professional community. He had not used his Facebook account for several years by the time he died, so Cora expected that deleting his account would make sense for her.

As we spoke about Cora's husband, she described him as a "luddite" who feared how technology was negatively changing society. Even so, our conversation turned to the broad influence of his life and work, and Cora began to consider the younger people who may be interested in learning about him. In these considerations, she acknowledged that memorializing

the profile would provide context for people who search for her late husband online. She remarked that, as he had stopped using social media at the decline of his mental faculties, his minimally-populated profile reflected a truer sense of who he had been for his entire life, not just the end of it. She has a simple memorial altar to her husband on his dresser, consisting of his watch, ring, and wallet on a blue cloth, next to a candle and a photo of him. Cora placed the laptop on this surface when I guided her through the memorialization request.

5. Whitney is a teacher in her 60s who tutors students online and uses Facebook to keep up with her adult children's lives. Her mother, age 91, recently died. She left 3 different Facebook profiles behind, reflecting each last name she had had in the last 15 years. Whitney describes her mother as glamorous and vain, indicated by her frequent sharing of photos of herself on Facebook.

Whitney talked with me about how to delete her mother's profiles, with a secondary goal in mind to have that knowledge for others in her community. She ultimately decided to leave the third and most recent of her mother's profiles alone, as it contains photos and other memories from her most recent in-laws, whom Whitney does not know well. For the earlier two profiles, Whitney took one week to inform her children and other family members that her mother's profiles would be deleted soon. In our second and final interaction, she reflected on the things she had learned from those conversations, especially the fact that her children had interacted frequently with their grandmother on Instagram. Then, Whitney and I performed a simple ritual, in which she took a breath and spoke to her mother before sending in the deletion request.

6. **Alli** is a practicing death doula in her late 30s who rushed to her mother's side after the sudden death of Alli's step-father. We spoke about 24 hours after his death. Through his computer, Alli had signed into her step-father's Facebook account and posted a notification of his death. Not being part of his community, she found it to be the best way to quickly and broadly communicate with those who knew him. Alli was intentionally not part of her step-father's community. She reported that he mistreated her mother throughout their decades of marriage, and frequently posted "hateful" and political content on his Facebook page. Alli remembered seeing my posts in our shared Facebook group, and reached out to me to learn about what options existed for her step-father's Facebook account.

Alli ultimately decided to make herself the legacy contact, and memorialize her step-father's account. She did not feel that deleting his profile would be an appropriate decision for her to make, and chose memorialization because that would defer his digital remembrance to people who did care for him. Her decision to be legacy contact was a matter of practicality and assisting her ailing mother, not of any desire to steward the account.

Each participant had these things in common: they were all women, they all took time to consult with others about the post-mortem options, and with the exception of Tina, they successfully navigated the process of requesting notification or deletion over Zoom with me. For the five participants who chose memorialization, they were motivated by some account security

concerns, but were more motivated by the profile being a way to maintain continuing bonds with the deceased person, either theirs, other people's, or both. Each woman did not want to make decisions about the profile on their own. In the following section, I provide analytical details about the participants' perspectives of Facebook's options, their decision-making processes, and how the structured interactions allowed them to articulate and meet expectations in the stewardship of their person's profile.

Discovering and Practicing Post-Mortem Account Stewardship

In each participant's story, I learned what prompted them to think about social media after their person's death, how they made decisions about their person's accounts, and how managing online accounts compared to other tasks that participants engaged with after the death of their person. Out of the six participants, only one decided to have her deceased person's Facebook account deleted. The others chose to memorialize, either with me or at a later date. I discuss the common themes in their choices here.

Motivations to Manage a Loved One's Facebook Account

It is not a foregone conclusion that people who lose a loved one with a Facebook account will do anything to manage it. Most Facebook accounts are left as-is, with no one reporting the account holder's death or attempting to manage it. So why did these participants choose to address their person's lingering profile? And why had they avoided doing so before, even when, in some cases, months or years had passed since the death?

I found two situations that prompted people to engage with me to make decisions about their deceased loved one's profile. The two situations indicate different levels of familiarity and comfort with Facebook's settings. The first possible prompt was the study recruitment information. In some cases, the recruitment information served as a *reminder* that the person's profile needed managing, whether or not the participant had continued to engage with it since the death. This was the case for Loni, who I reached through a local email list.

Loni: "I kinda felt like I took care of what I felt was urgent, and what had to happen, and the rest I've kinda just been like... I'm not quite ready. But then I keep thinking, Should I do something? Is it bad to leave it as it is?"

For Loni, her late husband's Facebook page was an afterthought among other post-mortem logistics she had to take care of. Her questions revealed that she was unaware of what specific options exist for Facebook accounts of deceased people, as well as how necessary those options may be. This lack of knowledge contrasts with other logistical options Loni mentioned having after her husband's death, from his burial and funeral options to making changes in their shared bank accounts. Burial options tend to follow cultural and familial traditions, banks legally require account holders to name an heir, and both hold serious consequences if neglected. In Loni's story, I found that the Facebook account was different because managing it initially lacked urgency or necessity, as it caused no problems for her. Yet, her practical experience with her late husband's other accounts connected the actions she performed in those capacities with possible options for his Facebook account. The study information prompted Loni to ask what options were available, and to understand what might be best for the account.

What Loni's experience has in common with every other participant is that all of them had their first experience of talking through options during their first conversation with me. There were no recommendations or information sources in any of the other logistics processes they went through after their person died.

Tina had a subtly different response to seeing the study information on the neighborhood email list. She told me that she did not realize there could be *any* options for her late husband's profile. She described herself as "hazardous to technology," while her late husband had loved building computers and coding his own websites. It had not occurred to her that any of his online accounts needed to (or could) be managed at all. We connected about 3 months after her husband's death. For most of those days, she had been checking his phone and responding to his emails, and had presumed that his online accounts would "fade away" once she decided to turn off his smart phone and cancel its payment plan.

"I honestly hadn't even thought about his Facebook stuff, I didn't even realize you could do something about it when someone dies. But then I saw your email and thought, oh she can do this for me!"

Tina felt overwhelmed with the tasks to be completed after her husband's death. She described lawyer friends and nurse friends who helped her with some tasks, like bank accounts, tax paperwork, and the medical equipment that remained in their home from when her husband was in hospice care. Yet no one had spoken with her about his technology. As his smartphone was Tina's access point to her husband's accounts, she presumed that, as long as she could continue to log into his phone with the single passcode she did know, she could check his accounts with their auto-saved passwords, and do whatever turned out to be necessary. In the months following

her husband's death, she started checking his email and Facebook every day. At first, it was necessary to notify people of his death, and cancel various subscriptions. Then it became part of her daily routine. She told me that she presumed everyone's online accounts were deleted after a few years of inactivity, and her continued activity served as maintenance. The recruitment materials had made her question that assumption.

The second scenario that prompted participants to engage with this research was a problem with the deceased person's profile. One such problem was reported by Ann, whom I assisted with her late mother's and late brother's profiles. Her brother's birthday was a few weeks before they spoke, and Ann was upset by Facebook's reminder to wish her brother a happy birthday.

Ann: "My brother's [profile] popped up that it was his birthday... and... uh... [sigh] And it's like... I really could do without that."

She went on to describe that birthday reminder as a prompt to investigate her mother's profile as well, finding that,

"It's still there and hasn't served a purpose for a long long long time. And it's like, I don't know what to do with it. And then [I saw your information], and it's like, Oh my god! I can fix this!"

While her brother's birthday reminders made her sad, Ann reported no awareness of a way to communicate with or find information from Facebook about what to do; she was not even aware that the Help Center existed. She also did not seek information from people she knew. In fact,

her husband arrived home during the interview, discovered what we were talking about, and explained how she could “tell Facebook he died, and they’ll kill the profile.”

The presumption that no one can help, and that no information is available was prominent in my participants. The study information or a problem with the account therefore make sense as prompts to act, as participants reported their experiences of grief as not having the capacity to be proactive in making things happen, difficulty learning new things, or not being motivated to address things that did not seem urgent in comparison to other post-mortem tasks. A lack of existing or known structures for decision-making left people to reluctantly fumble through the profile management process without any forethought. The barriers to solving the problems that come up with deceased people’s profiles are similar to barriers that typically turn people to tech support services, or at least help from friends, but come up against the complexity of grief, like a sense of overwhelm at the number of management tasks. The study recruitment information, especially for those who experienced problems, took that initial step for participants: it informed them that options existed, and that a knowledgeable person was available to guide them through the process that they previously were not aware of, yet needed or wanted.

Furthermore, the prompts to manage the deceased person’s account brought to people’s attention that there may be consequences to inaction. As Loni asked, “Is it bad to leave it as it is?” Loni’s uncertainty about the necessity of managing her late husband’s Facebook account demonstrates how a social media profile is different from other things that are left behind when a person dies. Clothes fill a closet, possessions gather dust, and bodies begin to decay. But digital items do not have a visible decay process related to human lifespans. The nonphysical nature of a

social media profile makes its meanings and permanence more difficult to identify. Therefore, the problems that prompted my participants to manage their loved ones' profile are the beginnings of their processes in identifying what the profile has been for them and for others. For example, Ann's experience seeing birthday reminders for her brother helped her identify that the profile had been one way she was persistently aware of her brother's life and activities. She can now "do without that" awareness because she can no longer message him or speak to him when Facebook calls her attention to him.

In contrast, participants like Loni did not mind birthday reminders, and had settled into a routine with the deceased person's profile: tagging it in photos and posts, signing in as the person to read old messages, and generally expecting it to be there for reminiscence. The participants at the end of the previous chapter would be able to answer Loni's question in detail: leaving the profile "as it is," meaning that no official report of the account holder's death has been sent to Facebook, would be leaving the profile at risk of being hacked and subsequently disabled in a way that resembles deletion. Once these participants became aware that their routine with the profile could be disrupted, they were able to articulate what the profile had become for them, which made certain management options desirable or not. Participants continued to form expectations about the profile through reviewing Facebook's options, which I discuss next.

Decision-Making After the Death

All of my participants were unfamiliar with Facebook's memorialization settings when I first got in touch with them. Only Cora and Alli had previously heard of Facebook's memorialization settings, but had not managed to find the settings or review any information

about them. Here, I describe participants' reasoning throughout our conversations, and how they arrived at their decisions about the deceased person's profile. I conclude this section by theorizing about the importance of their communications with other loved ones throughout their process.

The first thing we did was establish what problem needed to be solved, or what closure needed to be achieved in managing the deceased person's Facebook account. Asking about problems and closure contrasts with more common structures in user research that focus on goals or work to be done. It was necessary to focus on closure, as participants did not know what options could be chosen or what work there was to be done with the profile in the first place. Above, I described Ann's wish to stop birthday reminders, Loni's concerns about maintaining connections to people, and Tina's acknowledgement that her mother-in-law would appreciate having the profile memorialized. Overall, these specific wishes represent participants' need to tie up a loose end: if there is anything pertaining to the deceased person that remains unresolved, it should be resolved so as to mitigate any risks or future problems that would cause stress or complexity to the account holder's loved ones. A "loose end" pertaining to the deceased can be understood as anything that remains outside the participant's control. Participants like Loni had perceived their person's profile as being within their control by default, but came to understand that they needed to take action to ensure that they actually had the control they needed.

Having established the participant's needs and concerns, I explained what memorializing would accomplish (with or without a legacy contact), and what would happen if the profile were deleted. Though I attempted neutral descriptions of both memorialization and deletion,

participants often asked for examples about why they might want to choose or not choose one or the other. Before answering those questions, I asked about how the account holder had used Facebook during their lifetime, especially what kind of content was visible on their profile. Questions about the deceased person's activities provided data related to the hypothesis that choices about memorialization or deletion would be based on how the account holder had used Facebook. Participants' choices were also limited by their access to the deceased person's account: I described the option to memorialize the account *with a legacy contact*, but none of the deceased account holders had chosen a legacy contact during their lifetime. Participants either signed into the deceased person's account to confirm their settings, or verified that neither of them had known about the legacy contact setting. However, as I demonstrated in Study 2, it is common for surviving loved ones to make themselves the legacy contact for an account prior to requesting memorialization. I chose to make this process known to participants because of my previous research that indicated the usefulness and meaning of a legacy contact's capabilities. Tina, Cora, and Alli each chose to be the legacy contact for their person's account. Most participants chose to memorialize their person's account. Only Whitney chose to delete.

In each conversation, I observed participants progress through deepening levels of understanding about what the profile was. Ann moved through three different definitions of her late mother and brother's profiles, which influenced her decision to memorialize both. The first definition was that the profile was a problem. Ann wanted to stop the birthday reminders she had been seeing because they upset her. She had a presumption that "killing" the profile was what would stop the birthday reminders, but did not know how to go about doing that. She said several times, "I don't know what to do with them." When she learned that memorializing the profiles

was an option, and would stop birthday reminders, she responded with excitement about the idea. It seemed to spark her imagination, and a second definition of the profiles. Ann mentioned friends of her mother and brother who would appreciate the profile still being there, just as a record that they had lived and died. She also mentioned that, as her brother had died quickly after he was diagnosed with terminal cancer, he may have some distant friends who do not yet know he is dead. She considered those friends when deciding to memorialize. The third definition was focused on the future, in which Ann imagined her great-grandchildren being able to see photos of their unknown uncle on the profile, and what that could mean for ancestry research.

I guided each person to their personal understanding of the profile by creating space for them to verbalize what certain content or activities on the deceased person's profile meant to them. Finding those meanings and connections made the right decision for the profile clear to each participant. However, their personal understanding was never enough to begin carrying out that decision. Each participant wanted to run their decisions by other people first. (Alli is an exception to this, though her decision was based on not disrupting connections that she perceived other people to have to her late step-father's profile.) Some participants, like Loni, concluded their participation in the research at this stage, and did not follow up with me. Others reported back about their conversations, and what questions their friends and family had about their choices.

Ann spoke with her husband and daughter about what other people had done on Facebook after a death. She was hesitant to do something that was unfamiliar to others. Loni had similar questions about what was normal or common in my research. These questions seek

norms around profiles of the dead, and speak to the tensions that arise from varieties of death norms on social media discussed in previous work.

Tina spoke with her late husband's mother and sister, asking them if they would approve of memorializing the profile. She reported her mother-in-law being grateful that her son's words and photos did not have to disappear.

Cora spoke with her late husband's daughter to see if she would agree that memorialization was a good idea. Her step-daughter expressed relief that she would not need to collect and save information about her father's friends in order to contact them.

Whitney spoke with her siblings and children before deciding to delete her late mother's profile. Her son wanted to be sure that his late grandmother's Instagram comments would not disappear from his posts if her Facebook account were deleted. Being assured that her Instagram would not change, Whitney's son agreed that deleting the Facebook profile would be fine.

Alli had no desire to interact with her late step-father's Facebook friends, and so chose memorialization as the least intrusive option that could still consider the grief of people she did not know.

No participants made decisions about the profile that were rooted in their singular connections or understandings of the profile. The fact that each decision was communal, either in detailed conversations with others or simply acknowledging the perceived needs of others, emphasizes the fact that profiles are co-constructed representations of an identity. In considering others, each participant was identifying the relationships that were major parts of who that

person had been during their lifetime, and how much the deceased person's presence could continue to be part of their loved ones' identities. These connections reified the networked identity of the deceased. For Whitney, verifying that her children could maintain their connections to their grandmother without her Facebook profile(s) confirmed that she could delete the profiles, as it would not disrupt their continuing bonds. For Alli, she was an outsider in her late step-father's social circles; her choice to memorialize his profile was a choice to avoid consulting with people she would not enjoy speaking with. Yet both decisions represent understandings of what the profile is, and respectful acknowledgement of the deceased's loved ones' needs related to it.

Realizing Expectations Through Memorialization Requests

After understanding which option would be preferable for their person's profile, and discussing the option with friends and family who they felt should have a say, participants reconnected with me to go through the process of requesting memorialization or deletion.

For participants I guided through the whole process of memorialization or deletion, we obtained a digital copy of the death certificate, and talked through Facebook's online form as needed. The part of the process that was most often confusing to my participants was the "profile link," especially in how to find it. This was complicated for them because we were often working on a mobile device, and getting the deceased person's profile link required opening a separate tab or window, knowing how to copy the URL, and paste it into the form. Some participants found it easier to ask someone else in the room to look for the URL and type it out for them. A two-device configuration for completing the form was common in post-mortem tasks on social

media. Loni, Tina, and Cora all reported looking through their deceased person's friend list on one device while finding those friends on another device so they could notify those people without sending a message from the deceased person's account. This tedious notification process was often done with another person. The familiarity of co-acting on behalf of the deceased made my combined role as a researcher and tech support person feel natural to the participants. They also reported that it relieved the stress or overwhelm they had previously experienced when doing an unfamiliar task online because I had answers to their questions or could otherwise explain that something not working was not because of any errors on their part.

Once each element of the form was completed, I would ask the participants to review what would happen once their request had been approved. After verifying their understanding, I asked, "are you ready to click the button, knowing the change could be almost instantaneous?" If they responded in the affirmative, I asked them to take a deep breath with me, and say something out loud to mark the moment if they wanted to.

Tina said, "That's one less thing to worry about," and retreated to her kitchen to make a drink while we waited for an email to confirm the memorialization request.

Cora requested a moment of silence before sending the memorialization request.

Whitney said, "You are indelible to our memories, Mom. You don't need to be digitized." Then she sent the deletion request.

Following the submission of the memorialization or deletion request, one of two things happened via email, usually within 15-30 minutes: either the participant got pushback from Facebook

Community Operations requesting more information, or they received confirmation that the request had been completed.

Requests for additional information revealed some complexities in how the deceased people had used Facebook. For Ann and Whitney, complexities arose because both of them had filed multiple request forms. Ann requested memorialization for her mother and brother at the same time. When she received a request for additional information, citing that the information on the death certificate did not match the information on the profile, there was no indication about which profile was in question. Ann replied to the email to ask which profile they were referring to, and did not receive an answer. However, she later received a confirmation email that her mother's profile had been memorialized, and so deduced that more information about her brother's account was needed. Further viewing of her brother's profile revealed that he had displayed information about himself that was not strictly true: his birth year and the city where he lived did not match the facts on his death certificate. Ann wrote a reply email to Facebook explaining this oddity. A few days later, she checked his profile, and found it had been memorialized with no further communication.

Whitney had submitted multiple requests because her mother had three Facebook profiles, each with slightly different names. Whitney explained to me that her mother had been married three times, and widowed twice, throughout her life. Each Facebook profile reflected the surname she took with each marriage, with the most recently-used profile carrying the surname of the husband she herself had widowed. Though Whitney had decided to delete her mother's profiles that used her names from her first and second marriages, (the second of which was

Whitney's surname), she decided to leave the decision about the most recent profile up to her mother's surviving husband and in-laws, whom she does not know well.

The moments of complexity and the uncertain timeline in waiting for Facebook's responses made it difficult for participants to maintain a sense of control or closure about the profile because uncertainty was a barrier to meeting the expectations they had just formed in our conversations. Though completing the request form was a finalizing action on the part of the participant, it was not actually the moment in which the profile was changed. It simply handed the reins to Facebook. In Ann's case, her sense of accomplishment was almost immediately undone by Facebook's request for additional information. It was as if we had begun to leave the funeral home, only to be asked to come back for one more viewing. It would perhaps have been more impactful to create a moment of ritual surrounding the confirmation of the profile's memorialization or deletion, but we had no way to know when precisely that would happen. Facebook's correspondents did tend to reply quickly, so we generally continued chatting until the participant received that email.

Once we had received confirmation that memorialization or deletion was completed, I asked each participant to examine how the experience made them feel. Ann chose to write a short essay about her experience, which she sent to me a few days after our last conversation. In her essay, Ann specified the moments in which she changed her mind from wishing to delete the pages to being excited about memorializing them. Her excitement was based on the possibility of the profiles being informative to future genealogists, and was also mixed with relief that birthday reminders would no longer intrude on her day-to-day Facebook use. Her reflection identified

each of the multiple points of understanding together, which demonstrates that the points taken together create a meaningful whole. She now knows what the profiles are, and what they mean to her.

Tina and I spoke for several hours during our final meeting, which, like all my interviews with Tina, occurred in person. Surrounded by her late husband's photos, computers, medical equipment, clothing and sports gear, Tina expressed relief at accomplishing something that needed to be done, and having company in the process. I offered to help her with other things while I was in her home, but she declined, preferring to talk and tell me more about her life with her husband. The objects in Tina's home were physical reminders of the work that had been overwhelming her since her husband's death. Being with her alleviated that sense of overwhelm, allowed her to accomplish a task, and gave her space to process some of that day's grief. For Tina, the memorialization process was an opportunity for remembrance and connection, even if she herself would not be using the profile going forward.

Cora also took some time to share with me about her late husband once we had concluded the memorialization request for his Facebook account. She described his love for the environment, and how it was connected to his decision to have his body go through aquamation. With his aquamation remains, Cora has some solid matter that is similar to cremated ashes, and several liters of liquid. She shared with me that she waters her garden with the diluted mixture and considers that a ritual to honor her husband's love of the land and give himself back to it. I found this to be a profound connection to Cora's desire for future generations to find her late husband's information via his Facebook profile and learn from it.

Whitney, as the only participant to choose deletion, said she would have been fine going through the request process on her own, just to get it done. However, she reported feeling deeply thoughtful after our brief ritual, and glad to have taken more time than she would have on her own. The time to think through her mother's profile(s) prompted conversations with family members that were full of reminiscence, life updates, and new recognition of each other's relationships with Whitney's late mother. She reported feeling grateful for those experiences that she would not have had without participating in the research.

Each of these participants' guided experiences demonstrated how the process of deciding on memorialization or deletion served the same functions as a typical ritual: it guided the participants to understand what could happen next, allowed them to form expectations, and then met those expectations. While making the best decision mattered for the broader community, the space to understand and expect the changes to the profile, and honor the connections that it represents were beneficial conversations to each participant. The articulation of meaning is one of the primary functions of ritual, among other parallels that I discuss in the next section.

Tech Support as Rituals for Sensitive Tasks

This section will explore how the core elements of ritual were present in my interactions with each participant, in a way that helps explain these participants' thoughts and decisions about social media data of their deceased loved ones. I had hypothesized that guiding post-mortem social media management as one would plan a funeral ritual would bring about the change it is marking, and perhaps return us to an older, deeper way of understanding what we feel a need for after we have lost a loved one. In closely reviewing the transcripts and notes from each guided

decision-making experience, I find that the lengthy and meaningful decision-making conversations I had with each participant contained the core elements of ritual as described in the Related Works section of this chapter:

1. A fixed time, place
2. Beginning
3. Pre-arranged actions
4. Pre-arranged words
5. Both of the above explaining what has happened
6. Both of the above articulating expectations for what will happen
7. Closing

In the descriptive findings above, I shared the experiences of three participants who agreed to moments of intentional pause during the memorialization or deletion request process, while the other participants declined to do so, or went through the process at a later date without my direct assistance. However, these small moments are not the only portions of the interaction that contain elements of ritual; I find the moments of pause to be the expression of meanings and intentions, which is only step 6 of the 7 core ritual elements. The entire interaction between myself and each participant could be described as a ritual: the fixed time and place was our scheduled meeting, whether over video chat or at the participant's home. The beginning was my review of the informed consent agreement and the questions I presented to establish a rapport with each person. The pre-arranged actions and words were from Facebook itself, in the Help Center articles some participants read, or the memorialization or deletion request form. Some participants even read portions of the form aloud to ensure that they understood the content, or to

pose questions to me. These pre-arranged words formed a foundation for the participant to understand what would happen to the Facebook account, and to take part in the change. The closing was in verifying that the change had taken place, and in reflecting on the experience together. Though each of these guided experiences took place over several days, rather than a single concentrated time, the experience created expectations, brought about the change it was marking, and completed one unfinished task for the participant. Most importantly, no participant reported any negative feelings or unintended consequences of changing the deceased person's profile through their participation in the study.

The positive responses from participants contained a common element: they were grateful for an opportunity to share things about the person they had lost. Furthermore, the need to consult with others about the Facebook account prompted conversations with other loved ones that resulted in participants reminiscing with their loved ones in ways that were comforting and connecting. By extension, participants shared that the people they contacted did appreciate the advance notice about what would happen to the Facebook timeline with which they were familiar. Participants' inclusion of other loved ones is in line with the function of funeral rituals in communicating changes broadly, and thus meeting many people's common expectations. Having notice about the change and being prepared for it contrasts starkly with participants in the previous chapter who had experienced sudden, jarring deletions that caused them pain. The difference in these two categories of experience highlight how much Facebook profiles are associated with digital presence, and how the profiles of deceased people can thus become lingering entities. But unlike with other things that indicate the presence of the deceased, like

physical photos or possessions, these participants did not have complete control (or even awareness about how) to address how that presence should be handled after the death.

Participating in the study provided these participants with the guidance to make the best choice for the account, and created space for them to process and communicate their emotions with me and with others. This observation is in line with Moncur et al.'s study in creating a bespoke digital memorial with a bereaved parent, in which "the participatory design process itself served as a memorial, by presenting opportunities for the participant to share detailed memories of their loved one" (2015). Being able to expect and control any change related to a deceased person is an important part of how people process death and grief. I find that memorializing or deleting an online presence through a process that mimics rituals is especially important because of the intangible nature of its digital content and its contextual network. If online accounts should bear the status of "digital remains," as discussed previously, structures and expectations must be developed for their management, not just with the technology in mind, but with the sensitive space people need to consider their dead.

In addition to evoking the presence of the deceased, the profile was a source of information that allowed participants to communicate with the deceased person's friends and family, especially if recent phone numbers or addresses for those people were not available. The ability to send a Facebook Message to those people was a convenient avenue of communication that participants wanted to maintain. Loni, for example, acknowledged that her grief made it difficult to remember and consider all of her late husband's friends from different chapters of his life:

“I kept wondering, ‘Who am I not thinking of?’ Like, who would appreciate remembering him, but I’m not close enough to just call them.”

All participants recognized the variety of friendships and connections their person had had during their lifetime, and pointed to Facebook as the simplest way to verify that more distant connections could be made aware of their person’s death, and get in touch with others who knew them. Using Facebook to inform people of the death is in line with Rossetto et al.’s findings that news dissemination is one of the primary benefits of social media after a death, the other benefits being preservation and community (2014). Participants also reported wanting to notify people before the profile would either change to its memorialized state or be deleted, because it was important to them that people know the change had been made intentionally. The verification of intentionality was important to each participant; if loved ones of the deceased had purposefully made the change, rather than giving any impression that the Facebook system had done anything automatically, participants felt that would sit better with those who had known the account holder. The decision to memorialize or delete the deceased person’s profile also prompted discussions about it that would not otherwise have happened, such as the conversation described above between Whitney and her son. This tracks with other research that suggests people need and want to talk about their deceased loved ones, but need structure to do so (Vickio 1999).

Having confidence that any problems with the profile would be resolved by their decision, and having communicated with the people with whom they needed to, participants then began to imagine the future of what a memorialized or deleted profile would look like. They thought about what content might be worth keeping for reminiscence, especially photos. Participants discussed with me how the Tributes section of memorialized profiles had potential

for messages and memories to be shared among people who had known the deceased, and that such interactions could be meaningful to them. Discussions about reminiscing moved seamlessly to what content should be kept on the profile for posterity. Future learning about the person was especially important for Loni, who had young children and wanted them to be able to learn about their late father as they got older, and for Cora, whose late husband's environmental documentaries regularly draw educators and their students. Posterity also mattered to Ann, in her experience with genealogical research.

Throughout participants' descriptions of their person's profile, through any level of understanding they seemed to explore, they sometimes used personifying language to describe the profile. Participants spoke of "deleting him" or "memorializing her" as the options they were considering. Tina's family members referred to reminiscing on her late husband's profile as "seeing him". Ann's husband went so far as to describe what Facebook does with deceased people's profiles as "killing" those profiles. Though it may have been a matter of simplifying language during lengthy conversations, participants' personifying language may be indicative of the degree to which the deceased's presence is felt in their profile. These linguistic clues suggest that participants' connections to the deceased person's profile are part of their connections to the person themselves.

Shifted and Expanded Understandings of the Profile

As participants identified their understandings of what their person's profile was, those understandings shifted and expanded influenced their decisions. I find it useful in this context to identify how my participants' shifted and expanded understandings mimic similar changes in

perspective that are common after a death. Generally, each participant recognized that the profile shifted from an unresolved loose end to an accomplished task that freed them from worry about what might happen with the profile in the future. At the same time, their surface-level views of the profile as a communication tool that the deceased person used during their life shifted toward imagining how it could be a record of their life that would be of interest to people in the future. The shift in understanding from personal communications to future reminiscence and posterity is significant because it demonstrates that the two individuals who are technically able to make decisions about the profile — the account holder and the legacy contact — are not the only relevant parties to the profile. Each participant shifted from an individual understanding of the profile to seeking communal understanding about what it could or should be. Even Tina, who generally disliked Facebook, said,

“[My husband’s mother]’s on Facebook all day long. She’s obsessed. So I think what you said about a memorial would be for her. I would definitely want to do that as a gift to her so she can look at her son’s page.”

For Tina, her understanding of her late husband’s profile shifted from an annoyance to a gift because she became aware of the relevance and variety of other people’s perspectives, and chose to incorporate those perspectives into her decision. Other participants experienced similar shifts from individual to communal understandings of their person’s profile:

A widow considered what her husband’s profile might be to her children.

A daughter found that her mother’s profile was different to each of her siblings.

A son knew his mother’s friends would want to keep visiting her profile.

In noticing each participant's shifts in understanding, as well as their expanded sense of who had contact with the person through their profile, no particular definition or direction led inevitably to memorialization or deletion. In the absence of an explicit instruction from the account holder, the people tasked with managing a post-mortem profile had to recognize the shift toward the profile's possible sacred significance. Participants did so by considering and consulting with other people whose contacts with the person were recorded on the profile. In this way, participants' shifted and expanded understandings of the profile were not individual journeys, but emotional processes toward articulating the account holder's place in their community, and what that place meant for the community's needs. The chart below illustrates the process I followed with each participant, with the progression on the right corresponding to which steps were related to which definitions of the profile participants may have identified.

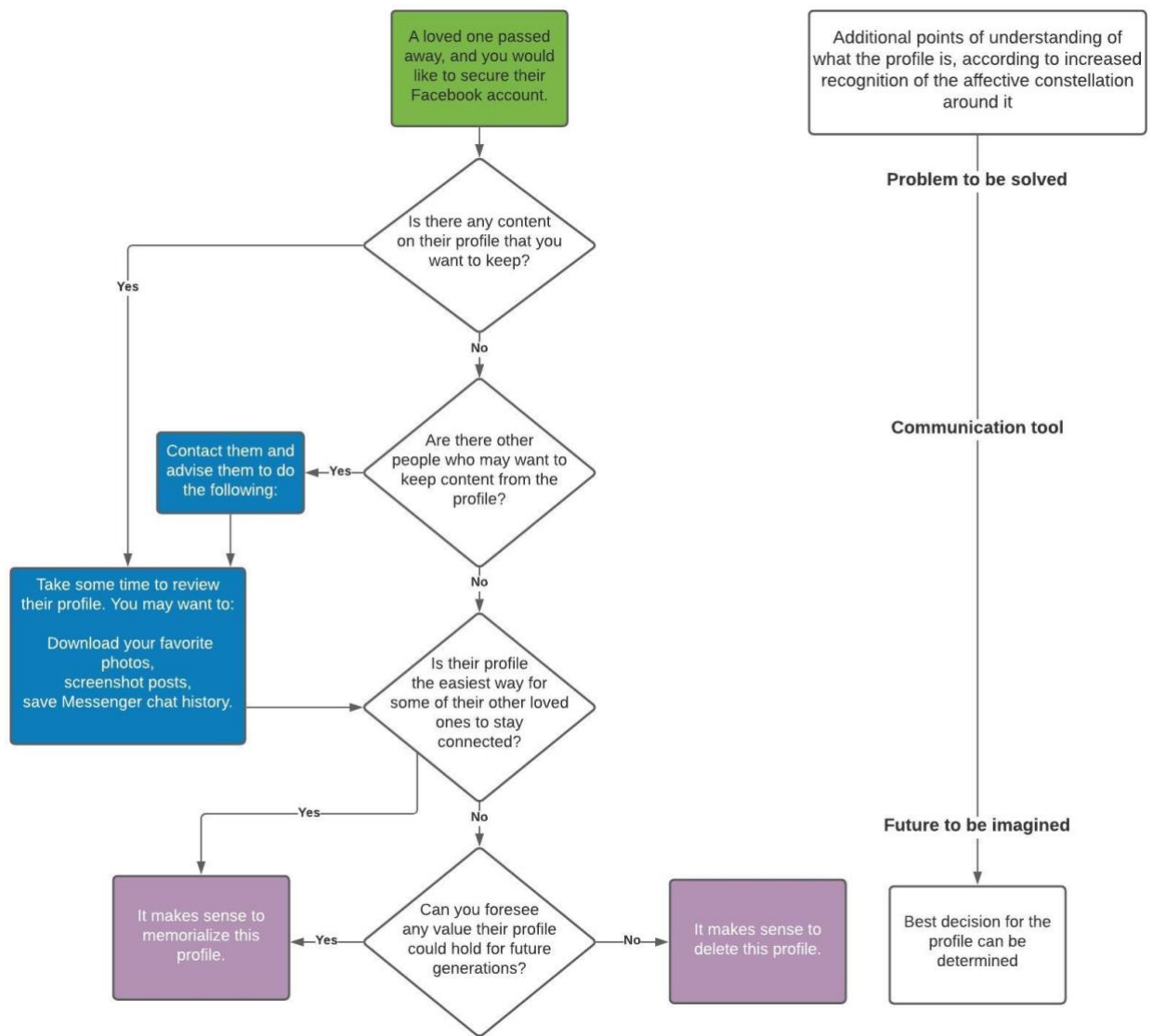


Figure 13: Making a decision about a deceased loved one's Facebook account

Ultimately, each new facet of understanding about the profile allowed participants to see a coherent shape: the profile's overall meaning or importance in the larger context of the deceased person's enduring legacy. If, like Whitney, the facets of understanding the profile did not significantly impact the overall shape of the person's legacy, deleting the profile would make

sense. Though the connection between the participant and their deceased loved one was clear to them, the way that connection manifests in the profile was not always clear until they were prompted to discuss it. Participating in the study with me provided a template for each person to take to others and gather additional facets of understanding how the person's other relationships were maintained through the profile. Once the participant gained a clearer understanding of the many facets of the person that were present on the profile, the best option for the community also became clear.

Consider the different understandings of a profile that Ann articulated during our conversations, and how they apply to all participants when abstracted:

1. A problem to be solved
2. Communication opportunities
3. A future to be imagined

These understandings emerged from the overall themes of each participant's descriptions of the profile. Each participant began with an understanding of the profile as a problem to be solved, or a task to be completed. Whether it was Ann's sad birthday reminders, or Tina's bothersome phone notifications, deceased people's Facebook accounts are subject to being presented in algorithmic activities that do not reflect the reality of the account holder's death. Even if the surviving loved ones did not mind the zombie-like behavior, the potential of something happening to the profile hung over their heads. Loni and Cora both reported awareness of profiles being hacked or accidentally disabled, and so did not have confidence that the untouched profile would be preserved indefinitely. The need for the profile to be preserved is connected to the deeper level of understanding that has to do with communication. Beyond

notifying the larger network of the account holder's death, maintaining a space for people to feel as if they are communicating with the deceased person *and* with others who loved them remains important to survivors. While those communications in perpetuity may constitute a future plan for the profile, others think beyond that toward the profile being a learning resource for future generations.

The next chart displays the process for requesting memorialization or deletion of a deceased person's profile, including the difficulties and complexities that these participants experienced.

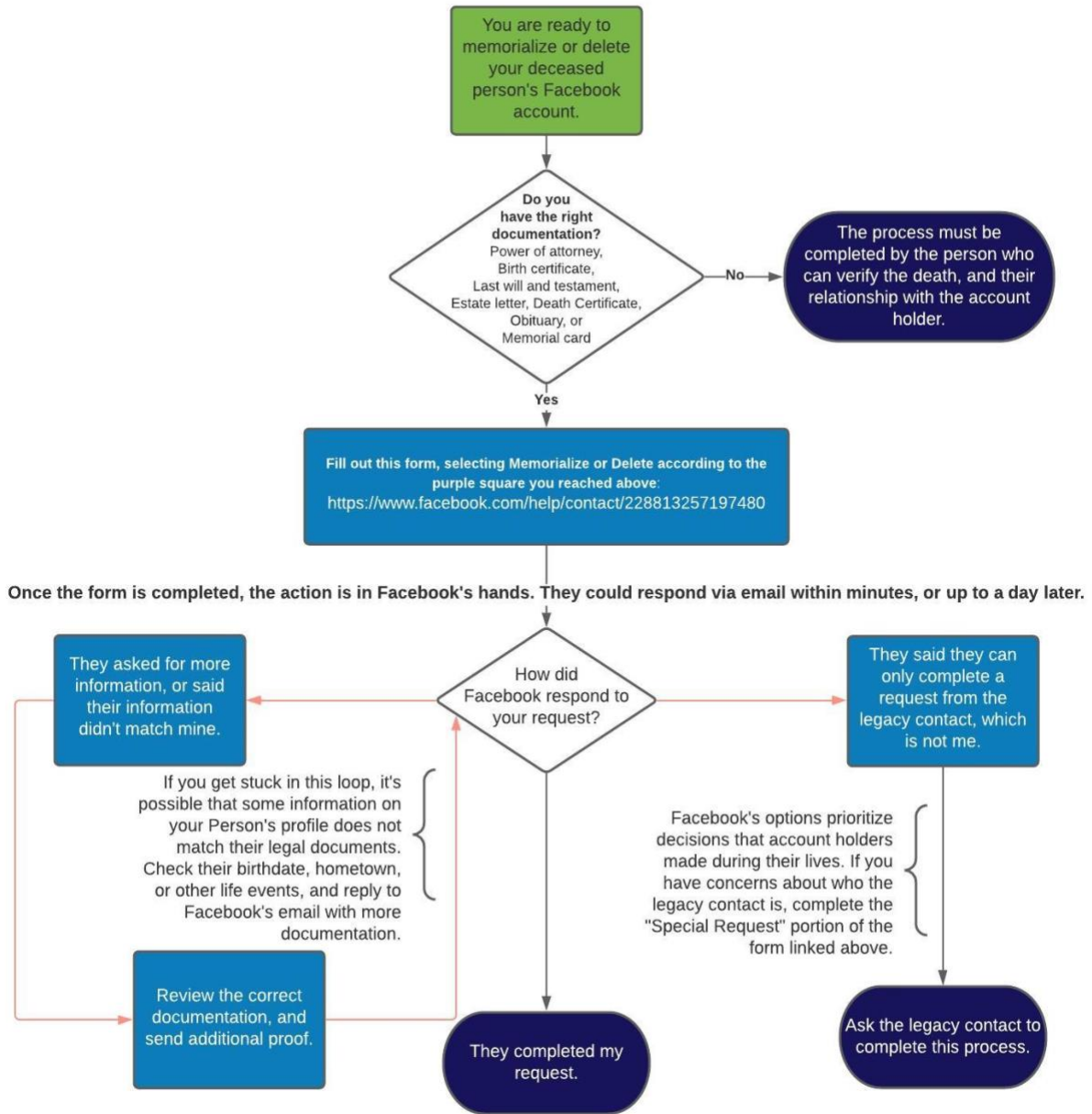


Figure 14: Facebook's request process for a deceased person's account

Note that the moment of pause that I engaged in with three participants, which occurred after filling out the request form, was not the end of the process. There was uncertainty around the timing in which Facebook's response would actually complete the change to the account, which complicated the sense of closure that was intended with the reflective moments. The difficulties that we did experience throughout the memorialization or deletion processes followed the completion of the form. Though we had taken time to acknowledge the meaning of the action that would change the profile, agency remained with Facebook to complete the process. The disconnect between agency and communication is one example of how social media technologies complicate the ways people need to articulate and form expectations when they consider their connections to post-mortem data. I discuss these difficulties in more detail in the next section.

Insights From Guiding Post-Mortem Stewards

Having detailed each participant's experiences with managing their person's Facebook account, I will now discuss deeper insights and implications from their collective experiences. First, the memorialization or deletion process and its complexities reveal biases toward the individual that have been built into the system. Next, I discuss how participants' time and effort in communicating with others indicates a need for community involvement to be more integrated in post-mortem data management. Finally, I discuss how my participants' understandings of a deceased person's profile are similar to other understandings people come to have about items of remembrance after a death, and the value of adopting ritual structures in the future to enable dignified post-mortem data management.

Presumptions and Biases Built Into Post-Mortem Options

Post-mortem profile management is a community process, but is currently designed to work best for individuals: a singular account holder, and their singular legacy contact. The bias toward individuals is apparent in the difficulties that some participants experienced in the process of requesting memorialization or deletion. For the memorialization or deletion request process to work without any complications, the following must be true:

- The managing person is handling only one death
- The deceased person only had one profile
- The person who has the death certificate is willing and able to submit the online form
- The deceased person's Facebook profile information matches their legal paperwork

At least one of these things was untrue for each of my participants. Ann was managing profiles for two deceased people, and requested their memorialization at the same time. The communication with Facebook's team was not designed to specify anything about the profile in question, and so caused confusion for Ann. Whitney's mother had three separate profiles for herself, and so experienced the same confusion when more information was needed. Tina felt overwhelmed by the process and was eager to defer it to someone else. However, even with a death certificate, Tina could not delegate the task without removing herself as her late husband's legacy contact. Even Loni, who did not go through the memorialization request with me, decided to delay the process because she needed to feel ready. Finally, Ann's brother's profile did not display his correct birthday or hometown information as it appeared on his death certificate. The question of authentic identities has troubled Facebook in the past, especially in regard to indigenous names and trans people's names, and thus could present similar complications in the

deaths of people for whom identity is marginalized (Holpuch 2015). Each of these issues caused Facebook to request additional information from the participant before completing their request. The request for additional information frustrated each person, adding to their sense of overwhelm and erasing any relief that the account had been successfully managed to their needs.

Other presumptions built into the process did not necessarily cause additional complications, but forced the participant to do more back-and-forth than they had anticipated in making their request. These presumptions included:

- The person who has the death certificate is the appropriate person to make decisions about the profile
- Only one person is needed to complete the form

Since each participant consulted with others before completing the request process on Facebook, taking a few hours to a few days to have those conversations, that doubled the number of times each participant did the work of finding the correct form, reviewing the information, and verifying that their documents and information were in order. The presence of others who cared about what they were doing and were able to help, either me or others, proved to be essential to completing the request form and responding to subsequent communications from Facebook. Their grief experiences were interspersed with, and an essential part of, the completion of this online task. Because people are necessarily bereaved when going through the memorialization or deletion request processes, it would not be healthy for them for the design to presume their isolation. I argue that the most compassionate possible design for online post-mortem tasks should presume or even prompt the input of the bereaved person's community. Some ways that design of these tasks could presume or prompt the input of others include allowing the account

holder to name multiple post-mortem stewards, or allowing the account holder's chosen steward to defer tasks to another person. Expanding the scope of who may manage a deceased person's profile would better recognize that a profile is not merely a representation of an individual, but a hub of activity around which a community creates part of itself.

The Profile as a Networked Surface of Contact

Ultimately, the deceased person's content on their Facebook timeline was not the factor that determined whether participants would memorialize it rather than delete it. *Other people* were what determined the appropriate fate of the account, whether it was unknown or distant friends of the deceased, or people who do not yet exist but may benefit from the profile's mere presence as a primary source of history. I had asked each participant what kind of content was on their deceased person's profile. Those questions were rooted in an initial hypothesis that choices about memorialization or deletion would be based on how the account holder used Facebook during their life. However, these participants' choices did **not** reflect a relationship between the account holder's Facebook use and the participants' choices to memorialize or delete. Some profiles that my participants chose to memorialize contained very little content, or even objectionable content. Yet all except Whitney chose to memorialize the deceased person's profile. Even Whitney only applied her decisions to two of her late mother's three profiles, deferring the decision about the third to the family members who had most recently spent concentrated time with her mother.

As discussed above, the profile of a person is strongly indicative of their presence, as it is the primary interface of contact between people in that particular digital context. The name and

photo of a person do not only appear when one visits the profile itself, but also in comments and reactions, and in the ability to tag the profile in statuses or photos. Maintaining digital links to the representations of the person's presence was a desirable outcome for these participants. Beyond the record or hub of communication, the profile stands as a digital grave marker, verifying that the person has died, even if very little of their life or personality had been preserved on their timeline. Indicating their existence in the network was preferable to making it seem like they had never been present on Facebook at all.

The persistence of the person's existence in the network through the profile was also preferred because it facilitated ease of communication with others. The hub of the network that was a person had become the only shared space for non-mutual friends of the deceased. This is conceptually similar to the "periphery" of relationships discussed in Pinter et.al. 2019 in its recognition of connections that only exist as a result of a particular relationship. As Loni described, it would take time to re-weave those networks of relationships to include the next-of-kin. She reported that some of her husband's friends had Friendened her since he died, but she had still needed the initial hub for them to make initial contact with one another. The profile as a hub is especially valuable over longer periods of time that might be needed for the next-of-kin to feel ready to take initiative to reach out to others.

Memorialization should not be conflated with wanting to keep a Facebook profile in perpetuity. Some participants reported that their comfort with making themselves the legacy contact, then requesting memorialization, was in knowing that they could *eventually* delete the deceased person's profile. The nuances of deciding to memorialize for reasons other than content, with plans to eventually delete it, are evident in Alli's experience. Alli thought her step-

father's anger-filled timeline should be deleted, but ultimately decided not to do so. Her reasons for her decision strike as both compassionate and selfless: despite her intentional lack of a relationship with her step-father, Alli was able to consider the people who did care for him. The content on his timeline was fully objectionable to her, but the profile's role in her step-father's network of friendships was not lost for her. Maintaining the space for people to connect in memory of him still mattered, even if she would have no part in it.

Overall, this study describes what decisions people made about the Facebook profile of a deceased loved one, how those decisions were initially understood, and the multitude of people included in the decision. The deep analysis of these six interactions reveal what a deceased person's profile is in terms of one person's understanding, as well as the network's understanding of not just the profile, but the person who has now ceased to interact with the world.

Dignity and Sensitivity for Understanding Post-mortem Profiles

Ultimately, my conversations with each participant were attempts to define their person's profile, toward the purpose of stewarding it well. To enable the person who did not create the profile to define it, I considered Ahmed's theorizations of affect within the context of HCI during times of grief. Ahmed's characterization of emotions as both socially constructed and personally embodied enabled me to construct questions about online content and data that remained centered on the deceased person's identity, relationships, and community. Applying an affect theory lens to my participants' experiences, and examining them beyond simple emotion and beyond the individual, I recognized that the intersection of grief and technology is lacking

scaffolding for people that rituals might provide. In this way, affect theory as I have described above motivated the guided experiences in this study by challenging the distinction between the individual and the *dividual*⁵ or collective perspectives of identity.

The data I describe here reveals that profiles are part of a complex ecosystem of media that makes up the ways people in relationships have contact with one another. As a medium of contact, a profile is part of the shape a person's identity takes as they live in community with others. This specific consideration is connected to viewing a deceased person's online profile as their "digital remains." While physical remains have structures for planning and handling that necessitate slowness and evaluations of meaning. To form support structures for post-mortem stewards requires end goals, yet I could not presume any particular outcome as being desirable for each participant. Post-mortem stewardship of online profiles, though taking place as an online process, is more complex to describe than other technological user experiences: it cannot be described as "pleasant" or "delightful" as other processes may strive for. The best type of experience one might hope for in managing a deceased loved one's affairs is "free of barriers," or "not painful." Ritual planning considerations proved to be adequate for post-mortem profiles because it incorporates exploratory questions with a maintenance of dignity for the survivors and the deceased alike. The sensitivity and depth of conversations about the deceased allowed participants to arrive at the best choices for a deceased person's profile. The profile becoming sacred is not a universal reality, but participants did need the chance to consider whether it is or not.

⁵ The term "dividual" is largely derived from British anthropologist Marilyn Strathern's discussions of kinship in her paper "Cutting the Network," as well as the lectures of American anthropologist Michael Wesch throughout the early 2000s.

Funeral rituals exist to acknowledge and facilitate a shift from “everyday” to “sacred”—a shift which happens to spaces and objects after a death. For the participants who had experienced a loss, both in this study and in Study 2, the shift toward sacredness was observed with online profiles. Yet the shift was not universal, and no strong correlations emerged between a person’s use of the profile during their lifetime and their community’s needs after their death. In attempting to accommodate the as-yet-unknown needs of my participants, I formed the interview protocols with the anticipation of possible ritual practices being desired and helpful to my participants. Yet, I found that the benefit of rooting this study’s interactions in ritual was in the sensitive space it created to evaluate expectations. Participants considered the profile more deeply than if we had only focused on completing a digital process. Approaching post-mortem stewardship with rituals in mind allowed me to invite my participants into the perspective of post-mortem profiles being digital remains.

Other things that have become sacred in the wake of a person’s death have urgent processes or tasks associated with them. For example, a room must be cleaned, or possessions must be handed down. When an item’s use or purpose has changed because of a death, the change needs to be recognized. We recognize changes and articulate meanings through rituals, which are the intentional creation of liminal spaces to pass through. Online accounts like Facebook profiles are both powerfully indicative of the person’s presence and completely intangible. Therefore, the *possibility* that the profile has become something sacred remains unfamiliar for most people. People need the guidance and opportunity to recognize what the deceased person’s profile has become in order to make the best choice about it. The process to form and meet expectations for post-mortem account management should avoid automation,

allow for multiple people to be involved, and anticipate time and space to respond to emotions that are rightly part of the process. To succeed at making space for forming and meeting expectations in post-mortem profile management, a definitive timeline of communication should be followed, clear expectations should be set about what the process will entail, and control should remain with the bereaved person as much as possible. The principle finding of this study is that the five-part structure of rituals were an effective approach for assisting people through post-mortem data management. Therefore, I suggest a similar approach for technologists who work with people in other highly-sensitive decision-making situations.

Conclusion

This study describes the experiences of six different people who had recently lost a loved one, and their process in making decisions about and managing that loved one's Facebook account. I documented the ways they understood facets of the deceased person's life through the profile, and how identity and relationships were central to those understandings. I argue that the elements of ritual that were present in each interaction made essential space to evaluate the profile with the dignity deserving of digital remains, and allow participants to form and meet their resulting expectations. Because online presences can become meaningful memorial spaces after death as the primary interface of the surviving community's online interactions with the person's memory, the work of decision-making matters in post-mortem profile management. Intentional consideration and inclusion of others prepares those who loved the deceased person for a shift in their digital presence. Part of bereaved people's journey forward after a death is in consciously reconfiguring things that represent the person they have lost. The simple online form and email exchanges that currently make up the post-mortem account management decision

process on Facebook may be inadequate in making people aware of the consideration and intention that may be beneficial to them, and to the others who are bereaved. The challenge in caring for bereaved people through their management of an online presence may be in creating space for people to make decisions and perform management tasks in community with others.

9 | Theorizing the Emotions of Grief in the Sociotechnical Space: Identity as an Affective Constellation

Losing a loved one is a deeply emotional experience. Understanding emotional experiences was foundational to the unique and sensitive context of my core research questions, such as: “What are the experiences of people who have to manage a deceased loved one’s profile?” In the lens of affect theory, emotions are a person’s embodied responses to contact with people, events, texts, or other “objects”, while affect describes the capacity of our emotions to understand and intersubjectively define objects we come in contact with (Ahmed 2013). Contact between people and objects (including other people) produces the affect of their experiences. In this chapter, I employ this definition of affect theory to introduce the concept of identity as an “affective constellation,” as an alternative concept to the “user” for HCI in sensitive or difficult life experiences.

An “affective constellation” is the identifiable shape of a person in the context of, and including, people, ideas, values, and objects with which they come into contact. In an affective constellation, a person’s identity is rooted in their embodied consciousness, but is shaped by contact with others and objects, and shapes the others in turn. As affective constellations, humans stick to one another and give shape to one another, and so can be best known and understood through the contacts — relationships, values, and ideas — that shape them. The medium of an interaction, whether it is virtual or embodied, can be understood as the surface of contact, which altogether determines and redefines that particular facet of both the person and the object. This means that affect is intertwined with media of contact between people, carrying

messages — and personhood — between bodies. A surface of contact is the means by which people had contact throughout a person's life, whether that be embodied (in-person) contact or contact mediated by text, technology, or other exchanges. The combination of all surfaces of contact around an embodied consciousness gives an affective constellation its shape. To understand a person's identity is to understand who and what makes them who they are. A human is more than their histories of contact, of course; one's affective constellation includes *how* they had contact with objects and others, and their emotional responsiveness to those contacts.

Throughout a person's life, the shape of their affective constellation responds and reshapes through contact with others. When the person dies, their consciousness of contact ceases and their body is laid to rest, so that particular affective constellation becomes static and unmoving. The living people, as affective constellations, will continue to come in contact with their own surfaces and media of contact that had been shaped by the now-deceased person. The affect of grief is created in contact with absence — with affects and media of contact that can no longer respond. Because the medium remains, and the affect remains, that surface of contact remains, creating a shell of the person's shape that continues to influence the shapes of others. Throughout this section, I will explain aspects of human identity, death, and relationships through the lens of affective constellations, in order to offer future designers a foundation to ask deeper questions about the people who use their systems, and what should happen to those people's data after death.

Outside of ourselves, another human's affective constellation is something we can only speculate at. In the same way that a celestial constellation can be seen as a trapezoid, and a

Drinking Gourd, and a Great Bear, people as affective constellations are perceived subjectively, in ways that are both culturally bound and dynamic. How well a person knows another may be understood as how many surfaces of contact one is able to perceive related to the person.

Throughout a person's lifetime they will both shape others and be shaped by their contact with others.

What happens to the ideas, values, people, and objects that were in contact with a person who has died? The shape remains in the surfaces that were shared with others, but the consciousness in which it is rooted is no longer responsive. Yet the ways they shaped others remain. The affect of grief is created by contact with absence. People's surfaces stick to only static *histories* of contact — essentially the surface of a person whose shape may no longer grow, change, or respond. When a person dies, not only does their body stop functioning, but their emotions stop circulating and responding. The dynamic nature of their existence becomes solid: a forceful barrier in the ever-changing shape of others' existences. The other affective constellations will continue to grow and shift around it, but the survivors will never be shaped as if the deceased person's constellation were never there.

Throughout their lives, people experience relationships, learning, and self-expression through the medium of digital platforms that may remain visible to their loved ones after death. The next section will describe how viewing people as affective constellations can be useful in HCI research by contextualizing their digital records of contact as co-created facets of identity.

The Meaning of Data in an Affective Constellation

Emotional and relational experiences that happen online reach beyond individual end users. Building on work in HCI, such as embodied interaction (Dourish 2004a) and post-userism (Baumer & Brubaker 2017) that challenge designers to think beyond singular users in limited contexts, the theoretical perspective of affective constellations combines ideas of embodiment, emotion, tangibility, and interaction. When a sociotechnical system is part of a formative or emotional experience, meeting the person in that experience requires understanding their social and emotional world. Considering a person as an affective constellation, as opposed to an account holder (which HCI typically refers to as a “user”), offers such understanding in the presence and significance of the relationships that shape a person. In this way, the concept of affective constellations is a lens through which to view one person’s embodied consciousness as dynamically intertwined with many others.

In HCI, the objects of interest in an affective constellation are data, and the relationships and histories those data represent. Viewing a person’s social media data as an approximation of their affective constellation is a lens that helps designers to consider the world a person inhabits, and help them to determine the scope of people to consider in how post-mortem data should be managed. The scope of a person’s identity becomes difficult to discern in data, as people in close relationships have deeply embedded or overlapping shapes (in that objects, or data, might appear in multiple affective constellations). Though content on social media may have been generated by a single account, it may represent multiple individuals or relationships. The lens of affective constellations provides a more accurate scope of what to consider, and encourages designers to be more inclusive in what they consider to be an accurate representation of any user. Other

approaches in HCI might strive for accurate representations through authenticating the user (Mundie et al. 2002), or even through interactions that enable particular sociocultural practices (Irani et al. 2010). My approach strives for accurate representations through consideration of the possible social and emotional impacts of managing digital representations of identity after death.

For a platform like Facebook, which aims for its account holders to interact as their “authentic selves,” the accuracy of the representation within the system can be highly consequential. Consider the application of identity as an affective constellation to a Facebook profile. An embodied human took many actions to create content that connected them to their Friends. Each of those Friends interacted with that content, perhaps through entire conversations in comment threads, intertwining the data among itself, creating an entire context. And on the other side of each Facebook account is another embodied human leaving their traces. Data are representations of contact a person has throughout their lifetime, all of which gives other people some idea of their shape.

In this way, a social media profile is part of many surfaces of one’s affective constellation, holding records of contact between (on average) hundreds of relationships. Digital records of contact are part of the media between bodies, facilitating the ways people could shape one another. As affective constellations are dynamic relational entities that are continually changed by and changing others, digital media is among the affects that stick between constellations. Again, one person can only speculate at the shape of another’s constellation. But people in close relationships, as between spouses, or parents and children, can be said to know the shape of one another’s lives.

In terms of affective constellations, what can be understood of a person's shape — their identity — after they are gone? To answer this question, I will explain the findings of the studies above through this lens to illustrate how viewing a person as an “affective constellation” will allow designers and researchers in HCI to better understand post-mortem data and its challenges.

The Affective Constellations of Participants and Their Dead

How might an affect theory lens contribute to HCI's understandings of the ways that digital presences of the dead are interacting with survivors' formations and experiences of their grief? Where that matters for identity and grief in a sociotechnical system, is that the system itself (specifically Facebook in these examples) could not recognize the intersubjectively experienced interaction as anything but separate sets of data that were created by two singular account holders. On Facebook, that data consists of the account holder's profile, but also their photos, comments, private messages, and contributions to group discussions. Digital contacts between two people, for example, are experienced as their shared surface of contact, integrated with the other media of contact in their relationship. Yet their digital records of contact are not integrated in the system; their co-created data are scattered throughout the complex interfaces that make up the Facebook platform.

When a person dies — when their affective constellation becomes static — their data may continue to circulate around the online platform through algorithmic activity. The dynamic nature of an affective constellation is rooted in embodied consciousness, which ceases to interact

upon death. Actions that are rooted in the embodied consciousness cease upon death, but the media of contact may continue to evoke the constellation's shape. This happens because the deceased person's data was not uniquely theirs, but had been integrated with the surfaces of other constellations who remain alive. Algorithmic activity that appears to be the actions of the deceased person violates Western people's expectations that the dead do not respond to new communications (Stokes 2012). With a cessation of activity in the midst of a dynamic social world, death shifts reality and sparks intense emotions in people. The people, relationships, and objects that have the strongest influence among other constellations typically know how to reflect the newly-static reality of the deceased person, and begin to change their actions and responses to reality accordingly. However, social media platforms that the deceased had used during their lifetime do not respond to the death of the person the way other people do. Data and content continue to circulate among others' surfaces in disturbing ways, despite the death of one person, because media of contact exist between and as material aspects of many affective constellations. In this metaphor, things like Facebook birthday reminders or On This Day memories for deceased people are collisions with the static surfaces of the deceased person's presence that cause grief-related emotions to circulate among all surfaces of contact with the affective constellation.

Consider how participants in Study 1 described their choices. When choosing an appropriate person to manage their post-mortem Facebook profile, people made decisions based on who knew them best. In other words, people reflected on their own identity, and chose the person who had the best understanding of their full shape and contacts with others. As long as the chosen legacy contact is someone who could discern the affect of any given contact between

the account holder and other people or objects, no further instructions or technical choices would seem necessary.

For active legacy contacts, the analogy holds. Though legacy contacts were mostly self-selected, the selection happens with the general acknowledgement and approval of the other people who shaped and were shaped by the deceased. Recall the trust-related stress cases described in Study 2, in which P21 said, “I was making medical decisions for [my mother] for the past few years. I was making financial decisions for her. And then Facebook says they can’t trust me to manage her Facebook account?” The violation that P21 felt was related to his thorough understanding of his mother, to the point that highly consequential decisions were entrusted to him. P21 was offended by Facebook’s lack of trust in him because Facebook itself does not contain the comprehensive understanding of P21’s mother that he does. In limiting P21’s actions on his mother’s memorial profile, Facebook essentially made a decision for their account holder with much less understanding than the appropriate legacy contact.

In death, the person with the clearest, most comprehensive sense of the dead person’s affective constellation is ideally entrusted with decision-making. Simplified to legal terms, this is the next-of-kin, who may or may not be the closest person to the deceased. Decision-making power matters to the dead because their affective constellation has to be perceived as well as possible in order to make good memorial decisions. To perceive a deceased person’s affective constellation is to recognize all of the objects, ideas, and values that gave them their shape, like being able to discern what a missing puzzle piece looks like because the surrounding pieces are present.

Living people who love a deceased person may continue to reveal who the deceased person was through memories, stories, and artifacts that are present within themselves, as well as in their physical and digital artifacts. It would be a gross misunderstanding of affective constellations to presume that all of these memories, stories, and artifacts that make up the surface between two people uniquely belong to either one person or the other. Yet the deletion of a person's Facebook account makes precisely this mistake.

The unexpected, sudden, and thorough deletion of all of the content the person created attempts to make the Facebook world appear as if the deceased person had never existed there. But, as I stated above, the lives of survivors will never come to be shaped as if that person never existed. When every facet of an affective constellation is deleted, that action takes pieces of other constellations with it. In this way, deletion destroys not only the histories of contact in which the person's presence held the shapes of loved ones, but it removes pieces of survivors' constellations that should have remained tangible in that medium. In this way, deletion changes the shape of others' constellations in the space, in ways that impinge upon who they are, and their ongoing sense of connection to their deceased loved one.

As described in Study 4, Facebook has both AI and memorialization options in place to mitigate the "algorithmic cruelty" that people can experience if a deceased loved one's Facebook profile appears in an inappropriate context (Facebook 2019). These features do well to acknowledge the difficulty of contact between living people and the static presence of the deceased. As the beginning of Chapter 7 explains, post-mortem deletion remains a more popular choice than memorialization precisely because people do not wish for their data to "bother" their

loved ones after they are gone. However, considering deletion through the lens of affective constellations, it becomes clear why the current functionality of “Delete After Death” created a different kind of cruelty for the bereaved participants in Study 3. Those participants described favorite photos, kind comments, and meaningful conversations between themselves and the deceased that they had expected to remain available on Facebook even after the deceased person’s profile was gone. Yet much of that content was deleted. Removing the deceased person’s affective constellation (i.e., deleting their account) became a different problem, not a solution. The systems that carry the digital presences of the dead can be designed more compassionately by considering how the affective constellation of people, objects, and entities may be allowed to reconfigure itself around the absence of the deceased person before removing their presence from the platform altogether. The three possible resolutions to the deletion dilemma described in Study 3 — informed, delayed, and dividual deletion — would each allow for slow reconfiguration of survivors’ affective constellations. The next section offers further practical application of such reconfiguration.

Post-mortem Data Management as a Liminal Affective Technology

With the perspective of affect as the connecting and defining surface between individuals, HCI researchers could reconsider the presence and importance of an “absent” deceased person when their loved ones act in digital spaces on their behalf. Consider the decisions around post-mortem data management as a “liminal affective technology”: a structured process that creates space for recognizing particular emotions, in order to transition that person from a place of distress and confusion to a place of understanding of what is possible after the

intense event (Stenner and Moreno-Gabriel 2013). A post-mortem data management process that works as a liminal affective technology would intentionally turn one's attention toward an emotional reality that they would typically turn away from, in order to recognize the deceased person's affective constellation. Instead of considering an "ideal," isolated user, HCI researchers and designers might ask, "Which people, objects, and other entities created the identifiable shape of this account holder, and how might they need to maneuver around that shape to honor the desired affect?"

The concept of a "desired affect" in a particular experience warrants explanation. It implies that a particular understanding can be intentionally evoked through an emotional response, and that certain affects are related to a situation's desired outcomes. There is evidence for both implications. Having a practical awareness of one's own affect — the contextual and historical nature of one's connection to another person or object — can influence perspectives and decisions in ways that accommodate one's values and important relationships. Consider the following case study.

In a 2013 psychology study, Stenner and Moreno-Gabriel describe the heart-wrenching process of discussing deceased organ donation (DOD) with the next-of-kin of a person who has just died. In Spain, where the study took place, organ donation is opt-in-by- default, but still requires medical professionals to speak with the next-of-kin to obtain consent in the moment. Stenner and Moreno-Gabriel frame this critical consent-seeking conversation with the next-of-kin as a "liminal affective technology." The conversation between the medical professional and the surviving loved one is intentionally coordinated and structured to evoke and process the

emotions of the newly-bereaved person, *and* to orient their emotions toward the decision of whether their loved one's organs could save another's life (Stenner and Moreno-Gabriel 2013).

Decisions about whether to donate a deceased loved one's organs differ greatly from decisions about post-mortem Facebook profiles. The "desired affect" of the DOD conversation would always be for the next-of-kin to agree to live-saving action for a person they do not know, while the "desired affect" of managing a deceased person's Facebook account would differ from steward to steward. Still, the conceptual parallels are useful. Even in the simple form of a conversation that was largely tech support, the participants' ritual of conversations with me, as described in Study 4, served as a liminal affective technology. Together with my participants, we created a structured process that presented possible outcomes of various decisions about their person's profile in order to formulate expectations for the profile that were aligned with the values and wishes of the deceased and their community. Some questions intentionally provoked recognition of meanings within their person's profile (if such meanings were present), which allowed the participant to understand what was possible or needed for meaningful maintenance of shared surfaces with the deceased person's affective constellation.

The goal of their participation was not for them to arrive at a predefined desired outcome, but to create a space in which their shared surfaces of contact with the deceased's affective constellation may be recognized and evaluated, leading to a discovery of the outcome that might be best for all of the people who shaped the deceased person throughout their life. That is to say, we discussed the deceased person's use of Facebook in order to identify where the profile may have been sustaining a shared surface of contact. We discussed how the participant *and* their

community had been interacting online to identify where the deceased's digital presence was being encountered, and might be expected to persist. We identified those who helped make other decisions after the death, and sought to include their input with post-mortem data management in a similar manner. The structured experience led the person through a necessarily liminal process to reach adequate recognition of their shared affective surface of contact, form achievable expectations of the task at hand, and make a decision. The structured experiences I described with my participants did not have a predetermined "desired affect." As a result, their emotions and relationships had to be considered as dynamic and important facets of the participants, their loved ones, and the online content, in contrast with only being acknowledged as the edges between persons in the DOD conversation (Stenner and Moreno-Gabriel 2013). The liminal experience of my participants in Study 4 can be understood thus:

1. The people who shaped the deceased person's life, and were likely to have the most comprehensive perspective of who they were, engaged in an intentionally reflective conversation in which the deceased's affective constellation could be evaluated. A structured experience (with adequate agency given to all constellations in contact with the deceased) democratized control of the experience, and allowed more people's emotions to be expressed and shared surfaces recognized.
2. The role of affect in the structured experience of the people involved was not about achieving consensus, but about the variety of experiences among the constellations that would continue to come in contact with the shape of the deceased. Though a meaningful experience was achieved with four participants, results varied. The reality of varied

experiences in this aspect is evident in the consultations described in Study 4. Each person involved in a grief ritual was a “primary steward” of the profile deletion, but other relationships were still honored.

3. We allowed the constellations of people around the deceased person to evaluate and express how they had experienced or expressed their relationship through Facebook data. The participant acknowledged the variety of interpretations and emotions evoked in the structured experience, and maintained a cohesive understanding.

When a surviving, grieving loved one comes in contact with the online content of a deceased person, the content becomes a co-creator of the affect between the survivor and the deceased. The concept of the affective constellations of people impacted by post-mortem data management decisions must address who and what else makes up the other surfaces of the deceased person’s affective constellation. That is to say, there will always be many people’s emotions and relationships to consider in post-mortem social media management. An affective constellation is more complex than a list of legal next-of-kin, and most likely acknowledges many people and many media of contact. To understand who is most invested in the difficult tasks following a death, system designers must consider the role and connection of each person in the other’s life, and acknowledge the most appropriate steward to guide the fate of the deceased person’s digital remains. The most appropriate post-mortem steward is likely to be the person the account holder would call first in an emergency, trusting that person to continue the chain of communication as needed. A good steward would respect the unknowns of their

person's trust, and be able to guide their affective constellation compassionately to a new shared reality among the other shared surfaces of the constellation.

Relationships and relational concepts of identity do exist in HCI design processes in terms of "personas" or "stakeholders" (Baumer and Brubaker 2017), the lens of affective constellations takes typifications of human experience one step further by opening inquiries about how the core account holder and their loved ones, values, and important objects may have experienced their relationships and contacts through data. Without an adequate lens through which to account for the experiential nature of the account holder's identity during sensitive times, designers risk consequential misunderstandings of the people who have had meaningful connections to one another through the social media system. By considering an account holder's identity as an affective constellation, designers may discover how to prompt account holders to understand and communicate what a future post-mortem steward may need from their data, while also providing space or support for post-mortem stewards to maintain their sense of self in the context of remembering their beloved person.

The lens of identity as an affective constellation emerged from a meta-analysis of all four studies described above, but most directly from the communications and actions with my participants in Study 4. As I offered information about Facebook's post-mortem options in the context of learning about my participants' deceased loved ones, they were prompted to acknowledge as many facets as possible in the deceased person's affective constellation, as represented on Facebook. In hindsight, the adequate time and agency being made available to the steward empowered them to become aware of the affective constellations in contact with themselves, the deceased, the deceased's data, and even their grief. With such awareness, a

decision was reached in which participants confirmed that the appropriate people, relationships, values, and emotions were honored.

Without a model to account for the experiential nature of co-created aspects of identity, designers of social media systems presumed individual user identity. In doing so, they default to the assumption that one singular person knows what they want from the system, and will follow a clear, logical process to achieve it. Yet in the post-mortem social media stewardship studies I presented in the four previous chapters, neither the account holder nor their loved ones have a clear idea of what they will want from the system in the event of the account holder's death. By asking questions about the deceased account holder through the lens of their identity as an affective constellation, people who design social media systems can discover deeper perspectives of how a person's life is represented within the system. In doing so, designers may use those perspectives to offer detailed prompts and discussion for post-mortem stewards about what is possible for post-mortem profiles in their system. In prompting meaningful discussions among groups of survivors, designers may effectively empower stewards to discover how their relationships are reflected in their social media data, and therefore articulate what meanings that data could have when an account holder dies. The following questions are a starting point for designers to consider an account holder's identity through the lens of an affective constellation:

1. What gave this person their shape? Take note of people, values, ideas, objects.
2. In death, the person's shape has become static. How are the people, values, ideas, or objects continuing to contact that solid shape?
3. Of those shaping entities, which are connected through our data? What contacts of this person's AC are within control of the product?

4. What of those data contacts make the solid, static shape appear to still be in motion? Or to violate its solidity in other ways?
5. What contacts should absolutely not be related to data, or left in control of the product?

Through the question above, design discussions may yield more than just the best settings for that account holder or group of account holders; detailed discussions could account for how social media data is one substance of the group's surfaces of contact, and thus, their affect. In discussing possible changes to or loss of their data, they see where their emotions have been circulating, and what avenues for their emotions should be maintained or removed with the loss of one of their people. I recognize these discussions as the surviving loved ones recognizing where their departed loved one's shape is defined by others. The discussions, such as those I described in Study 4 allow them to see where their continuing bonds with their loved one could (or should not) be maintained. The affective constellation model of identity frames continuing bonds with the deceased as critical to a living person's sense of self. To continue one's bond with a deceased loved one is to maintain contact with the part of one's self that was shaped by that relationship, and should continue to be shaped by new experiences that re-contextualize the past. This is why any changes to post-mortem social media data could be "jarring" or "devastating," as was the case for participants in Study 3: the surviving loved ones were not allowed any opportunity to account for social media data in their affective constellation.

To view data as substantive to the affective constellation of a person's identity, I acknowledge that one's data, especially one's social media profile, can be seen as an extension of one's presence. But a person's identity overlaps and blends with others in a way that is better represented when their dynamic emotions (which become solid in death) and relationships are

able to be recognized. It is up to the person who is most aware of the deceased's relationships and values, as well as relationships and values' connections with one another, to fully recognize who their loved one was, and how they should be remembered in death. The steward is not separate from the person they have lost; neither should they be separated from that person's data without a process appropriate to their values.

Why did social media get death wrong in the first place? How did such large infrastructure around human identity and relationships fail to adequately acknowledge the one universal human experience? Social media profiles and their current functions view people as independent agents who are present in their actions, and behave according to logical patterns. In times of death, it is easier to see that humans are highly *interdependent*, present in their relationships, and behave according to dynamic emotions. Our technologies could also be structured in these alternative ways, no longer limiting the complex relational ways that we express our humanity. Communities that care for and support a person must be integrated into discussions beyond the user.

Neither logic nor reason can stand as dominant motivations for action during a time of deep grief (Henrich 2017). Therefore it is most useful to consider my research findings within perspectives that move beyond cognitivism. To this end, works that consider the body, such as embodied interaction and phenomenology, are most applicable. However, if technology is involved in the affective experiences that occur during a time of death and loss, and thus must be considered as an actor in the emotional well-being of the bereaved, HCI designers and researchers must offer a system or set of recommendations for how surviving loved ones might

achieve technological tasks while acknowledging the affective presence of the individual that will influence the experience of that task for the survivors.

10 | Conclusion

When a person dies, a collection of people and services come together to arrange the work that needs to be done to remember them. In physical spaces, it is easy to see how the deceased's families, their community, and relevant professionals defer to one another to better honor the deceased and support those most touched by the death. Yet a strong imbalance of decision-making agency is present when Facebook account holders die. Though Facebook has led social media in building robust post-mortem account management options, I have found that the platform itself retains a disproportionate amount of agency over what happens to their users' digital remains. In this final chapter, I review how I came to that conclusion, and offer a speculative future path for how to honor people's affective connections to their loved ones' post-mortem data by returning to them a sense of control over those connections.

Overview of Contributions

Through four qualitative research studies, I have investigated and explained people's experiences with Facebook's post-mortem management options. My overall contribution from these studies is twofold. First, I contribute an in-depth understanding of the inadequacies of how platforms currently handle deceased people's data, especially why people's experiences with them have been difficult. Second, I contribute the argument that people's difficult experiences with post-mortem data are not purely technical problems, nor do they have purely technical solutions. Post-mortem data management is much more dynamically social, and related to the lack of cultural scripts or common understandings of meaning for the data of deceased people. To extend this argument, I offer the insight that platforms should consider modeling death as a

community-level event rather than an individual one, as death is larger than a single-user problem.

Throughout my studies, I articulated some of the complexities of managing and interacting with the Facebook data of a deceased person. I began in Study 1 with an investigation of advanced planning for one's own death, in which I demonstrated critical misalignments between what people expected of the system and how it would actually work. The option to select a legacy contact is the first step an account holder may take to maintain some control over their account in the event of their death, and to communicate what they want with their loved ones. My findings in this study offer a curious answer to my first research question, "How do people think and communicate about their own social media legacies?" They think about what will be easy for their loved ones, but they communicate very little. As a result, the control they expect to bequeath is not actually what will be possible. The problems that arise from misaligned expectations between legacy contacts and the memorial profile system are evident in the second study.

The second study, which occurred contemporaneously with the first, evaluated the experiences of active legacy contacts for deceased Facebook account holders. I found that legacy contacts' priorities — and frustrations — stemmed from their views of trust, particularly when the responsibilities with which they felt entrusted were limited by the functionality of the system. Moreover, active legacy contacts lacked any confirmation that Facebook trusted *them*. To rephrase this study's main finding, active legacy contacts experienced less control over the memorialized profile than they felt they should have. Facebook retained too much control for

them to feel properly trusted. This study provided an answer to my second research question: what are the experiences of people who have to manage a deceased loved one's profile? Their experiences are constrained, but manageable through work-arounds. However, in light of the findings from the first study, I argue that active legacy contacts experience constraints in their capabilities *in comparison* to the expectations they had of how the system would work — expectations we found to be misaligned in other participants.

In the third study, I investigated the alternative option to selecting a legacy contact: having one's Facebook account deleted after death. In the first part of this study, I asked why people want their accounts deleted post-mortem, in order to understand what kind of control people expected to retain over their data after death. I found that post-mortem deletion is a common default choice for Facebook account holders, not to maintain control over their data, but to avoid burdening their loved ones with its management. Yet the second part of this study revealed that survivors of account holders reported pain and difficulty upon account deletion, and wished they could have either preserved content from the account or kept the profile as a memorial. The contrast between the account holders' wishes and survivors' experiences forms what I call the Deletion Dilemma: platforms are bound to honor the stated wishes of account holders who die, while the surviving loved ones the account holder meant to care for may benefit from making different choices. Deletion is the scenario in which it is most clear how much control remains with the platform, and how little is available to the family and community, when account holders die.

In the fourth and final study, I sought to find out whether ritual-based guidance might create adequate structure to form and meet expectations in the post-mortem social media management experience. I guided six people who had recently lost a loved one through the process of managing their deceased person's Facebook account. I hypothesized that ritualizing the process would make deleting the profile a compassionate experience for my participants. Instead, I found in my analysis that the guided process itself allowed my participants to recognize what meaning, if any, the person's profile could contribute to their memory. The experience extended beyond the individuals with whom I worked; each participant considered or consulted with others who had loved the deceased person when making choices about their account. The way the community helped to shape the fate of each deceased person's profile demonstrates that a different balance of control than what platforms currently maintain is needed for respectful death work.

The overview of each study, when drawn together, might lead to a conclusion that post-mortem profile deletion is rarely as simple for surviving loved ones as account holders assume it would be. Yet deletion sometimes is the most caring choice for a particular person's community. Elaine Kasket discusses certain instances in her book where survivors of the deceased desperately wanted the memorialized profiles to be deleted, such as a mother who had lost her teenager, and felt disturbed by her child's friends' continued communication to her child on social media (2019). It would not be easy to predict whether memorialization or deletion would be the best choice for any given account holder's community. For my participants, memorialization was a more comfortable choice for them to make for the reason that it was *reversible*: legacy contacts on Facebook may request for the profile to be deleted at any time,

while a deleted profile cannot be recovered. When uncertainty dominated participants' considerations, memorialization (with the eventual option to delete) was preferred because it let them retain control over the account. To maintain such control in deletion, it must be collaborative, community work.

When social solutions can exist for a problematic technical process, how much responsibility does a social media platform have to address and improve the ways we handle death in American culture? After all, the misaligned expectations I described in Study 1 are more about Western cultural scripts (or lack thereof) when discussing end-of-life planning, rather than anything specifically technical. Similarly, the workings of trust in relationships (as described in Study 2) *could* merit the exploration of a technical solution, but could be entirely circumvented by thorough end-of-life planning. Even so, end-of-life planning does not, and never will, happen for 100% of people, let alone for their online accounts. A process must exist for decisions to be made by an appropriate proxy after an account holder's death in order to prevent the emotionally fraught loss of meaningful content through security breaches, platform changes, or even malicious mismanagement.

As for deletion, I do describe some technical ways to reconfigure deletion to reflect co-creation and co-ownership of networked content in Chapter 8. But the popularity of preferring post-mortem deletion for one's data prompts a deeper question about how people perceive their impact on the world, and what they will leave behind. Such conversations and personal introspections happen in the context of relationships, not a singular person using a technology. It is the social contexts of one's identity that will remain after their deaths, and their closest social

connections who will require space, time, and slowness, to prompt their considerations after a beloved person has died. The emotional needs of those who lose a loved one are not needs that can be adequately served by any technological process. I argue that the research I have presented here uncovered barriers beyond technical feasibility to making truly human-centered options for post-mortem data management.

The technical barriers for existing post-mortem management systems like Facebook are complex, and include how to represent open-ended aspects of human relationships like trust within rigid computational systems. But the technical barriers are much more surmountable for platforms with no existing post-mortem management options to date. Below, I provide some examples and principles for how social media platforms might implement post-mortem account management options. Some suggestions are inspired by improvements to Facebook's post-mortem options that were a direct result of this research. Even with such work, technology may always fall short for reasons I discuss below. However, it is possible to work within the constraints of tech corporations' varying priorities and cultural reluctances around death. Such work will require a different kind of collaboration with platforms, as well as community resources for individuals. I conclude by identifying emerging structures of community death work as a potential resource for HCI design during times of death.

Platform Solutions and Beyond: The Need for Change in Death and Data

Advances in technology have typically offered promises of improving human life, or at least making it a bit easier. To this end, why *shouldn't* a social media platform take on the

responsibility of helping humans face their mortality? Especially if, like Facebook, that platform has developed an engrained role in the lives of most American adults? If social media platforms aim for improving communications and understandings of digital remains, they must consider beyond the managerial tasks, and design for affective connections that many people have to one person's post-mortem data. One way to do this would be for platforms to collaborate with community death care workers to find ways to include more people, to let systems be more porous, and to make trust and help more possible for loved ones of deceased account holders. This section will describe how Facebook's post-mortem management options have improved since 2015, and speculate about some non-technical barriers to further improvements in post-mortem social media management.

Improvements to Facebook Memorialization

Some of the work I present here contributed directly to Facebook working better in the area of post-mortem account options. The original functionality of Facebook's post-mortem account memorialization settings looked much different from what is described here when the options were first launched in February of 2015. Though an exhaustive documentation of the changes is not necessary here, some notable changes did come directly from the findings of Studies [1](#), [2](#), and [3](#):

1. Legacy contacts can now deactivate the "Profile Review" privacy setting, which previously prevented content from being visible when others posted on a memorialized profile, as was P21's experience.

2. The user interface for prompting account holders to communicate with their legacy contact through Messenger, now clarifies that the pre-populated message can be edited.
3. Eventual deletion by legacy contacts is now allowed.
4. The instructions for Legacy Contact setup include information about the Tributes section and related options that give legacy contacts more agency in managing memorialized Facebook profiles (Facebook 2019).
5. Selecting Delete After Death, formerly a single check box, is now an informative workflow that prompts the account holder to share their decision about deletion with a trusted Facebook friend, in direct accordance with the informed deletion workflow I describe in Chapter 7.

The solutions that have been implemented indicate that post-mortem data management is not a human problem that can be entirely solved by the application of technology. Sharing life and eventually leaving behind traces of one's self is only one aspect of how people use Facebook in their everyday lives. In other words, "People are on Facebook because of life, not because of their anticipated death" (Kasket 2019, p. 200). Other uses and experiences influence how people view their Facebook data. Especially in the aftermath of public controversies like the emotional contagion study (Kramer 2014, Hallinan et al. 2020) and the Cambridge Analytica scandal (Isaak et al. 2018), general distrust in Facebook is now a ubiquitous element of popular culture in America. Public distrust in Facebook, combined with my research findings presented here, leads me to speculate that distrust of Facebook as an entity may contribute to people's misunderstandings about how post-mortem profile management options work. Especially in the case of deletion, it is possible that people seem unable to anticipate deletion being as complete

and real as it is, as it would be an instance of Facebook working in a way that people have come to never expect: truly prioritizing the protection and privacy of user data.

The interests of social media companies and the interests of the everyday people who use them are often at odds. The imbalance of control that Facebook retains during times of death may reflect the company's priorities of privacy and security for individuals, which come up against a bereaved community's need for access and connection. While the four studies presented in this dissertation focus on Facebook, the importance of understanding people's experiences with post-mortem data management apply to any social media platform used by mortal humans, and thus should consider how to manage deceased people's data. The following section will therefore focus on generalizable principles to be applied to the hopefully-near future of broad standard post-mortem data management for social media accounts.

Technically Possible, Yet Still Beyond Reach

The evidence of my research does not indicate a need for some yet-to-be-invented technology. I conducted the four studies and theoretical analysis presented here with a presumption that I would be working toward the intellectual challenge Mark Ackerman identified more than 20 years ago: "there is an inherent gap between the social requirements of computer-supported cooperative work and its technical mechanisms" (2000, p. 179). Considerations of death and experiences of grief are ideal instances in which to examine socio-technical gaps because of the depth and clarity of human needs therein. Yet good post-mortem data management technology is well within our current reach. When participants used Facebook's memorialization options as designed, they had meaningful conversations with their

loved ones, like Shane in Study 1. Even when work-arounds were needed, active legacy contacts did appreciate the capabilities they had for managing their loved one's profile. The nuances and particularities of digital legacies and memorial practices on any platform can be accounted for, as long as a path exists for accounts to be recognized as belonging to a deceased person.

The first critical step for any social media platform is to have options for people to prepare their account for their deaths. I was able to study Facebook as an example of a robust post-mortem account management system, and therein discern that a technological solution that enables profile stewardship *does* work adequately when used as designed. However, my research also revealed that it remains rare for people to use the technical solution as it was designed. Meanwhile, stewardship itself remains limited to platforms that enable it; currently only Facebook and Google, which allows account holders to designate post-mortem access and maintenance of certain types of data to designated people. Unfortunately, the lack of post-mortem data management options suggest other platforms and services do not yet see any urgent need to change. Meanwhile, account holders die every day, and managing their data remains complicated for their loved ones.

If high-quality, meaningful, post-mortem stewardship options like Facebook's Legacy Contact are technically feasible, why do social media platforms like Instagram, Twitter, LinkedIn, Tiktok, and countless others still lack such options? Each platform may have its specific justifications, but I speculate that their reasons for ignoring account holder death are legal, financial, and cultural. I will now discuss each of these in turn.

Legal. Platforms write policies to protect themselves from liability; Apple’s “no right of survivorship,” as described in Chapter 7, is not required by any US law. Rather, it is a legal choice the company made that is in line with the strict privacy of user data that is paramount to how they want their products to function. Apple has a history of refusing outside access to account holders’ data for any reason (i.e., Feiner 2020), indicating the company’s priority of user privacy. If Apple could be convinced to prioritize the loved ones of deceased account holders, they could change their policy to allow for post-mortem data stewardship. However, financial considerations, such as the lack of benefit to the company and Apple’s faithful customers’ reliance upon their privacy features, would make such convincing rather difficult.

Financial. Other literature details the benefits and drawbacks of ad-based financial models that keep our favorite social media platforms profitable (i.e., Fiesler & Hallinan 2019). It is widely known that user data allows commercial retailers access to expensive but effective targeted advertising. The storage and maintenance of all that user data is a cost the platforms incur. Once a user is dead, they can no longer provide data or business to retailers. Thus, the cost of storing their data can no longer be offset by ad revenue. Maintaining user profiles offers no direct financial benefit to platforms. Death forces the person’s social media profile to be dealt with as the thing it has always truly been in the eyes of the law: a corporate asset.

Cultural. I believe that my participants’ understandings of their connections to post-mortem data are representative of a larger cultural shift in what online content is, and how it should be managed. Among the barriers that emerged in partnering with Facebook’s Memorialization team was a lack of consensus or confidence in the role that the platform should take in reminding people of their mortality. For example, consider whether it would be appropriate for Facebook to require all existing account holders to select a legacy contact or

request deletion after death. The question at the core of that consideration is whether it is appropriate for Facebook as an entity to remind its users that they will eventually die. Even if public distrust in Facebook were not the massive issue that it is, our cultural taboos around death would make it uncomfortable for people to receive any overt prompts. Even if Facebook could strike the appropriate balance between informing its users of their options and being tactful about death, Facebook is only one platform. Other platforms provide no options at all, and may not ever do so. Elaine Kasket puts it quite simply: we cannot rely on platforms to do right by their users where death is concerned (2019). Research like what I have presented here might push the needle eventually, but people are dying now. Their loved ones cannot wait for a sea change in technology policy or sustainable business models to be able to remember their people well. This is where community death workers can play an important role by becoming informed about post-mortem social media management, and understanding how to guide their communities through decision making about digital legacies. If platforms are unwilling to confront their entire user base with mortality, a more subtle option would be to create targeted information resources about their post-mortem management options specifically for trusted community death workers.

Social media platforms may hesitate to associate their businesses with death and grief due to the concerns I described above. Yet not every single feature of a social media platform needs to be directly profitable or legally conservative; some features exist because they enable what people do to be human online. Our particular way of being human in American culture is to sequester death away from everyday business (Ariès 1974). The way death intersects with social media surprised the participants in each of my four studies: the ways others would continue to connect with the deceased and others on the profile, the way the platform seemed unaware of the

death, and especially the strong feelings they had about the deceased person's content. My participants' experiences demonstrated the needs, preferences, and the meaningfulness of content that participants had not previously considered. As more people experience the deaths of their loved ones who have created massive amounts of online content, the cultural need for memorializing that content may begin to outweigh the cost of such memorials for social media platforms. With enough social pressure, platforms may change their policies and begin to enable post-mortem data management.

Considering Death and Data-driven Identity Systems

Five years ago, the primary issue with post-mortem data was that most social media systems had no way to define an account holder as being deceased (Brubaker 2015). Death was not an aspect of human identity that had been deeply considered in the context of social media or in technology more broadly, despite the primary function of social media being identity expression (boyd & Heer 2006). It remains true today that most social media platforms do not offer any post-mortem stewardship options, or any death-related options beyond general customer service contact information. Facebook's options, thoroughly evaluated in this dissertation, could become a blueprint for how post-mortem accounts and their data could be handled on other platforms. This section will extrapolate and generalize the findings of the four studies I presented here, and offer further considerations for what death may reveal about human identity within computational systems.

In Study 1, I discovered what decisions and communications people engaged in when they had dedicated settings with which to make decisions. Their communications could be described as minimal to none, with the exception of people in jobs that necessitate considerations of death (like military deployment). The structures and prompts for participants to connect their expectations of a memorialized Facebook account with how the system actually works were ineffective due to participants' lack of cultural scripts or shared meanings about digital legacies. Yet account holders' decisions are irreversible after death. When the consequences of a decision are irreversible, communication is paramount. The resulting misalignments are fertile ground for the negative experiences that were described in the second study. Other platforms should therefore include granular prompts about what will change or be removed in their social media account, and guide account holders to direct instructions for their chosen post-mortem steward.

The study of active legacy contacts (Study 2) examined what it was like for people to steward a deceased loved one's social media profile. Generally, once they worked around their deceased person's lack of any specified preferences, participants appreciated the way memorialized profiles worked. Yet the participants who had significant problems with a deceased loved one's account demonstrate how foundational elements of a relationship, such as trust, are often not acknowledged by the system when general principles were offered instead of specific instructions. That is why the participants in Study 2 experienced mistranslations of trust. Computational systems cannot be adequately aware of how interpersonal relationships should be acknowledged after one counterpart of the relationship has died.

To be fair, people often do not know how relationships should be acknowledged after a death. The typical difficulties surrounding post-mortem planning, especially that of imagining loved ones' needs after a death that has not yet occurred, were present in the study of deletion (Study 3). The short answer to why deletion is a popular preference for account holders is that my participants believed that deletion after their death would be the simplest option for their loved ones. Deeper questions, however, revealed that participants found it more important that their loved ones have control and options in the event of their deaths. Yet different participants in the same study discussed that "control" and "options" were not what they had when their person died. This paradox suggests that account holders and their communities may be better served by appointing a post-mortem decision-maker with a greater amount of control, rather than a proxy to carry out specific requests that may never have existed.

For people who deleted a deceased loved one's Facebook account, they typically did not do so on purpose. Rather, they did not know that deletion had been the preference of the account holder, which is the only condition in which the accounts of deceased people are deleted. These participants expected that they would retain control over any final changes that could be made to the account, and experienced a painful violation of that expectation when the account was deleted. For these participants, deletion was not experienced as simple, but as jarring and even inappropriate. Furthermore, the legal and policy structures surrounding those options now make things *more* complicated for people who survive account holders who did not use those options, or who used them without communicating with their loved ones. If an account holder did not configure their settings, that can be taken to mean that they did not want a legacy contact, and so one may not be added posthumously. Selecting "Delete After Death" may not have been

something that the account holder felt strongly about, but if they checked that box, their family has no option to contest deletion.

Because deletion was a specifically bad experience for people who were already bereaved, Study 4 was an intervention with bereaved individuals in the post-mortem account management process. I found that rituals are a feasible way to create meaningful and intentional post-mortem social media management experiences. Yet what really made the experience meaningful for my participants was their experiences of engaging with their communities around the decision-making. In the context of communities who continue to love a deceased person, broadly-defined rituals made a difference because they were co-work that co-created meaning, emphasizing the importance of people working with and being supported by others after a death.

Chapter 9 ties together these four studies by outlining a theoretical framework of how the emotions of grief are connected to people's experiences with online content. The design of a tech-support interaction based on rituals emerged from the reality that my participants did not often recognize how their deceased person's data was part of their relationship until directly asked about it, or until after the data had been deleted. Participants' recognition of the nature of data in the context of their relationships emerged in a space that was created precisely to evaluate possible meanings around data. Adequately evaluating meaningful data required practical prompts toward consulting with others, and a guide who understands the experience. Other work in HCI confirms that guided, practical awareness of the outcomes of certain settings or actions in a social networking platform may change how people use it to more closely align with their expectations and values (Consolvo et al. 2010). Stewards' work to understand their person's

identity through their many relationships may be seen as comparable to how people might further understand their online privacy through data visualization. Yet the work of a post-mortem profile steward is to accommodate the expectations and values of an entire bereaved community who have a variety of needs and uses for a memorialized profile. Prior research indicates that the limited number of relationships people may sustain at varying levels of intimacy is also related to needs for “different kinds of information at different levels of detail” (Gatt et al. 2009). Varying information needs reflect a commonly discussed concept in the death doula community, which characterizes the loved ones of a dying or deceased person as “concentric circles of care”. The next section delves further into how community death work practices may be applied in online spaces.

Enabling Community Death Care Online

The strangeness of someone’s presence persisting online is documented in other work (i.e., Marwick & Ellison 2012, Baglione et al. 2018), and demonstrates that leaving an account as-is can be harmful to a surviving community. Yet the algorithmic activity involving deceased people’s content is only one example of possible emotional harm. My research demonstrates that leaving a profile as-is, or having it deleted suddenly *both* risk doing harm by eliminating communal opportunities for collectively articulating the meaning of the person’s death in that digital space. Along with removing the presence of the account holder, deletion reaches beyond the individual by eliminating co-created content as if it were only representative of one account holder. The over-reach of deletion is an example of one of the most long-recognized ways that social media falls short of accurately representing people’s identities and relationships: context collapse.

Context collapse is typically discussed in reference to content being visible to a wider audience than its creator had intended, thus complicating the person's typically contextual presentation of themselves (i.e., Marwick & boyd 2011, b). Deletion, in this sense, complicates the way that social media data conceptualizes an account holder as an *individual*. If the content were instead structured or recognized as the co-creations of a community, dividual representation of identity and dividual deletion (as described in Study 3) would be possible. This is already done to some extent on Facebook with the use of profile cards that display select information and contextually relevant content to people who are members of the same groups.

All of a person's communities and relationships form their dividual identity, so the sense of who a person is in the context of varying audiences provides an opportunity to recognize how one person is a collective of how they were known to each audience. While some communities may find comfort and meaning in the facets of a person they did not know during their lifetime, other people may keep parts of their life intentionally compartmentalized for safety. Where disparate relationships interact, dividual representations of a person, such as allowing a profile to *appear* deleted to one group while persisting for another, or blocking some groups from viewing photos rather than deleting them, would allow for those disparate communities to make differing decisions about the content that is most relevant to them. Differing decisions would allow protection and preservation of contextually meaningful content, eliminating areas of potential danger or harm. The principles that should guide post-mortem social media and online account options in the future are collaboration, consultation, and iteration. Technical solutions toward

better community management of post-mortem data would expand the people involved in management, such as:

1. Allowing account holders to assign multiple post-mortem stewards
2. Allow account holders to specify which content should be managed by which steward
3. Allow post-mortem stewards to delegate their management to another steward
4. Require verification from a steward before deleting any deceased person's account

In contrast to the potential assistance provided by people who only share use of a particular platform with a given person who needs to do post-mortem management, these options focus on how technology can enable necessary technical post-mortem practices by an account holder's loved ones. These suggestions are about how a community may do their work, uninhibited, after a death.

I recommend the guiding principle for any platform to presume the involvement of an affective constellation of loved ones that exists around the account holder. Beyond the next-of-kin in a legal sense, many others may be assisting with work related to the death, including community death care workers. Just as bodies may be legally given to the care of a funeral home or crematory, stewardship of digital remains could be delegated to professionals by making platform-specific information available for death care workers. (In the next section, I describe platform-specific functions that would be conducive to this purpose.) By broadening the scope of people who can do stewardship tasks around post-mortem data, platforms would be expanding their recognition of who a death reaches and changes, thereby allowing a wider variety of

communities and structures of care to take part in the digital ways of remembering that are increasingly valued in American culture.

What matters in social media memorialization and deletion is that the people who are most impacted by the death are given some semblance of awareness about what will happen to the data they feel connected to *before* it happens. If they may have some involvement in that process, all the better. Deletion can be good and meaningful as long as the appropriate people get to do the work that leads to deletion. Ultimately, the fate of a deceased person's social media profile is less important than the work by that person's community to let the profile reach that fate. The core challenge of post-mortem data management is therefore how platforms might allow and design for community death work. The next section explores some ways that community death work could intersect with data management to mediate post-mortem data stewardship regardless of platform affordances.

The Future of Death Work in Online Account Management and Memorial Practices

It is a common saying that American society has a strong practice of “death denial” (Ariès 1975). We do not speak of death in formal company, and opt for euphemisms like “passed away” even in familiar company. The bodies of our loved ones are cared for by professionals in facilities we are not allowed to enter. Death studies and sociology scholars refer to this phenomenon as the “sequestration” of death (Ariès 1975). Similarly, Americans expect expressions of grief to be kept hidden (Harris 2010), and often express disapproval or disbelief

when grief is publicly visible online (Gach et al. 2017). Western culture encourages somber quietude, and solitary, personal grief, and considers specialized therapists to be the best support option for people struggling with the loss of a loved one (Pearce 2019). In short, death and grief are marginalized.

The things we push to the margins of societies tend to find each other there (Douglas 1966). In recognizing that death and grief are marginalized, it would make sense to find marginalized people doing the necessary, hidden work of death and grief support in American communities. For Americans, anyone who is not a cisgender, heterosexual, white man is marginalized in some way (despite growing efforts toward diversity, equity, and inclusion). Consider the demographics of my participants across all four studies: of the 76 people I spoke with, 50 were women. Additionally, the first two studies had a disproportionate number of women respond to the screener surveys, resulting in the specific selection of men during the later parts of data collection in order to obtain a more balanced sample. Similarly, when completing the death doula training prior to the final study, I found that it is precisely non-cis, non-straight, non-male, and non-white people who are the majority in the growing circles of non-medical community deathcare workers. I argue that marginality is why women and gender non-conforming people are the majority in community death work, and thus will play a central role in the future integration of social media and cultural practices around death.

Historically, death work was community work. Cultural sequestrations of death and grief have marginalized people's support systems during times of loss, making them difficult to identify and articulate in public-facing and business-focused contexts. The tech industry is

particularly guilty of ignorance regarding human needs during times of death. The difficulties and pain points that my participants experienced throughout these four studies are indicative of several important aspects of human relationships that social media platforms have failed to consider: sensitive communication, trust, and community support work.

The question of *why* core aspects of human relationships were not anticipated in the design and functions of any social media platform from their outset could have two answers: either sociotechnical identity systems are unique among inventions in their minimization of humanity, or such systems emerged from a society that was already subtly devaluing those aspects of human relationships. If the former is true, the work of human-centered computing is a logical avenue toward making social media better tools for society. With all due respect to such efforts (after all, this dissertation describes several), I find the latter explanation more compelling. The pains and difficulties of post-mortem data management bring things to light about Western individuality, property ownership, and corporate oligarchy that have been forming a society in which communal ways of knowing cannot thrive. In contrast to individualist practices, community death care workers like death doulas are working to return death to a more integrated and personal presence in people's everyday lives, and are generally eager to learn new tools that may ease death-related tasks.

For example, recall from Study 4 that Alli was able to make a compassionate decision on behalf of a man whose behavior had caused pain for her. How was she able to do so? The answer is simple but profound: Alli had been trained as a death doula. She contacted me through the network of people who had completed the Going with Grace course. Her thoughtfulness and compassionate decisions demonstrate a core tenet of what those who do community death care are striving for: to work as an advocate for the dying and deceased regardless of their own

opinions. Alli's training and experience as a professional death doula enabled her to consider a variety of relationships and needs in the wake of her step-father's death, and make appropriate decisions on his behalf. Social media platforms could employ death doulas' existing skills and networks to make the public more aware of post-mortem account management options that may come to exist, and even train death care workers to guide their clients in using those features.

In the fourth and final study for this dissertation, I exercised such skills, integrating my training as a death doula with my expertise in Facebook's memorialization settings. In reflecting on my experiences with those six women, I found an interesting contradiction. In the study on configuring one's own post-mortem settings (Study 1), people expressed a desire for their loved ones to not have any burdensome tasks after their deaths. But people having *some* work to do in their grief is actually helpful and important. In that work, the proper support must be available to them. The personal and emotional connections I was able to create with each participant reduced the complexity of their task, and helped each individual articulate meanings around their loved ones' data. Ultimately, the participation in the work mattered more than the resulting artifact. The ritual-inspired guidance worked because the participants and I did the work together. A similar researcher effect has occurred in other studies, such as Moncur *et al.*'s Story Shell project (2015). There, the benefit to the participant was the process of creating a memorial artifact with members of her community. Co-creating a memorial within a community offers time, intention, and agency to the process of remembering with data. These are all the things that were missing from the deletion process when it was reported to be painful. Support structures to articulate the meanings in deceased people's data may not exist in a technical sense for some time, but can exist among informed communities now. Study 4 is one example of what is possible in this area.

The research in Study 4 explored one way that the loved ones of deceased account holders might make meaningful data management possible until post-mortem data stewardship options become standard practice across online platforms. Designing the ritual-based study was inspired by another cultural shift, or rather, a cultural return to stronger death awareness and community-based death care. I was able to approach post-mortem data as both a qualitative researcher of technology, and a trained death doula. That study revealed how, in the context of a slow, intentional, and emotionally aware connection, people were able to make informed decisions and have meaningful experiences with post-mortem data. Though I was able to make the existing Facebook options and tools work for my participants, it should not be so rare for people to have a caring experience when managing a recently-deceased loved one's online presence.

The connections that are needed for meaningful, good death work to happen around people's data already exist within the platform's networked content; they just need to be made visible. Someone does not need to be uniquely trained in either death or technology; they just need to have gone through the process before. To this end, platforms could allow people who have completed any process that may present emotional difficulty to make their experience visible to others:

- On Facebook, enabling community death care could mean that the Help Center articles about Memorialization settings conclude with a list of one's Friends who have configured their own settings. Similarly, the information about reporting a death could conclude with

a similar list, making it easy for people to message those who already hold positions of trust and care in their lives to assist them with something difficult.

- On LinkedIn, enabling community death care could mean that Connections who have reported the death of a coworker would be prompted to post about their experience within their networks, or even list their familiarity with the process as a Skill.
- On Twitter, enabling community death care could be a visual badge on someone's Profile, indicating that they are willing to message with others about how to handle a deceased person's account.

The principle to be applied across platforms is simple: leverage existing connections to enable **relational** tech support for emotionally difficult processes. Each of these design suggestions for specific social media platforms involves leveraging connections that already exist for their account holders to enable distributed sensemaking. As described by Fisher et al., distributed sensemaking indicates that people are capable of gathering new information through the evidence of others' learning processes (2012). Furthermore, this suggestion is inspired by the many participants throughout my years of research who were comforted by the idea that their experiences with death on Facebook could help other people. Turning the pain of grief into benevolence was a common theme among all 76 participants, who described such a wish as their motivation for participating in the research. Allowing account holders to opt in to a relationship-based tech support network of others who have completed post-mortem data management processes could be applied to any given platform.

Finally, no matter how human-centered the design of the system is, only defining the user as the human at the center of the good intentions leaves out laborers around the intended user. System design needs to account for the contract workers for big tech who answer emails with canned responses, receiving no training for scenarios that do not fit the system's design, nor do they receive any support for emotionally difficult interactions they may have. I dream of a world where systems are able to see beyond individuals as singular entities, and instead recognize the web of relationships and shared nature of our reality that makes humans who they are. Each hub of a network should be allowed to unravel, and let the frayed edges of loss discover one another and rebuild around it.

There is an analogous conclusion to my neighborhood's King Soopers memorial fence that I described in the Introduction chapter. The people who came to manage the ad-hoc memorial fence around the King Soopers accomplished the slow, intentional, networked grief work that I dream of making possible on social media. Before the fence was removed, the company filled each chain link with a live flower, and invited the community to "dissolve" the fence by taking the flowers over several days. The slowness, intention, and reverent beauty of the fence's dissolution eased the community forward in understanding what the sacred place would become next. In other words, we had time to recognize our contact with the space and the deceased, and consider the changing shapes of our affective constellations. The affective constellation lens of identity, described in Chapter 9, is difficult to represent in the database architectures that underpin social media platforms. But through community death care work that is informed about what meanings and connections may be present in data, people may be empowered to recognize and consider those connections in their decision-making before and after death.

This dissertation is one piece of my larger goal to increase knowledge about how social media data footprints become sacred memorials to the dead, and to empower people to honor their loved ones' lives, and their own grief, by incorporating their digital remains into their existing meaningful practices. To honor affective connections to data means to recognize the dynamic relationships and creations that make up a person's identity—relationships that outlive a singular person. The responsibility of honoring affective connections to post-mortem data lies in balance among the closest loved ones of the deceased, their community, and the related professionals. Social media platforms fall into the category of “related professionals” after a death, but do not yet defer enough control to people, who will always know the best ways to honor their dead. So how *should* people “delete” the dead? Thoughtfully, and together.

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