Learning from Family Mysteries: Accounting for Untold Stories in Family Memory Practices

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Given the importance and social significance of passing down family stories to each generation, why do important family stories not get told? How should designers of digital family storytelling platforms address missing or incomplete parts of narratives? Drawing from the results of an interview-based, practice-oriented inquiry, we argue that non-telling should be considered an important and integral part of family storytelling. Our findings show that non-telling is not simply silence. Non-telling allows family members to observe protective and discretionary values essential to the identity-making and relational goals of family storytelling. We also show ways that a person's reticence is situated and may change over time. In our discussion, we provide design strategies for family storytelling technologies to make room for silence and incorporate the values, purposes, and practices of non-telling.

CCS Concepts: • **Human-centered computing** → **Empirical studies in collaborative and social computing**.

Additional Key Words and Phrases: family memory; remembering; collective memory; storytelling; silence

1 INTRODUCTION

Family memory is a form of collective memory. It is composed primarily of stories from and about family members; inherited knowledge, such as old songs, recipes, or genealogies; memory objects like heirlooms and mementos; and rituals and traditions that unite the family through a regular, shared activity. Historically, in Western cultures, sharing memories through family storytelling is one of the primary ways that generations connect and create a sense of shared identity over time [4]. Family memory is also said to be the foundational social framework through which individuals gain a sense of self in relation to others [51].

Family storytelling, in our theoretical framing, is a form of communicative collective remembering [4]. Family stories convey important information to each generation about their shared history, give insight into the character and lives of previous generations, and explain family relationships, traditions, and practices [4, 18]. When these stories cannot be told, invaluable information is lost and present family members can be disconnected from their history, heritage, and ancestors.

Given the importance and social significance of sharing family stories, significant attention in the broader HCI literature has been devoted to supporting family storytelling in both direct (face-to-face / synchronous) and mediated contexts (e.g. crafting memoirs, audiorecording stories)

[7, 27, 29, 48]. We study storytelling practices in order to better inform the design of platforms which mediate storytelling when direct interactions are not possible. In the intergenerational context of family memory, stories are often recorded in some artifact form, from written memoirs to digital video montages, that can be passed down to future generations. Interactions are temporally distributed (i.e. across generations), resulting in stories being mediated across networks of people and various kinds of records and artifacts.

The focus in prior work has been on helping people tell their story in technology-mediated contexts, focusing on the activities of capturing, preserving, and revisiting important memories through storytelling. Yet, there is no work that considers "non-telling," or choosing not to tell a story. Bannon argues that to deal only with the preservation aspects of remembering without attention to the ways that things are ignored, cut out, or buried, fails to fully account for the activities that make up the reconstructive process of remembering [5]. The lack of attention to non-telling in design reflects an assumption that not telling a story indicates an unwillingness to engage. However, theories of social memory suggest that this assumption is an over-simplification. Inspired by Bannon's argument, **we posit that "non-telling," or choosing not to tell, is actually an essential component of family storytelling** [5]. Non-telling encompasses a range from silence (a refusal to share), to obfuscation, to selective sharing. We believe it is important to understand, as designers, why family stories are not always passed down, and why "important and relevant stories may never have been told, or told incompletely" [32].

Family and other social communities continue to adopt and appropriate digital media tools and platforms in attempts to capture, preserve and share memories that are important to their collective identity [25, 36, 43, 46]. As a result, the ways that people remember together are also shifting as new technologies enable new ways of interacting together with stories, over a distance, over time, and across generations [4,6,21,42,47][6, 9, 27, 48]. Our study answers calls from prior work in human-centered computing and memory studies for a better understanding of social memory practices to inform the technologies that increasingly mediate these practices [46].

With a focus on "socio-biographical" storytelling (stories told about the family), we examined often-taken for granted accounts of mysterious, missing or incomplete family stories. To gain a sense of people's family storytelling experiences from their point of view, we conducted a "story tour," a loosely-guided conversational interview based around examples of family stories each participant found interesting from their own family [21, 25]. We asked who they heard stories from, why the stories they chose stood out to them, what they learned about their family through these experiences, and how they might share these stories with their own children or grandchildren.

To make our argument that non-telling is an important storytelling practice, we make three contributions:

- Through these accounts, we illustrate common scenarios where non-telling exists beyond a simple unwillingness to share. We also illustrate the intergenerational social tensions that surround non-telling, including incongruity about what stories to tell and disagreement on appropriate conditions to tell a story.
- We outline values which motivate non-telling, including: 1) protecting personal and collective identity of family members, 2) exercising discretion about the potential impact of the knowledge revealed in a story about a person or past event, 3) showing respect to a family member's agency in sharing their personal story, and 4) waiting for the right moment to share.
- We discuss how family storytelling platforms can incorporate non-telling to support the protective and discretionary values this practice enacts. We also offer ways to leverage the

expanded temporal and signifying affordances of digital artifacts to help mitigate some of the social tensions that emerge across generations.

Memory practices necessarily involve keeping some things and discarding others [5, 22, 34]. Our work examines family storytelling from this perspective. Our approach foregrounds the motivations, goals, and values of potential users to better inform the design process of future technologies. In the following sections we will describe our theoretical basis and the gaps we identified in literature on technology-mediated family memory which inspired and guided our analysis.

2 BACKGROUND AND RELATED WORK

Our use of theory follows the tradition of foundational CSCW work in collective memory in organizations, which takes into account the sociocultural and sociopolitical dynamics that affect how people interact with one another through their use and interpretation of information artifacts [2, 3]. The theoretical lenses of family memory and collective remembering allow us to understand gaps in current literature and apply a theory-driven understanding to familiar, everyday social practices of family storytelling.

2.1 Family Storytelling as Collective Remembering

In this paper, family storytelling is a form of collective remembering. As will be seen in the examples given by our participants in our findings, family stories are not necessarily full narratives–they could be well-formed and rehearsed tales, or they could take less structured form, such as insightful answers to personal questions, remembered conversations, or instructive anecdotes. A story can be autobiographical, as the teller recounts their own memory and experiences, or an "inherited" story, where the teller rehearses a story they received from their own ancestor [17]. "Passing down" a story entails either a direct, often informal, storytelling interaction between the teller and the listener, or a mediated interaction, where an account is written down or somehow recorded for a future recipient.

The family stories we are concerned with are the "communicative" form of collective memory: everyday memories transmitted through stories, conversational anecdotes and other interactions between family members [4]. Erll argues that family memory is predominantly communicative [13]. Sociologist Maurice Halbwachs is widely credited with coining the term and modern concept of "collective memory", which describes the memory of a group that transcends the personally remembered experiences of its individual members [18]. Some scholars use the active term "collective remembering" to emphasize the nature of memory as a process: an ongoing collective engagement and interpretation of the past [49]. Formative social groups, such as families, are "mnemonic communities" in which members share a common identity, learn to make sense of the past, and enact this identity through their shared ways of remembering [51].

There is no single trans-disciplinary definition of family memory with respect to storytelling, so we establish a working definition as:

> "a shared, ongoing narrative that family members co-construct to create a sense of shared identity and connection among current, previous, and future generations."

We note here that nearly all of the theoretical work on family memory is based primarily on observations and reflections from Western home contexts, and does not include cultural memory practices that are more ritualized or formal. Our findings and analysis therefore contribute within this scope.

2.2 Storytelling Practices

We conceptualize family stories as both a product (the story) and a process (the telling), in line with prior work in HCI and CSCW on design for family memory [21, 25, 30]. Jones & Ackerman conceptualize family storytelling as a co-constructive process in which those with a story to tell *(tellers)* and those who wish to learn about family *(listeners)* together engage in discovering, deciphering, and reconstructing cohesive narratives out of information and recollections of the past [21]. We take a similar practice-oriented approach, where practices are "the minimal units of analysis where essential and interesting social issues all come together in a natural and authentic way and become accessible for study"[26]. A practice-oriented perspective allows designers to foreground attention to the values and politics of actors involved in the activities being studied.

Intergenerational family storytelling is value-driven practice, motivated by a sense of obligation or duty to the family [21, 25]. Why then, would people not share their stories? To our knowledge, the only explanation currently offered in the literature is a simple unwillingness to share. For example, Fivush proposed that the family stories could be missing or incomplete due to family elders exercising their "narrative authority," or the right to tell a story in the way that they wanted, even to the point of remaining silent on aspects they did not want to share [14]. In oral histories, reticence of storytellers in answering certain questions about their past was "a common conversational ploy to avoid either outright refusal to respond or full disclosure" [28]. However, as we reflexively brought our own experiences and observations to bear on this assumption, the simple refusal to speak and wholesale denial of access seemed too simple an explanation to encompass all the possible scenarios in which a story may not be told. Our study considers, in a multi-generational collective context, how factors other than an individual's personal preference influence shape family storytelling.

2.3 Digitally Mediated Family Storytelling

A growing body of literature documents the motivations, practices, and challenges of people performing memory work on behalf of "the family", such as elders crafting their legacy [30, 44], family historians compiling digital genealogies [50], stewards managing family heirloom collections [25, 37], and memory keepers collecting family stories [21, 30]. These studies inform and motivate the design of bespoke digital tools and platforms to support family communication, archiving, and genealogical practices, and have inspired the introduction of new features on general purpose social media and networking platforms.

Much of the focus in the design space has been on creating artifacts: digital mementos, digital heirlooms, and platforms to enable a range of interactions with recorded content. Since the first augmented *Memory Box* [16], innovations such as a virtual Family Archive device [24, 42], "slow" multimedia portals [33, 35], and variety of smart and interactive tangible media interfaces (e.g. [6, 36, 41]) have been proposed as new ways of creating, preserving, curating, and revisiting digital mementos. Yet, even when high quality, curated content could be created and then presented to a future recipient as a "story," significant sociotechnical challenges prevent these devices and platforms from being seamlessly integrated into family practices.

First, we do not yet understand how stories are mediated through networks of people. Family stories are told out of a sense of obligation, a desire to connect generations, and to teach family values [30]. Are the values and motivations of the storyteller the primary factor of decisions to tell or not to tell? What kind of objective and subjective judgments do people make about stories they will tell, stories they have heard, and stories they wish to tell or hear? When a story is told and passed down, how are these judgements communicated in the mediated story, if at all? These and other questions we believe are essential to designing effective, "unremarkable" mediated storytelling tools and platforms that fit into family practices and align with family values [45].

Second is the issue of control. In related literature in digital legacy, which concerns the management of a person's posthumous digital material, studies have shown that the original creator of shared digital mementos is not the only person who claims an interest in what happens with this content. On some platforms, other people can claim rights to access or control content if they are present in the content (such as a person tagged in a photo [40]). In other cases, rights are conferred if their relationship with the contributor carries a societal expectation of shared stewardship [10]. On the other hand, prospective recipients could experience such an emotional toll from stories or messages from "beyond the grave," that they want to control how and when a story or other message is received, regardless of the expressed desires of the storyteller [20].

To begin to address these gaps, we address in this paper the apparent complement of storytelling–*non-telling*, and the role that it plays in co-constructing family memory. In our discussion, we consider ways that different design strategies align with as well as disrupt expectations, values, and politics among storytellers and listeners.

3   METHODOLOGY

3.1   Recruitment and Participation

We recruited 21 people who expressed interest in learning or sharing about their respective family histories (see participant details in Table 1). We recruited two groups of people based on the idea that older adults would be more likely to serve as storytellers in their families, and younger people more likely to be wondering about their family history. In reality, both older and younger adults in our study shared insights about learning of their family stories and sharing them. Half of the participants (n=10, 5 women) were actively researching their family history and endeavoring to create some comprehensive record of their family stories for future generations. These interviewees were primarily older adults (ages 50-80's), with one younger enthusiast who was writing a book about his family (30's). These participants were recruited through word of mouth and snowball recruiting from the research team's social network, local cultural centers, and community heritage organizations.

The other half of interviewees (n=11, 8 women) were younger adults (ages 20-30's) who were recruited through announcements sent via a university mailing list, word of mouth, and network contacts. Volunteers answered affirmatively to being "interested in learning more about their family" and, to focus the scope of our study, had lived the majority of their lives in the United States. Fitting with the diversity of the country, interviewees came from a range of cultural and racial backgrounds, including first and second-generation immigrants with family in Europe, South America, and Asia. Along with this cultural range, participants' account indicated a range of family structures, from multi-generational households, to nuclear two-parent families, to separated, divorced and blended families.

This study was approved by our Institutional Review Board for appropriate research ethics.

3.2   Data Collection

The "story tour" took place in a semi-structured individual interview format, with each conversation lasting between 60-90 minutes. Our interview and analysis style was informed by Charmaz's constructive approach to grounded theory, where interview questions serve as guides for an unfolding conversation and can change throughout the process [11].

In our first round of interviews with older memory "keepers," we asked general questions about their family stories, why they were interested, and how they wished to pass them on. We became intrigued by the near constant reference to so-called "family mysteries" in these interviews, and started asking followup questions to probe deeper. In our next round of interviews with younger

ID	Pseudonym	Age	Heritage	Has children?
1.	Tina	30-40	Eastern European, Latina, 1st gen	Yes
2.	Lisbeth	30-40	Eastern European, Jewish, 1st gen	Yes
3.	Gloria	30-40	White	Yes
4.	Lincoln	20-30	White	No
5.	Evan	20-30	White	No
6.	Christine	20-30	White	No
7.	Maggie	20-30	White	No
8.	Marie	20-30	White	No
9.	Anne	20-30	White	No
10.	Terry	20-30	Asian, first generation	No
11.	Janine	20-30	W.European, Black, Latina	No
12.	Eli	20-30	Black	No
13.	Alina	50-60	White, Western European	Yes
14.	Robert	50-60	White	Grandparent
15.	Vivienne	60-70	White	Yes
16.	Barb	60-70	Latina	Grandparent
17.	Carolina	60-70	Black	Grandparent
18.	Joe	60-70	Jewish	Yes
19.	Cory	60-70	Jewish	Yes
20.	Oscar	70-80	Russian, Jewish, first generation	Grandparent
21.	Lilian	70-80	White/Western European	Grandparent

Table 1. Interview Participants Information (by Alias)

participants, we added two questions to our protocol to reflect this theme, asking "Have you heard this story more than once? If so, did it change?" and "Did you face any difficulties learning more about aspect of your family?"

In the consent process, each person was ensured at the beginning of the interview that they could share as much or as little about a particular story as they wished. In the interest of privacy, detailed stories are not reprinted in this paper, with the focus being on participant's reflections about the stories rather than the story itself.

All interviews were conducted in English by the first author, audio-recorded and transcribed. All participants are referred to with a pseudonym, and direct quotes used in the findings have names of people and places changed to protect identity.

3.3 Analysis

We coded all the interviews by using participants' stories as distinct experiences and analyzing their reflections about the story. The first author used a combination of process and in-vivo coding to organize insights from the interviews, noting the actions and explanations participants recalled taking to learn, share, and make sense of family stories. The codes were discussed and refined by the entire research team, and then grouped into themes describing motivations, perceptions, and practices of storytellers and listeners. *Practices* enacted around non-telling included: (for listeners) Asking Questions, Hearing Others' Perspectives, Overhearing, Making Cohesive Versions of Stories, and (for tellers) Painting a Picture of the Family, Navigating Intergenerational Disconnect, Using Situational Triggers, and Waiting for the Right Timing. *Perceptions* of untold stories and non-telling included: Reticence, Incompleteness, Embellishing, Unfolding Details, Silence as Respect, Pain and

Shame, and Worries of Disconnect. *Motivations* to seek out untold stories included: Entitlement, Connecting to Family Members, Readiness, and Learning.

We then reviewed the excerpts associated with each of these themes to select those that specifically mentioned silences, incomplete stories, or other instances of non-telling identified by our participants. While all of our data was used in our analysis, these selected excerpts served as guiding examples for synthesizing and discussing the themes in this paper.

We endeavored to present a fair and rich representation of non-telling activities and values. While there must be some details that are judiciously excluded for space and focus, based on intersections with related work, resonance with reviewers and commentators, and the creative value of the design implications we were able to distill, we believe the level of detail that we were able to convey is sufficient to support the claims and goals of this work.

In the following findings section, we describe how instances of non-telling became noticeable to people, and draw out the protective, discretionary, respectful, and temporal purposes perceived to motivate non-telling. These findings are illustrated through examples from participants of storytelling practices enacted around untold stories.

4 FINDINGS

4.1 Noticing Non-telling: Silence, Secrets, and Lies

For the purpose of grounding our analysis, we first describe ways that non-telling became visible in our participants' family stories. McNay refers to the holes and fragments in narratives as "absent memories," and argues they create tensions when they begin to disrupt the construction of a person's narrative inheritance [32]. Elder and younger participants described becoming aware of missing or incomplete family stories both by chance and through investigating their family history.

Due to the nature of memory, all families have some questions about the past that are unanswered or unanswerable. In some cases, an older family member was simply "never very talkative"(Gloria) and a younger family member "never pried really all that much" (Evan). Outside of these cases of mutual disinterest, there were notable silences, hidden secrets, and even lies that functioned as barriers to learning more about a person or about the family.

Silences. Silence is a refusal to speak, and can be intentional, unintentional, momentary or long-term [14]. The silences that participants noticed were intentional (*"a certain kind of reticence to talk about certain things. There's a boundary and that's it."(Lisbeth)*, and prohibited mention of significant life periods (e.g. childhood, or wartime) or people and parts of the family (e.g. *"I feel like I can't ask my dad for information about his dad."(Lincoln)*.

For example, in his retirement, Oscar decided to start researching his family history based on the many stories his father had told him about his family's emigration to the U.S. from Eastern Europe. After intensive genealogical work and historical research, Oscar discovered a branch of his father's family that he had not known about, and that his father had never mentioned. Unfortunately, Oscar's father had died prior to this discovery, so Oscar was unable to ask his father about it. This untold story became a family mystery:

> "So, the intriguing mystery of all this was, did my father know that he had a nephew and two nieces in Poland, and not say anything ever about them? Or did he simply not know of their existence? And there's no evidence in all the research that I've done that he did know about them. But of course, there's no way to prove that he didn't." (Oscar)

Discovering the existence of close relatives that he knew nothing about seemed too important to Oscar to be a simple oversight. He surmised that either his father had lost contact with and did not know, or that the topic was purposefully avoided:

"This all must've been very, very painful for my father, and that's why we never talk about it." (Oscar)

Taboos. Another example of noticeable silences were the existence of taboo topics in families. Four participants mentioned that *"there's a lot of topics people just don't talk about" (Anne)*, where life stories of particular events, people, or time periods were known to be off-limits due to family feuds, past trauma, or uneasy relationships. These taboos could last generations. In one example, Carolina described her quest to resolve the identity of a "mystery relative" who appeared in an ancient family portrait but whose paternity was unknown:

"... For generations, people have been asking, 'Who is this man? Who is this man?' Now the generation that went back to probably my father and my aunt and uncle, they probably knew but they wouldn't tell." (Carolina)

Carolina finally decided to dig into his identity, because she felt the likely taboo was outdated:

"I don't want to pull up any skeletons. I just want to be able to link as much information as possible. And that's what I've gotta get people to understand, that was five generations ago. Can we just dispel the myth and the mystery and just put it out there? Back then it was a taboo, but now it's so commonplace, generations now are just going to say "Ok, so his mom and dad didn't get married. Let's move on." (Carolina)

Lies. Another marker of untold stories were falsehoods and conflicting accounts. Two participants recalled a family member's story being completely denounced by another family member. For example, Barb had been working with her father to write his biography, and asked him to describe and record the kinds of jobs he had held growing up. After he passed away, Barb's mother discovered the written notes from these talks and declared them all to be false:

"She saw [the notes] and she says, "What's this? This is full of lies! This didn't happen! He didn't do this!" (Barb)

Although Barb's father's accounts were plausible to her, her mother, who ostensibly had first-hand knowledge, challenged his version of events. Without her father present to defend his recollections, Barb had to come to her own conclusions about the veracity of what he had shared.

Falsehoods coexisted in family narratives with exaggerations, embellishments, and rumors. However, when participants talked about a "story that wasn't quite right," they could generally explain where they thought the line between fact and fiction was. As Vivienne, an amateur historian, thought about her family history: *"They usually all have a big kernel of truth. But sometimes the little side facts get lost in the passage of the story."* A lie, in contrast, was used as a façade to hide the real past.

For example, Eli shared his process of reckoning with family stories about having Native American ancestry amid their multi-racial background. Eli originally dismissed the stories as mere legends, because his known ancestors were listed as Black or White in census records. However, some historical research revealed census takers in his family's hometown who would not record claims of mixed ancestry, effectively erasing this part of his family's heritage from official record.

"[The census taker] basically tried to erase people of mixed ancestry if they were living in [our town]. He went around and basically told his people doing the census, 'If they look black, you put 'em down as black. If they look white, you put white.' So, by him doing that, people today trying to do their research are finding that their ancestors were black, mulatto, or white, but they have this history passed on to them that they're Native American." (Eli)

After learning about this historical context, Eli started paying more attention his family's heritage stories. He surmised that *"you can't really trust the records"* when delving into historical matters of race, and thus, he decided to trust his family's account.

> "I just came to a point in myself where I'm no longer doubting in my own family—the stories that have been told to me. I'm setting out to confirm them." (Eli)

In Eli's case, the conflicting accounts led him to discover a hidden story about his family's heritage.

Secrets. A third marker of untold stories was privileged information. Privileged information could be benign–stories that were simply not meant for a particular listener, or secrets–information the family has kept hidden due to its negative perception [47]. Secrets were often wrapped up in silences and taboos, or the teller was *"circumspect about what I [share] publicly" (Vivienne).* Three participants recalled learning stories serendipitously, not because they were told, but by their proximity to someone the teller actually wanted to share with.

For example, Tina described only hearing her dad's stories when he's talking with his friends, not her.

> "I find with my dad, I find myself surprised a lot. He rarely tells me stories. He tells other people stories and I happen to be there. He tells a lot of stories when he's with his friends." (Tina)

In a similar example, Terry described learning about how his parents met by eavesdropping on their conversations with their friends.

> "Part of it was eavesdropping. They told the story to me too, but they don't know how much Chinese I understand so whenever they talk to their friends on the phone, or kinda in the car, then I can hear what they're saying. So a lot of it is putting pieces together. So like I heard parts of it myself, and parts I heard from other people." (Terry)

In some cases, it might have been easier for a teller to reminisce with friends rather than share with their children. Although a story was not specifically intended for a person, there was no harm in them learning indirectly. However, in other cases, tellers were purposefully selective with their audience.

Summary. A known or discovered lack of mention of significant lifetime periods, certain topics, and specific family members contributed to an awareness of untold stories. In addition to holes in family narratives, conflicting accounts also pointed to the potential of an untold story. Rumours and legends contained suggestions that commonly accepted stories might not be accurate. Lies and false stories acted as facades over the real past, the discovery of which could lead listeners to deeper investigation and gathering alternate accounts and perspectives.

4.2 Creating and Protecting Identity

Participants described cases where they, or a family member had decided to not share a story, or aspects of a story, in order to protect their sense of identity. These hidden stories were personal as well as second-hand, inherited stories and were described as evoking feelings of shame, embarrassment or moral outrage from the teller or the listener.

For example, in researching his grandparents' relationships, Cory described discovering late in life that his grandparents had been divorced for a period and remarried. He was surprised to learn this fact after so long, and surmised his mother had avoided the topic due to the propriety of the times.

> "I asked my mother about that, and she said 'Oh I didn't think you would be interested.' She was ashamed of it." (Cory)

In Cory's view, a crucial detail of his grandparents' life and past had been hidden from him due to the negative interpretation that his mother had of that circumstance. Family stories did not simply record information about the past; they often conveyed important family values. However, at times the values represented conflicted with the personal values of the teller.

In another example, Gloria realized that her father was actively working to suppress family stories that transmitted the memory of his own father, who she described as *"notorious"*, well-known but regarded in the community as *"a terrible person."* Gloria found it difficult to learn anything about her grandfather because of her father's strong negative association with stories about him:

> "And my father just hates to talk about [his father]. My father was a minister . . . he took it so personally, the way his father lived. And I never understood why, and I asked him, and he said, 'Well, I would hate it if people thought about me that way'... maybe he thought that there was some kind of genetics equaling destiny type of thing involved." (Gloria)

Although it was not his own behavior being judged, Gloria's father considered stories about his father to be a personal shame. He suppressed amoral stories of his father to resist the social identity implied by the relationship, and to maintain a social image that more closely fit his own character.

An important purpose of non-telling was to push back against the values contained in the story, both purposeful and implicit, when they were in conflict with a person's own values.

4.3 Exercising Discretion

Family stories are usually about people and the things that they had done or experienced. When a story communicated events in the recent past, tellers considered the effect of the story on the people concerned. Family stories sometimes contained sensitive information that storytellers were reluctant to share because of its effect on the person featured. For example, Lincoln recalled investigating a mysterious uncle after his death, and learning that details of this uncle's life struggles were purposefully hidden by the family out of care for his privacy.

> "My mom is a very dedicated pray-er so she was probably praying for him and some of those things. There's a certain sometimes confidentiality that comes with those sorts of prayers. She knows that it's sort of an ongoing thing that he's dealing with but she won't share with anyone unless they're close to him and need to know sort of thing." (Lincoln)

Vivienne explained a similar orientation to sensitive stories. She described stories about difficult and painful experiences as important for her to have and to pass on to her children eventually, but should be handled carefully.

> "You have to think about the people that are still living. There are some stories that I haven't told because I have my mother and aunt that are still around and they don't want those stories to be told. ... Some things that are not so fraught with emotion or negative feelings, those things are easily shared. And I guess maybe it depends on the passage of time. I'm much more open on things that happened way in the past, centuries ago, but if it happened to my grandparents or even great-grandparents, I don't share that kind of stuff much. (Vivienne)

Summary. Storytellers' consideration of how disclosure of sensitive information might affect current family members was an important reason for not telling a story. These stories might only be told on a need-to-know basis, as Lincoln described, or when the storyteller deemed it would not harm the family members featured or affected by the story.

4.4 Showing Respect and Compassion

Some family narratives have obvious holes that all family members decide to leave alone, out of respect for the storyteller's preference. For example, Maggie recalled being explicitly instructed by her parents not talk to her grandfather about his past experience being kept as a prisoner-of-war (POW) during military service.

> "We knew he was a POW and we were just told never to bring it up,... We just kind of understood that he probably – this wouldn't be a comfortable thing to talk about unless he wanted to talk about it." (Maggie)

In this case, Maggie and her family tried to anticipate her grandfather's wishes, avoiding certain topics in acknowledgement that this aspect of the past might be painful to recall. Eventually, when he was ready, Maggie's grandfather "suddenly opened up" and first shared his story with his family and then with the wider community.

In another example, Tina described only being able to hear "optimistic" stories in talking with her grandmother about emigrating from Europe and asking her questions about her experience adjusting to life in a new country. Tina's grandmother did not mind talking about the past, but would avoid mentioning any challenges or difficulties:

> "I think my grandmother had a hard life. [But] she didn't really talk about the hard stuff. Even at the end, she wasn't one of those people that wants us not to forget the hard stuff. She was very optimistic and wanted to focus on the fun stuff." (Tina)

Although her grandmother's editorializing left Tina with a lot of questions about her grandmother's past, Tina decided to accept her grandmother's unique perspective as it was.

> "Sometimes I just wonder how is it that she didn't express emotion, or didn't express difficulty or the human experience around those things. But in a way it's just part of who she was. I wouldn't have wanted her to be a different person. Maybe it would be interesting to know from other people what that mood was like, but I don't think I would have wanted her to sit with me and tell me how horrible it was." (Tina)

Summary. To respect and show compassion to the storyteller, the listeners tried to anticipate or infer how the teller might be impacted by telling these stories. While tellers might choose to exercise discretion knowing what to tell and not tell, listeners deferred to a storyteller's choice even without knowing what was hidden. Topics were avoided and questions unasked out of respect for the storyteller's goals and readiness to share.

4.5 Waiting for the Right Moment

In the earlier sections, we described examples of non-telling that served a particular purpose in the moment. However, changes over time for family members and their circumstances influence whether and how stories were told. We mentioned earlier examples where sensitive stories would only be shared when it would no longer affect the person, or when a reticent elder might suddenly decide to share their story when they were ready. Reflecting on these circumstances, there were some explicit time-related criteria that participants described waiting for in order to share and learn about certain family stories.

Waiting for Interest. Several participants who were parents described considering ways to document their stories based on the worry that their children would not be interested in their family stories during their lifetime. Gloria shared this common sentiment as she discussed her motivation to write stories in a journal for her son:

> "I have a toddler, we are older parents, so I feel like I do have to write everything down... Maybe he won't get interested in this stuff until after I'm gone. Maybe he'll

> get interested because I'm gone, and can't talk about it anymore. So, I have to figure
> out a way to preserve it. I think a lot of times it's natural to ignore your parents until
> they're dead and then be like, 'What did you wanna say to me? I want for you to tell me
> something.' And I'd be like, 'Here, here's a book. I wrote it for you. I love you. Here's
> some stories. Read them.' (Gloria)

Gloria did not intend to give this journal to her son immediately, but rather to leave it behind
on the chance that he might be interested. Prior literature has noted worries among elders that
their descendants would not care about their stories [44]. Not knowing whether their children or
grandchildren will ever be interested in learning more about the family can discourage a storyteller
who might otherwise be willing to share their stories.

Readiness to Share. As we saw in earlier examples, stories might center on weighty or emotional
topics that the storyteller needed time to process and come to terms with before they were ready
to share. Maggie a younger participant, described aspects of her own experiences that she thought
would be valuable to share at some point, but not at her current point in life.

> "I think it'd would be worth it for kids who don't know what the heck they're doing with
> their life, 'cause everyone is worried. And I'm queer, so I mean I guess it's becoming
> easier for kids, but I was closeted and outed in high school. It was kind of a sh*tty time
> . . . there's also some things about high school that I might share when I'm older, but
> it's just not really the right time yet..." (Maggie)

Maggie described a personal "right time" to share that only she could determine for herself. Other
participants alluded to a storyteller's reticence as a reflection of a broader generational or cultural
readiness to discuss a challenging period in the past or some collective struggle.

Growing with the Listener. Six participants recalled stories they had been told in their youth
that had details missing or changed to be more "child-friendly." In one example, Terry recalled
asking questions about an experience from his grandmother's past as a teenager, but only being
given vague details:

> "I know my grandma lived through the Cultural Revolution [in China]. . . I know only
> because I did a project on it and my mom insisted, like, 'Oh you should ask grandma, she
> might know something.' But she was very vague about it, for like some obvious reasons.
> Like she said 'oh yeah, everyone was really hungry all the time.'... She probably doesn't
> like talking about it, but also when I asked I was pretty young. I was a sophomore
> in high school. So she probably didn't want to put so many details in. . . . maybe, she
> might still see me as a child." (Terry)

Terry surmised that his age, both past and current, served as a barrier to learning more about his
grandmother's past experiences. In a similar case, Marie described her favorite story about her
parent's wedding that unfolded over time, progressing from edited versions to a more detailed
story as she got older. Originally, the story depicted a romantic scene:

> "And they got married on this beach in Hawaii and the only people there were these
> surfers, like three surfers, and the guy who officiated the wedding. ... These random
> people that they didn't know played this Hawaiian wedding song while they got
> married and it was the most wonderful thing ever. At least the way my mom tells it, it
> was the most wonderful thing ever." (Marie)

As Marie grew older, her own increasing sophistication led her to ask ask more probing questions,
and her mother shared more details in her re-telling:

> "She'll repeat the same story over and over again, which is fine, and as I've gotten older, it expands, so it becomes more detailed. I don't know if that's because my mom thinks I can actually remember and understand it now..." (Marie)

In Marie's case, the details revealed a less romantic version of the story than she heard as a child:

> "Yeah, like that the surfers were super high. ... Right, that was something that came later, the surfers were like smoking while my parents were getting married." (Marie)

Summary. Judging a person's ability to understand a story and handle its details was one way that a storyteller modified how they shared their memories over time. A story or important details might not be shared if the storyteller did not feel the person was ready to hear.

4.6 Missed Opportunities and Misperceived Intentions

The changing circumstances, evolving life stages, and maturity that accompanied the normal passage of time also led participants to reflect on missed opportunities to learn family stories. While elders worried that their descendants would not grow interested in their stories during their lifetime, younger people could also regret not being interested at the right time. For example, Evan reflected that although his parents were alive, he was unable to learn much about their relationship when they were his current age. By the time he was old enough to be curious, his parent's divorce had made their prior relationship a taboo topic:

> "I never asked too much about my mom and dad's relationship, because by the time we were teenagers or more able to ask that kinda stuff, it was clear that they didn't like each other anymore. So, I didn't wanna talk about that with them. And then, even afterwards, there was a lot of resentment on both sides. So I never really got too many stories about them from their 20s together." (Evan)

In addition to lost chances to connect to storytellers, tellers might forget to share aspects of their story. Without context, forgetful omissions could be misinterpreted by future generations as meaningful silences. Lincoln, for example, realized that his casual storytelling in the interview had left off any mention of his brothers. He reflected that, if this happened in his actual memoirs, the omission could be misconstrued by his descendants:

> "As I'm telling you the stories, kind of mentioning the stories that are important to me, like I haven't mentioned my brothers. So maybe the things that I leave out intentionally or unintentionally, future generations won't be able to know, they'll only be able to know by negative analysis, I guess. Saying like, "Oh he never talked about his brothers, maybe he wasn't close," or something like that. The things that I choose to leave out are the things that I just forget, [but they] are definitely going to color how people see me in the future to the past." (Lincoln)

Without explanation, simple mistakes, like a forgetful omission, could be misinterpreted as a silence for descendants unfamiliar with the storyteller. Family stories and the way they were told carry significant social weight, and misinterpretation could introduce an unwanted tone when they were passed down. In non-face-to-face settings, opportunities for misinterpretation could grow more complicated because listeners could not clarify what they read in memoirs or listened to in recordings.

An additional complication in mediated storytelling is the line between what was meant for the family and what was personal. As we described earlier, older participants were working to record family stories so they could be shared past their lifetime. Yet these prepared stories they wished to tell could be lumped in with their private, personal possessions, such as diaries, personal correspondence, or digital files. Private thoughts and memories, not intended to be shared, could

unintentionally be revealed if family members read and choose to share these documents. If not specifically set aside, these private memories could become stories-not-meant-to-be-told, inner thoughts shared outside the teller's intention.

For example, Janine, a younger participant, contemplated whether her diary should be automatically considered an heirloom for future generations, given its private nature.

> "I currently journal a lot and it's mostly just from my own release and processing of thoughts. But, I could imagine that maybe those journals would be some kind of documentation that future generations could look at. I imagine that that would be the most accurate representation of me that future generations would have access to. But of course, journals can be very private and there are some thoughts that are just meant for you." (Janine)

Janine acknowledged the expected privacy of personal reflection tools like journals and diaries, and the uncertainty about whether a person would want to share their innermost thoughts. Yet, she described *"a sense of entitlement towards those histories"* that would override any hesitation to *"devour"* the contents of a ostensibly private diary, if not given express instructions otherwise.

> "I think it depends I guess, the way [a journal] was given, and if that person is still alive or not. So my biological grandfather is no longer living, so I think at that point my own curiosity would probably take over and I would wanna know about him, and what kind of person he was. So, yeah. I know it's kind of hypocritical." (Janine)

Without some explanation about the artifacts and records left behind by a person, it could be impossible for listeners to interpret and understand the intention of the storyteller. It seems unlikely that descendants would assume any documents or artifacts left behind after a person's death were intended to stay private, unless explicitly told so. The "sense of entitlement" to information about previous generations, mentioned by Janine, gave her license to delve into otherwise private artifacts. This entitlement is also echoed in other participants' accounts (e.g. *"I thought that experience was my experience." (Oscar)*), as well as in the literature of oral histories, where silence has been described as "being denied something to which I was entitled" [32].

Summary. Stories might not be told simply because of a missed opportunity. Yet, without an understanding of an intent *not* to tell, listeners could see holes in a family narrative and assume some meaning where in fact, it was a simple oversight. On the other hand, in mediated contexts, listeners are likely to assume that anything left behind is theirs to consume and share at will. This could result in stories that were not meant to be told, and information being shared that a person would rather have kept private.

4.7 Summary of Findings

In these findings, we described family elders' and young people's reflections on experiences where important family stories were not told. Life stories, family history, values and life lessons were passed on in family stories, and they served as important means of connection to current family members and ancestors. Stories that were not told constituted holes in family narratives that were made visible by unanswered questions, taboos, secrets and conflicting accounts. Not passing on a story however served as a way for tellers to protect their personal and family identity, exercise discretion about what and how stories should be told, and for listeners to show respect to a storyteller. Stories might also be not told *yet*, and we outlined ways that storytellers waited for interest, readiness and maturity to tell a story or significant details of a story. Nonetheless, while non-telling had its purposes, there were also simply missed opportunities where tellers and listeners failed to connect or understand each other's interests and intentions.

5 DISCUSSION

Building collective family memory through storytelling is a process of recalling past stories told, listening to and interpreting stories, and integrating one's own memories and values to generate new stories. We motivated our study with the question of whether untold stories and the resulting tensions in a family's sociobiographical storytelling indicate problems to be solved or interactions to support. Our findings support an orientation towards non-telling as meaningful practice rather than a problematic indicator.

We learned of protective, discretionary, and respectful goals in non-telling. Storytellers attempted to protect their identity and their values through silence, obfuscation, and selectivity, and exercised discretion about disclosing information that could have a negative impact on people affected by the information in the story. Listeners participated in non-telling by choosing to not to ask and by respecting the agency of the storyteller even when they wished to know more or see a different perspective. From these findings, we argue that ***non-telling practices are critical to consider in interaction design for family storytelling tools and platforms***, and that preserving stories not-yet-told deserves dedicated attention in the design of digital memory artifacts.

The current lack of support for non-telling as a family storytelling practice contributes to a "social-technical gap"[1] where the resulting design metaphors do not quite reflect the full complexity of family remembering. For technology design to incorporate the full range of family storytelling practices, **non-telling must be conceptualized as more than just non-use.** How would researchers design a family memory platform that incorporates these insights? Below, we consider the important design implications that we, and other family memory researchers, should consider based on the findings presented above.

5.1 Making Room for Silence

First, including non-telling as a storytelling practice involves a conceptual shift in design. Currently, technologies for memory use an archival design model that emphasizes preservation of digital sentimental media (i.e. digital "memories", "mementos", "souvenirs", and "heirlooms"). These mimic the conceptual form of "treasure boxes," which people create or buy to place special memory artifacts. Such systems offer features for capturing and preserving new content as well as storing and accessing existing digital and physical content. While the interaction metaphors for these systems vary widely–from time capsules to coasters–we consider in this discussion a basic generalization of existing systems: a stable digital archive of linked and annotated audio, video, or multimedia; accessed through one or more physical and digital user interfaces; accessible to all authorized users of a family group. The "treasure box" is a simple and evocative design metaphor, which inspires near infinite creative interpretation. However, its power lies in its focus on content: there must be things to put in the box. In current conceptualizations of non-telling, however, there is nothing to preserve. To make non-telling tenable for interaction design, we conceptualize it similarly to negative space in graphic design. Non-telling forms the meaningful space between and around family stories.

5.2 Enabling Protective Discretion

In our findings, two key reasons why our participants chose not to share aspects of their own life story, or not to pass on an inherited story, were to protect their own identity and family identity and to protect others from unwanted disclosure or unnecessary harm (Sections 4.2, 4.3).

One's Own Stories. A person who wanted to keep part of their life story as a secret or prevent the disclosure of privileged information could try to accomplish this through strategic non-use of an archival storytelling platform. Prior work in oral history suggests that the narrator has near

absolute narrative "authority" to decide what and how much they want to share [14]. However, in societies saturated with information, social media, myriad recording devices, and curious cousins, it is increasingly unlikely that a person is an exclusive steward of information, even about themselves. Other family members, and non-human sources, could contribute enough information in their stories for a listener to infer details a person was trying to keep private. Therefore, to remain truly silent in a mediated storytelling context, a person must *actively* engage in non-telling. Rather than not participating, which could be misconstrued as a missed opportunity (we return to this later), a person would need to make clear that their goal is silence.

From a design perspective, "silence" could be added to the list of *expected* user goals and activities, and specifically considered in the design process. An example implementation might use a special "silence" media placeholder, so that a person could contribute silence on a particular topic or period of the family history. The meaning of silent participation in mediated contexts could be explicitly encoded through metadata or annotations, or gain social significance in practice (like "black-outs" in social media). Yet, a silence does not necessarily have to be empty. The nature of digital media gives added flexibility to storytelling. A person could, for instance, audiorecord a personal story they do want to tell, but encode it as a silence that transforms into accessible media under certain conditions or at certain times.

Existing, Inherited Stories. We saw in our findings that people could also try to stifle a story they were told, to protect themselves or out of consideration for others. In a mediated context, a story that has been "told" has already been recorded, added to the treasure box, and made available to family members. It may also have been made available to others beyond the person seeking to stifle it. To enable a person to silence an existing story, they might silence it for themselves and all who inherit it from them. To accomplish this, a platform would need to provide a blocking mechanism that allows a person to block access to particular content for themselves, and also a user relation scheme that traces the flow of information across generations (i.e. parent to child) and within generations (i.e. sibling to sibling). Operationalizing relational flow of content would enable the possibility of protective and discretionary non-telling, even for existing stories in the archive.

In any implementation, to avoid protective or discretionary non-telling being misperceived as an omission, we suggest that this practice be made visible in design.

5.3 Finding the Right Time

In our findings (Section 4.4, 4.5), we saw that non-telling was often purposeful for a particular moment. Tellers might be waiting for some ideal conditions to emerge, such as interest or maturity from their children, or might be giving themselves time to process the emotion of the experience. Conversely, listeners showed respect and compassion by waiting for a teller to become ready to share. In an mediated context, this waiting period could extend beyond a single family member's lifetime, and future generations might inherit not only stories, but also the wait.

Dealing with inherited content is a hallmark of long-term information systems such as archival family memory technologies. To return to our initial impetus for this work, intergenerational family storytelling,by definition, extends beyond any single family member's lifetime [15, 21]. Therefore, new forms of digital- or artifact-based storytelling must intervene in complex sociotemporal scenarios. Lindley argued that designers must consider how notions of time embedded in technologies align with the actual rhythms of the practices and experiences they mediate [31]. Prior studies proposing technologies for autobiographical storytelling and memoir creation note significant tensions in this space: the valence of stories changes over time [22], the interpretation of content over time could be dependent on available context [41], and future generations may demand changes that violate the expectations of contributors choosing to share in the present [21, 30]. What are the implications of these tensions for including silences or non-telling?

The waiting practices associated with non-telling in our findings point to the potential importance of maintaining a sense of temporal evolution in storytelling across generations. Considering the wait involved in inheriting family stories also addresses a gap in the literature about the ways that control is handled in collective memory platforms. We outline three complementary temporal interaction design strategies that could be implemented by designers to facilitate time-moderated access to digitally mediated family stories.

"Soft" timing would provide the most flexibility for designers and users. With this strategy, the storytelling platform would provide a means of communicating timing preferences and leave it up to the discretion of the recipient to observe. The *Tales of Things* augmented antiques prototype offers inspiration for an implementation of this approach. The designers attached physical paper tags and digital RFID tags to each object describing the original owner or contributor, why this item was important to them, and linked to digital media with stories or videos about the object [12]. Future work could extend this approach to non-telling by offering a means to harbor locked or unreadable digital content for a time. A key for access could be provided along with the locked content, with an explanation of the teller's preferences and advice about the best time to use the key to access a story. This explanation could be encoded in digital or physical metadata included with the recorded story artifact, such as an informative preamble to an audio recording or an instructive label on a physical container. This approach would be *"soft"* because only informs rather than constrains human action: the timing would rely on the teller's discretion (their advice about the best time to reveal hidden content) and the listener's respect (choosing to observe the preferred timing.)

"Hard" timing, on the other hand, would rely on system implementation to decrypt or deliver contents on a particular date or triggered by a calculated future event. For example, *SoundCapsule*, an app-based audio time capsule, allowed delivery of audio recorded messages to the user at some specified amount of time into the future, from 15 minutes to several days [19] Referring to specific dates or intervals could be easier for a teller to use as an anticipatory strategy, as humans are accustomed to using dates and predictable events (such as holidays) to mark time. Extending this approach for non-telling, future work could enable people to choose particular times to reveal, hide, or modify stories they have shared or inherited. People could use hard timing to strategically ignore painful stories until later in their life or pass off unwanted stories to the next generation. To maintain an untold story, a person could use hard timing to discreetly remind themselves or others of a secret they had to take care to keep. Further, instead of conceptualizing sharing and hiding a story as oppositional with respect to the availability of digital content, designers could make availability more fluid. A person, for example, might choose to make an unflattering story they inherited from a grandparent unavailable during the month of the grandparent's birthday, not-telling for a while to avoid unpleasant memories. Hard timing would not be subject to a sudden change of opinion, emotion or regard. The determination of timing would allow more control to the storyteller, which aligns with expectations of elders writing memoirs for their children and descendants [30].

"Moderated" timing would be a combination of algorithmic and human-stewardship. Easily describable events that are not predictable, such as "on my grandchild's graduation day" would rely on human (or AI) judgement of certain conditions to be met. While soft timing would allow the listener to choose whether to respect the agency of the teller, moderated timing sets a steward in the place of the teller to interpret their wishes. This arrangement aligns with current intergenerational traditions, where a family member or elder might volunteer or inherit a role as a "steward" of family heirlooms on behalf of the family [22, 30]. *SafeBeyond.com*, as a technology example, allows a user to send posthumous messages to recipients at an appointed time. This platform implements a moderated timing strategy by allowing users to also appoint human "trustees" to release messages

to intended recipients at events specified by the sender. Trustees sign a contract with the sender agreeing to enforce their wishes after their death. An ideal moderated timing approach in family storytelling, however, would consider both the wishes of the storyteller and the listener. In our findings, tellers were not only judging their own readiness to share, but also the listener's. Thus, in a family storytelling context, a steward could be engaged in communicating the teller's wishes with the listener and coming to a mutually agreeable arrangement on when to share a story.

5.4 Distinguishing Silence from Missed Opportunities

As discussed in sections 4.5 and 4.6, stories might be left untold unintentionally through misalignment of the teller's readiness and the listener's interest as well as by forgetful omission. Along with the above design strategies to support intentional non-telling, designers could include features that would help family members create and take advantage of opportunities to share stories that are important to them so as to avoid unintentional gaps.

First, to reduce missed opportunities, family storytelling systems should provide mechanisms to publicize unanswered questions among all the family member users. For listeners in our study, the impetus for beginning to talk to relatives, question records, and research family history were often unanswered questions. Further, we saw in our findings that people might not share or leave important details out of their stories because they did not know someone was interested. A shared list of unanswered questions, ranging from serious research projects to "just wondering" prompts, could be a useful nudge for an elder with stories to tell. Someone who might otherwise think their stories are of no interest to their descendants could discover an unforeseen audience or angle that could inspire them to share. A list of unanswered questions could also serve as an indirect, respectful form of request, providing space for tellers who need time to process their thoughts or to decide whether they want to share their story or what they know. Taking a collaborative approach to reduce missed opportunities to share family stories has the potential to reduce forgetful omissions and thus, clarify instances of intentional non-telling.

Second, family memory platforms could leverage the implicit storytelling value of physical mementos. While we did not discuss the role of heirlooms, souvenirs, and other meaningful memory objects in this paper, prior work has noted that such artifacts are often interwoven with storytelling, as triggers or reasons to tell [8, 16, 24, 38]. As a result, much of the work in digitally mediated remembering and storytelling leverages the accessibility and familiarity of physical objects as tangible portals to virtual archives. More recent work, for example, has explored creating physical mementos that looks like household objects specifically for the purposes of capturing and recording everyday moments as digital life stories [23, 39, 41]. We believe that an artifact-driven interaction approach could be used to create opportunities for sharing and enhancing the storytelling experience. As Petrelli and Light pointed out, meaningful physical objects can become anchors for family rituals and traditions [36], one of which could be sharing life stories. Augmented objects could offer inspirational prompts or interactive conversation-based features that could be used to create both person-to-person storytelling opportunities as well as engaging solo storytelling or listening interactions.

To avoid missing opportunities to tell an important family story, storytelling applications should consider helping users publicize their unanswered questions as inspirations and respectful requests and leverage artifacts as engaging storytelling supports.

5.5 Summary of Implications

In summary, we have shown that non-telling is an important part of constructing family histories across generations. The considerations we propose provide important support for the practices we observed by no longer ignoring non-telling or viewing it as a barrier to other recognized aspects

of storytelling. To fully support family storytelling practices, technology platforms must make room for silence, enable the protective and discretionary purposes of non-telling, facilitate the right timing for storytelling, and distinguish intentional non-telling from missed opportunities. The above design implications view non-telling as an important part of family memory practices, necessarily in tension with preserving stories, that should be considered and supported in future prototypes and systems.

5.6 Future Work

The work presented in this paper addresses the motivations, judgments, and politics of storytellers and listeners with respect to non-telling and untold stories in a collective family remembering context. With non-telling included in family practices, future design work can explore ways to enable family storytelling using various digital media and mediation strategies. This work will further our understanding of what kind of objective and subjective judgments people make about content, including stories they will or will not tell, stories they have heard, and stories they wish to hear.

Future research deploying technologies in an intergenerational family context can investigate how socio-technical dynamics of control, timing, and awareness shape storytelling and evolve existing practices when a story or silence is contributed and inherited. The insights about non-telling presented in this paper can help researchers better anticipate and account for the ways that technology design strategies align with and disrupt the values and expectations of families co-creating collective narratives.

It will be immensely valuable to the global design community to investigate storytelling practices in other cultural settings to understand the values enacted in collective remembering in other cultural contexts.Our participants were all based in the United States, which, while a melting pot of cultures, has distinct sociocultural values that may color the ways that people interact with stories of their family's past. In addition, numerous distinct and rich traditions of formalized oral and mediated storytelling exist in communities across the world, which can complement the focus of this work in personal and informal storytelling.

We look forward to future social analytic and design work further exploring family storytelling practices in a mediated contexts and addressing challenges diverse communities face in navigating the intergenerational transmission of important memories and practices in digital forms.

6 CONCLUSION

In this paper, we presented an argument for consider "non-telling" as an important component of storytelling in co-constructing the collective memory of families. Leaving a story untold, with key details missing, or only available to a select listener enables a storyteller to enact personal and family values related to their identity and care for other family members. Family memory technologies should not conflate non-use of the system with non-telling. Non-telling is a form of active participation in collective storytelling. Therefore, including non-telling as a practice is essential for family memory technologies to fully support intergenerational storytelling, where stories are passed down over time and mediated through networks of artifacts and people. To complement existing work on the capture, preservation, and sharing of family stories, we outlined strategies for design to make room for silence, enable protective discretion, find the right time, and distinguish non-telling from missed opportunities.

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