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Cooking Stories: Connecting Remote Families Through the Sharing of Cooking Experiences

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Abstract. Families can facilitate beneficial discussions on healthy eating, and in so doing provide important support for each other's health habits. However, distance, e.g., an adult child moving away, makes this interchange more challenging. In this paper, we introduce *Cooking Stories*, a research tool designed to investigate how the sharing of cooking experiences between remote families can be supported by HCI researchers. We conducted an IRB approved interview study with five participants between the ages of 20-67. Preliminary findings indicated that *Cooking Stories* addressed sharing barriers that study participants had experienced in previous systems. Based upon our participants' engagement with the *Cooking Stories* prototype, we identified three themes: focusing on cooking experiences, incorporating cooking processes, and emphasizing familial community. We discuss the potential for these themes to be expounded upon by future work, in order to better support the sharing of full cooking experiences between distanced family members.

Introduction

Eating is not an isolated choice. Individuals rely upon environmental support to maintain healthy habits; family members can provide this support by engaging in conversations about food and health habits (Delormier et al., 2009). However, physical separation from family, e.g., an adult child attending a distant college, lessens the health support they receive and hinders their ability to collaborate with family members on food choices (Binda et al., 2018; Panicker, Basu, and Chung, 2020). Providing support mechanisms for sharing and collaboration over food choices could alleviate these challenges that distanced family members face, and help promote healthy eating, habits, and mindfulness.

Technology that promotes healthy eating through celebratory experiences over corrective measures creates a positive environment for change (Grimes and Harper, 2008). Based on this perspective, users of DECAF (Diary of Emotion, Context and Food) also reported feeling more comfortable sharing and reflecting on their personal health information (Cordeiro et al., 2015). Previous work has identified family support as a key factor in maintaining a healthy lifestyle. Technological tools are used to communicate healthy food habits, nudge family members to adopt healthier lifestyles (Sandbulte et al., 2021), and facilitate the changing familial roles (Panicker, Basu, and Chung, 2020). Current solutions explore photo-based experience sharing to promote mindfulness (Epstein et al., 2016), connect individuals to family members (Biemans et al., 2009; Binda et al., 2018), and exchange health information (Sandbulte et al., 2021). Other solutions such as EATProbe (Grevet et al., 2012), and Performance Apron and Talking Bottle (Chai, Soro, Alessandro, Roe, and Brereton, 2017) enhance food-related communication to overcome feelings of isolation through synchronous, text, and voice-based communication. However, although synchronous communication provides rich interaction opportunities, it could be challenging for family members who are separated by time zones or with misaligned schedules.

Our work expands photo-based food experience sharing through the design of a mobile application prototype, *Cooking Stories*. *Cooking Stories* encourages remote family members and friends to share food experiences akin to the experiences they would have in-person, such as shopping, prepping, and cooking together. In particular, *Cooking Stories* incorporates sharing to support family members' desire to create shared food-related experiences. We developed the prototype and conducted preliminary evaluation studies with five participants who were distanced from their families and had an interest in sharing their *Cooking Stories*. We analyzed the interviews through open inductive coding and affinity mapping. We summarize and discuss three preliminary themes of how technologies could bring remote family members closer together over conversations about cooking and food.

Related Work

Our research focuses on supporting distanced family members' healthy eating practices through the mutual sharing of cooking experiences. These elements of healthy habits, family dynamics, and cooking experiences place our work within the Human-Computer Interaction (HCI) disciplines of food, health, and domestic HCI research. We focused our review of prior HCI work on four interdisciplinary themes we felt best encompassed our work: celebratory technology, family support, photo sharing, and asynchronous communication.

Celebratory technology began with Grimes and Harper (2008), who argued that systems within food research should complement the usual corrective approach with a celebratory approach. More succinctly, users should feel celebrated and affirmed for their food choices. This perspective has been applied to the sharing of health and food information with some success. Ferdous *et al.* (2017) found that celebratory technology enhanced family interaction at mealtime, and Cordeiro *et al.* (2015) found that celebratory technology made individuals feel more comfortable recording personal health information. We extend prior work on celebratory technology by applying the concept to the context of cooking experience sharing. Our aim is to create a celebratory, welcoming environment for individuals to connect with their remote family members over all types of cooking.

Family support is an integral component of supporting an individual's health needs. In the context of Sociology, Delormier *et al.* (2009) discussed the social nature of eating— food choice is dependent upon environmental contexts, and social support can change an individual's eating habits so long as the support remains. They posited that adopting an individualist view on eating tends to disproportionately overstate the extent to which logic and rationale behind food choices influence health. Although eating is an individual act, it is situated in a social context, and therefore is impacted by social and environmental factors. Their work shows that family members are best positioned to influence eating habits of others within the family as eating habits themselves are deeply ingrained not only in familial environments but also through interactions with parents and siblings. Prior work within HCI builds on these findings. Sandbulte *et al.* (2021) found that family health habits, such as eating, moved family members to adopt more healthy lifestyles, and that those habits were at times communicated through technological tools. They delineated three obstacles to family collaboration to foster healthy eating practices: a lack of interest, a lack of consistency, and a lack of understanding. To address these challenges, Sandbulte *et al.* (2021) proposed design recommendations for family-centered healthy eating technology to include motivational factors, foster shared memories, and build sustainable practices. In our study, we aim to leverage the relationships between family support and adopting healthy eating practices informed by these studies.

Panicker et al. (2020) discussed the dynamic roles within the social context of intergenerational families, suggesting that systems supporting individuals should account for changing familial roles. They considered eating and meal preparation to be social activities, and suggested that sharing these experiences may promote connectedness and wellness. The paper explored through the lens of symbolic interactionism, how changing roles within families can be a source for tensions and conflicts between non-collocated family members. They identified the tradeoffs between maintaining shared values, existing routines, rituals, and individual autonomy as crucial considerations for family-centered systems. More succinctly, Panicker et al. (2020) emphasized the need for systems to account for family dynamics, supporting the transitions between various familial roles that individuals inevitably make. We follow the call to support individuals' healthy eating habits through family relationships, and hope to facilitate connections between distanced family members by accounting for dynamic family roles.

The use of photo-sharing can facilitate the exchange of health information. Epstein et al. (2016) found that a lightweight, photo-based approach could increase conversation and promote mindful eating. In the context of family, Binda et al. (2018) recommend using photo-based systems to motivate family members to share health activities. Biemans et al. (2009) similarly found that even photos of mundane events connect individuals with family members. We adopt these prior photo-based approaches to facilitating the exchange of healthy eating experiences. Similar to Binda et al. (2018) and Biemans et al. (2009), we focus on sharing ordinary, mundane experiences in the context of cooking to connect individuals and their family members.

Asynchronous and synchronous methods of communication both have merit. Prior work has shown that systems supporting synchronous communication can connect individuals and, in so doing, prompt further synchronous communication (Judge *et al.*, 2010). In the context of a family, synchronous communication, such as live video calls, is often preferred but cannot fully bridge the communication gap between distanced members due to conflicting schedules, time zones, etc. (Cao *et al.*, 2010). Asynchronous communication has the potential to address this gap. Prior work has shown that systems supporting asynchronous communication, such as photo and text message sharing, can connect individuals (Bernheim Brush *et al.*, 2008) and meet the needs of busy families (Romero *et al.*, 2007). Ultimately, people base their media choices on the context of shared information (Muñoz *et al.*, 2013). When designing a system, the choice between synchronous and asynchronous communication revolves around that context. To support the sharing of the experience and process of cooking, instead of only the products of cooking, we adopt an asynchronous communication model. We believe this model empowers individuals to record, elaborate, and curate their experience and stories.

There has been some work within HCI focusing on the sharing of food-related experiences. Prior work like *PhamilySpace* (Sandbulte *et al.*, 2021) has used photos

to asynchronously facilitate the sharing of health information but has not focused on supporting the sharing of cooking experiences and practices. Other prior works, such as *EATProbe* (Grevet *et al.*, 2012), *Messaging Kettle* (Brereton *et al.*, 2015), and *Performance Apron* and *Talking Bottle* (Chai, Soro, Alessandro, Roe, and Brereton, 2017) have focused exclusively on cooking and eating moments, but synchronous, text- and voice-centric communication may not be applicable to families who cannot cook or eat together. We distinguish our work from past systems by focusing on asynchronous, photo-centric sharing to encourage cooking and food making within remote families. By facilitating photo-centric, asynchronous sharing of cooking experiences, we hope to support healthy eating practices that account for various types of family routines, dynamics, and practices.

Cooking Stories Design

Our prototype design built on the 27 interviews Panicker, Basu, and Chung conducted with older adults and adult children (2020). Participants in the study reported that shared cooking experiences between family members are a valuable social experience that enhance connectedness; when families become distanced due to extenuating circumstances, members often continue this sharing through technology, e.g., sending photos of their cooking to each other through messaging tools. However, participants also reported tensions when these food preparation roles and contexts within family change. They also worried being judged or criticized when sharing food experiences. We designed *Cooking Stories* as a research probe to further examine how to support family members to share and collaborate on food experiences in various contexts.

Design Principles

Based on the findings from Panicker, Basu, and Chung's (2020), wee identified three design principles supporting the sharing of cooking experiences through technology, in the context of distanced family members: supporting transitions between food preparation roles, promoting the capture and curation of full cooking experiences, and focusing on the celebratory experience.

Supporting Transitions between Food Preparation Roles

Building from Panicker *et al.*'s work (2020), we acknowledge the different food preparation roles family members often take and transition between. In our design, we want to enable family members to engage with the app in more than one way. In the context of cooking, this could mean being able to teach a recipe to another family member, learn from each other, or simply create a shared experience together. By supporting these opportunities, we seek to engage family conversations through varied contexts they consider appropriate and desirable.

Promoting the Capture and Curation of Full Cooking Experiences

As reported by Panicker et al. (2020), family members often used existing messaging apps to share short snippets of their cooking experiences. While this type of sharing provides opportunities to promote conversations, they may overlook the contexts that are important to create mutual understandings and shared experience. In our design, we seek to support the full cooking experience, allowing family members to choose and curate their stories as well as situate these conversations within the context they deem appropriate.

Focusing on Celebratory Eating and Cooking

In Grimes' and Harper's call for celebratory food technology (2008), they emphasize the positive and delightful aspect of how people engage with food as a potential design space. In our design, we are interested in creating a pathway for family members to share the stories as well as setbacks of the home cooking process. To support this goal, we intentionally focus more on the experience and the nuances involved, instead of step-by-step recipe creation. Furthermore, we do not create functionality specifically focused on healthy foods, meals, etc.; rather, we strive to promote healthy habits through the connectedness that joyful sharing brings.

Application Features

Cooking Stories (see Figure 1) is an asynchronous sharing application where users can post photo- and video-centric "*Cooking Stories*" and other users can respond to and discuss those posts in a thread-reply format. Before we discuss the application's core features, however, we think it important to give an example of the types of scenarios we envision this application being used in, such as when adult children move away from their family.

Jane Doe has recently begun attending a university several hundreds of miles away from her family. The Doe family has a long-standing tradition of cooking together as a family, and Jane wants to continue that tradition while distanced. Her busy schedule and time zone makes synchronous sharing of her cooking difficult, and general text messaging applications do not let her share the full details of her cooking easily. Hearing that Cooking Stories is an asynchronous, family- and cooking-focused application, she downloads it and asks her immediate family members to download it. They use its detailed, cooking-specific posting format to share their cooking with each other and provide comments and critiques. They do not prefer the app to cooking together in-person, but find it a more compelling option for staying connected than existing communication tools, such as WhatsApp and FaceTime.
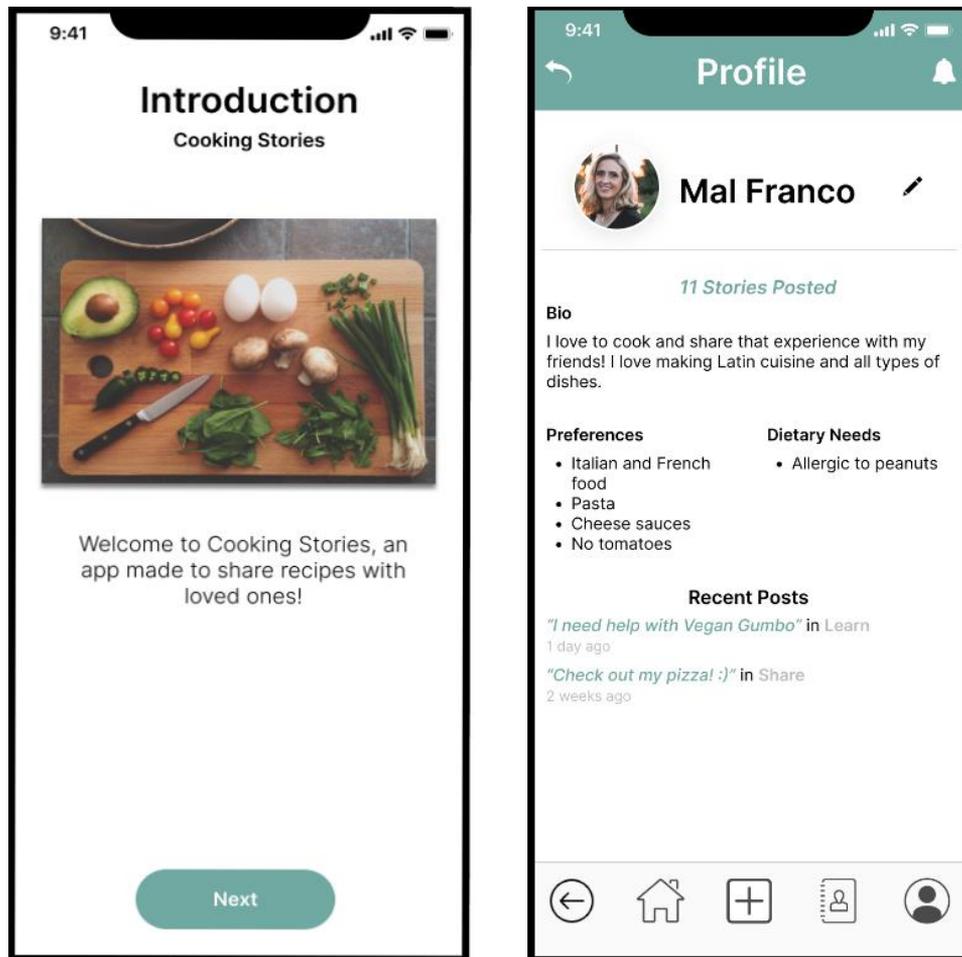
Figure 1: *Cooking Stories* welcome page (left) and *Cooking Stories* profile (right). Users can create a profile to share their cooking interests.

Now that we have established the scenario in which we envision this application being used, we will go through each of the core features, describing them in detail and providing our design rationale.

Asynchronous Sharing Between Family Members

Cooking Stories functions as an invite-only, close circle form of social media to connect family members over cooking experiences; therefore, to view a post from a specific user, other users must be added as friends (see Figure 2). *Cooking Stories* posts are asynchronous, meaning users can make posts whenever they are cooking, and other users have the freedom to comment and/or respond with their own

creation whenever they have the free time. *Cooking Stories* posts remain on user's profile so they can always respond to what they or a family member has posted.
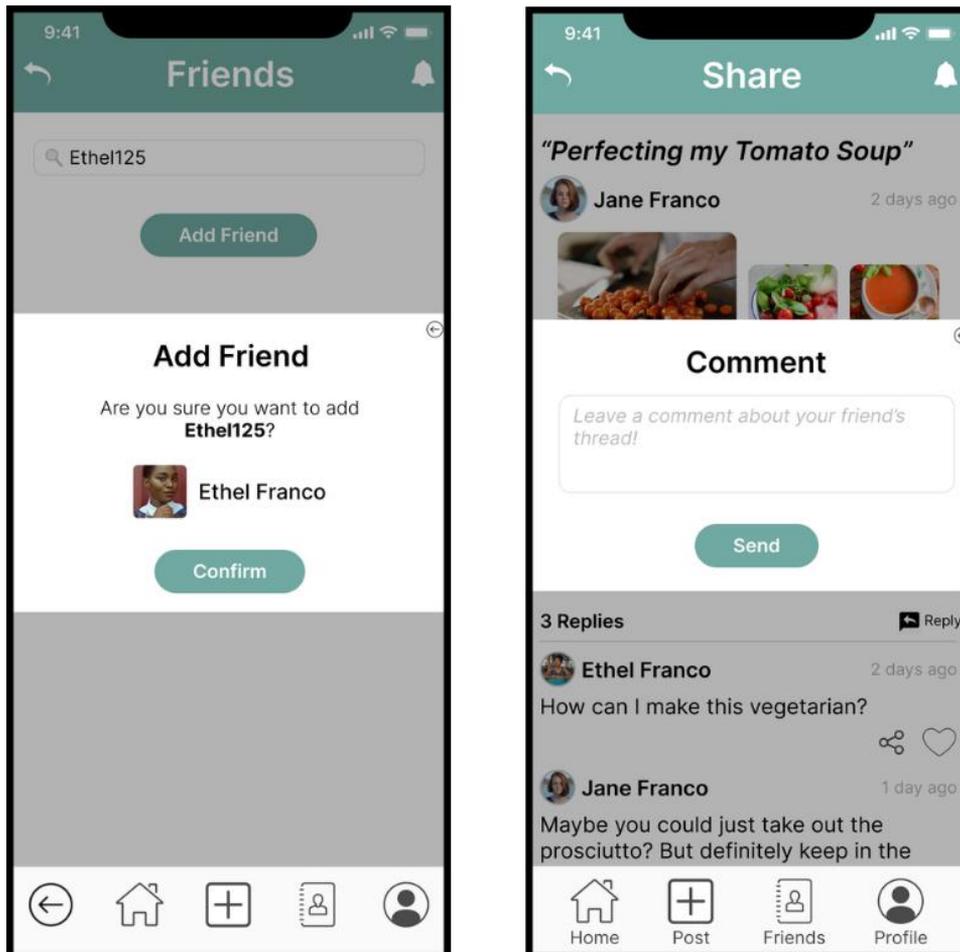

Figure 2: Example of adding friends to a *Cooking Stories* profile(left) and leaving a comment on a Cooking Story (right).

We chose to focus on asynchronous sharing between family members it best fit the type of sharing we want to support. Prior work (Bernheim Brush *et al.*, 2008; Romero *et al.*, 2007) has shown that asynchronous sharing can meet the needs of family in different scenarios. Asynchronous sharing allows users to quickly record their cooking in ways that are convenient to them and share at a later time. The in-person sharing we are striving to replicate virtually is not just large family cooking events (e.g., a potluck or a holiday meal); rather, it also includes small, everyday moments of cooking between only a few family members (e.g., making lunch for a few people). The disparity between these scenarios calls for a flexibility that asynchronous sharing provides. By implementing asynchronous sharing, we hope

to capture the authenticity and intimacy in sharing mundane, seemingly uninteresting events, while recognizing that not everyone wants to synchronously share their everyday cooking all the time.

Photo- and Video-Centric Posting Format

Cooking Stories provides structured flexibility in the posting format (see Figure 3) so that users can be as descriptive as they like when posting about their cooking experiences. First users enter a name and general description about their Cooking Story. Then they can add images showing the process of their cooking with corresponding captions. Finally, users have the options to add all the ingredients in the recipe and can post their Cooking Story.
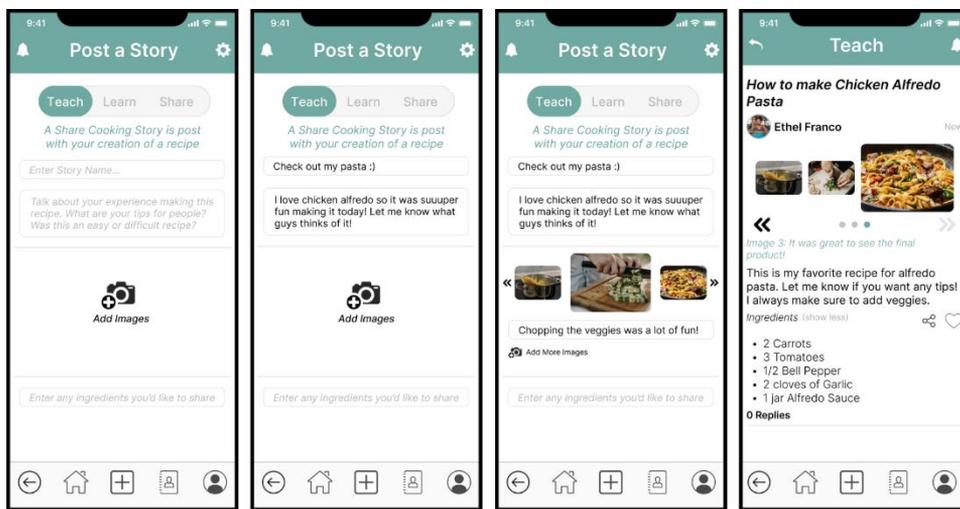

Figure 3: Example of Ethel's process creating a post about making pasta tonight for dinner. From left to right, the example shows the flow of creating a Cooking Story, adding a description, images and captions.

This extended posting format is designed to maximize the intimacy of this asynchronous application, allowing others to partake the full experience of cooking even when they are not physically together at the moment. Given the wealth of prior work on photo-centric sharing (e.g., Binda et al., 2018; Biemans et al., 2009), we naturally gravitated towards photo and video sharing; but, especially given the different age groups which the application is designed for, we also wanted to provide sharing mechanisms for those who do not have an affinity for photo and video sharing. By giving users many ways to convey their experience in a post— images and videos, captions, an experience description, and recipe ingredients—, we hope to support the sharing of fuller, more vibrant, and focused experiences among people of different preferences. Furthermore, by supporting conversation

threads and replies, we hope to emulate the conversations that naturally occur in-person.

Posting and Thread Categories

Posts are sorted into three categories: "Teach", "Learn", and "Share". These categories are designed for specific types of cooking roles and experiences (see Figure 4). A "Teach" post might be a cooking tutorial, a "Learn" post might be a user sharing their first attempt at a new recipe, and a "Share" post might be a user simply wanting to connect with family over a dish they recently made. Users select one of these three categories when they create a post; based on the category they choose, the textual prompts differ. For example, a "Learn" post prompt encourages a user to describe what they're struggling with, whereas a "Share" post prompt asks them to describe what they liked the most about making a particular dish. When viewing others' posts, users can sort the posts by these categories or use the "All" category to show all posts regardless of category.
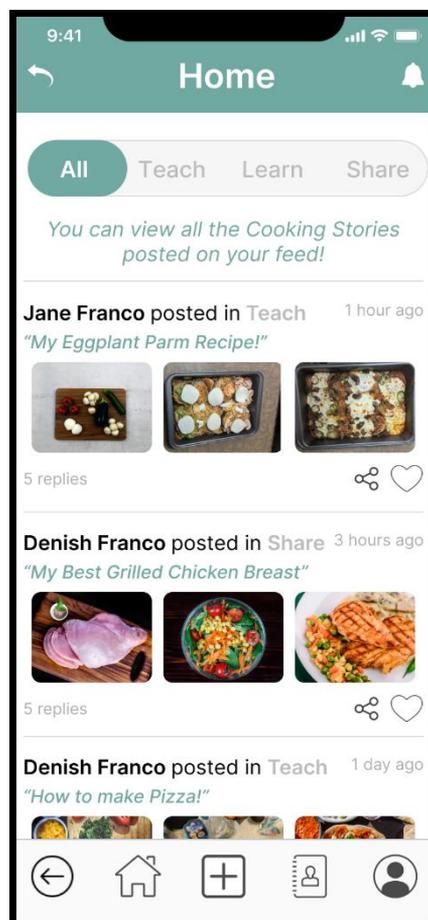

Figure 4: Example of *Cooking Stories* homepage, showing the posts based upon the three categories: Teach, Learn, and Share

We chose these categories because we felt they represent the different roles that naturally emerge from cooking. For example, "Teach" for those seeking to pass along their skills, "Learn" for those seeking to improve their skills, and "Share" for those more interested in simply connecting over food. By utilizing these categories, we can support the type of interactions between family members that lead to enhanced connectedness. Furthermore, the ability to post in any category supports members when their roles or contexts change. An adult member transitioning out of a food receiver role, for instance, may begin posting in "Teach" rather than "Learn" as they take over the food preparation role.
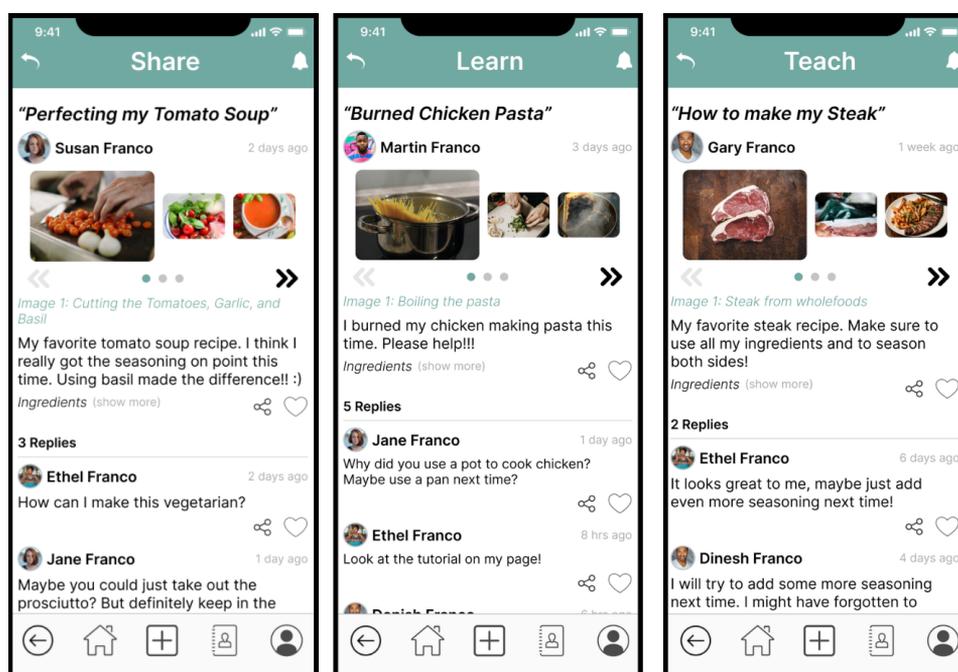

Figure 5: Examples of a "Share" *Cooking Stories* where Susan perfect her Mom's soup recipe (left); a "Learn" Cooking Story posted by Martin who is asking advice after burning chicken (middle), a "Teach" Cooking Story where Gary shares his family recipe for steak (right).

Promoting Celebratory Eating and Cooking

Celebratory eating and cooking are not only represented by a singular feature in *Cooking Stories*. Instead, we tried to weave their themes throughout our different features. While many cooking-centric applications, e.g., *Whisk*, have an explicit focus on healthy eating and nutritional content, we instead focus on experiences: we want users to connect over, rather than criticize, each other's cooking.

This rationale framed all three of our primary features. We chose sharing among families because we felt that the familial context lent itself better to celebration; a public posting context could easily devolve into excessive criticism of user's food choices. For the posting process, we felt that celebratory cooking

conversations was an inherent part of sharing fuller cooking experiences; by supporting users' sharing of contextualized experiences, we augment others' understanding of that experience and, by extension, their ability to celebrate rather than criticizing it. In creating categories, we wanted to guide how participants interact with the application; all three avenues of interaction we offer—Teach, Learn, and Share—are all designed to support celebratory, rather than, corrective activities, further encouraging users to interact with each other in a celebratory fashion.

Methods

With approval from our institution's Institutional Review Board, we conducted a qualitative study with five participants between the ages of 20-67 to answer our research questions:

- Which technology do distanced family members currently use when sharing cooking experiences with each other, and in what ways do they use them?
    - How does *Cooking Stories* compare to this technology?
- What technology shortcomings do distanced family members currently experience that make it more difficult for them to share their cooking experiences with each other?
    - Does *Cooking Stories* address these shortcomings? If so, to what extent? If not, how could it?
- What features do distanced family members desire in technology centered on the sharing of cooking experiences?
    - How does *Cooking Stories* support these experiences? If not, how might they be incorporated?

In conducting this study, our goal was to examine, as the first steps of the iterative design process, how *Cooking Stories*' features support distanced family members to share their cooking experiences with one another. Our preliminary questions were informed by the interviews by Panicker, Basu, and Chung (2020) and contextualize participants' experiences interacting with the application. By interviewing and designing concurrently, we hope to better understand user needs and iterate on design features. Looking forward, our ultimate aim is to leverage these early findings to inform future, larger-scale studies and deployment.

We recruited participants by posting flyers to online cooking forums and reaching out to personal connections who fell within our target group, i.e., adult children or parents of adult children who communicate with distanced family members about their cooking experiences. Given our focus on early design feedback, we recruited individual participants rather than paired family members. Recruiting in pairs would be ideal for a long-term deployment study, but our goal was to iterate on early feedback in this exploratory study.

We conducted the studies via online Zoom meetings. Our study consisted of a short semi-structured preliminary interview, a usability test of *Cooking Stories*, and another semi-structured follow-up interview. These three components took place consecutively within the same Zoom meeting. The entire study sessions were video recorded, with participants' consent.

Table I: Participant Demographics and Experiences with Sharing Cooking Experiences

Participant #	Gender	Age	Distanced Sharing Family Member	Prior System Use
1	Female	20	Siblings, Mother, Relatives Abroad	Snapchat, Instagram, Text Messages
2	Non-Binary	23	Siblings, Mother, Extended Family	Snapchat, Instagram, Group/Text Messages
3	Female	20	Siblings, Grandparents	Instagram, Tiktok, Whatsapp, iMessage
4	Male	57	Daughter, Extended Family	iMessage, Facetime
5	Male	65	Daughters	Text Messages, Zoom

Our preliminary interview asked participants questions about their cooking experiences: what they share, how they share it, and with whom they share it. Participants then engaged in usability testing. This testing focused on the fundamental features of *Cooking Stories*: asynchronous sharing between family members, a unique posting format centered on cooking experiences, and post categories supporting changing roles and contexts. We sought to learn how participants across different age groups valued the core functionalities of *Cooking Stories* and saw themselves adapting it into their personal lives. Our follow-up interview asked participants questions about their experience using *Cooking Stories* in comparison to other sharing technology: how they felt about their experience using it, how it compared to the current applications they use, and whether they could see themselves integrating it into their sharing habits.

We conducted inductive qualitative analysis on these interviews; we performed open coding on the transcripts using Saturate[1], a web app for coding and memo creation. We then used affinity diagramming to organize our open codes into high-level themes, which formed the basis of our findings and further analysis.

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[1] http://www.saturateapp.com/

Findings

In our study, we focused on understanding the barriers our participants faced while sharing cooking experiences with remote family members, and how, if at all, *Cooking Stories* addressed those barriers. We identified three themes throughout participants' complaints about experience sharing, *Cooking Stories'* features, and participants' thoughts on interacting with the prototype. These themes are focusing on cooking experiences, incorporating cooking processes, and emphasizing familial community.

Focusing on Cooking Experiences

Our participants experienced hesitancy sharing cooking experiences through popular communication apps, such as WhatsApp, Snapchat, and Instagram. They described deliberating over whether an experience was appropriate to share, often opting not to share it. The criteria for suitability differed between participants. For example, Participant 1 described choosing not to share a cooking experience because she felt it did not match the food interests of family members; Participant 3 described choosing not to share because she felt her experience would not be exciting to friends and family; Participant 5 described choosing not to share because his daughter has a *"busy adult life"* and he did not want to intrude. Our participants shared the same fundamental barrier: because general-use communication tools may not provide appropriate context for sharing, it becomes challenging to decide when and with whom it is appropriate to sharing their cooking and food experiences. This barrier is particularly problematic because opting not to share an experience with family reduces the social support an individual receives for their healthy eating habits.

After interacting with *Cooking Stories*, participants felt that having a dedicated channel for sharing cooking experiences addressed their concerns over the suitability of sharing. By focusing explicitly on cooking, *Cooking Stories* allows individuals to dedicate any experiences relevant to the cooking process within family contexts. For instance, Participant 2, who had previously described their difficulty sharing experiences in their family group chat, appreciated that the app was a *"dedicated space for [cooking]"*.

Incorporating Cooking Processes

Participants expressed that their preferred mobile applications did not fully support their sharing of cooking experiences. The goals and features of these applications often did not align with or meet the participants' sharing needs. For example, Participant 2 criticized Snapchat for not allowing her to share permanent posts of her cooking. Participant 4 felt that existing cooking apps had too great a focus on

calories and therefore did not meet his needs; in his words, *"I don't have a problem with my weight…[but] that's what a lot of mobile apps are [about]."* Participant 4 also disliked that text messaging and FaceTime, his preferred method of remote communication, did not support the sharing of full cooking experiences: *"you can't really show how you start from the beginning of making, prep-making, and preparing food to actually cooking."* The shared complaint among all participants was that their chosen apps did not incorporate cooking processes. Snapchat, Instagram, WhatsApp, etc. can display a small part of a cooking experience but lack the functionality and atmosphere conducive to a full-length, start-to-finish experience.

Participants felt that *Cooking Stories*, to an extent, did address this issue by directly incorporating cooking processes into its design. They felt that its features, i.e., ingredient lists, multi-photo stories, and post categories, created an environment conducive to the sharing of fuller, longer cooking experiences. For example, Participant 1 stated, *"I like how, like, the recipes are on there…you don't have to message [your friend], like, 'what's the recipe for this?'"*

Participants also had specific feature recommendations to enhance *Cooking Stories*' incorporation of cooking processes. Participant 2 felt limited by stories only showing ingredients and suggested that stories could also include specific recipe steps. Participant 4 suggested a "live", in-progress story which could be posted incomplete and then iteratively added to. These suggestions indicate that these features resonated with our participants, to the extent that they wanted to see them improved and more fully incorporate cooking processes.

Emphasizing Familial Community

Unlike the past two areas of focus, users did not express any frustration over a lack of familial community. Similarly, there was no greater barrier originating from community that all participants shared. However, despite no barrier to serve as a catalyst, participants shared a desire to engage in a cooking-oriented community when presented with the opportunity to do so.

When interacting with the prototype, participants responded positively to the emphasis it placed on inter-personal, communal connection. The interaction with family appealed to all four participants; each readily described different individuals who they could see themselves using the app with. Participant 2 in particular explicitly emphasized community, describing the app as a *"community space"* where they and their friends could have a *"community based around cooking, as opposed to…social media"*. Participants 1, 2, and 3 (ages 20-23) expressed interest in using the application to connect with family members; their only reservation was whether their older family members, e.g., parents, would be willing to download the app. Participant 4 (age 57) expressed some interest in using the application with his adult daughter. He felt that the posting process was time-consuming and

expressed that he would use *Cooking Stories* to share longer experiences when he had time but would use text messaging to share shorter experiences. Participant 5 (age 67) appreciated the app's features but was uninterested in using the app to connect with family members; he self-described as a technological *"neanderthal"* very uninterested in using mobile applications to communicate with his family.

Importantly, though we designed *Cooking Stories* with familial community in mind, Participants 1 and 2 were as interested in friend-focused communities as they were in family-focused communities. Both saw *Cooking Stories* as a way to engage their friends who are uninterested in cooking. Participant 1 said that she could see herself using it to create tutorials and that her friends would *"be like motivated to cook"*.

Discussion

Several of the participants' shared experience confirmed understandings from related work. Similar to prior studies, participants in our study responded positively to the photo-centric approach to experience sharing (Biemans *et al.*, 2009; Binda *et al.*, 2018; Epstein *et al.*, 2016). They also thought that our celebratory approach provided comfort in sharing, particularly appreciated the family-centric nature of *Cooking Stories*. Though we were not able to fully evaluate the efficacy of *Cooking Stories* prototype's categories, we did note that all our participants responded positively to the "Teach/Learn/Share" categories, which shows the potential to support interactions among dynamic family roles.

We also found unexpected participant reactions. We specifically designed our community features to be focused on family rather than friends, and yet participants nonetheless associated *Cooking Stories* with friends just as frequently as with family. This could be attributed to the fact that many of our participants were under the age of 25 and associated social media as a way to interact with friends as well as family. Although we primarily design for a family-centric application to support the experience sharing among remote family members, there are potentials for the system to extend beyond family members. For example, though Participant 4's dislike of weight-loss-centered apps did partially fit within our focus on celebratory rather corrective sharing, it also has unanticipated implications — by not focusing on weight loss and nutritional intake, *Cooking Stories* could implicitly provide support to some individuals outside of the context of family social support. More succinctly, our app's celebratory sharing could be an element of support in of itself. Finally, Participant 1's desire to use *Cooking Stories* as a family recipe catalog suggest that the app could be construed as a cultural artifact (Davis *et al.*, 2014).

Overall, our findings suggest that an asynchronous, photo-centric mobile application for the sharing of cooking experiences holds promise for connecting remote family members. Participants responded positively to the app and could envision themselves using it to connect with distanced family members, to varying

degrees. The core features and functionality resonated with them, particularly the specific elements we most wanted to emphasize—celebratory sharing within a familial community. However, we acknowledge that findings from this preliminary study may not represent participant experience in the wild. Future studies are necessary to further examine and evaluate how these features support real life experience in sharing and collaboration of cooking experience..

Limitations and Future Work

Our preliminary study included five participants due to time constraints. Recruiting more participants from a wider age bracket and family roles would give more insight on the diverse ways in which individuals would interact with our application.

Future work would build on current findings, further reinforce the three themes supporting family connection and sharing, as well as incorporate user feedback, such as design changes and feature recommendations. Following these changes and additions, we will transition from online prototyping to developing and deploying a fully functional mobile application.

Conclusion

In this paper we introduce *Cooking Stories*, a mobile application which aims to connect distanced family members through the sharing of full cooking experiences in a collaborative online environment. In our preliminary qualitative study (n=5), our participants envisioned how *Cooking Stories* could support the sharing and collaboration of cooking experience with remote family members. . We believe systems like *Cooking Stories* have the potential to further support family connections over cooking experiences, and encourage further work to future examine such support in real life contexts.

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