

# Moving from Talking Heads to Newlyweds – Exploring Video Chat Use during Major Life Events

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## ABSTRACT

Video chat programs for home and personal use (e.g., Skype) are becoming increasingly popular for doing more than simply conversing with a remote friend or family member. This creates a need to understand the broader use of video chat that moves “beyond talking heads.” In this paper, we investigate one emergent scenario: major life events where video chat is used to connect remote participants to a ritual gathering (e.g., a wedding, a funeral). To explore this scenario, we conducted an online survey with 87 people who reported on their usage of video chat for viewing or sharing major life events. Our results show that major life events, as an example of a burgeoning set of video chat scenarios, bring unique socio-technical contexts and challenges. Asymmetry characterized much of the findings: we find differences between local and remote group sizes, environments, atmosphere, and emotionality. We discuss these situations and identify ways to improve the design of video chat to better support shared experiences.

## Author Keywords

Video communications; major life events; family; friends; Skype; video chat; asymmetry; shared experiences.

## ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION

Video chat programs such as Skype and FaceTime have established themselves as successful technologies for connecting friends and family to one another over distance. [1,14,17]. The success of these programs, along with increased mobile data services, has contributed to emergent scenarios where people are using video chat in new circumstances that go beyond the traditional “talking heads” setup where both participants are seated at a laptop and holding a one-to-one conversation [4,5,33]. Relatively few studies have explored the use of video chat in these

emerging situations. Notable exceptions include Brubaker, Venolia, and Tang [4] who call for system designers to focus more squarely on “shared experiences” that might be occurring in the environment while the video chat connection is open.

In this paper, we examine an example of a shared experience that is growing in popularity – using video chat to involve remote participants in a gathering for a major life event. For example, a search on YouTube for “Skype Weddings” reveals many cases where people have used a video chat system to be “present” at a remote wedding. One poll by USA Today found that over half of brides consider providing a Skype connection for remote guests to attend their weddings [40]. One could find similar results for other major events like childbirths or graduations. What makes these events particularly salient for video chat is a growing technology-enabled desire, and perhaps even obligation, to “witness” and participate in major life events despite physical distance. Despite such usage, there has yet to be any research exploration to understand these experiences and what they mean for the design of video chat systems.

Given this, the goal of our study was to understand the ways in which video chat is used for sharing major life events over distance, how this differs from other reported situations using video chat, and what challenges people experience in the process. In the remainder of this paper, we report on an exploratory online survey with 87 respondents who described the ways in which they either shared or viewed a major life event over video chat, and use this as the basis for design recommendations.

While most work in personal and family use of video chat has found benefit in rich symmetrical connections, our primary finding is that asymmetrical connections can also be valuable in the *personal* sphere. We outline four themes that illustrate asymmetry in the locations where video chat is used, size of groups participating in the chat, the atmosphere at those locations, and the emotionality experiences by participants. We point to a need to rethink the way video chat systems are designed for shared experiences such that this asymmetry is acknowledged and supported. More specifically, video chat systems might consider how they engage with key participants, allow for better “navigation” through remote locations, and avoid pitfalls associated with attempts to replicate place and atmosphere. Our work contributes the first study of asymmetry in the context of the personal sphere (i.e., video

chat with friends/family), and provides examples of work that goes beyond “talking heads” to illustrate a broader set of shared experiences that video chat can support.

## **RELATED WORK**

### **Video Chat among Family and Friends**

There has been a large amount of recent research on video chat usage amongst family and friends. This work has shown several important themes related to our paper’s focus. First, video chat connections are typically difficult to set up and maintain, especially over long periods of time [1,17,20]. This is despite the fact that people are typically in the “safe” confines of their own home and an Internet setup. People often rely on an individual in the family or household that has more technical expertise to set up and help maintain the connection [1]. Despite technical challenges, family members are willing to struggle to keep a connection going (and reconnect) [4] because they strongly value the technology and seeing a remote person [4,15,16,33].

Second, video chat connections are typically used to connect people who share a similar setting and atmosphere. For example, studies of grandchildren and grandparents using video chat describe home settings in living rooms and bedrooms on both ends of the connection [1,14,17,35]. Long distance couples that use Skype to create an open-connection between their remote homes connect between home areas including the living room, bedroom, kitchen, and bathroom [33]. Teenagers typically connect between their bedrooms, though sometimes one person may be outside showing an activity (e.g., skateboarding) [5]. Across these situations and more, we see generally the same atmosphere at both ends of the video connection. Exceptions to this include situations where a person is mobile (e.g., on public transportation) and calling someone at home [34] or in a public setting (e.g., zoo) and showing people at home an activity [19,32].

Third, video chat connections allow family members and friends to do shared activities together [4], though these relate to somewhat everyday mundane activities. Long distance couples might watch television, perform household chores, talk, get “ready” for their day, and sleep over video chat [33]. Grandchildren might read with their grandparents [1,35], childhood friends might play games together and talk about their activities [18,23,44], and parents separated from their children because of divorce might do homework together [43]. Teenagers “hang out”, do homework, and perform for one another (e.g., playing guitar) [5]. Thus, we see everyday activities, as opposed to major happenings in life. These are also not typically of a deep emotional nature, unless conversations talk about more challenging times in life [5,33]. Within these situations, the number of people connecting is relatively small, e.g., two to six people.

Fourth, in the family context, most people have few concerns about privacy in relation to video chat [20,21]. This is because they are often chatting with close friends

and family [14,15]. As such, people are typically fine with others seeing their own appearance over video chat and do not typically “dress up” or change their appearance before a video call [20]. They are also not typically concerned with the appearance of the space around them when video chatting, and, if they are, will simply adjust camera angles to hide a “mess” [14]. Even still, these norms change for some relationship dynamics. For example, some long distance partners “dress up” for dates over video chat [33]. Teenagers are quite conscious of how they look over video chat and will sometimes go to great lengths to “prepare” their appearance before a video call [5]. Privacy also becomes a larger issue when family members use video chat in mixed contexts, such as working from home and connecting to colleagues at a remote office where dress may be appropriate for a home environment but not for a workplace [31].

### **Video Communications in the Workplace**

Video communication has also been a widely studied topic in the workplace and many of the environments, setups, and issues that have been previously explored relate to our current study [12]. First, a variety of media spaces—always-on or available video connections—have been studied that explore office-to-office connections between co-workers [6,11,24,29]. Group sizes were small and systems were used to connect “intimate collaborators” [11,29]. Media spaces were used to share awareness information and casual interactions and other everyday work activities [8].

Second, some media spaces were used in more public settings such as shared meeting rooms [3,8] or common kitchens [13]. In these situations, there may be subgroups of people more interested in using the video connection, yet everybody entering the space would be subject to it. Thus, privacy becomes an issue because not everyone may realize they were captured on camera or know who the remote viewers were [2,7]. There have also been studies of the use of video in meeting situations where small groups get together to discuss work projects amongst hub-and-satellite teams [41]. This has also seen the use of moveable “social proxies” that can be controlled by a remote user [41].

Third, researchers have also explored webcasting technologies to stream large meetings, workshops, or even conferences. These studies explore the remote access of a presentation screen along with a view of the speaker, and the ability to interact over distance (e.g., asking questions) or view recordings of the presentation [39]. The importance of asymmetry in video media communication systems has been explored for workplace situations [42], yet nobody has explored the concept in the home context for video chat.

### **Major Life Events**

The current work stems from a growing set of literature in HCI on technology use during major life events. Major life events have been identified as key moments for changes in technology adoption and use [26,37]. They have also been noted as times when system designs are “tested” and

“pushed” as part of unusual and often heightened circumstances [26]. Although video chat has a considerable amount of scholarship around it, the unique circumstances of major life events reveals critical places where the technology shines or breaks down.

Major life events are, historically and culturally, moments for forging and reinvigorating social connection. Of course, communication with family and friends occurs over a period of time depending on the life event; recent work has explored computer-mediated communication around major life events including the loss of a loved one [27], divorce [44], weddings [28], the birth of a child [9], and the transition from home to college for young adults [38]. In this work, technology permits people to connect, overcoming distance and time to celebrate or cope with their changing life circumstances.

To date, however, relatively little work has focused on the associated community gathering for these events (e.g., a retirement party, a funeral, a wedding reception). These gatherings provide a rich starting point for our exploration of video chat for many reasons, foremost among which is the established practice of photography and video during these events. As sociologist Roland Grimes notes:

*“Shooting a rite can amount to a declaration, ‘This event is really important; this is real.’ Video documentation and portrait shooting not only disrupt them, but also validate them...Documenting a performance is no longer an act imposed on a rite by an outsider. Rather, shooting is part of the ceremony itself.”* – [10], p. 30.

Sarvas and Frohlich [36] have also commented on the role of capture technologies as part and parcel of an event by creating opportunities for “photo talk”. These practices are so crucial to the event that they are replicated in virtual worlds like Second Life [30].

In some sense, video chat may be viewed as an extension of existing modes of photography and videography during these gatherings. At the same time, video chat introduces new challenges because of the “liveness” of the connection; it is these that we explore alongside use in the periods before and after a gathering, but still related to the event.

## STUDY METHODOLOGY

The goal of our study was to understand the ways in which video chat is used for sharing major life events over distance, how this differs from other situations using video chat, and what technical, social, and organizational challenges people experience in the process.

### Method

We recognized that we were unlikely to find a large set of participants who used video chat for major life events in any one given city (akin to an interview method), and so we chose to conduct an exploratory web survey with a large number of open ended questions in addition to a smaller amount of closed questions. The survey collected demographic information followed by information about

the most recent event where participants used video chat. For example, we said, “Tell us about the most recent event where you used video chat to share or view a major life event,” and “Describe how video chat was set up for this event.” Participants were then asked if they had participated as a remote viewer, or as a local participant and asked questions about their use of video chat accordingly.

### Participants

Participants were recruited through convenience sampling and through Amazon’s Mechanical Turk. Turkers were compensated \$3 USD for completing the survey. Responses from convenience sampling and Mechanical Turk were merged for analysis, and yielded a diverse sample. We note that while this sample is not representative of the general population, it provides a suitable first sample for exploring an emerging phenomenon, and we leave more rigorous testing for future work.

In total, 87 participants completed the survey. Three responses were discarded due to invalid responses (e.g., responding about a routine trip) or due to duplication. Fifty-six percent of respondents were female. About 41% of respondents were between 19 and 25 years old, 31% between 26 and 35, 20% between 36 and 49, and the remaining 8% between 50 and 64 years old. Participants’ occupations included students (26%) as well as people in various sectors (e.g., technology, business, health, retail). Of the 87 participants, 17% were from Canada, 9% from India, 2% from Mexico, and 72% from the USA.

The majority of participants (72%) identified Skype as their most frequently used video chat system, with 21% citing FaceTime, and the remainder using Google Hangouts, ooVoo, and Line. Participants had significant experience with video chat systems, with 94% of participants reporting they had used video chat for a year or more. When asked to describe their comfort with video chat, 97% of participants rated themselves comfortable or very comfortable. Participants also used video chat regularly, with 28% of participants reporting more than 10 video chat calls to friends and family in the last month.

### Data Collection & Analysis

Respondents described the single most recent major life event where they used video chat, with births, graduations, and weddings most frequently reported (Figure 1). We performed descriptive statistics on the quantitative data and a thematic analysis on qualitative responses to understand the main themes in our survey data. As part of this process, we reviewed all survey responses and looked for commonalities and differences across answers.

We now describe the themes developed by our analysis by reporting survey statistics alongside qualitative responses. First, we outline the ways in which participants said they “normally” used video chat for activities not constituting “major life events.” Second, we outline participants’ perspectives on major life events. Third, we explore the ways in which video chat was used for sharing major life

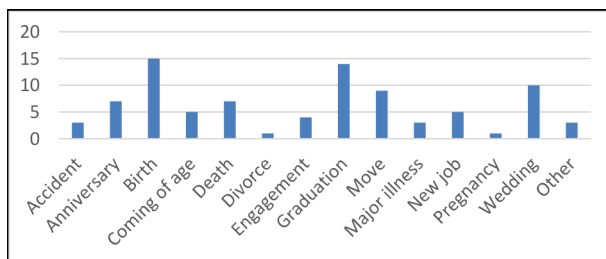


Figure 1. Distribution of major life events in the sample.

events and the themes that made these scenarios different than more typical video chat sessions. Throughout the results, participant numbers are listed along with the main type of event that they shared or viewed over video chat.

### MAJOR LIFE EVENTS OVER VIDEO CHAT

Our survey asked participants to describe what “major life events” were to them. This was partially to help us ensure we had similar conceptions of what this category of events might be, but also because it tells us about the types of events that people think are important enough to actually set up and use video chat. These most often included events that caused major changes in a person’s life moving forward and would have long-term effects as a result.

*“Something that will change a life forever, what was normal in the past is going to be totally different” – P61, Birth*

*“A major life event is something that will change our life forever. It’s something that will prevent you from living your old ordinary life.” – P45, New Job*

Participants also talked about major life events being difficult to forget, cherished over time, and sources of periodic reflection. If major life events are to be remembered forever, then this also raises questions of recording (which we return to later in the paper). Respondents also talked about major life events being those with a very large emotional impact, events that only happen once in a lifetime, or moments that they had a strong desire to share with family or close friends.

*“Any important changes in your life would be a major life event. It can be the birth of a baby, a new job, wedding, anniversary, death, getting a new house. These are events that bring joy to us and changes the course of our lives. These are moments that are cherished as memories.” – P23, Baptism*

Some events were “firsts,” such as showing a person’s first apartment, some were “once-in-a-lifetime” activities, such as a wedding, baptism, or graduation, and others were deeply emotional times, like a funeral, moments before/after a surgery, or the sharing of news of a death. These working definitions of life events illuminate to a degree some of the motivation for setting up and using video chat, and may indicate some of the properties that shared experiences are likely to have in practice.

Video chat was most frequently used because some people lived far away from where the event was occurring, the cost was too much to travel to the event, or people could not travel because of health issues, work schedules, or school

		Local attendees						Total
		< 5	6-10	11-20	21-40	41-75	> 75	
Remote attendees	< 5	38	8	6	13	2	15	82%
	6-10	2	3	2	1	1	5	14%
	11-20	2	0	0	0	0	1	3%
	> 20	0	0	0	0	1	0	1%
	Total	42%	11%	8%	14%	4%	21%	100%

Table 1. Percentage of events organized by how many people were participating remotely and locally.

obligations. For example, some people were on military deployments, or were in a country with restricted work (e.g., visa) regulations. Thus, there were real and challenging issues that video chat was helping mitigate.

People were generally positive about the idea of using video chat for sharing major life events (especially happier life events, as the distribution in Figure 1 suggests). Some commented that using video chat for major life events was the next best thing to being there and especially valuable for situations when one could not travel. In these cases, many people described very positive emotional experiences. Others said it was better than other technologies for sharing in the moment because you could actually see the event.

*“I think this is a wonderful device to share events when you can’t physically be somewhere to share a life event with loved ones.” – P5, Birth*

Even still, some people said that video chat should only be used for major events as “a last resort.” For example, one participant talked about it being inappropriate for sharing very personal events like child birth because one may not know who “sees things” over the Internet.

### VIDEO CHAT EVENT SETUP

We asked participants about the setup for the major life events that they shared over video chat. Local sharing was performed by family members (e.g., a partner, sibling, parent, nephew, niece, cousin) or close friends of the people who remotely viewed. People without any particular expertise nearly always set up the video connection from the sharing end. Only two talked about having professionals attend to the video chat: one was a photographer at a wedding and one was a wedding chapel coordinator. The person setting up the connection at the remote location was the main person who watched the event from afar, though sometimes small groups collected together to view a remote event.

**Comparison of local and remote groups.** Table 1 provides a matrix showing the number of local and remote attendees at the events respondents described. As can be seen, numbers varied quite heavily: some were large events and some were more intimate with a small group. The most common situation was a small event with less than 5 people on each side (38% of the 87 events). These events were

death announcements, birth announcements, household moves, anniversaries, accidents, divorce proceedings, surgeries, and coming of age ceremonies.

Within the entire set of events, 51% had connections between 1 and 10 people on both ends where the size was similar between both locations. That is, both ends had a small group or individual connecting with a small group.

6% of events had more people remotely than locally (in person at the event); all but one had less than 5 people locally and between 6 and 20 people remotely. These events were 2 health events, one birth announcement, and one home move announcement. One event had 76+ remote and 41-75 locally where a wedding was broadcast to another church location.

The rest of the events (49%) had more people locally attending than remotely, which is what one would expect to see. However, it shows that a significant proportion of events are those situations where a small number of people are local, and connect to a larger number remotely.

**Devices used.** When using video chat, approximately 50% reported using it on their desktop computer, 70% on their laptop, 41% on their mobile phone, and 28% on their tablet (participants could select more than one option).

**Call length.** Most (69%) of calls lasted 1 hour or less, although 15% were 2 hours long, and 10% were 3 hours long. The longest events reported were 6 hours long.

#### **Enlisting a Local Attendee and Managing the Camera**

People attending the event remotely used a typical video chat setup where a computer would be sitting on a table or desk, or they would be holding a mobile phone. People who were locally at the event and responsible for streaming it to the remote people most often held phones in their hands for the duration of the event. Across all devices, respondents told us that it was easiest to share stationary activities such as conversations with specific people and ceremonies taking place at the front of the room. Sometimes they would periodically move devices around to show different areas or angles. Nobody complained about holding phones, despite the likely difficulties in doing so for long periods of time (found by others [34]).

*“My brother set it up on their end. After that my mom held it. On my end I was at home and used my desktop connected to cable internet.” – P54, Wedding*

*“I had my phone moving around to show all the surroundings.” – P43, Graduation*

Only one person talked about propping up a phone on an object so that he would no longer need to hold it.

*“I just held my iPhone 5 in my hand for the most part, or placed it in front of my computer on a book.” – P15, New Job*

Remote viewers were aware of the burden that operating the video chat placed on the local attendee tasked with managing the system. This burden involved having to remember to bring and set up the right equipment and software, troubleshooting technical problems, carrying or

monitoring the device throughout the event, and so on. In some cases, video chat took place at times and places that were not “the main event,” but had better technical infrastructure. For example, P46 used video chat during the graduation party at home where there was WiFi, but not during the ceremony.

*“I would have asked them to bring it to the graduation, in order to see the actual event, but I know that would have been painful and taken away from their own viewing experience.” – P46, Graduation*

This quote additionally illustrates the opinion that managing the video chat “takes away” from being present at the event for the local party. Unlike taking a picture, which can be done quickly and without detracting from the flow of the event, video chat was seen as interrupting.

*“I would pay somebody to exclusively be in charge of the computer because my nephew was not happy to be in charge. He’d complain that was missing the party because he was afraid that someone would steal his computer.” – P71, Coming of Age*

Across the major life events that respondents talked about, we saw themes emerge that explore how video chat was used in contexts beyond the basic family-friend connections that video chat was likely designed to support. We step through each of these and highlight the challenges that people faced as a result of the event, setup, and usage of video chat.

#### **LARGE SPACES AND ROOMS**

Many gatherings for major life events occurred in large spaces and rooms. Some had a single large room with a stage or presentation area at the front of the room. Video chat could be used from any location in the room but focused on the front of the room. This included events such as graduation ceremonies, weddings, and funerals.

*“It was my brother’s graduation from high school. It was like I was sitting in the crowd looking at the stage where he came up to get his diploma. I could hear everything that was going on and see a panoramic view of the stage area and sides of the stage area. I could talk, and the person holding the camera could hear me as well as my other family members that were on the call, we could also type chat too.” – P57, Graduation*

Some events were held in spaces where a large number of activities were occurring at various places in the space. For example, it included graduation parties, wedding receptions, anniversary parties, coming of age parties, etc. This created problems where respondents told us they could often not understand what was happening where. Smaller, private areas within a larger space (e.g., rooms in a new home) faced the same challenges as large rooms in terms of orientation and understanding. Because of the difficulty of understanding the remote location’s physical geography (the number of rooms, their relative positioning) and the activities occurring in various places or rooms, 29% of local attendees felt there were more activities occurring at the event than they were able to see or share with a remote person.

*“The event was in big room and I could not follow all what happen in the quinceanero.” – P71, Coming of Age*

*“Some of the events including cake cutting ceremonies and some other traditional ceremonies where groups of people were involved were hard to take part in, as no was able to hear my input or opinion.” – P74, Wedding*

Several participants reported that the challenge in these situations was the ability of the camera to zoom or not, the distance of the camera’s placement from the activity, or its ability to be mobile or capture different areas or rooms at different points in time. People had a desire to be much more mobile than they were afforded with video chat and their setup at the event. In many ways, they wanted to have multiple camera viewpoints or be able to move throughout the event in an embodied way. For some people, this even meant being more mobile than a person *at* the event might have been. For example, respondents described wanting to use video chat in ways that allowed them close-up views of activities, such as a person walking down the aisle at a wedding, from a more advantageous distance and angle than even a seated person might be able to get. When asked if they would change anything if they were to do the event again, some respondents talked about getting better access to move around the space:

*“I would use my phone the whole time.. it's easier to use and move around the room.” – P26, Family Reunion*

*“I would have the laptop be carried to get a better view.” – P41, Funeral*

*“I would probably just go to the anniversary party, or have the webcams at both places be mobile and moving.” – P73, Anniversary*

Emerging technologies that permit users to stream video from their mobile phones to others seated at remote places during an event might be helpful in this circumstance.

### **LARGE GROUPS OF PEOPLE**

There were many events where large groups of people were gathered locally and sharing their video stream to remote viewers. For events with large crowds of people, the ability for remote viewers to engage in this larger and more diverse social space was limiting. People were constrained to be a small part of the event rather than part of the larger whole.

*“The call was made one hour before the party because everybody was busy. I started the chat early because I wanted to talk personally with my niece. I knew that when the party start it is impossible to talk with the quinceanera. There were about 12 people in the call that I interacted with directly. However, I saw many people in the background.” – P71, Coming of Age*

Large groups of people created technical challenges. These included problems distinguishing voices amongst a crowd, being able to see a key participant through a crowd, and so on. It also made it difficult to hear important activities far away, such as on a stage.

*“Some of the speeches given since she could not hear them too clear.” – P43, Graduation*

Despite the fact that a person was connecting into a setting with a large number of people, the caller was more closely connected to a subset of particular individuals. This most often included the person who was in charge of the device’s operation. Remote users relied upon this individual to narrate key events and ensure key people were spoken with (e.g., the bride and groom, the quinceanera), though for large events these conversations would come and go. Even though the remote person was connecting to a space with many people, conversations occurred with only a small number of them.

### **DEEPLY EMOTIONAL FOCUS**

Events often had a deeply emotional focus that was qualitatively different from many “talking heads” scenarios in business, or even among families. These sometimes involved emotions tied to events with large groups of people like weddings, funerals, and graduations. In addition, it was also seen with much smaller groups of people (e.g., 2 to 6) where these tended to be events of a more intimate nature where specific people were connected in order to share an important moment. For example, some people shared moments relating to surgeries, health crises, accidents, etc. These sometimes occurred in places where one may not expect to see video chat, like a hospital. This creates new paradigms of usage based on the context and raises the question of how one ought to act in these situations, especially when communicating and interacting over a mediated channel like video chat.

*“My son is stationed in Germany and was involved in a major car accident. He was in ICU for 5 days and since I couldn't be in Germany with him, friends of his set up a video chat so I could ... see the hospital room and see his face and how he looked. I could see all the machines hooked up to him and hear what had happened and been done to him.” – P8, Accident / Surgery*

*“I was in New Zealand at the time ... My friend G hit me up on Skype, so I accepted because we hadn't spoke in a while. He had red eyes and I could tell he had been crying. I asked him what was wrong, he told me that one of our mutual friends had committed suicide. I broke down immediately.” – P31, News about a Death*

Seven people felt they were not able to share the full range of interactions that they wanted to, especially during events that one may consider to be emotional. This went beyond simply seeing the remote location to wanting to have an actual physical presence. For example, it included wanting to hug or kiss the remote person, taste the food or drinks at the event, and be able to actually help the person in the situation (e.g., at the birth, after a surgery).

*“Just that I wanted to be with him, it was so scary to see him in the hospital and he had bit his tongue in the accident and couldn't speak as well as usual, seeing all kinds of tubes hooked up to him was also scary and I wanted to be there, but at least I could see with my own eyes how he was and that sure helped.” – P8, Accident / Surgery*

*“We could not hug or kiss her over video chat.” – P49, Birth*

As noted previously, a large amount of the video chat research has focused on everyday situations where

emotions may not be expected to be as heightened (indeed, the presence of the phrase “hang out” in Google+ Hangouts suggests a relaxed, low-key affair). Our findings illustrate video chat conversations during major life events can carry extraordinarily complex and deep emotional content, and evoke emotions in large groups of people over space and time. Importantly, the emotions being shared may not always be at the same level of intensity or tenor among all participants. Technically speaking, this presents opportunities to improve the ways that emotion is expressed alongside video chat.

### **ATMOSPHERE AND AMBIANCE**

Remote viewers were often connecting from their homes into a place with a very different atmosphere and ambiance. Five people talked about challenges in getting a sense of atmosphere of the event. Because they could be watching from their own home, the actual sense of the “feeling” of the event was lost across the video channel.

*“The atmosphere was difficult to convey.” – P69, Surgery Recovery*

It is difficult to translate a sense of atmosphere from the place of the major life event to the home, although some respondents reported that they *tried* to recreate the atmosphere at home. This included things such as wearing the “right” clothes, adjusting lighting, or decorating a room.

*“Yes, I made sure that I was dressed up so it felt like I was actually at her graduation.” – P18, Graduation*

*“I decorated the living room we broadcasted from with balloons so that it would look festive.” – P19, Coming of Age*

Remote viewers did relatively little beyond this to recreate the atmosphere of the remote event. There were no reports of participants doing the same activities (e.g., dancing, eating) as those at the local event. Some of the local attendees worked to try to transmit the actual ambiance of the event by pointing the camera at particularly important bits of the atmosphere, such as banners or the band, but these efforts often detracted from the focus of the event.

Conveying the ambiance and atmosphere of an event also leads to technical issues video chat software is not equipped to adequately handle. For example, some participants noted that the very things that make up the atmosphere of an event – low lighting, dancing, eating, applause – were the things that made it difficult to appreciate the situation remotely.

*“I couldn't watch everyone enjoy the buffet line, and it was hard to see everyone dancing when the turned the lights down.” – P19, Coming of Age*

*“The event was in big room and I could not follow all what happen in the quinceanero. I missed a lot because I couldn't hear well for the music.” – P71, Coming of Age*

*“Voices sometimes got distorted when people were applauding.” – P82, Graduation Ceremony*

While this outwardly would speak to the need for better technologies that can handle non-speech audio and low-

lighting conditions, we actually find that these aspects of the atmosphere are perhaps best *not* pursued as transmissible via existing technologies, and instead left as a space *not* to design around. We return to this in the discussion.

### **WATCHING AND BEING WATCHED**

After analyzing the situations and environments in which participants described their events, we recognized that there were a number of potential privacy issues related to who was watching and being watched by others. First, in some situations, an individual or small group of people was sharing a large event containing lots of people. We could not get data from the “others” in the crowd who may be caught on camera accidentally as part of the event; however, we recognize that a privacy threat exists for them. They may not know they are on camera, and, if they did, may not appreciate it. They also would not know who is able to see them. This might even occur for small events, as this quote illustrates:

*“The calls were made just before the celebration was held- to three households, and I am not sure how many people were on each call.” – P19, Anniversary*

Literature on media spaces suggests this would be a major concern for some people because they do not know how they are represented remotely and not in control of their representation (e.g., they cannot position the camera for an ideal look) [2]. Unlike talking heads scenarios where a camera is focused on a single user’s face, it would be impossible to have every member of “the crowd” able to see the feedback image of what the camera was capturing. The remote viewers of the event would also be disembodied in the view of the crowd at the event. That is, it would be very challenging for every person at the event to see the video display on a handheld device in order to see the representation of the remote viewers. Thus, in the eyes of the crowd, these people are not “at” the event.

Second, privacy issues could arise for the remote viewers of the event because they would not necessarily know how they are “a part of” the event at the remote location. They likely do not know where in the placement of the event they are in relation to other people and the overall space. For example, they would not know if they were next to a crowd of people, at the middle of the room looking at a stage, at the back of the room, etc. They would not know who could hear what they said or who could see them on the video device because people can easily be standing off camera or at a distance to pick up the transmitted audio. The above situations could also present feelings of discomfort for the person handling the video sharing as he or she could easily feel “responsible” for infringing on people’s privacy by being the “recorder.”

Yet moving from our analysis of the setups and situations to our participant responses, we curiously found no instances of concerns about privacy across all of their survey answers. We did not ask participants explicitly whether or

not they had privacy concerns because we did not want to accidentally “insert” them into situations based solely on our suggestion. The literature would predict that these would appear as issues when asking participants what challenges they faced when using video chat for the major life event. Interestingly, no participants mentioned any of the above issues. This suggests that they were not thinking about such issues or it was much less secondary to the actual event itself. Thus, their interest in seeing the event superseded any notions about being seen on camera (if they were the remote viewer) or performing the somewhat public capture of an event and larger audience. The “capturers” or local sharers could have easily been somewhat ignorant to the fact that they may be breaching people's privacy. A response to a follow-up question that we asked a participant alludes to this:

*“I had asked the school principal before the ceremony if it would be ok and he said yes. I mainly kept the webcam focused on our family and my son, but there may have been people who didn't realize they were caught on the video chat. I don't know that it would have made anyone feel any stranger than they did when they saw people were recording video with their cameras.” – P47, Graduation*

Thus, we see that video chat from afar for major life events was seen as being “normal” and “okay,” somewhat akin to other image or video capturing devices that were likely prevalent and widespread at many of the larger scale major life events (graduations, weddings, anniversary parties, etc.). Because some gatherings are in some ways public – for example, graduation ceremonies – expectations about video sharing and recording might differ from home use. There is perhaps a supposition of recording at these events—and indeed, participants mentioned that they wished they could more easily record the video chat.

*“I would figure out a way to record the event from my point of view so that I could share it with others after the fact.” – P19, Coming of Age*

Several people also talked about recording the video stream during the event for easy replay in case connectivity cut out and a portion was missed by the viewer, or for later replaying. While certainly valuable, such recordings could have the potential to infringe even further on people's privacy; records of the video chat session would now be permanent instead of streamed and ephemeral. This raises the question: are recordings of video chat sessions different than recordings by a person with a regular video camera? We return to this in our discussion section.

## **DISCUSSION**

We now reflect on and discuss several salient points that we found in our results. These focus on how one might better support major life events over video chat and the natural asymmetry that arises in such situations.

### **Major Life Events and Remote Attendance**

First, having participants provide their own definitions of life events illuminated to a degree some of the motivation for setting up and using video chat. If an event is to result in

“massive” changes, then being present to witness the source of those changes becomes important for achieving a sense of continuity. Further, these experiences have a shared emotional component that can be facilitated to a degree by having video chat available. Simply seeing and hearing the same thing is not a shared experience; users sought opportunities to share their emotions and thoughts more so than the audiovisual stimuli, and video chat provides one way to convey those thoughts and emotions in real time. In that sense, there is a natural asymmetry of experience that video appears to lessen, but does not overcome completely.

Our research also revealed that users recognize a tension between attending in real life and attending via video chat. Attending major life events via video chat was seen as a “last resort,” where previously the only option was absence. In the future, if video chat systems become extremely good at transmitting the tone and tenor of an event, it may be the case that video chat is a preferred method of attending (c.f., people who prefer to watch sports on TV instead of in person). For HCI, this is a goal that we might want to achieve, but one that might also be fraught: do we really want a world where everyone attends your wedding by Skype? While improved devices and technical support are clearly important, and may even result in more satisfying shared experiences, this study has raised questions surrounding the role of video chat in the sharing of experiences more generally in the future.

### **Video Chat in Unexpected Places**

Participants noted that they would use video chat to film the life event *in situ*, whether this was at a football stadium for a graduation or a hospital bed for a surgery. In all of this, there is an associated question of infrastructure; participants talked about unreliable wireless signals or questions about whether the video chat software would run appropriately even if wireless were available. This suggests that designers should support elegant degradation of signals. Rather than drop a call entirely, it may be the case that a subset of information can be transmitted to the remote party, especially since they are unlikely to be the focus of the action. This would also suggest an asymmetry in video chat, where one side of the conversation is more important than the other to transmit. Software might prioritize streaming video *from* the event over streaming video *to* the event, for example.

Our survey shows that people desired better infrastructures and would suggest that places where major life events often occur (e.g., churches, auditoriums, hospitals) might benefit from installing permanent video chat endpoints tied to the place. In addition to addressing problems of hoisting video chat management responsibilities onto an unwilling local attendee, this introduces an asymmetry in endpoints and a rethinking of the current model where an account is equivalent to a person. We might move beyond a talking heads model where a person calls another person, to a model where people, places, and events are all first order



entities capable of participating in video chats with one another.

### **Atmosphere and Ambiance**

Participants talked about the importance of atmosphere and how difficult it was to feel like they were really at the event. Outwardly, this would suggest that technology is doing a poor job – we need better cameras to see more of the event, better microphones to capture the audio, perhaps even technologies to let us smell the air and taste the food. However, reflecting on our findings suggests that this is not necessarily the most fruitful approach. Part of the reason major life events are so important is because of the uniqueness and ephemerality of their setting, and how the atmosphere cannot be recreated elsewhere or ever again [28]. The asymmetry of atmosphere and ambiance should not be seen as a problem that can be solved with technology, but rather an essential property that makes an experience worth sharing in the first place. When thinking of these events, regret of absence and imagination of how the event might have been may actually be valuable experiences, and may be preferable to an approximate digital translation of the sensory stimuli present at the event. This asymmetry leads us to believe that the world where everyone attends your wedding by Skype will not be happening any time soon.

### **Support Directed and Small-scale Conversation**

Our findings revealed that remote attendees interacted primarily with a small group of local users who facilitated their involvement (e.g., by holding the laptop and controlling the camera angle). This suggests there are opportunities to exploit both small-group and large-group interactions via video chat. For example, when sending a message or speaking via video chat, the message may be directed at the smaller group rather than the entire congregation. These messages may also be directed at specific pre-determined people in the event, such as the bride and groom. We suggest considering ways to direct conversation from remote participants to specific local attendees, and to small groups in addition to the entire congregation (e.g., by introducing multiple channels or commands for directing messages). Such selective presentation of oneself is important because even though a person is “present” at an event via video chat, it does not mean they are interested in being seen by, or speaking to, everyone involved.

### **Better Access and Mobility**

Given that people are connecting over video, it seems fairly obvious that they should get more than just a “view” from a seated position. One might imagine being able to get access to any number of camera angles from cameras embedded throughout an environment. Yet there is something nice about just getting the view from the seat of someone else attending the event. Access from any camera in the room feels privacy intrusive. Being restricted to a “handler” of the camera seems to mitigate privacy concerns somewhat. This might also involve having access to key

participants (who often are not the people with the cameras). For example, mechanisms that would allow remote parties to “jump” directly to seeing key participants who might be moving about a space would be helpful (e.g., being able to see the bride and groom as they mill about the reception hall). Other supports might include maps to help remote participants obtain a better sense of the layout of the event. We might also provide local facilitators with better tools for supporting remote attendees, especially when we consider that the local facilitator will be in a better position for determining timing of interruptions, directing focus, and so on.

### **Video Recording and Sharing**

With respect to privacy, we note several areas for future design work and thought. It is common to record some major life events (often ones we want to remember), but not others. A wedding might be recorded by a videographer, but it might be disrespectful to record mourners at a funeral. At the same time, if video chat software makes it easier to record video then it might become more common to do so, and the presence of, and purposes for, these recordings may be drawn into question more starkly. Recording video chat is more than a simple “backup” of the viewing for interested others or for later replay; recording affects the tenor and consequences of participation in the event.

Participants noted that major life events were times for sharing – we might consider ways to enable video streams to be shared amongst participants. For example, a remote participant might be able to invite a third party to join the video stream. This of course has its own set of privacy concerns, and there is an opportunity to better represent what has been termed the “invisible audience” [25] – that is, the groups of people who may be viewing the video chat but who are not physically present. Recording and sharing video chat allows for future members of the invisible audience as well. Recording and sharing in video chat creates asymmetries where the actual and eventual audience for the video may be larger and broader than the one participants imagine.

### **CONCLUSION**

Our study has explored the ways in which people appropriate video chat for sharing major life events over distance. Overall, our research shows that video chat for major life events presents a fruitful, unique design area that is still greatly underexplored. People currently make do with the video chat technologies that are available, yet it is clear that these technologies can be designed to better support the rich and nuanced activities that people are sharing as a part of major life events. There are also certainly many cultural questions that will be need to be addressed (e.g., when is it appropriate to “Skype-in?”) as video chat becomes even more readily used for major life events as we move forward. Studies should continue to explore these areas.

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