

Spirituality at the Breakfast Table: Experiences of Christian Online Worship Services

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ABSTRACT

Since the COVID-19 pandemics, we have witnessed an increase in online worship services. Nevertheless, HCI has little insight into how technological mediation influences religious experiences and how technology should be designed for use in religious contexts. Therefore, we see a unique opportunity to understand better real-world experiences of technology use in religious rituals and, more specifically, in online worship services. Inspired by contextual design, We virtually observed and interviewed eight persons during and after participation in online worship services. We identified a field of tension between faith, everyday life, individuality, and community. The data suggests that current online worship service systems do not account for believers' needs for community, faith, or extraordinariness. We discuss opportunities for future research and design, and aim to contribute to the understanding of online worship service experiences and the design of technology-mediated religious experiences.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**;
Collaborative and social computing.

KEYWORDS

Religion, spirituality, ritual, prayer, extraordinary, community, faith

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1 INTRODUCTION

We have witnessed dramatic changes to everyday life due to the COVID-19 pandemic. New rules and restrictions have come into effect to avoid spreading the virus and religious communities decided to provide alternative formats to regular worship services to lower the danger of infection in face-to-face meetings in enclosed spaces. They appropriated existing technologies such as video conferencing, streaming platforms, or social media for religious purposes [13, 14]. In Germany, the context of this study, the increase in available online worship services during the pandemic was tremendous. About 65% of pastors surveyed in Germany offered online worship services, and only 4% of those did so prior to the pandemic [13, 15].

The appropriation of interactive technologies for religious purposes has long been observed and documented in the field of digital religion [e.g., 5] but also in HCI [e.g., 2, 24]. A prominent finding of previous work based on interviews with protestant Christian pastors in the U.S. is that online versions cannot replace worship services as being able to meet in person, experience community, and perform rituals that require touch are essential [22]. Following that, online worship service experiences received only little attention within the HCI community, with some exceptions [e.g., 16, 21]. In addition, Buie et al. [4] pointed out a lack of research across the variety of real-world applications and highlighted that HCI-related scientific insights on spiritual uses of technology are specifically under-researched. Given the enormous increase in available online worship services and the increased number of believers participating, we see a unique opportunity for HCI to gain an in-depth understanding of real-world experiences of online worship services and the elements that do (or do not) support believer's religious experiences. By spiritual and religious experiences we understand experiences that people associate with something greater than themselves or the transcendent. Religious experiences, however, have the particularity of being interpreted in the light of a specific religious belief system such as Christianity. We note that someone who is religious can have spiritual experiences - it depends on the particular interpretation and context of their experience. So when we use the term "religious experience" in this work, this also includes notions of spiritual experiences.

This paper presents findings from an initial phase of a larger, interdisciplinary project involving protestant theologians, psychologists and HCI researchers. Within the project, we explore novel designs for technology-mediated religious rituals and experiences. We report our findings from a contextual design study [8] where we (virtually) observed and interviewed eight persons during and after participation in protestant online worship services. The findings provide a more detailed picture of online worship service experiences and the elements that do (or do not) support believers' religious experiences. We expect these findings to serve as a starting point for designing religious ritual and worship service technologies.

2 BACKGROUND

2.1 Christian (online) worship services

Christian worship services are communicative gatherings of believers who invoke an external power and seek to make it tangible for those gathered [11]. All worship services are structured but the exact sequence and content vary between faith traditions (e.g., catholic and protestant), type of worship service (e.g., sermon service, devotion, prayer service, communion), and local communities. This paper focuses on protestant "normal case" worship services in Germany. In Germany, the Sunday worship service is often referred to as the "normal case". It takes place every Sunday at the same time and place and follows a structure familiar to the religious community. Sunday worship services typically follow a structure of three to four interrelated steps. Each step includes several types of respective prayers, songs, or bible readings, and their content is chosen and prepared by the pastor according to the topic for the given Sunday. Following this structure, protestant "normal case" worship services follow a regulated dramaturgy, describable as the staging of a "threshold and interruption" of space and time [11].

The aspect of independently choosing content for a specific worship service is connected to the structure of protestant communities in Germany. Religious communities and their pastors are independent but united under one organization, and they share their confessions. Nonetheless, worship procedures are very similar across communities. It is part of protestant understanding that there is a priesthood of all believers, meaning that every believer can be a pastor. Nonetheless, the independent pastoral role, often taken by a nominal church employee, is essential to the communities.

Participation in church services from a distance is not a new phenomenon. In Germany, for example, worship services have been offered on television or radio for several decades [17]. However, the primary type of worship services at a distance experimented with in Germany during the COVID-19 pandemic were different from earlier ones: For example, they were provided or streamed online, so they were available at any time, and they allowed interactivity (e.g., comments, reactions or video chats). Also, the amount of different online worship services was new. Believers had a myriad of alternative offerings from which to choose. Since the length of the paper is limited, we will not provide a historical account of worship services at a distance, but rather focus on experiences of online worship services and their specific characteristics (e.g., being always available, allowing to pause or skip, allowing to see viewer numbers).

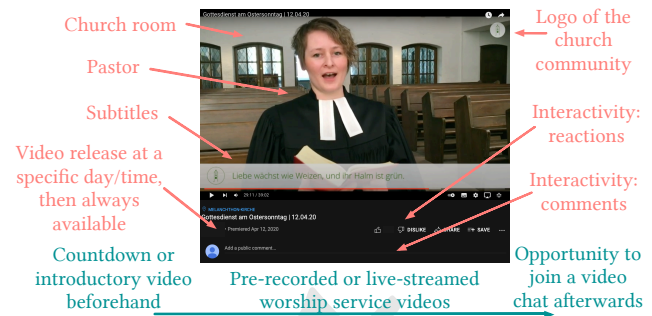


Figure 1: An example of a typical online worship service and its main visual and interactive elements (permission obtained).

During the COVID-19 pandemic, many protestant pastors in Germany provided online worship services that roughly followed "normal case" worship service structures and elements [13, 15]. Figure 1 shows a typical online worship service with all the usual elements and interaction options hosted on Youtube by a protestant church.

2.2 HCI and religious use of technology

HCI has long recognized that it is worth taking a closer look at religious uses of technology. For example, Wyche and Grinter found that American Protestant Christians distinguished between secular and faith-related artifacts, routines, and technology uses [23]. They concluded that a valuable perspective when designing future technologies might be *extraordinary computing* that takes into account and honors the special in everyday life. However, not only HCI researchers and designers have thought about adapting technology for religious and spiritual purposes, but believers themselves adapt and adopt available technologies such as youtube. For example, Buie and Blythe identified the need for a more in-depth analysis of spiritual technology-mediated experiences in context and as they take place based on their analysis of spiritual meditation videos and respective comments on youtube [3]. The comments suggested that many details add to the overall experience as it unfolds. For example, loud, disturbing advertisements or racist diatribes in the comments turned positive experiences with meditation videos into negative ones. Within the past few years, a whole range of products (e.g., apps, websites, interactive technologies) for religious and spiritual purposes has emerged, and already in 2013, [4] noted that the HCI community would benefit from analyzing the many real-world spiritual applications.

Apart from spiritual and religious applications and technologies more generally, HCI researchers have also looked into the topic of participating in religious rituals from a distance or home. Especially in the Buddhist context, several artifacts have been designed that enable remembrance rituals for closely related deceased ones [e.g., 19, 20] or public memorials [18] from home. The designs are closely related to existing Japanese Buddhist funeral and remembrance rituals. For example, the SenseCenter is an interactive device that senses incense smoke and displays photos of deceased ones, thereby meditating typical Japanese remembrance rituals technologically

Table 1: Details on the five visited online worship services.

Visit No.	Setting	Type of online worship service	Participants	Participation (per month)
1	Couple watching in their living room using a laptop	Livestream on youtube from their church community	B1 (female, mid 50's) B2 (male, mid 50's)	1-2 times 1-2 times
2	Individual watching while sitting at a desk via a desktop PC	Recorded video from his church community	B3 (male, 40)	5 times
3	Flatmates watching in B4's room using a smartTV	Recorded video on youtube from a local church community of which participants are not members but which is appreciated for its video formats	B4 (female, 23) B5 (male, 24) B6 (female, 51)	4 times 1-2 times 1-2 times
4	Individual watching in her living room using a laptop	Recorded video on youtube from her church community	B7 (female, 64)	4 times
5	Individual watching in his living room using a tablet	Livestream on his church community's website	B8 (male, 69)	2-3 times

[19]. Another example is ThanatoFenestra, which technologically enhances typical family altars that support memorial rituals for the deceased. An artifact designed explicitly for connecting physically isolated individuals of a virtual faith community in their prayers is AltarNation [7]. AltarNation was developed in response to mourning practices following the 11 September terrorist attacks in the United States, where lighting candles and exchanging prayers were two predominant forms of mourning. As indicated by the name, AltarNation consists of an altar niche interconnected with altar niches of community members. Believers could enter their AltarNation and lighten up a candle when wanting to pray together. The system then recognized the lightened candle and made it visible to other believers. The visualization of other "active" believers was displayed as a dot of light on a display mounted on the ceiling of the AltarNation niche, which looked like a starry sky. Again, the design focused on augmenting existing practices by merging the tangible and digital [7].

In addition to the concrete design of technologically-mediated religious rituals, there is also some preliminary work on worship services in HCI. Previous research has looked into special worship services such as Buddhist funerals or the participatory development of a streaming platform within a rural area for online worship services. Uriu et al. set up a funeral webcasting during the pandemic and learned about the importance of allowing remote mourners to actively hold rituals and say farewells to the deceased instead of only passively viewing a live stream [21]. Similarly, Struzek et al. set up a streaming platform for worship services, but with an emphasis on the participatory process involving older parishioners [16]. They identified the need to overcome local problems such as poor internet connections or support various devices with their streaming platform [16].

Summarizing previous work, we learned that paying close attention to existing practices, focusing on the extraordinary aspects of religious rituals, and taking into account pragmatic issues are essential aspects to be considered when designing for religious contexts. This paper aims to add insights about online worship experiences to

the existing body of knowledge and show what elements are essential to technologically-mediated religious experiences and should be considered in their design.

3 METHODS

To understand experiences of online worship services in detail and to inform subsequent design concepts, we followed the contextual design approach [8]. Due to Germany's COVID-19 rules and restrictions at the time of the study, we adjusted the approach to be suitable for observation at a distance as inspired by rapid, virtual ethnography [12]. For this study, we received clearance from the local ethics committee. However, recruiting believers who were willing to be accompanied virtually while participating in online worship services was more challenging than initially expected. It was not until we spread our invitation through the communities' established mailing lists that we found believers willing to participate. In the recruitment process, we also learned that it is better to give little information in written advertisements and instead try to make people curious and lower the barriers to contacting us (e.g., by providing a phone number for more information). People were somewhat ambivalent about our study: On the one hand, the topic was sensitive, and people initially had many questions on how the data would be gathered and published. On the other hand, they were also very curious and happy to contribute to research and the further development of online worship services. The eight participants of this study were members of several church communities (see Table 1).

The meetings were scheduled to accompany participants as they participated in an online worship service. Participants needed to have access to two internet-connected devices. One device was used for a video call with the researcher, and the other was used to access the online worship service. The device with the video call was positioned so that the researcher could observe the participants. In addition, the researcher also accessed the respective online worship service (video or stream). Each session started with standardized participant information, and consent was obtained. We refrained from asking questions during the online worship services (which is otherwise typical for the method) but instead took

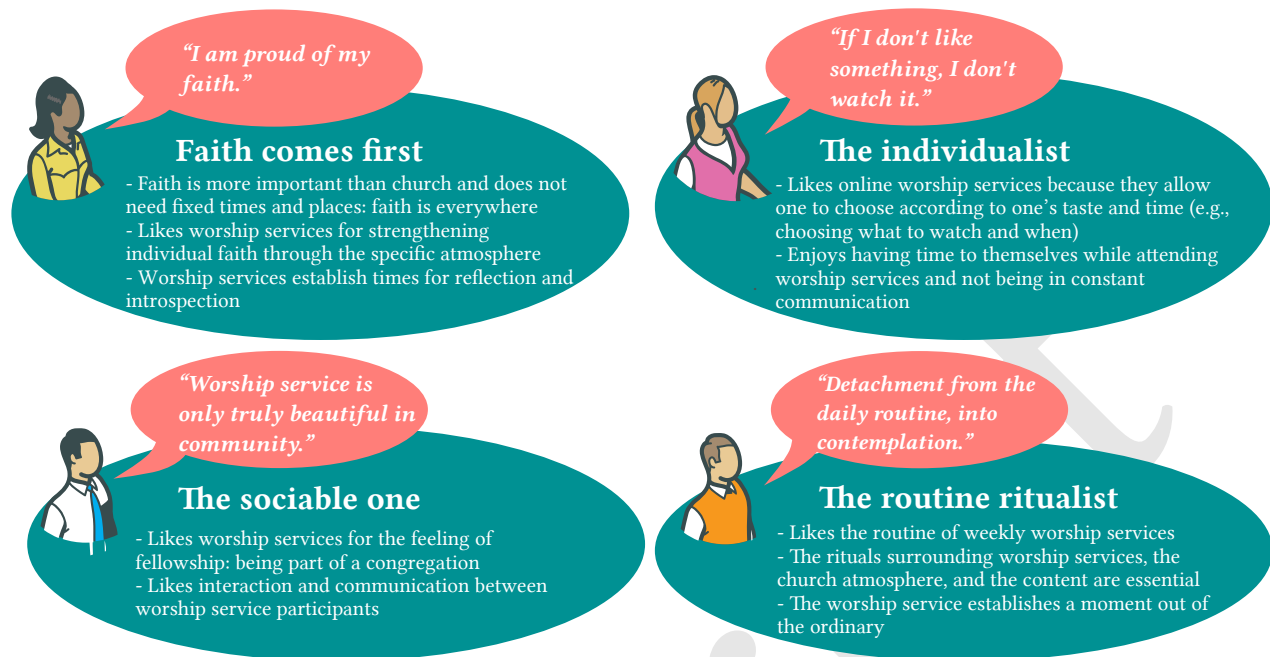


Figure 2: The shortened identity model with four identities reflecting our participants' sources of pride and core values related to their worship service attendance.

notes on observations we wanted to ask participants about. In a subsequent conversation, we asked participants to rethink the experience step by step and to detail their thoughts and feelings about, for example, why they performed specific actions (e.g., pausing or skipping, laughing, talking). We captured the data by taking notes. Overall, each session took between 1.5 to 2 hours. We then performed interpretation sessions within 24 hours each and analyzed the data using iterative affinity diagramming and identity modeling [8]. The affinity diagram and the identity model were then used in extended wall walk sessions with a team of HCI students, HCI researchers, and collaborating protestant theologians. As a result, we formulated key insights and generated initial design ideas. Over several weeks, the paper's first author went through the data and key insights to identify central themes and sub-themes that will be presented in the results section. In addition, we present a shortened identity model that aggregates the core motivations and values of our participants (see Figure 2; see supplemental materials for detailed version). Note that the identity model does not represent specific persons but aggregates identity elements to help uncover sources of pride, self-expression, and core values in a way useful for design [8].

4 FINDINGS: BELIEVERS IN A FIELD OF TENSION BETWEEN FAITH, EVERYDAY LIFE, INDIVIDUALITY AND COMMUNITY

4.1 Faith comes first

Our participants described faith as a central motivation for attending online worship services, but it was seen as distinctly separate

from the church as an institution. In the notion of the participants we accompanied, faith comes first (see Figure 2; Faith comes first). One participant said, "church and faith are two different things for me" (B7), and faith was the more critical aspect. For our participants, "faith became evident through life in everyday life" (B7), and the worship services were just one way to strengthen individual faith. "The church atmosphere has a strong effect on me, and worship services strengthen my faith" (B3).

However, this empowering atmosphere was not always conveyed virtually: "It is about the experience itself, which is unfortunately weakened in online worship services" (B1). While one participant expressed that "our prayers don't lose their power just because the service is online" (B2), the sense of faith was not fostered by the current online worship service systems. Instead, the interactive elements available, such as pausing, skipping, commenting, and responding, were associated with infotainment rather than worship experiences and resulted in what was perceived as an inappropriate emotional state for worship services.

Moreover, the production quality led participants to question the centrality of faith in online worship services in some cases. Many pastors put much work into the production and use the novel possibilities comprehensively. For example, they fade in lyrics and display titles of prayers (see Figure 1). However, this did not necessarily improve the worship service experience but even led to the opposite: "Streamed online worship services quickly become self-dramatization if one focuses too much on production quality instead of content" (B7). In the online worship services we accompanied, the pastors were at the center, which was reinforced by the camera perspective, the empty church, and the low interactivity. However,

putting the pastor at the center contradicts the principle of the priesthood of all, which, according to Protestant understanding in Germany, suggests more interactive forms of worship. In addition, the high production quality was seen as "inhuman" because "mistakes are missing" (B2).

4.2 Individualism vs. communal experience

The theme of individualism vs. communal experience integrates two contrary perspectives present among our participants. First, our participants expressed that the sense of community is a vital factor of a successful worship experience (see Figure 2; The sociable one). In analogue worship services, the sense of community was especially present when people sang or prayed together. However, there was no such experience in online worship services for our participants. One participant said: "recorded online worship services are more of an individual or personal experience rather than a community one for me" (B8). While longing for a communal experience in online worship services, our participants also expressed the need for individualization (see Figure 2; The individualist). Some participants explained that online worship services offered great opportunities to mix and match various worship services available online. For example, one could listen to the music of one church community and the sermon of the pastor of another. While this approach was more wish than fact at a higher level, our participants pursued customisation at a lower level. Often, our participants used the option to stop or even skip parts of the online worship services that they did not like. This contradicts the established practice of analogue worship services that follow a clear structure, but underscores the need for and potential of individualized online worship experiences combined with a greater degree of agency on the part of the believers.

4.3 Online worship services between the ordinary and the extraordinary

The third theme also ties in with the previous ones but primarily reflects the ambivalence of online worship services in terms of their situatedness. We found a discrepancy between what believers indicated they were looking for by the attendance of the online worship service and the observed behaviour of what they actually did. The believers in our study described their experiences and expectations of worship services as being something extraordinary - or as one participant said: "Detachment from the daily routine, into contemplation" (B7). Worship services are not an everyday occurrence for believers but something special, and they usually invest some effort to mark the worship service experience as distinct from everyday life and routines, e.g., dressing up, changing places, and taking the time (see Figure 2). In contrast, online worship services promote values like continuous accessibility or flexibility. Most online worship services we accompanied were pre-recorded and could be watched any time after they were uploaded. The tension resulting from expectations that are not met by momentary online worship services is best demonstrated with an example: During the first visit, a couple (B1, B2) expressed several recent experiences about which they were annoyed. For them, worship services are something special, and it is important to them to follow a worship service from beginning to end. However, they woke up later than

usual on one of the last Sundays and were in the middle of breakfast when they realized that the online worship service was about to start. Invited by the flexible and accessible design of current online worship services, they decided to watch it using a laptop at the breakfast table. This was practical, but they quickly became annoyed with themselves. They realized that they had turned what had been a formerly extraordinary experience into something ordinary. They even felt like "falling for consumerism", which others perceived as well (B1, B2, B3, B7). This discrepancy between what is wanted and what is done was also reflected in smaller interactions throughout the online worship service: The same couple expressed that, on the one hand, they found it convenient to be able to skip "bad" songs but did not like the feeling of slipping into consumerism in the process. The same applies to both examples: It is possible, and therefore it is done, even though it feels terrible.

In addition, experiencing the online worship service as something extraordinary was made even more difficult for our participants through the home context. While participating in the online worship services, they were physically in their everyday environment, full of distractions. Participants described that others who are not participating in an online worship service often enter the room and interrupt the experience with everyday things. Overall, the greater context created an atmosphere as if one were at home and not in a worship service.

5 DISCUSSION AND FUTURE WORK

Our findings suggest that participation in online worship services was a unique experience, quite different from participation in on-site worship services and that observing online worship services from an experiential perspective yielded many valuable insights. Below, we discuss the various insights along the four identities (see Figure 2) and in relation to prior literature, and suggest possible ways for future design. To begin with, we think it might be valuable to shift the perspective from compensating for "normal" worship service experiences to creating new kinds of experiences in online worship services, taking better account of the new opportunities that arise.

Comparing our findings, especially all aspects relating to the routine ritualist, to previous ones, it becomes clear that the idea of *extraordinary computing* [23] is very relevant to the context of online worship services and has not yet been designed for. Many artifacts described in previous work, like AltarNation [7] or ThanatoFenestra [20], suggested to establish special places within peoples' homes (= "altar") for spiritual and religious purposes. This could be one way to address the need for extraordinariness. To further support the design and address the complexity of *extraordinary computing*, a fruitful approach might be to integrate theoretical perspectives from the social sciences and religious studies, such as the extensive body of work relating to ritual theories [e.g., 1, 6]. Ritual theories, for example, suggest wearing unique clothes, meeting at special times/places, or deliberately restricting options but carefully curating what activity or element to integrate to render rituals extraordinary. Novel online worship service systems could integrate such elements by, for example, requiring small rituals such as lighting a candle and prayer before access is granted. In doing so, it is vital to reflect on the experiential perspective and

existing practices in order to turn such additional interactions into valuable practices rather than "necessary evils" [10]. If this succeeds, an objectively costly interaction (e.g., an interaction that is time-consuming or even exhausting) can turn into something valued and important [9].

As documented above, the systems used for online worship services in Germany do not necessarily support feelings of faith but actually "violate" them by creating feelings of consumption through the given options such as pausing, skipping, or participating anywhere and anytime. These findings relate to findings of Buie and Blythe who identified the need for a more in-depth analysis of spiritual technology-mediated experiences in context and as they take place [3]. Our finding underlines that when designing for spiritual purposes, or more precisely for online worship services, not only the content (= the what) is essential, but also the context and the system with its visual design and interaction possibilities (= the how). In light of our findings, it does not seem best to import all designs and interactions from other areas, such as infotainment. Instead of simply using the same player and response options, all elements should be examined for their contextual fit and contribution to feelings of faith and adapted if necessary. More appropriate reaction possibilities than symbols for "I like" or "I don't like" in the context of worship services could be, for example, symbols of praying hands or candles.

The finding that a sense of community is vital in worship service experiences is in line with previous findings that suggested that online worship services could not replace analogue ones as the experience of community is vital [22]. Nonetheless, our participants managed to develop a sense of community in online worship services when they planned to attend in advance and arranged with others to watch the service live (see Figure 2). Another way to support a sense of community might be to visualize other participants, like in the concept of AltarNation that visualized other praying community members through star-like lights [7]. In addition, it might be worthwhile to look more closely at the results of telepresence research and research on relatedness at a distance or religious TV services to identify further design guidelines for supporting a sense of community in online worship services.

Overall, our findings can be interpreted as somewhat controversial from a theological perspective. For example, skipping parts of a worship service contradicts the very idea of worship services that consist of interrelated content and a pre-determined structure that is carefully curated but highlights the dynamics and agency of the performing actors inherent to rituals in a broader sense. This, in turn, demonstrates the importance of a detailed understanding of the topic, the greater context, and the different perspectives (e.g., believers, HCI, theologians) when designing for online worship services. We need to consider the effects of a design carefully (e.g., the impact of a skipping button on worship services) and find ways to participatory decision-making in the context of designing for technology-mediated religious experiences.

A limitation of our study is the small, homogeneous sample consisting of eight Protestant, German believers (albeit from different church communities and of different ages). Furthermore, online worship service experiences are highly culture-dependent, so the results presented in this paper are not globally applicable. Nonetheless, we hope that our work inspires future work in the area and

that it highlights the urgent need to better understand technologies' influences on religious experiences.

In future work, we plan to refine and implement our ideas for possible online worship service systems that better value the extraordinary, foreground faith, and enable a sense of community while also considering participants' need for individuality and theologians' concerns about worship services. Following this process, we will evaluate our prototype in the wild to refine our findings on online worship service experiences. Ultimately, this will contribute to the development of HCI-specific knowledge for central religious rituals and provide answers about how HCI designs can meet specifically human existential needs for reassurance, revision/balancing of one's life, and impulses for current and future living.

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