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EXPLORING TECHNO-SPIRITUALITY:
DESIGN STRATEGIES
FOR TRANSCENDENT
USER EXPERIENCES

ELIZABETH ANNE BUIE

A thesis submitted in partial fulfilment
of the requirements of the
University of Northumbria at Newcastle
for the degree of Doctor of Philosophy

Research undertaken
in the Faculty of Arts, Design
& Social Sciences

Dedication

I dedicate this thesis to Timothy Kendall, music director of *Collegium Cantorum*. Without Timothy's acceptance of me as a *Collegium* singer and his provision of MIDI files to help us learn the music, I cannot begin to imagine having had a transcendent user experience like the one that sparked my research. Timothy, *gratias maximas tibi*.

Abstract

This thesis presents a study of transcendent experiences (TXs) — experiences of connection with something greater than oneself — focusing on what they are, how artefacts support them, and how design can contribute to that support. People often find such experiences transformative, and artefacts do support them — but the literature rarely addresses designing artefact support for TXs. This thesis provides a step toward filling that gap.

The first phase of research involved the conduct and analysis of 24 interviews with adults of diverse spiritual perspectives, using constructivist Grounded Theory methods informed by relevant literature and by studies performed earlier in the PhD programme. Analysis found that TXs proceed in three phases — creating the context, living the experience, integrating the experience — and that artefacts support two phases and people desire enhancements to all three. This TX framework supports and extends experience structures from the literature: it recognises the top-level categories as phases in a cycle where integration may alter future contexts, and it extends the structure of TX by incorporating the relationships of artefacts and of enhancement desires to the phases of these experiences. This extended structure constitutes a grounded theory of transcendent user experience (TUX).

The second phase involved the design and conduct of three “Transcendhance” game workshops for *enhancing transcendence*, which incorporated themes from the grounded theory and aimed to elicit design ideas in an atmosphere of imagination, fun, and play. Participants sketched 69 speculative ideas for techno-spiritual artefacts, and analysis mapped them to TX phases and identified possible extensions inspired by relevant research. The great majority of ideas mapped to the phase *Creating the Context*, with very few mapping to *Living the Experience*, which suggests that context may be easier than lived experience to understand and address *directly*. This point is especially important for experiences such as TX that are tricky to define, impossible to arrange or anticipate, and thus unsuitable for straight-forward “classic” user experience methods.

The final phase involved the elaboration of workshop ideas to explore the extension of design fiction for TUX. Analysis related design fiction to the TX phases and suggested features that affect design ideas’ potential for TUX design fiction. This phase ended with the proposal and analysis of three new forms of design fiction — extended imaginary abstracts, comparative imaginary abstracts, and design poetry — using workshop ideas to illustrate the forms, their construction and use, and their benefits to TUX design.

Transcendence workshops and TUX design fictions approach techno-spiritual design *peripherally*, “sneaking up” on lived experience by addressing context and enabling the consideration of ineffable experience through storytelling, metaphors, and oblique imagery.

This thesis combines the grounded theory of transcendent user experience with the Transcendence workshop process and new forms of design fiction, presenting *peripheral design* as a promising strategy for facilitating design to enhance transcendent experience.

Keywords

Techno-spirituality, design, transcendent experience, user experience, design workshops, design fiction, design games, transcendent user experience, grounded theory, peripheral design.

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List of Accompanying Content

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Blythe, M., & Buie, E. (2014b). Digital Spirits: Report of an Imaginary Workshop on Technologies to Support Religious and Spiritual Experience.

Buie, E. (2014b). User Experience and the Human Spirit. In *Extended Abstracts CHI 2014* (pp. 335–338). Toronto, ON, Canada: ACM.

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Buie, E., & Blythe, M. (2013a). Meditations on YouTube. In *Proceedings of the 6th International Conference on Designing Pleasurable Products and Interfaces - DPPI '13* (pp. 41–50). Newcastle upon Tyne, UK: ACM.

Buie, E., & Blythe, M. (2013b). Spirituality: there's an app for that! (but not a lot of research). In *Extended Abstracts CHI 2013* (pp. 2315–2324). Paris, France: ACM.

Two CHI posters:

- CHI 2014 Doctoral Consortium poster (accompanies Buie, 2014b)
- CHI 2016 Transcendhance Game poster (accompanies Buie, 2016)

My Bright Club Newcastle standup comedy sketch (Buie, 2014a) —

<https://www.youtube.com/watch?v=a-5bb0XYYwI>

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Andii Bowsher, the university's Co-ordinating Chaplain, expressed great enthusiasm for my work and helped recruit the last few participants for my interviews. Eben Haber pointed me to VideoNoteTakerUtility, an IBM tool he had developed for controlling playback and transcription of recordings; its ease of keyboard control streamlined that task. And of course I am grateful to Northumbria University itself, for taking me in and providing me the required academic resources, and especially for giving me a three-year studentship to help fund my research.

I have received tremendous support from family in the USA and from friends here, there, and everywhere. Rosamund Stansfield took me in when I was new to the North East of England. She introduced me to Grainger Market and other shopping in Newcastle City Centre, advised me on how to navigate the NHS, and checked in occasionally to see if I could use a friendly chat over coffee. My fellow PhD students acted as sounding boards, workshop participants, and sources of information about the programme. The warm and generous people of Newcastle Unitarian Church welcomed me as a visitor and then as a member; they must have been interested in my thoughts on spirituality and technology, as they kept inviting me to lead the occasional Sunday service. The lovely people of Cappella Novocastriensis gave me a weekly uplift via choral singing in good company, in a church several centuries more ancient than anywhere I had sung back home. Friends are still telling me how much they enjoy reading about my saga on Facebook and in my blog. And in my final year the kindred spirits of RSA Newcastle provided stimulating conversation in a convivial atmosphere.

Of course I owe a tremendous debt of gratitude to the interview and workshop participants. Each person I interviewed took me through a spiritual autobiography and the story of an event or two that meant a lot to them, sometimes getting emotional but always willing to forge ahead. Dear people: I found your stories fascinating and inspiring, and I felt close to you every time I read or listened to your words. Profound thanks to you. The people who joined the workshop didn't know exactly what they were being asked to do, but they plunged right in. Dear people: It was a joy to see you laughing together as you sketched your ideas and described them to the rest of us. Heartfelt thanks to you.

These acknowledgments would be incomplete if I didn't mention Facebook, the NHS, and the Oxford comma. By making it easy to keep up with family and friends everywhere, Facebook made it thinkable for me to move across the Pond alone, which allowed me to feel mystified that people kept admiring my courage in doing so. As a full-time student I qualified for health care under the NHS; and although it could be excruciatingly slow and frustratingly¹ conservative regarding treatment, it was there when I needed it.

And finally, I must honour the memories of three special family members. My husband, Antonio Vallone, has been with me in spirit during this fascinating journey of mine and has often helped me in my imagination, grabbing pen and paper and saying encouragingly, as he so often did, "Facciamo un'analisi."² My mother, Beverly Buie, always wanted to hear about what I was doing and was proud of me even when she had no clue what it meant, and I often imagined explaining my research to her. My grandmother, Kathryn McNairy, shared my interest in extraordinary experiences and once confided to me her own near-death experience, explaining her willingness to open up to me by saying, "Somehow I just knew you'd understand." It gives me warm fuzzies to imagine how proud of me you all would have been. I love you and miss you.

¹ Most likely they're trying to avoid spending money until they're convinced that it's necessary.

² Italian for "Let's do an analysis."

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought, and has been granted by the Faculty Ethics Committee at the end of June 2013 (exact date no longer available), on 19 March 2014, and on 8 December 2015.

I declare that the Word Count of this Thesis is 87,221 words

Name: Elizabeth Anne Buie

Signature:

Date: 5 March 2018

Chapter 1 – Introduction

It's morning rush hour, in the autumn of 2008. I'm on the road to a client's office, making my way through Washington DC to what feels like the other side of the world. The next concert of *Collegium Cantorum*³ is about two weeks away, and the one-hour-plus drive gives me the perfect opportunity to increase my familiarity with the part I'll be singing. Although I will have sheet music for the concert, I read music fairly slowly, and I have little experience singing music of this genre. It is not in the repertoire of most modern choirs.

This genre is Renaissance sacred polyphony.

Polyphony is a musical style that is often harmonically and rhythmically complex, and *a cappella Renaissance* polyphony is five hundred years old. Never mind for how many decades I've listened to it, until I learn the idiom I find *singing* it a real challenge. So thank goodness for music technology! Before each term, Collegium's director distributes Musical Instrument Digital Interface (MIDI) files of all the pieces. Unfortunately, his MIDI's assign all the parts to the same instrument sound, and even with the sheet music I can't pick mine out when they're all playing at once. So I import the files into music notation software and change the instrument assignments — always ensuring that mine comes out as a French horn played *più forte*⁴ than the others — which lets me hear it clearly amidst the other parts. I save the results as MP3s, load them onto my iPod, and voilà! I'm sorted.

So here I am, driving through the DC rush hour, my “learning files” playing through the car's radio, thanks to a handy little gadget that connects my iPod to it. I *la-la-la* along with the French horn; by now I've got the feel of my part well enough to keep up with what I'm hearing.

Suddenly, something changes.

I find myself covered with

goosebumps and feeling *intensely* connected to everything — the autumn colors, the stream flowing alongside the road, the mystery and wonder of this *magnificent* music, the kindred spirits

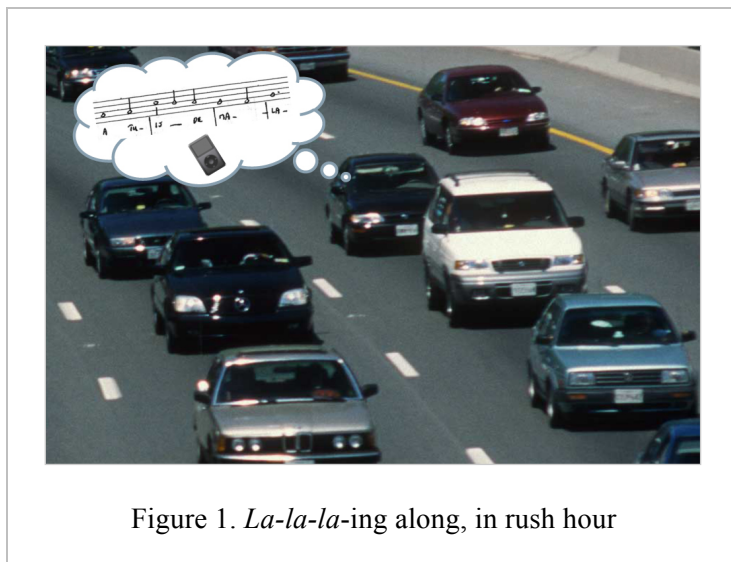


Figure 1. *La-la-la*-ing along, in rush hour

³ <http://www.collegiumcantorum.org>

⁴ “Louder” in music terminology.

with whom I'll be singing it, the people who'll come to hear us, the church with the *amazing* acoustic... My spirit *soars*; all is right with the world. Thanks to digital technology, rush hour doesn't faze me one bit.

When the feeling subsides, I sit back in wonder. "*That was a spiritual experience!*" I say to myself, "and it was part of my user experience of these technologies." (*These technologies* are three pieces of software and three pieces of hardware, not counting the car.) "I think I could study that."

And so it began. Two years later, when I decided to leave user experience (UX) consulting and embark on a PhD programme, I considered other research topics but this one kept whispering in my ear. Spiritual and transcendent user experience, it turned out, was the area of UX that fascinated and energised me enough to induce me to immerse myself in it for three years or more of intensive work.

With this thesis I present what I did, what I've learned, and why it matters to human-computer interaction.

1.1 Transcendent Experiences and Human-Computer Interaction

In a world where many people see technology as dehumanising and isolating — even perhaps anti-spiritual — how can interactive technology facilitate and support spiritual practices and transcendent experiences? How might design contribute?

My research lies within the broad domain of human-computer interaction (HCI) and, more narrowly, in its sub-domain of user experience. HCI research addresses itself to all aspects of the interaction between people and technology; UX research investigates people's *lived experiences* with technologies they use. According to the field's premier professional society, HCI research seeks the following:

to understand human-technology interface from many perspectives, including psychology, sociology, anthropology, industrial design, and ergonomics (SIGCHI, 2016)

Since its beginning¹, roughly three and a half decades ago (Carroll, 2013), HCI research has broadened from human factors and individual user performance to encompass more and more research methods and to study technology use in more and more areas of human activity. It moved first to collaborative office environments and then to a "third wave" that includes "new elements of human life...such as culture, emotion and experience" (Bødker, 2006, p. 1) and in which "designers seek inspiration from use" (p. 2). More recently, Leong, Wright, Vetere, & Howard (2010) called for considering users holistically and "recognizing them as creative agents embedded

in complex and changing social networks...as lover, as worker, as colleague, and as friend” (p. 256). In the past few years, the community has become increasingly interested in and involved with HCI for social good, as exemplified by the recent growth in HCI discourses around political, social, and broader personal topics. These topics include⁵ value-sensitive design, peace, sustainability, the developing world, housing and communities, feminism and gender issues, racism, ageism, accessibility, positive psychology/computing/design, citizen participation and policymaking, health, subjective well-being, and death and bereavementⁱⁱ. SIGCHI’s annual Social Impact Award, given since 2005 “to individuals who promote the application of human-computer interaction research to pressing social needs” (SIGCHI, 2005), underscored by the theme of the 2016 CHI conference — represented by its *hashtag*, #chi4good — emphasises that the HCI community is committed to making a difference in the world, to using HCI for the good of all.

Given the presence and influence of spirituality and religion in the lives of people worldwide, as well as the extensive role that technology plays in them, one would think the HCI community would involve itself in making a difference in that sphere of life. Spirituality and religion constitute a part of life for the vast majority of people: in 2010, more than 80% of the world’s population described themselves as affiliated with a religious group (Pew Research Center, 2012b). Religious use of technology is high as well: in 2010, 69% of American congregations⁶ had websites and 90% used email (Thumma, 2012) and “online religious activity within Hinduism [was] flourishing” (Helland, 2010, p. 148); and in late 2014 an average week saw about 20% of American adults using social media to share their religious faith, “about the same percentage that tune in to religious talk radio, watch religious TV programs or listen to Christian rock music” (Pew Research Center, 2014, p. 1). My own exploration of iPhone and iPad applications (Buie & Blythe, 2013b) led me to estimate that in December of 2012 the iTunes US App Store contained about 6,000 apps keyworded with general terms for spirituality and religion. What’s more, a recent brief Google search of the App Storeⁱⁱⁱ suggests that these apps may now number more than 20 times as many as they did then, and that they *may* even have quadrupled their percentage of total offerings (from 1% to 4%). Clearly, techno-spirituality⁷ has relevance for HCI.

⁵ This list of topics is by no means exhaustive.

⁶ These data appear to be fairly comprehensive for faith traditions in the USA: Thumma’s (2012) list of 26 denominations includes Jewish, Muslim, Unitarian Universalist, Baha’i, and many varieties of Christian congregations (including Mormons), plus “Non-Partner Denominations/Traditions” (p. 10). It does not name Buddhist, Hindu, or Quaker denominations.

⁷ Bell (2006) used the phrases “techno-spiritual practices” (p. 141ff) and “the techno-spiritual” (p. 145ff) to characterise the use of information and communications technology (ICT) in religious and spiritual practices. The HCI community has adopted “techno-spirituality” as a more general term for the use of technology in spirituality and religion, including the study of subjective experience.

Unfortunately, HCI gives spirituality and religion in general — and spiritual and transcendent experiences (TXs⁸) in particular — far less attention than their presence and influence in people’s lives suggests they deserve. For at least a dozen years, anthropologist Genevieve Bell has written (Bell, 2004, 2006) and spoken (Bell, 2010; Madrigal, 2012) about the importance of “techno-spiritual practices” (Bell, 2006) to HCI, calling spirituality one of the most important “underexplored” areas of HCI research (Bell, 2010). As long ago as 2004, she reported that in the previous year approximately as many Americans had searched the Internet for information on religion as had downloaded music (Bell, 2004). Recent findings such as those of the aforementioned Pew Research Center study (2012) give additional weight to what I call Bell’s “great exhortations”. But as of December 2012, HCI research in the ACM-DL was still relatively scarce^{iv}, and it overlooked several types of techno-spiritual practices that existed “in the wild” (Buie & Blythe, 2013b).

I argue that HCI needs to consider *subjective* spiritual and transcendent experiences as well. First, such experiences — experiences of connection with something greater than oneself — are relatively common. A 2009 study involving interviews with a representative sample of 4096 British adults (Castro, Burrows, & Wooffitt, 2014) found that 12.4% reported having had at least one mystical or transcendent experience; and a 2004 study involving interviews with a representative sample of 1328 American adults found that just over one-third of them had had “a religious or spiritual experience that changed [one’s] life” (Smith, 2006, p. 284). Second, although it is not clear how frequently such experiences occur whilst the experiencers are actually using technology, it is undisputable that a great many people use technology in their spiritual and religious practices. I argue, therefore, that it is reasonable to conjecture that the overlap — the frequency of TX in spiritual and religious practices that use technology — is high enough to be worth pursuing as an HCI research area. Third, TXs can have transformative effects on people’s lives (Levin & Steele, 2005; Waldron, 1998). Such effects include increased subjective well-being (Palmer & Braud, 2002) and “transformations in worldview, self-concept, and value-orientation” (Garcia-Romeu, Himmelstein, & Kaminker, 2015).

Thus, considering HCI’s growing interest in positive design and positive computing and its increasing emphasis on doing good, the popularity of techno-spiritual practices combined with the incidence and effects of TXs underscores the importance of conducting HCI research on facilitating subjective transcendent experiences.

⁸ I use the initialism “TX” because the “X” aligns with “UX” for “user experience”.

1.2 Why “Transcendent” Experiences

Transcendent, spiritual, religious, mystical, peak, numinous — so many names we call the experiences, but what are the differences among them? And which term should I use in my research? (*Is there in fact a best term?*) Do all the names refer to the same thing? I’ll answer those questions in Chapter 2, but I want to say a few words before I get started, in hopes of aiding understanding and ease of reading.

Transcendent experiences come in many flavours. Levin and Steele (2005) use “transcendent” as the general term, listing a score of alternative names for “the ultimate expression of subjective awareness” (p. 89) and observing that the experiences can range in intensity and duration from the relatively light and transient “flow” experience that Csikszentmihályi described in 1970 (Csikszentmihályi, 2013) to an intense and lasting state of mystical awareness that Underhill described in 1920 (Underhill, 1960). Although Levin & Steele (2005) do not explain why they chose “transcendent” as the general term, they note that it is one of the two words that most commonly characterise the experiences (the other being “transpersonal”). They explain:

This experience typically evokes a perception that human reality extends beyond the physical body and its psychosocial boundaries. A principal characteristic of this experience involves transcendence of one’s personal identity and dissolution of a primary conscious focus on or grounding in one’s ego. Another frequently described element of this experience is the perception of merging or identification with the source of being—whether known as God or Higher Self or the Absolute or Eternal. Accordingly, this experience is most commonly described as both transpersonal and transcendent. (p. 89)

They go on to list twenty alternative names for the experience, offering this observation:

Its variety of labels suggests that it is not perceived in exactly the same way by everyone. Across religious traditions, especially, considerable diversity in characterizations of transcendent and mystical experiences is apparent. (p. 89)

The transcendent experiences that my research covers do not include the general experience of flow. Although Levin & Steele (2005) define flow as a type of transcendent experience, they point out that it is a less intense form and note that Csikszentmihályi himself wrote that “in its most extreme form” (p. 90) it can involve self-transcendence. Flow experiences are associated with challenging and enjoyable activities such as athletic and artistic pursuits, which can involve deep concentration and immersion in a highly complex activity (Csikszentmihályi, 2013) but with a few exceptions (e.g., Kotler & Wheal, 2017)⁹ generally are not described as experiences of connection with something larger and beyond oneself. Thus I do not study flow experiences *per se* — the HCI literature already covers rather well the phenomenon of flow in computer-based activities (e.g.,

⁹ Note that this book is in the popular press and the authors are not academics.

Cowley, Charles, Black, & Hickey, 2008; Polaine, 2005; Wang, Yan, Zhang, & Zha, 2015), and I am interested in experiences that are not necessarily triggered by or focused on an activity. Interestingly, Levin & Steele's (2005) list of names does not include "spiritual experience", "religious experience", or "noetic experience". Given what other researchers have written about experiences that bear one of these three names (many of which I discuss in this thesis), I include them in the list of names — bringing the total to twenty-four (23 for my research, excluding flow).

When I started my research programme I referred to "spiritual and numinous" experiences. I omitted the word "numinous" from my participant recruitment materials and consent forms because I expected most people to find it unfamiliar. As I went along, I discovered how many people associated "spiritual" with "religious" — and since I was interested in all types of experiences of the human spirit I found myself needing to add "which may or may not be religious" and to explain that the "something larger" with which people might feel a connection could be a deity or something else, such as Nature or the Universe. Chapter 2 gives more detail about the terms *spiritual*, *religious*, *transcendence*, and *transcendent experience* and how I use them in this thesis.

1.3 Open Questions

Despite the clear need for increased research into techno-spirituality, the HCI community has continued to give the topic less than its due. As of late 2012 the ACM Digital Library (ACM-DL) contained only 98 HCI works¹⁰ that addressed it at all (Buie & Blythe, 2013b); of these, a mere 19 were research papers focused on it, and almost half of those were the work of one person and her colleagues. Similarly, HCI research on subjective techno-spiritual experiences lags substantially behind closely related components of subjective user experience such as aesthetics, emotion, and immersion. Six of the aforementioned 19 papers (Gaver et al., 2010; Hlubinka, Beaudin, Tapia, & An, 2002; Vidyarthi, Riecke, & Gromala, 2012; Woodruff, Augustin, & Foucault, 2007; Wyche & Grinter, 2009; Wyche, Magnus, & Grinter, 2009) covered subjective TX in any substantive way; only one (Laarni, Ravaja, Kallinen, & Saari, 2004) addressed it as the primary research focus.

How best to begin closing this gap? Researching techno-spiritual practices *as practices* and designing artefact support for them are, I argue, relatively straight-forward matters. Although we may be unfamiliar with the beliefs, practices, and customs of a specific faith tradition for which we are exploring design, we can use ethnography to learn about them, as Wyche & Grinter (2012) did in their study of sketching to support design for charismatic Pentecostals in Brazil. Designing

¹⁰ The paper for which I searched the literature in 2012 was intended for the ACM HCI community, the Special Interest Group in Computer-Human Interaction (SIGCHI). Therefore, my search took as its scope the work published by the ACM and affiliated organisations, hosted in the ACM-DL.

for *subjective* TXs, however — even researching them — poses a much greater challenge, as the experiences themselves elude description and definition (Braud, 2002b; Castro, 2009; Stace, 1960). According to Kohls, Hack, & Walach (2008), the difficulty of putting these experiences into words makes it difficult to research them: “[I]t could be even more difficult to embed them within standardized questionnaires” than to describe them, they point out (p. 157). Fortunately, they maintain that such experiences “can be approached *indirectly* and *implicitly*” (*ibid.*, emphasis mine), pointing out that mystics have historically used “metaphors, allegories and paradoxes” (*ibid.*) to convey a sense of what they experienced.

“The ineffable eludes definition;” write Boehner, Sengers, & Warner (2008), “yet we know it when we experience it” (p. 6). They were referring to aesthetic experience, although the same holds for transcendent experience, arguably even more so. We might wish that the challenge were simply a matter of the difficulty of verbalising the experience, in which case we might consider methods such as the one Boehner et al. (2008) used: they designed a system for two of the researchers’ own use and used critical reflection to consider its potential by exploring their reactions to it. Unfortunately, for TXs the matter is not so simple: such experiences are not only ineffable but *unforeseeable*. Although when aesthetic experience researchers create their study conditions they cannot know what *kind* of aesthetic experience a person will have, they do know that she will *have* one, and they can study that. In contrast, transcendent experiences cannot be triggered with certainty¹¹; nor can they be anticipated with confidence; they can only be *invited* (Gaggioli, 2016). A participant in my research interviews, a man who often has TXs in religious services, stated the difficulty simply and clearly: “You can’t dial it up, [although] you can put yourself in the way of it.” Thus, even if we understand very well the conditions under which such experiences tend to occur, we cannot guarantee observing one even if we create those conditions intentionally.

To address the question of techno-spiritual design for transcendent experiences and the transformative effects they can have, HCI needs first to gain an understanding of TXs as they are experienced and to discover whether and, if so, how artefacts support the experiences and the positive effects of those experiences on people’s lives. Then it needs to explore ways of designing to enhance such support and facilitate the effects, given the ineffability and unforeseeability of the experiences and their unsuitability to “classic” HCI methods. What are some approaches we might explore that have been used in design for other types of subjective experiences? What are some insights we might gain from ways in which fields outside HCI have contemplated techno-spiritual

¹¹ I exclude conditions involving *entheogens*: although such substances may reliably induce TXs (Griffiths et al., 2011; Griffiths, Richards, McCann, & Jesse, 2006), those conditions would not inform HCI research into the possible contributions of artefacts to TX.

design? How can we apply Kohls et al.'s (2008) advice to investigate TX “indirectly and implicitly” (p. 157) in devising an approach to techno-spiritual design for transcendent experience?

1.4 Roadmap to the Thesis

In this thesis I offer a critical exploration of subjective spiritual and transcendent experiences, ways in which artefacts support such experiences, desires that people have for additional artefact-supported enhancement for those experiences, and some ways in which design can contribute to such enhancement. After presenting the literature review and the methodology, I describe a process of in-depth interviews with 24 adults from a wide variety of spiritual and religious backgrounds — addressing their spiritual practices and how they use artefacts in them, eliciting descriptions of one or more spiritual and transcendent experiences they have had, and ending with their desires for enhancements to such experiences and to artefact support for them. I describe the development of a preliminary grounded theory of TX from the analysis of interview data regarding the experiences themselves, followed by its elaboration into a grounded theory of transcendent *user* experiences (TUX) by the addition of interview data analysis regarding artefact use and desires for enhancement. I summarise the explorations of design fiction to which I contributed and the inspirations they offer to the process of designing for transcendent user experience. I describe the development of a design game and its use in a workshop, applying findings and insights from the grounded theory to inspire and elicit techno-spiritual design ideas for TX by approaching the experiences indirectly and implicitly in an atmosphere of imagination, fun, and play. I discuss implications of my findings to techno-spiritual design and some possible limitations of my approach. I conclude by describing the contributions of my research to HCI, envisioning the potential applicability of my work to areas outside HCI, and suggesting follow-on work to explore refining and expanding my approach and investigating its applicability.

1.5 Notes on Reading this Thesis

This thesis uses footnotes, endnotes, and glossary entries to elucidate and clarify some of its points. Footnotes use Arabic numerals (1, 2, 3...) as indicators, endnotes use Roman numerals (i, ii, iii...), and glossary entries use dotted underlines.

Chapter 2 – Background and Related Work

When we survey the whole field of religion, we find a great variety in the thoughts that have prevailed there; but the feelings on the one hand and the conduct on the other are almost always the same, for Stoic, Christian, and Buddhist saints are practically indistinguishable in their lives.

– William James, *The Varieties of Religious Experience*
(1902, pp. 486–487)

There are varieties of experiences, good and bad, and we need to characterise these varieties if we are to improve user experience.

– McCarthy, Wright, Wallace, & Dearden, “The experience of enchantment in human–computer interaction” (2005, p. 369)

In this thesis I present research that bridges two disparate domains of subjective experience. On one side lies transcendent experience, the experience of connection with something greater than oneself; on the other, user experience, the experience of using artefacts¹². Although both research domains address subjective experience, they view experience somewhat differently and take divergent approaches to it. Transcendent experience research concentrates on (usually brief) experiences, seldom considering the role or design of artefacts. User experience research focuses on (often ongoing) experiences with artefacts, treating the nature and quality of subjective experience as key but rarely considering transcendent experiences that occur during use or how artefacts support them. My research bridges the two domains (Figure 2) by studying how artefacts support transcendent experiences and exploring how design may contribute to that support. This chapter presents a review of TX and UX literature that provide background for this thesis, and of related literature on techno-spirituality.

2.1 Two Domains of Subjective Experience Research

2.1.1 *Transcendent Experience: Brief Experience, No Artefacts*

The TX literature generally regards a transcendent experience as a single, relatively brief episode (Rankin, 2005). Although researchers acknowledge that such an experience may occur multiple times or may have a lasting effect by triggering life changes, in general the literature does not treat lasting effects or recurrences as an aspect of the TX itself. Levin & Steele (2005) represent a notable exception in describing two *types* of transcendent experience, one being a longer lasting, “mature” type — “a more enduring serenity and equanimity [that] is not so much about transient mystical feelings or phenomena as about entering into a new state of awareness” (p. 90).

¹² For simplicity I use “artefact” as the general term, although HCI and UX also address things that are more complex than what we normally think of as artefacts (e.g., control centres) as well as more abstract things that may or may not involve technology (e.g., policies, procedures, services).

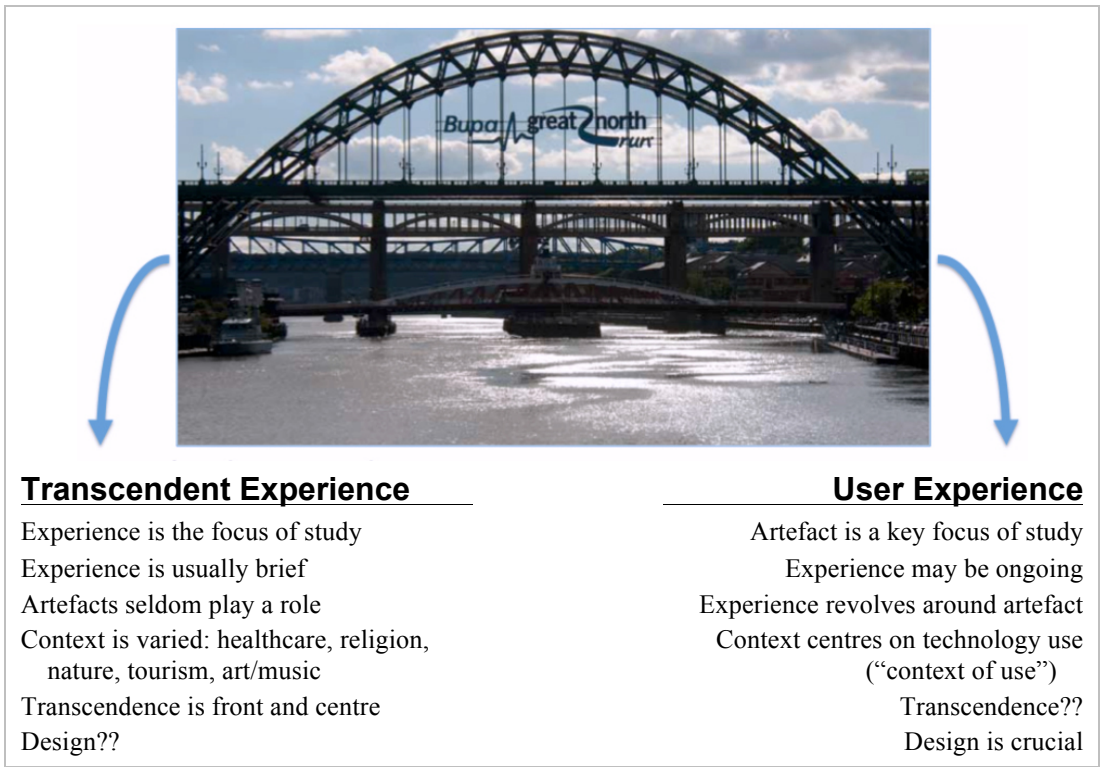


Figure 2. My research bridges two disparate domains of subjective experience research

I maintain, however, that the “self-transformational shift in one’s consciousness or spiritual perception” of which they write (p. 90) is, for the most part, more a way of experiencing or a generally spiritual or self-transcendent outlook (Cloninger, Svrakic, & Przybeck, 1993; Kavar, 2015; Piedmont, 1999), than it is an *experience* of the sort on which TX research focuses.

Rarely does transcendent experience research consider the role of artefacts, let alone their design, in the experiences it studies. Although the contributions of some kinds of artefacts to fostering such experiences have been studied and written about, even for centuries — architecture, art, and music¹³ being prominent examples — those writings generally do not lie within the body of research on subjective transcendent experience but within that of religion (Atkins & Schubert, 2014; Gojmerac-Leiner, 2015; Pike, 2002; Westermeyer, 2013) or of the creative endeavour itself (Barrie, 1996, 2013; Bogdan, 2010; Britton, 2011; Essawy, Kamel, & Elsayy, 2014; Gabrielsson & Lindström, 2003; Herz, 2015; Lipe, 2002).

¹³ Although music is not an artefact *per se*, most music — with the exception of unaccompanied voice, performed live and without amplification — depends on artefacts to be heard. Most art is depicted by or as artefacts; in fact, the word “artefact” is etymologically related to “art”.

Most TX research appears in the literature of healthcare (Rousseau, 2014), and much of the rest of my TX corpus comes from psychology or religion. (See Section 2.2.2 for a discussion of the sources of TX research.) Although I have not analysed in any depth the experiential contexts mentioned in this literature, the research works in my corpus that mention context tend to focus on spiritual practices and activities, spiritually meaningful environments such as religious services and nature, and physical and mental healthcare.

2.1.2 User Experience: Extended Experience, Artefacts Key

User experience research considers the UX of products, systems, and services, most of which have at least some high-tech and electronic aspects. Roto, Law, Vermeeren, & Hoonhout (2011)¹⁴ point out that UX has three faces: it exists as a phenomenon, a field of study, and a practice. UX often considers experience to be ongoing and not limited to a specific episode or encounter with the artefact: McCarthy & Wright (2004a), for example, talk about “an experience”, but on the whole they consider the process of reflecting about an experience and making sense of it to be part of the experience itself, even when such reflection lasts a long time:

Our sense of any particular situation depends on previous experience and reflection. Objects and situations attain a meaning for me in my ongoing experience with them and reflections on them. As meanings developed through reflection are absorbed by the object or situation, the sense of that situation changes. (p. 116)

In addition, Donald Norman, who popularised the phrase “user experience” in HCI research and practice, maintains (NNgroup, 2016) that “user experience” is the totality of a person’s experience with an artefact, including his experience with the company that produced it — which can last a very long time indeed¹⁵.

The contexts of UX research began with the human factors focus on the context of office work. It widened as “[t]echnology spread from the workplace to our homes and everyday lives and culture” (Bødker, 2015, p. 26). Various analyses of context have appeared — for example, Dourish (2004) analysed the treatments of context in HCI and proposed a phenomenological view of context not as a stable situation but as “an interactional problem” (p. 22) that “is particular to each occasion of activity or action” (*ibid.*) and that “*arises from the activity*” (*ibid.*, emphasis his). Yet UX research has naturally continued to address the *context of use*, as it is explicitly concerned with experiences associated with the use of technology.

¹⁴ I contributed to this white paper as a UX practitioner.

¹⁵ I bought my first Apple product — a Macintosh SE — in 1987, after having used a Macintosh at work for more than a year.

2.1.3 Transcendent User Experience: Bridging the Domains

The UX perspective on experience as interactive and ongoing makes perfect sense in the context of experience with artefacts — and I argue that UX needs to pay more attention to transcendent experiences in users’ experiences with artefacts in all contexts. Such experiences are not about the use of the artefact, necessarily, but they may be facilitated by artefacts and as such are important for UX research to consider. The TX perspective on experience as subjective and transformative makes perfect sense in the context of the types of experience it studies — and in my view TX needs to pay more attention to the ways in which artefacts can facilitate the experiences. In bridging these domains, I explore various aspects of transcendent experiences, how artefacts support those aspects, and how design can contribute to that support.

2.2 Background: Transcendent Experience Literature

Transcendent experience research provides critical background for the type of user experiences on which my research focuses. To set the stage for the discussion of TX, I explore the meaning of transcendence and how I distinguish amongst the three related concepts of transcendence, spirituality, and religion.

2.2.1 Spirituality, Religion, and Transcendence

As I explained in Chapter 1, I initially called the experiences of interest “spiritual experiences”, later switching to “transcendent experiences” to avoid giving the impression that I was studying specifically religious experiences. It is, however, impossible to study transcendent experiences without reference to either spirituality or religion: many people see the concepts as inextricably intertwined, and many TXs unfold in religious contexts. In this subsection I discuss these terms and how I use them.

Spirituality vs religion

Spirituality and religion have historically been connected; only in the last century has academia begun to address them separately (Rousseau, 2014) and academics have not yet reached a consensus. Streib & Hood (2011) argue against the separation, pointing out that academic language needs to be more precise than general usage and urging academia to maintain usage that considers spirituality an aspect of religion. Rousseau (2014) supports the separation, citing James’s (1902) description of “institutional religion” and “personal religion” and arguing that “spirituality” has come to represent what James meant by “personal religion”. Researchers who separate spirituality and religion tend to see spirituality as a relationship with (or search for) the sacred and religion as involving a set of beliefs and practices regarding that relationship. “To put it bluntly,” comment Kohls and Walach (2006), “spirituality focuses primarily on experiences and insights,

while religion can be regarded as a complex cultural and social framework that tries to encapsulate, interpret and facilitate spiritual experiences” (p. 126).

I find persuasive the arguments by Rousseau (2014) and others for spirituality as a separate construct. I also recognise that although many people experience their spirituality within a religion, a growing number call themselves “spiritual but not religious” (Pew Research Center, 2012a; Saucier & Skrzypińska, 2006). Thus, I separate spirituality and religion.

The literature contains many definitions of spirituality^v. All of them, note Giordano & Engebretson (2006), “address a universal aspect of the human condition” (p. 216). Observes Kourie (2007), “everyone embodies a spirituality” (p. 19). My research addresses spirituality and transcendent experience irrespective of religious or spiritual background or perspective. I assume that people of any faith, or of no faith, may have transcendent experiences.

Transcendence and transcendent experience

Transcendence, or self-transcendence, constitutes seeing beyond oneself and connecting to something greater or higher. Maslow (1969) defines *transcendence* as

the very highest and most inclusive or holistic levels of human consciousness, behaving and relating...to oneself, to significant others, to human beings in general, to other species, to nature, and to the cosmos. (p. 66)

Seligman (2012) defines it as

emotional strengths that reach outside and beyond you to connect you to something larger and more permanent: to other people, to the future, to evolution, to the divine, or to the universe. (p. 259)

A transcendent experience, in Maslow/Seligman terms, would be an experience of connection with “something larger and more permanent” than oneself — a deity, perhaps, or Nature, or even a community.

Some researchers observe that transcendent experience is not one single type but comprises a range of *levels* of transcendence. Levin & Steele (2005) comment that a TX “typically evokes a perception that human reality extends beyond the physical body and its psychosocial boundaries” (p. 89). They note that TX covers a fairly wide spectrum, from the lightness of Csikszentmihályi’s (2013) “flow” to the depth of mystical experience, in which one perceives oneself to merge with the Divine or the Universe. Beasley (2013) defines TX as “any experience that induces or is perceived as a transcendent state of mind” (p. 101) and states that it comprises “a continuous range of experiences embracing slight to deep immersion into a transcendent state; for example, from a simple feeling of peace to a profound numinous or mystical experience” (p. 102).

Transcendent experience goes by various names, including the following¹⁶:

- Mystical experience
- Religious experience
- Numinous experience
- Peak experience
- The peace of God, which passeth all understanding
- Samādhi
- Cosmic Consciousness
- Satori
- Flow¹⁷

Reed (2013) offers a definition that may explain the range:

Human beings are...capable of an awareness that extends beyond physical and temporal dimensions [and which] may be experienced through altered states of consciousness, but more often it is found in everyday practices in reaching deeper within the self and reaching out to others, to nature, to one's God, or other sources of transcendence. Self-transcendence embodies experiences that connect rather than separate a person from self, others, and the environment. (p. 111)

This definition brings into the concept not only the deeper “awareness that extends beyond physical and temporal dimensions” but also the lighter connection to “self, others, and the environment.”

Therefore, all forms of transcendent experience are in scope for my research. When I cite other authors, I use their terms. But unless the cited/quoted material addresses that type of TX in some specific way, I am addressing transcendent experience in general.

Spirituality, religion, transcendence, and transcendent experience in this thesis

On the basis of the foregoing analysis, I use the terms as follows:

- *spirituality*: a person's relationship with the sacred or transcendent, with his ultimate values, with what that enables him to create purpose and meaning in his life; the search for the sacred or transcendent
- *religion*: beliefs and practices that support a person's relationship with the sacred, whether practised alone or with others; the organised practice of a set of beliefs and practices by the adherents of a faith tradition
- *transcendence, self-transcendence*: an awareness of, and connection with, something beyond and greater than oneself
- *(a) transcendent experience (single)*: an *individual* experience of connection with transcendence, whether sacred or secular, having a beginning and an end; it may be

¹⁶ Many (but not all) of these names appear in Levin & Steele (2005), p. 90, although that list is longer than what I have included here.

¹⁷ A flow experience may include transcendence, but I argue that flow *per se* is not necessarily a transcendent experience because it focuses on activity and accomplishment.

spiritual or religious, deep or light (I refer to this as “a transcendent experience” or, in the plural, “transcendent experiences”)

- *transcendent experience (collective)*: a person’s total experience of connection with transcendence, through one *or more* individual transcendent experiences (I refer to this as “transcendent experience” in the sense of experiencing transcendence)

The rest of Section 2.2 presents my review of relevant TX literature.

2.2.2 Sources of Transcendent Experience Literature

Modern academic research on the subjective qualities of transcendent experience began about 1900 (Zinnbauer & Pargament, 2005) with psychologist William James’s pioneering book, *The Varieties of Religious Experience* (James, 1902). Called a “classic” of early psychological literature on the subject (Bloom, 2012; Griffiths, Richards, Johnson, McCann, & Jesse, 2011),

Varieties was the first to describe *dimensions* of TX. An example of such dimensions appears in James’s quote of a friend’s description of an experience:

“There was not a mere consciousness of something there, but...a startling awareness of some ineffable good... Not vague either, the sure knowledge of the close presence of a sort of mighty person, and after it went, the memory persisted as *the one perception of reality.*” (James, 1902, pp. 64–65, emphasis mine)

James commented:

My friend...*does not interpret these...experiences* theistically, as signifying the presence of God. But it would clearly not have been unnatural to interpret them as a revelation of the deity’s existence. (p. 65, emphasis mine)

The above comment clearly reveals the distinction James was making between the perceptual and interpretive components of a transcendent experience. Later scholars — most notably Stace (1960) and Hood (e.g., Z. Chen, Hood, Yang, & Watson, 2011; Hood, 1975, 2001; Hood et al., 2001; Hood, Morris, & Watson, 1993) — have built on and elaborated James’s work and deepened our understanding of TX dimensions.

The transcendent experience literature is based in the spirituality literature, the majority of which comes from the healthcare field (Rousseau, 2014) and includes contributions from other literatures as well (the main ones appear below in alphabetical order):

- business (including marketing and management) (Schouten, McAlexander, & Koenig, 2007; Wood, 2013)
- neuroscience and neurotheology (Braud, 2002a; Cooke & Elcoro, 2013; Newberg, 2010; Newberg & Newberg, 2005; Urgesi, Aglioti, Skrap, & Fabbro, 2010)
- philosophy (Forman, 1989; Hodges, 2014; Stace, 1960)
- psychology (A. B. Cohen, Gruber, & Keltner, 2010; Emmons & Paloutzian, 2003; Hood, 1976, 2005; Hood et al., 1993; Maltby & Day, 2001; R. F. Paloutzian & Park, 2005)
- religion and theology (Z. Chen et al., 2011; Fuller, 2006b, 2007, Hood, 1975, 1977; Jantzen, 1990)

- social sciences (Castro, 2009; della Dora, 2011; Hill et al., 2000; Long & Averill, 2003; Maselko & Kubzansky, 2006)
- tourism and hospitality (Prazeres & Donohoe, 2014; J. H. S. Seo, 2012; Sharpley & Jepson, 2011; Tsaour, Yen, & Hsiao, 2013)
- wilderness and nature (Ashley, 2012; Cianchi, 2015; B. Johnson, 2002; White & Hendee, 2000; K. Williams & Harvey, 2001)

Healthcare dominates this work, however. A search for <spirituality AND religion> on Google Scholar on 20 March 2017 produced approximately 759,000 results (up from 455,000 in March 2014); a search for <"spiritual experience"> yielded about 58,400 (up from 47,300)¹⁸. Most of the first hundred results from each search (sorted by relevance) appear in the literatures of healthcare, mental health (psychiatry, counselling, social work), and psychology.

The healthcare community's concern with spirituality arose from a growing awareness of the need to assess and care for the spiritual needs of patients nearing the end of life or facing a serious or life-threatening condition. For example, the two earliest references in my corpus (Ryder & Ross, 1977; Toot, 1984) both cover end-of-life care. Other contexts in which healthcare researchers were studying spiritual care more than 25 years ago regard the chronically ill (e.g., Miller, 1985), the elderly (e.g., Forbis, 1988) and people with substance abuse problems (e.g., Krystal & Zweben, 1988). "Helping patients to fulfill their spiritual needs is part of the nursing process", asserts Forbis (1988, p. 158). To aid in understanding and addressing patients' spiritual needs, healthcare research has explored the meanings of *spirituality* and *religion* and has developed instruments for assessing spirituality, spiritual experience, and spiritual needs. Some healthcare research explicitly addresses the relationship between spirituality and health, including mental health; in fact, specialised journals publish research on this connection — for example, the *Journal of Religion and Health* began publication in 1961, the *Journal of Spirituality in Mental Health* in 2006.

2.2.3 Common Themes in Transcendent Experience

An analysis of the literature describing the experiences of interest reveals a number of themes in the descriptions. Researchers have found these experiences to occur in a wide variety of contexts: during group and individual activities (Newberg & Newberg, 2005); in religious and secular settings although more frequently in religious ones (Emmons, 2005; Giordano & Engebretson, 2006); during spiritual and religious activities although more frequently in religious ones (Emmons, 2005); and in many types of people although more commonly in people who self-identify as religious or spiritual (Emmons, 2005). Maslow (1964) stresses, however, that peak

¹⁸ I cannot make the same comparison of searches for "transcendent experience" because I switched to using that term only in the summer of 2014 and didn't conduct that particular search at the time.

experiences are not limited to religious contexts or people; and my research explores transcendent experiences in any context, from any religious/secular perspective.

More interesting than the contexts are the characteristics of the experiences and the perceptions and reactions that research has found these experiences to involve. Several key adjectives commonly appear in reports of transcendent experiences:

- ineffable (Anthony, Hermans, & Sterkens, 2010; Garcia-Romeu, Himmelstein, et al., 2015; Gellman, 2010; Giordano & Engebretson, 2006; Hanes, 2012; Schouten et al., 2007)
- powerful, intense (A. J. Cohen, 2015; Levin & Steele, 2005; Schouten et al., 2007)
- ephemeral, transient (Castro, 2009, 2015; James, 1902; Schouten et al., 2007)
- paradoxical, surprising (Gellman, 2010; Sobchack, 2008; Waldron, 1998)

Commonly reported perceptions are:

- a sense of oneness, unity, or immersion — with nature, humanity, the divine, the infinite — and a reduced sense of ego, of boundaries between self and other (Hood et al., 2001; Maslow, 1964; Newberg & Newberg, 2005; Schouten et al., 2007; K. Williams & Harvey, 2001)
- a sense of nothingness (Fox, Gutierrez, Haas, Braganza, & Berger, 2015; Gellman, 2010; Hood, 2001)
- a sense of the presence of a numinous, mysterious, or divine power or entity (Feenstra & Tydeman, 2011; Fire, 2010; Hill et al., 2000; Maslow, 1964)
- noetic quality (Caird, 1988; Z. Chen et al., 2011; A. J. Cohen, 2015; MacLean, Leoutsakos, Johnson, & Griffiths, 2012; Schlitz, Vieten, & Amorok, 2008; Wardell & Engebretson, 2006)
- sense of timelessness and spacelessness, altered state of consciousness (Giordano & Engebretson, 2006; Maslow, 1964; K. Williams & Harvey, 2001)
- focused attention, absorption in the moment, immersion (Braud, 2001; Schouten et al., 2007; K. Williams & Harvey, 2001)

Commonly reported reactions¹⁹ are:

- awe, wonder, reverence, surrender, devotion (Braud, 2001; Emmons, 2005; Hill et al., 2000; Maslow, 1964; Newberg & Newberg, 2005)
- ecstasy, emotional intensity (Braud, 2001; MacKenna, 2009; Newberg & Newberg, 2005; Schouten et al., 2007)
- peace, tranquillity, beauty, acceptance (Maslow, 1964; Newberg & Newberg, 2005; Underwood & Teresi, 2002)
- gratitude (Braud, 2001; Emmons, 2005)
- chills, goosebumps, tingling (Braud, 2001; Palmer & Braud, 2002)

¹⁹ In this thesis I use “reacting” and “reaction” to refer to what occurs whilst the experience is unfolding and perhaps immediately afterward. I place later or longer-term effects and more detached, considered responses in the *integration* stage. I do not give “reaction” and “response” any formal meanings they may have in some contexts; nor do I give “react” the negative connotation that popular psychology often ascribes to it. I merely use these terms as a convenient way of distinguishing the two concepts.

Finally, transcendent experiences can have profound and long-lasting effects on the people who have them. They can produce epiphany and conversion (Braud, 2001; Schouten et al., 2007); they can be transformative (Castro, 2015; Gaggioli, 2016; Garcia-Romeu, Himmelstein, et al., 2015; Maslow, 1964; Schouten et al., 2007; Shewchuk, 2015).

Below, I discuss a few key aspects of transcendent experiences.

Ineffability

The characteristic that researchers, for more than a century — including James (1902) — have described as central to TX is ineffability, the quality of being beyond words. The OED gives the following definition for *ineffable*:

That cannot be expressed or described in language; too great for words; transcending expression; unspeakable, unutterable, inexpressible ('ineffable', 2017).

Robins (2014) muses on the ineffable from a psychoanalytic perspective:

[T]he ineffable lurks beneath the surface of words like a textual unconscious. Indeed the unconscious and the ineffable correlate, because an unconscious experience is fundamentally an experience that evades explicit verbal articulation. ... The ineffable is an intense feeling that feels unfamiliar because it transcends language; no word fits; words only skim the surface of feeling, and seem to leave something out. ... Ineffability is the quality of unspeakableness, the feeling of not being able to speak, of not being able to find the word, or when the unmentionable overwhelms consciousness. When images override words, and when your mother tongue seems like a foreign language. (Robins, 2014, pp. 3–4)

Braud (2002b) writes that the ineffability of mystical experience may arise from several psychological processes:

...expansion of awareness from center to margin of the field of consciousness...; an attentional shift from a discrete figure to a large, complex, novel ground; limitations imposed by the nature of the “object” of the experience and by our vehicles of perception and cognition; difficulties of memory transfer from mystical to ordinary states of consciousness; and constraints imposed by brain structures, culture and tradition, and self-fulfilling prophecies [*sic*]. (p. 141)

For the mystical experience, he argues, ineffability “may be even more complete or extreme than that of other word-defying conditions” (p. 142).

Ineffability, then, is not merely a difficulty of description due to complexity, unfamiliarity, or (temporary) lack of terminology; it carries the sense of being beyond language because of the very nature of the experience. As Beasley (2013) puts it, ineffability is “beyond rational

conceptualisation” (p. 102). Aesthetic experience may be ineffable; Blockchain²⁰, as complex and hard to describe as it may be, is not.

Wonder and awe

The emotions of wonder and awe feature prominently in transcendent experience, many researchers listing one or both of them as central (Ashley, Kaye, & Tin, 2013; Braud, 2001; A. B. Cohen et al., 2010; Emmons, 2005; Hill et al., 2000; Maslow, 1964; Newberg & Newberg, 2005; Underwood & Teresi, 2002). Fuller (2006b) calls wonder “one of the emotional sources of humanity’s highest cognitive achievements” (p. 381). The emotion motivates us “to venture outward into increased rapport with the environment” (p. 371), he says. Prinz (2013) describes wonder as three-dimensional: sensory (“we stare and widen our eyes”), cognitive (“we cannot rely on past experience to comprehend them”) and spiritual (“we look upwards in veneration”). Wonder unites science and religion, he observes, by motivating them both.

Fisher (1998) holds that wonder depends absolutely on novelty: “there must be no element of memory in the experience” (p. 18) — but it must be utterly new. He describes wonder as an “involuntary” experience (*ibid.*) and explains that memory creates expectation, which precludes the surprise that gives rise to wonder. Fuller (2006a) observes, however, that wonder and novelty can be renewed by “meditation and mystical practices” (p. 131). These practices, he writes,

temporarily deactivate a person’s accustomed way of experiencing the world. As a result, experience appears novel, fresh, unaccustomed. This alteration in our accustomed ways of making sense of the world introduces the element of surprise...” (p. 131)

Fuller (2006a) thus argues that wonder depends on *perceived* rather than objective novelty: we can learn to see the world with new eyes, he says²¹.

At the extreme end of wonder, writes Prinz (2013), lies *awe*.

The Oxford English Dictionary (OED) gives the following definition of awe:

Dread mingled with veneration, reverential or respectful fear; the attitude of a mind subdued to profound reverence in the presence of supreme authority, moral greatness or sublimity, or mysterious sacredness. (‘awe, n.’, 2014, def. 2a)

²⁰ Maxwell & Speed (2015) describe Blockchain as ineffable.

²¹ This suggests that the design approach of defamiliarisation (Bell et al., 2005) might have something to contribute to helping people see familiar surroundings in new ways, thus facilitating the rekindling of wonder. Alternatively, design might find something in meditation and mystical practices on which it could draw, to help people defamiliarise themselves with familiar objects and see them with new eyes.

Keltner & Haidt (2003) conducted an in-depth analysis of literature on awe, most of which came from religion and philosophy. From this they proposed a “prototype”²² (p. 297) of awe comprising the two elements of *vastness* and *accommodation*. Vastness characterises aspects “experienced as being much larger than...the self’s ordinary level of experience or frame of reference” (p. 303); accommodation “involves a challenge to...mental structures when they fail to make sense of an experience of something vast” (p. 304)²³. In a follow-up study, Shiota, Keltner, & Mossman (2007) explain that vastness may be literal, encompassing physical size, or figurative, huge in time, number, competence, complexity, “even in volume of human experience” (p. 950). The critical part, they elaborate, is “the stimulus dramatically expands the observer’s usual frame of reference in some dimension or domain” (*ibid.*). Keltner & Haidt (2003) point out that the need to make sense of the experience may be satisfied or not, commenting that the satisfaction of this need determines whether felt awe is enlightening (positive) or terrifying (negative).

Numinosity

Often a transcendent experience involves a sense of another presence, as we saw in James’s (1902) description of his friend’s experience, above. We term such a presence *numinous*, thanks to Rudolf Otto, who defined^{vi} *numinous* as a *mysterium tremendum et fascinans* (Otto, Twiss, & Conser, 1992) — a sense of mystery and awe of an Other that is both terrifying and fascinating. In proposing *numinous*, Otto aimed to recapture the original meaning of *holy*, which he argued did not initially carry its then-current (i.e., 1917²⁴) connotation of being morally or ethically good, but referred only to the ineffable²⁵, “in the sense that it completely eludes apprehension in terms of concepts” (Otto, 1923, p. 5). We need a word, he argued, to convey the meaning of a “unique original feeling-response, which can be in itself ethically neutral” (*ibid.*), without the added implication of goodness, and he proposed *numinous* for that state of mind.

2.2.4 Factors in Transcendent Experience

Experiential and interpretive factors

Some types of transcendent experience — mystical experiences, especially — have been the subject of in-depth research on their nature and whether they may have common experiential features across faith traditions, across people who interpret and even describe them differently. Hood et al. (2001), for example, conjecture that the subjective sense of oneness/unity may be

²² This use of *prototype* refers to a conceptual model; it differs from *prototype* as Design uses it.

²³ Keltner & Haidt’s (2003) concept of accommodation appears to presage Prinz’s (2013) cognitive component of wonder: “we cannot rely on past experience to comprehend them”.

²⁴ The book was originally published in German in 1917.

²⁵ Here, too, ineffability has the sense of being beyond apprehension, not merely difficult to describe.

common to all mystical experiences — “possibly inherent in the nature of the experience” (p. 358) — and that what differs between people (and possibly across cultures) is the interpretations. Smart (1965) agrees, as does Maslow:

... whatever is different about these illuminations can fairly be taken to be localisms both in time and space. ... This something common, ... which is left over after we peel away all the localisms, all the accidents of particular languages or particular philosophies, all the ethnocentric phrasings, all those elements which are not common, we may call the “core-religious experience” or the “transcendent experience” (Maslow, 1964, Chapter III)

A number of researchers since James have analysed TXs and reported the factors they found in them. Stace (1960) led the way, classifying mystical experiences as “introvertive” or “extrovertive” (p. 61) and describing what is now called the “interpretive factor” (Byrd, Lear, & Schwenka, 2000, p. 260) that plays a role in both types. Other researchers have elaborated and elucidated Stace’s model, probably the most prominent being Hood (Z. Chen et al., 2011; Hood, 1975, 1976, Hood et al., 2001, 1993; Hood & Williamson, 2000). An introvertive experience, explain Hood et al. (2001), is a sense of timelessness and loss of self within a greater consciousness — “an experience of nothingness” (p. 692) — and an extrovertive experience is one of unity with everything in the universe. The interpretive factor, write Z. Chen et al. (2011), involves “positive affect, sacredness, noetic quality, and ineffability” (p. 329) and applies to both introvertive and extrovertive mystical experiences. Stace thus argued — persuasively, in my view, and later work (Z. Chen et al., 2011; Hood et al., 2001; Smart, 1965) supports him — that mystical experiences have an experiential “common core” and differ primarily in their interpretations, which are due mostly to culture and religion.

A slightly different three-factor model was suggested by Anthony, Hermans, & Sterkins (2010), who studied mystical experiences in 1,920 Hindu, Muslim, and Christian college students in India. They found experiences of “mystical union with a higher reality” (p. 270) to be significantly more common amongst Muslims and Christians and experiences of “union of self with a wider reality” (p. 274) to be more common amongst Hindus. They attribute this finding to the different mystical traditions of the Abrahamic and Hindu religions, suggesting that the concepts of “vertical” (union with higher) and “horizontal” (wider) mysticism, respectively, are more appropriate for the three-factor model than are introvertive and extrovertive mysticism. Although their study found differences between religions in the subjective aspects of mystical experience, it also validated the concept of a three-factor model comprising two types of mysticism and an interpretive factor.

Whether introvertive/extrovertive or vertical/horizontal, the three-factor model suggests that it may be possible to create a faith-independent design approach for techno-spiritual artefacts aimed at enriching transcendent experience.

Factors in reactions to the transcendent

People approach transcendence in different ways. Hill et al. (2000) see three different emphases in the search for the sacred:

Feeling. “For some, the...search for the sacred is primarily one of feeling” (p. 67). They note that James considered emotion to be “the driving force of religion” and that Otto called encounters with the sacred “a powerful emotional experience” (*ibid.*).

Thinking. “For others, the...search is primarily a way of thinking or reflecting about such issues as the nature of reality or one’s purpose for existence” (p. 68). One may use one’s spiritual perspective as a framework for understanding and interpreting the world.

Behaving. “Finally, for others, how one behaves in the search for the sacred is the defining characteristic of religion or spirituality” (p. 68). People with this view see spirituality or religion as a way of behaving, primarily a set of practices.

The authors comment that although people differ in the feelings, thoughts, and behaviours they exhibit as they search for the sacred, the search usually affects all three. These domains echo what, according to Chuengsatiansup (2003), William James suggested were the criteria for valuing religious experiences: “immediate luminousness [i.e., feeling], philosophical reasonableness [thinking], and moral helpfulness [behaving]” (Chuengsatiansup, 2003, p. 9). The domains also align with experience research in general, which holds that reactions to experience comprise affect, cognition, and behaviour (Klein, Kiesler, & Coughlan, 1961).

The structure of transcendent experience

Some researchers have gone beyond the factors in TX and studied the organisation of components of the experiences. Wardell & Engebretson (2006) developed a taxonomy of spiritual experiences via an inductive qualitative analysis of accounts of experiences written by a large number (477) of practitioners of an alternative medicine technique called Healing Touch. Garcia-Romeu et al. (2015) built a grounded theory of self-transcendent experiences from in-person interviews with a small number of people (15) of varying spiritual backgrounds. Both of the resulting structures contain three top-level components, which overlap a great deal and can be loosely described as (1) what surrounds and sets the stage for the experience, (2) what the person underwent and some aspects of how she perceived it, and (3) at least some part of the person’s response to what she underwent. Although neither work covers the sequence in detail, both structures identify, to some extent, the *before*, the *during*, and the *after* of experience.

2.2.5 Transcendent Experience and the Brain

Some research — particularly in psychology, psychiatry, and neuroscience — addresses the relationship of transcendent experience to brain function. Fulford & Jackson (1997), for example, found that “phenomena which in a medical context would probably be diagnosed as psychotic symptoms, may occur in the context of non-pathological, and indeed essentially benign, spiritual experiences” (p. 41). They argue that spiritual phenomena, even psychotic ones, are not necessarily pathological, and that the distinction between pathological and spiritual phenomena depends on the connection that the phenomena have with the values and beliefs of the people who experience them.

Several studies have investigated the role of psychoactive substances in inducing spiritual experiences. Griffiths, Richards, Johnson, McCann & Jesse (2011) investigated the effects of experiences induced by psilocybin — a hallucinogen used for centuries in some religious practices — in adults who had a regular spiritual or religious practice but had not previously taken hallucinogens. The researchers gave participants a high dose of the drug and obtained striking results:

...when administered under supportive conditions, psilocybin occasioned experiences similar to spontaneously-occurring mystical experiences that, at 14-month follow-up, were considered by volunteers to be *among the most personally meaningful and spiritually significant of their lives* (Griffiths et al., 2011, p. 621, emphasis mine).

More than a year later, participants felt that those mystical-type experiences were still having a positive effect on their lives.

I am not concerned with dysfunction, hallucinogens, or the distinction between transcendent experiences and psychotic episodes. I assume that my interview participants have reasonably good mental health, and I accept as accurate, from their perspectives, both their descriptions of the subjective aspects of the experiences and their explanations of what the experiences mean to them.

2.2.6 Assessing Transcendent Experience and Spirituality

As part of the effort to respond to patients’ expressed spiritual needs and reports of transcendent experiences, the healthcare field has conducted some interesting research on assessing spirituality. “Progress in studying the relationship between religion and health”, noted Idler et al. (2003), required “an adequate measure of religiousness and spirituality” (p. 327). Several instruments have been developed to address this need (Idler et al., 2003; Lawler-Row & Elliott, 2009; McSherry, Draper, & Kendrick, 2002), most of which come from healthcare. These studies have identified multiple factors in or dimensions of spirituality, spiritual health, and spiritual care:

- Spirituality, spiritual care, religiosity, personalised care (McSherry et al., 2002)

- Religious affiliation, personal religious/spiritual history, public practices, private practices, social support, coping, beliefs and values, commitment, forgiveness, daily spiritual experience, overall self-ranking (Idler et al., 2003)
- Church membership, frequency of attendance, frequency of prayer, religious well-being, existential well-being (Lawler-Row & Elliott, 2009)

Although many of the instruments presented in the TX literature assess spirituality or self-transcendence in terms of needs, life orientations, personality factors, or clinical issues, a small number address subjective transcendent experiences. The earliest one (Hood, 1975), which came to be known as “Hood’s Mysticism Scale” (Hood et al., 2001, 1993), assesses reported mystical experiences, concentrating on identifying their dimensions. As previously mentioned, his work validated Stace’s (1960) three factors in mystical experience — introvertive, extrovertive, and interpretive.

Kohls and Walach (2006) express concern about the then-existing assessment instruments, including Hood’s Mysticism Scale. Observing that few of those instruments “grasp spiritual, mystical or religious *experiences*” (p. 126, emphasis theirs), they note that the measures arose from research projects that focus only on “frequency of experience and not their individual meaning” (*ibid.*), and they propose their new Exceptional Experiences Questionnaire (EEQ) to address this concern. Although the EEQ includes items that address negative and pathological experiences, which may not be helpful in designing to support TX, it advanced the field by “separating the occurrence of an experience from the cognitive evaluative component that normally follows it. We have”, Kohls and Walach (2006, p. 127) continue, “thereby forced our participants to separate the phenomenology of an experience from its interpretation”.

Other TX-specific instruments include Underwood & Teresi’s (2002) Daily Spiritual Experience Scale (DSES) and Burdzy’s (2014) Sacred Emotions Scale. The DSES measures an individual’s “perception of the transcendent (God, the divine) in daily life and...of his or her interaction with or involvement of the transcendent in life” (Underwood & Teresi, 2002, p. 23), by addressing “reported ordinary experiences of spirituality such as awe, joy that lifts one out of the mundane, and a sense of deep inner peace” (p. 22). With the Sacred Emotions Scale, Burdzy (2014) aimed “to measure the emotional impact of an individual’s experience of the sacred” (p. iii) and investigate emotional responses in people of different beliefs. Her research found that people respond emotionally in very similar ways to experiences of what they consider sacred, regardless of their particular beliefs about what “the sacred” is. The DSES covers a person’s general spiritual orientation as much as it does spiritual experiences.

Efforts to measure possible correlates of TX appear in the computing literature as well. Muaremi et al. (2013) used wearable devices to monitor the bio-physiological responses of pilgrims to Makkah²⁶ and Madinah during Hajj, a period of Muslim pilgrimage that many pilgrims report as life changing. The paper presents an early study to monitor these data and “to understand, from the individual point of view, the characteristics of each of the pilgrimage stages” (p. 161). The data analysis identified differences in bio-physiological responses between congregational and individual prayers and between spoken and silent prayers. This work, the authors write, “provides a basis toward accomplishing our long-term objective for recognizing health, stress and emotional states of the pilgrims during all pilgrimage stages.” (p. 164) This study is just the first step in that effort, the authors note, and they did not attempt to identify emotional states. They assert, however, that bio-physiological monitoring can aid the study of subjective experience of pilgrimage, and it will be interesting to see to what extent, if any, they pursue emotional states or any other aspects related to transcendent periods in pilgrimage experiences.

2.2.7 Cautions about Fostering Transcendent Experience

In designing for transcendent experiences, one must consider the cautions that some writers express. One of these regards psychological and social issues — specifically, the tendency to get caught up in the pleasure of TXs and continue to pursue them for their own sake. Maslow (1964), for example, warns that some people may be tempted to seek and value peak experiences above everything else in life. This “mystical type”, Maslow writes, may become so obsessed with achieving peak experiences above all else that he or she

...may become not only selfish but also evil. My impression, from the history of mysticism, is that this trend can sometimes wind up in meanness, nastiness, loss of compassion, or even in the extreme of sadism. (Maslow, 1964, Preface).

Mossbridge (2016) cautions that, at the beginning of the path that a noetic experience can spark, “one extremely common pitfall...is to continually explore experiences” (p. 10). A person may be so entranced with the initial noetic experience, she observes, that they may “attempt to find the ‘perfect’ practice that mimics [their] initial noetic experience” (*ibid.*). She warns:

Most of this is not beneficial. Much of it stems from a habit of trying to control when and how the next step on the path appears. What the research suggests, instead, is that once a safe and sustainable practice has been found, what is beneficial is to *do the practice*. (*ibid.*, emphasis hers)

Others express physical concerns. Maslow comments that older people’s bodies and nervous systems are “less capable of tolerating a really shaking peak-experience” (Maslow, 1964, Preface). It is not clear that this statement has been confirmed by empirical research — I have found

²⁶ Often spelt “Mecca” in English-language writing.

none²⁷ — but it is something to keep in mind, especially if we have the goal of creating technology specifically to foster transcendent experience.

2.3 Background: User Experience Literature

The experiential focus of my research aligns with the growing attention that HCI research has paid to subjective experience in recent years, particularly in the last decade or so. McCarthy & Wright (2004a) point out the importance of studying subjective experiences, declaring that “it is only by seeing technology as participating in *felt experience* that we understand the fullness of its potential” (p. x²⁸, emphasis mine).

Hassenzahl (2008) takes it even further: “Insight, pleasurable stimulation, social exchange are the true underlying motives for technology use; feelings and experiences its true outcomes” (p. 11). His “underlying motives” rarely apply to work environments, however: employers tend to choose technologies for pragmatic business reasons and employees use them because their jobs require it (although they may use some of them for personal purposes). He may well be correct, however, within the type of use that most of his research covers: the products that he and his co-authors use to illustrate their points tend to have personal and/or home purposes and contexts, such as a shower calendar (Laschke, Hassenzahl, Diefenbach, & Tippkämper, 2011), a reminder clock (Laschke, Hassenzahl, & Brechmann, 2013), and a vacuum-cleaning robot (Diefenbach, Kolb, & Hassenzahl, 2014). Although Hassenzahl’s published work does not appear to address techno-spirituality *per se*, it would be fair to say that personal and family uses of techno-spiritual products lie within the types of use that he explores. One may accept, then, that his statement about the “true underlying motives for technology use” (Hassenzahl, 2008, p. 11) is likely to apply, at least in part, to the use of technology to support transcendent experience.

User experience is multi-faceted. “Much more deeply than ever before,” write McCarthy & Wright (2004a), “we are aware that interacting with technology involves us emotionally, intellectually, and sensually” (p. 2), and they comment that we therefore must understand the “felt experience” that people have with technology. They address people’s experiences with technology “in terms of aesthetic engagement, situated creativity, centers of value, and sense making” (p. ix). Technology, they stress, is deeply embedded in everyday life and as such must be studied in terms of aesthetics and ethics in addition to functionality — and, I would add, beyond the standard usability factors of effectiveness and efficiency.

²⁷ As an older(ish) person myself, I *hope* it is not true!

²⁸ This “x” is not a placeholder; it is Roman numeral “x”, the tenth page of the introductory material.

HCI increasingly concerns itself with the ways in which our response to aesthetic matters — visual beauty, for example — influences our relationship with technology (Diefenbach & Hassenzahl, 2009; Wallace, 2013). The field is also using in-depth phenomenological interviews to study felt experience (Light, 2006; Obrist, Seah, & Subramanian, 2013).

2.3.1 Defining “User Experience”

What constitutes “user experience” and can it be designed? The term is often used to include interactive user behaviours and even the artefact’s design, in addition to the subjective factors. For example, in 2014 Wikipedia explicitly included behaviour:

User experience (UX) involves a person’s behaviors, attitudes, and emotions about using a particular product, system or service. ... (Wikipedia, 2014)

Two years later, behaviour no longer appeared:

...a person’s emotions and attitudes about using a particular product, system or service. It includes the practical, experiential, affective, meaningful and valuable aspects of human–computer interaction and product ownership. Additionally, it includes a person’s perceptions of system aspects such as utility, ease of use and efficiency. ... (Wikipedia, 2016)

The 2016 article notes, however, that the International Organization for Standardization (ISO) includes “behaviours and accomplishments” (*ibid.*) in its definition²⁹. The ISO view still sees behaviour as *part of* a user’s experience.

Others hold that experience occurs within a person. The “UX White Paper” (Roto et al., 2011) defines it in terms of an “*experiencing*” process and a “user experience” episode:

The verb ‘*experiencing*’ refers to an individual’s stream of perceptions, interpretations of those perceptions, and resulting emotions during an encounter with a system. Each person may experience an encounter with a system in a different way. This view emphasizes the *individual* and *dynamic* nature of experiencing the encounter with a system. (p. 7, emphasis theirs)

and

The noun ‘user experience’ refers to an encounter with a system that has a beginning and an end. It refers to an overall designation of how people have experienced (verb) a period of encountering a system. This view emphasizes the *outcome and memories of an experience* rather than its dynamic nature. (p. 7, emphasis theirs)

²⁹ To be fair, the ISO definition dates from 2010, although ISO standards certainly take longer to change than Wikipedia articles do.

In these definitions, both “experiencing” and “user experience” refer to subjective impressions rather than to interactions and behaviours — although certainly they include perceptions of and reactions to interactions and behaviours.

Davis (2003) urges researchers and designers of experiential systems to “place that work on a solid theoretical foundation” (p. 45). Emphasising the need to consider the *nature* of experience, he draws on phenomenology³⁰ to present the view that our definition of experience must consider the lived experience as the source of information and must take into account “the interaction of the mind and the body in human perception and experience” (p. 46). From phenomenology, he writes, “we learn that experience is... a process that takes place in human minds/bodies” (*ibid.*). Experiences, he stresses, “are constructed out of the interaction of individuals and the world” (p. 47), and each carries a specific point of view:

Not only are experiences *inner mental events*, they are not uniformly so. Experiences are shaped by the expectations of their experiencers and hence there is no one experience that can be said to exist in relation to a given set of data. (*ibid.*, emphasis mine)

To illustrate, he cites aesthetic theorist Wolfgang Iser’s explanation of the difference between what is experienced and the experience itself. Iser, Davis says, likens these concepts to an artistic text and an aesthetic text:

The artistic text is like the stars in the sky, the aesthetic text is like the constellations we overall [*sic*] on them—different viewers can see many different constellations in the same stars. (*ibid.*)

Davis (2003) emphasises that maintaining the distinction between experience and what is experienced “is essential for a theoretically rigorous analysis and design of experiential systems” (Davis, 2003, p. 50).

I find Davis’s argument persuasive. I therefore treat user experience as subjective and phenomenological, occurring within a person; and I consider the rest of what some definitions include in experience (environment, tasks, content, user interface, designed interactions, etc.) to constitute not lived experience itself but *what* is experienced; they belong to the *context* of the experience. They are the *artistic text*, so to speak, the stars in the sky. Certainly those items influence the experience, the constellations perceived — and we cannot understand the experience without knowing a great deal about them — but they do not lie within the actual experience.

³⁰ “Phenomenology is the study of structures of consciousness as experienced from the first-person point of view.” (D. W. Smith, 2013, p. 1). See also Section 3.2.3 of this thesis.

On the basis of the foregoing analysis, then, I use the term *user experience* as follows:

- *user experience (individual)*: a single experience of using an artefact, having a beginning and end (I refer to this as “a user experience” or, in the case of multiple instances, “user experiences”)
- *user experience (collective)*: a person’s total experience of using an artefact and being exposed to its context, including his experience of Norman’s “industrial design graphics, the interface, the physical interaction and the manual” (Merholz, 2008), through one or more individual user experiences (I refer to this as “user experience”)

Sometimes I refer to “the user experience”, and I hope that the context will make it clear whether I mean the individual or collective version.

The rest of Section 2.3 presents my review of user experience literature that is relevant to important aspects of transcendent experience that occurs during artefact use.

2.3.2 Emotion

Emotion is a key aspect of transcendent experience, and any study of artefact support for TX must consider it. Emotion also constitutes a core part of a person’s experience of an artefact. “It is now understood”, write Brave & Nass (2003), “that a wide range of emotions plays a critical role in every computer-related, goal-directed activity...” (p. 54). These authors describe two key aspects of emotion:

- (a) emotion is a reaction to events deemed relevant to the needs, goals, or concerns of an individual; and,
- (b) emotion encompasses physiological, affective, behavioral, and cognitive components (*ibid.*).

Sengers et al. (2002) stress the importance of studying emotion in a way that, rather than treating it as clearly definable information to be used by the system, “respects the rich and undefinable complexities of human affective experience” (p. 1). Transcendent experiences can involve very deep and strong emotions, and the study of artefact-supported TXs must respect that.

2.3.3 Architecture, Art, Music

Since time immemorial, the practices of architecture, art, and music have aimed to influence spiritual and religious experience (Barrie, 2013; Roşca, 2014). The following paragraphs highlight just a few examples of the substantial HCI literature on these aesthetic pursuits.

Dalton et al. (2012) convened a workshop at CHI 2012 to explore what researchers in architecture and HCI might learn from each other. “The vision of pervasive or ubiquitous computing”, they write, “introduced the idea that the environment is fundamental to the interaction process” (p. 2744), and they maintain that interaction design researchers are becoming increasingly aware of the need to understand the role of space in their work. Architects, in turn, have much to gain

from collaboration with HCI, they state, noting that, for example, interactive digital technology controls energy consumption in many buildings.

Dade-Robertson (2012) draws an explicit connection between the architecture of buildings and information architecture (IA), the structure and layout of information to promote navigation, understanding, and finding. Humans, he says, tend to frame artefacts we build in terms of things we can experience with our bodies. Website “navigation”, for example, is an attempt “to frame our experience of interaction with an otherwise abstract and disembodied experience by utilizing an embodied metaphor” (p. 15). He describes three types of spaces with which IA concerns itself: the rather abstract semantic and interaction spaces and the literally spatial “screen space”, whose content we can see in two (sometimes virtually three) physical dimensions.

England (2012) examined the collaboration between digital artists and HCI researchers. Both groups’ thinking, he writes, “has evolved over the years to face new challenges, to provide new ways of investigation and exploration, and to provide new experiences for audiences/user” (p. 710). Yet HCI still needs to build a deeper understanding, he says, of what makes an art experience engaging and meaningful for its audience. This last issue is relevant for my research because engagement and meaning are common aspects of transcendent experience.

Artefacts may support TXs by facilitating the provision of music. Boland & Murray-Smith (2013) developed an interaction style that enabled users to retrieve music from portable devices by tapping rhythms to the devices through their pockets. This method simplified music retrieval, eliminating the need for users to enter or even remember the name or artist of a song, using instead “rhythmic queries from their subjective interpretation and memory of music” (p. 30). A method such as this might help reduce the amount of conscious attention a person would have to spend retrieving music, allowing her to focus on the spiritual practice the music supported.

The ACM Digital Library contains many other works connecting architecture, art, or music to HCI. Detailing this work is outside the scope of this thesis.

2.3.4 Immersion and Presence

Immersion in an artefact-supported activity may turn out to be important in at least some types of transcendent experiences. The HCI literature treats immersion in slightly different ways, some seeing it primarily as related to computer-generated stimuli (such as a “virtual world”) and some focusing more on a narrative (which might, however, be supported by computer-generated stimuli). Seo’s (2011) definition exemplifies the former view: “The concept of immersion”, Seo writes, “is generally defined as a viewer ‘forgetting’ the real world outside of the virtual environment and by a sense of being in a make-believe world *generated by computational*

hardware and software” (p. 1, emphasis mine). Spaulding and Faste (2013) illustrate the latter, focusing on people’s immersion in a narrative, a story. They *are* interested in the role of artefacts in such immersion, though, writing about “immersion and engagement with interactive artifacts” (p. 2852). In both perspectives immersion involves a feeling of being “inside” what is happening, and that impression is important to the experience. I suspect that both perspectives might also involve Samuel Taylor Coleridge’s classic “willing suspension of disbelief” (Coleridge, 1817).

The literature includes studies of immersive technologies designed to support experiences that are, if not intentionally transcendent, at least closely related to transcendence. Thwaites (2005) studied the audience impact of “immersant experience” of two “virtual artworks”³¹ (p. 148), and found that many of the participants found “rapture and pleasure” (p. 154) in the experience. Vidyarthi and colleagues have created and investigated an immersive environment designed to help people learn to practise mindfulness meditation; their work shows user immersion as a key factor in the success of “Sonic Cradle” (see Section 2.4.3).

Gaggioli and his colleagues (Botella et al., 2012; Gaggioli, 2016; Riva, Baños, Botella, Wiederhold, & Gaggioli, 2012; Villani, Gaggioli, & Riva, 2015) study virtual reality technology to support immersive experiences aimed at improving health and well-being in areas such as weight loss and stress reduction. Gaggioli (2016) sees his work as promoting *transformative* experiences:

In principle, a transformative experience could be elicited by various media — including plays, storytelling, imagery, music, films and paintings. However, I argue that a specific technology — immersive virtual reality (VR) — holds the highest potential to foster a transformative process... (p. 106)

Brown & Cairns (2004), pointing out the lack of a clear definition at the time, conducted a grounded theory study of serious players of computer games and defined *immersion* as “degree of involvement with a game”³² (p. 1298). They identified three levels of immersion — “engagement, engrossment and total immersion” (p. 1297) — and described barriers to gamers’ reaching each level. Their “total immersion” level is, I argue, most clearly relevant to transcendent experience: “Total immersion is presence”, they write (p. 1299), a sense of *being* in the space the system creates. The question I see is not whether total immersion makes it easier for a person to have a TX when supported by the system but whether totality is *necessary* for TX in that context.

Although Brown & Cairns (2004) equate total immersion with presence, the HCI literature considers several aspects of presence. Saari (2009) writes that presence occurs when a user

³¹ I submit that Osmose and Ephémère were not virtual artworks but were actual artworks built using virtual reality technology.

³² Brown & Cairns (2004) were studying immersion in the context of computer games, but I argue that their findings apply to all computer-supported environments and perhaps even beyond.

receiving technology-mediated information experiences “the perceptual illusion of nonmediation” (p. 528, quoting Lombard & Ditton (1997)). He writes of spatial presence — the impression of “being there’ in a mediated environment” (Saari, 2009, p. 528) — and social presence³³, the feeling of “being together with another” (*ibid.*). Describing spatial presence as physical presence, he comments that it consists of “feeling immersed, engrossed, engaged” (*ibid.*), which supports Brown & Cairns’s (2004) equating of “total immersion” (Saari’s “immersion”) with presence. I wonder about Saari’s (2009) assigning “immersed, engrossed, engaged” specifically to spatial presence. I see potential value in studying (and designing for) social presence separately from spatial presence, but I would be curious to learn whether Brown & Cairns’s (2004) three levels might apply to social presence as well.

Laarni and colleagues (Böcking et al., 2004; Laarni, Ravaja, Saari, & Hartmann, 2004; Sacau, Laarni, & Hartmann, 2008) report that personality may influence the ability to experience presence in mediated environments. Sacau et al. (2008), for example, found that “absorption, and the capability to be immersed” (p. 2255) were associated with a greater sense of spatial presence. Laarni, Ravaja, Saari et al. (2004) mentioned “willingness to suspend disbelief” as a factor “typically thought to have an impact on presence experiences” (p. 88); they found an association between “extraversion, impulsivity and self-transcendence” and a greater sense of presence (*ibid.*).

On the other side of the “presence” topic is the sense of “a presence”, often called “sensed presence” or “felt presence” (Cheyne, 2001; Cooke & Elcoro, 2013; Latorra, 2005; Shiota et al., 2007; Steffen & Coyle, 2010). Barnby & Bell (2017) describe this as “the subjective experience of the presence of an external entity, being, or individual despite no clear sensory or perceptual evidence” (p. 2). Frantova, Solomonova, and colleagues (Frantova, Solomonova, & Sutton, 2011; Solomonova, Frantova, & Nielsen, 2010) studied the induction of felt presence through subliminal cues inserted “in a media-rich environment with liminal stimulation, dosed carefully, and open to interpretation” (Frantova et al., 2011, p. 179). Blanke et al. (2014) drew on neurological studies to build a robot that “generated specific sensorimotor conflicts” (p. 2681) in a person and induced a sense that there was someone behind her. “[T]he illusion of feeling another person nearby”, they conclude, “is caused by misperceiving the source and identity of sensorimotor...signals of one’s own body” (p. 2681).

³³ Saari (2009) also writes of “co-presence” as a third factor — non-located people “feel a sense of togetherness” (p. 528) when connected electronically — but says it is “a subdivision of social presence” (*ibid.*), so I do not include co-presence as a separate dimension because I do not view the distinction as important for my research.

These two concepts of presence differ substantially, I argue, one being “I sense my own presence in another environment” and the other “I sense the presence of someone or something else near me”. Frantova et al. (2011) see them as related:

One can argue that it is not possible to experience other reality without a feeling of being present elsewhere or immersed. In the context of a felt presence experience, ...immersion [implies] being spatially aware to the extent that other, normally, unreal aspects of the space begin to manifest themselves. (p. 179)

Although they do not support their argument with research, I find it an interesting conjecture and one I would like to see explored further.

These latter three studies (Blanke et al., 2014; Frantova et al., 2011; Solomonova et al., 2010) do not fall within the HCI literature or even that of computing, but I list them here because they involve interaction between people and technology and they add to the discussion of numinous experience.

2.4 Related Research: Techno-Spirituality Literature

My research builds on previous work on transcendent experience supported by artefacts and on designing artefacts to provide such support. Although techno-spirituality research in HCI focuses mainly on technology use in religious and spiritual *practices* (Buie & Blythe, 2013b), it also studies the subjective experience somewhat. Four of the works I published along the path to this thesis (Blythe & Buie, 2014a; Buie, 2014b, 2016; Buie & Blythe, 2013b) are among the 10 items returned on 25 March 2017 by a search for the exact string “techno-spirituality” in the Association for Computing Machinery’s (ACM’s) Digital Library (ACM-DL)³⁴. Fields outside HCI cover techno-spirituality as well. Religion, for example, includes “Digital Religion” (Hutchings, 2012), which largely addresses the sociology of religion (Timothy Hutchings, personal communication, 2016). Museum Studies includes work on numinous experiences of museums and museum objects (Latham, 2013, 2016). A specialism called “cyber-spirituality” exists within both HCI and Digital Religion, but its scope differs from mine — it addresses mainly religion rather than spirituality and the Internet rather than artefacts in general — and only one of the cyber-spirituality works I have found (Gálik, 2015) addresses subjective experience in any way. A new project called Transformative Experience Design, which also bridges TX and UX, is under way at the Catholic University of the Sacred Heart (Milan, Italy), investigating “possible principles and ways in which transformative experiences may be invited or elicited combining interactive technologies,

³⁴ To be fair, I must note that although I wasn’t the first to use this keyword I *have* been promoting its use among researchers on the topic.

cognitive neuroscience and art” (Gaggioli, 2016, p. 98). I consider all of these works to fall under the broad umbrella of techno-spirituality.

Techno-spirituality is a hot topic in the public media. Although very few writings use that phrase, the topic is out there: a Google search for “(spirituality OR religion) +technology” on 25 March 2017 produced approximately 11,300 results. A look through the first few pages of results reveals that the pieces constitute a mix of blog posts, news/opinion articles (both religious and secular), science fiction stories, philosophical musings, and artistic endeavours (e.g., paintings, photographs, films). A search with “human-computer interaction” replacing “technology” turns up more than 2.5 million pieces (although Google’s unfortunate penchant for ignoring hyphens in purportedly “exact phrase” searches suggests that the number of actual HCI works is probably rather smaller). A look through the first few pages of the latter set of results shows items covering HCI research, books for sale on Amazon, conference announcements, Wikipedia articles, university degree programmes, news articles, blog posts, and essays on religion and computers.

As one might expect, given the statistics (cited in Chapter 1) on the prevalence of technology use by religious organisations and individuals, academic literature contains a great deal of research regarding the intersection of technology with spirituality and religion. Most of it does not address HCI: a Google Scholar search³⁵ on 25 March 2017 returned about 1.83 million results for “(spirituality OR religion) +technology” and about 8,470 (0.46%) when “human-computer interaction” (exact phrase) replaced “technology”. That HCI number is almost two orders of magnitude greater than the 98 works I had found in the ACM-DL in December 2012 (Buie & Blythe, 2013b). This difference is due partly to the increase in coverage of the topic since 2012 and partly to the much wider scope of the recent search (not limited to the ACM-DL); and the 8,470 items include works that do not actually address techno-spirituality but use the language metaphorically, such as “the religion of open source” as I found in 2012 (Buie & Blythe, 2013b).

In analysing the ACM-DL and the App Store (Buie & Blythe, 2013b) I found six non-experiential uses of techno-spiritual artefacts — two (*institutional* and *practical*) that HCI had studied and four (*educational*, *inspiration*, *social*, and *divination*) that appeared amongst the apps but that HCI had not studied³⁶. Most relevant to my work is literature that addresses transcendent experiences and experiential uses. The next two subsections review HCI works that take different perspectives on TX, and the final subsection reviews HCI literature on the related topic of meditation.

³⁵ Note that the search described in the previous paragraph used the general Google search engine and this one used Google Scholar. This may explain the vastly different numbers between them.

³⁶ More detail about these types of use appears in Buie & Blythe (2013b). None of these uses is mutually exclusive with any of the others; an app may have any combination of uses.

2.4.1 Transcendent Experiences with Existing Artefacts

Some HCI literature describes findings of transcendent experiences in the use of existing techno-spiritual artefacts. Woodruff, Augustin, & Foucault (2007) studied several families' use of home automation technology designed to support Orthodox Jewish families' Sabbath practices. This technology switches lights and appliances on and off according to a timetable preset by the families, allowing families to practice Sabbath reflection and "submission to external processes and entities" (p 532). The authors found especially striking "the orientation to external forces... [which] is in stark contrast with traditional visions of the smart home, which focus on control and mastery" (p. 534).

Wyche, Magnus, & Grinter (2009) studied ICT use by Pentecostal churches and their members in Brazil. In addition to institutional and practical uses, the study found broad and deep experiential use: Members reported placing their hands on their television screens during broadcast church services so they could receive blessings and healing, or avoiding certain television and radio programmes and websites because they feared the devil could enter their homes via those media. Usability and functionality played a tiny role in reported uses; interactions "centered on wonder, or enchantment with technology" (p. 150). Participants used words such as "joyous" and "ecstasy" to describe their experiences of the divine, and many received guidance and comfort through these media. This suggests, the authors note, that "some ubiquitous systems and devices designed to promote healthy behaviors should acknowledge the spiritual dimension in peoples' lives." (p. 152)

In the field of geography, Lopez (2014) studied online journals kept by Italian pilgrims to the Spanish cathedral of Santiago de Compostela and found that keeping an online journal may have prolonged the pilgrimage experience differently from how journaling on paper has done. Although a paper journal could well have enabled a pilgrim to prolong the experience via writing about it, online journals constitute "virtual spaces" where pilgrims "are free to perform a renewed rite: writing his or her experience and expressing their authorship through action" (Lopez, 2014, p. 8). "ICT", Lopez remarks, "is transforming the adventure from an unknown world...into something that can be explored via entirely virtual media or more concrete representations of reality such as looking at webcams" (p. 4).

2.4.2 Design to Foster Transcendent Experience

Several techno-spirituality research projects developed and studied artefacts specifically to foster transcendent experiences. The earliest example I found is Bayley & White's (1997) Candle Altar³⁷,

³⁷ This design appears to belong to a set called "Babel Project" created at Stanford University (one author lists a stanford.edu email address), but a search has found neither a so-named project nor related designs.

designed “to provide people with the means of externalizing a problem or event that had spiritual significance to them” (sec. 4.2). The authors hoped that the Altar would motivate people to use it regularly “and build a kind of relationship with it” (*ibid.*) as if it were another person. Their design took inspiration from tools that support spiritual practice, both religious symbols (candles, a bell-tower shape) and other characteristics, although the authors did not elucidate how the non-religious attributes related to spiritual practice or how they had identified such a relationship.

Sun Dial (Wyche, Caine, et al., 2009; Wyche, Caine, Davison, Arteaga, & Grinter, 2008) is a mobile app that uses sacred Islamic imagery to “connect people to the experience of religion” (Wyche, Caine, et al., 2009, p. 55ff). The researchers reported that some of its imagery “prompted discussions of the history, experience and practice of Islam” and “contributed to users’ religious experience” (p. 58). The important factor in their design, they concluded, was “situating prayer in its broader context” (*ibid.*), which enabled users “to reflect on and connect their own experiences to bigger communities of practice” (*ibid.*).

The Prayer Companion (Gaver et al., 2010) is a device designed to give a community of cloistered nuns information on events about which they might pray. The device was aimed at supporting the nuns’ daily practice of prayer, and the researchers designed and positioned it to enhance the spiritual quality of the nuns’ experience. “One of the motivations for engaging with the nuns in this project”, they explain, “was to explore whether we could address their spiritual experiences more directly in our design work” (p. 2057).

Espanta Espíritos (de Quay, 2011) is “an interactive sculpture that embodies the spiritual and physical features of a wind chime” (p. 425) and invites people to respond to it spiritually. The extended abstract describes the sculpture but does not offer any information on the responses of people who have interacted with it, and it would be interesting to know what people made of it and whether it had the spiritual effect its creator hoped to elicit.

Devotional Gardening tools (Jenkins, 2013) connect mundane, repetitive activities of everyday life to devotional practices via digital technology. Noting that relatively few concepts emerging from HCI research had focused on the experiential aspect of techno-spirituality³⁸, the author developed the tools to “provide an open opportunity to reflect on the nature of the material action of gardening as well as the goals and ideological values of that practice” (p. 2225). Clippers, a trowel, a hand cultivator, and a shovel use input from the user’s body (e.g., galvanic skin response (GSR)) to augment the materiality of the interaction and deepen the sense of connection to the activity and to the Earth.

³⁸ In 2018 this is still true.

I note that reflection is common to Sun Dial (see above) as well as Devotional Gardening tools. I wonder, though, whether reflecting on the nature of an action *whilst engaged in it* might detract from the immediacy of that action and thereby reduce its value as a devotional material activity; and I would be interested in seeing further research comparing the devotional experience of gardening afforded by these tools and by ordinary tools. Perhaps, as with Sonic Cradle (Vidyarthi & Riecke, 2014), these tools could be used to teach devotional gardening so that the gardener could conduct ordinary gardening in a devotional way. It would also be interesting to learn about the reactions of people for whom gardening with ordinary tools is already a spiritual practice.

Some techno-spirituality work can offer insights to designing for TX even though it does not aim specifically at TX. Wyche and colleagues (Wyche, Aoki, & Grinter, 2008; Wyche & Grinter, 2012) used sketching to explore designs for religious use in cultures on three continents. Although their work was not focused on TX, their comments about the value of sketching for surfacing and discussing their assumptions about the community for which they were designing (Wyche, Aoki, et al., 2008) are important insights for anyone designing for transcendent experience, especially when the target audience holds beliefs the designers do not share.

Outside HCI but closely related is research involving experiences with objects in museums and in museum-like settings such as historic churches. Latham (2013) explored the characteristics of the experiences, finding “Unity of the Moment” (p. 8) to be the all-encompassing whole, with three themes contributing to it: “a direct link to the tangible and symbolic nature of the object, a feeling of being transported, and intensely profound connections with the past, self, and spirit” (p. 3). The meaning of an experience, she writes, comes from “the uniting of...emotion, intellect, feeling, senses, imagination” (p. 11).

Othman, Petrie, & Power (2013) studied the experiences of touristic visitors to English historic churches. They developed the Church Experience Scale to assess visitors’ subjective experience, and found a statistically significant difference between “active” and “inactive” churches on its “emotional and spiritual experience” subscale (p. 679). They speculate about possible influences of church features on this difference — for example:

...the emotional and spiritual experience had more of an impact in active churches where these churches have a *designated area and time* for worship, whilst inactive churches have merely *preserved their features* to be marvelled at and experienced. (p. 680, emphasis mine)

I note, however, that the active churches they studied were closed to touristic visits during services, so that all visits to both kinds of churches occurred outside the hours of worship. Perhaps other elements such as notice boards, leaflets, and votive candles helped convey the sense of an active congregation and contributed to the difference in response; I would like to see some follow-

up work exploring other possibilities. I would also like to see further work on the “emotional and spiritual experience” subscale (see Section 2.5, below).

I found only one study of specifically “transcendent” characteristics of artefacts: Laarni, Ravaja, Kallinen, et al. (2004) had participants use a hypertext (a virtual tour of a mansion) or view a film; they then administered measures of transcendence and spatial presence. Participants’ feelings of transcendence may have been influenced, they found, by characteristics not only of the medium — “sensory engagement, sensory fidelity and interactivity”³⁹ (p. 409) — but also of the participants, such as “the ability to focus on enjoyable activities” (*ibid.*). This aligns with McCarthy & Wright’s (2004a) observation: “the quality of experience is as much about the imagination of the consumers as it is about the product they are using” (p. 12).

Finally, Saari (2009) offers a characterisation of positive experience via a theoretical analysis of four types — transcendent experience, peak experience, peak performance, and flow. He lists classic elements of TX such as “positive affect, feelings of overcoming the limits of everyday life, sense of harmony with the whole world, feelings of lightness and freedom, sense of timelessness and sense of union with the universe...” (p. 528), but without saying that all apply to all four types of positive experience. He relates the experiences to presence as an established construct in HCI, aiming to help “model, measure and design for these experiences in mediated environments and human-computer interaction” (p. 535). Presence and transcendence have common features, he observes: transportation — “the user is transported to another mental reality” (p. 533) — and “loss of self-awareness, or intensive focus in the mediated or non-mediated environment” (*ibid.*). He suggests that this commonality of positive experience with presence, combined with HCI’s much greater understanding of presence in mediated environments, may help in designing for positive experiences.

2.4.3 Design for Meditation

The HCI literature includes works regarding technology to support meditation. Although meditation is a spiritual practice in some faith traditions — most notably Hinduism and Buddhism — most of the papers I found regarding technology support for meditation focused on purposes such as stress relief, pain relief, or well-being. I include all of these papers under techno-spirituality research, however, because meditation *is* sometimes a spiritual practice and because it often leads to transcendent experiences (Berkovich-Ohana & Glicksohn, 2016; Johnstone, Cohen, Konopacki, & Ghan, 2016; Levin & Steele, 2005).

³⁹ I would argue that sensory *engagement* is as much a factor of the user as of the medium, but it is possible they meant sensory *stimulation*.

A very small number of papers have a spiritual or religious focus for their study of meditation support. The earliest one I found involves AltarNation (Hlubinka et al., 2002), an interactive environment that used telepresence to help physically isolated people meditate with others online. “Meditation by its very nature is ambient,” explain the authors, pointing out that when it is practised in the physical presence of other people the “cues from nearby meditators: breath, presence, heartbeat” (p. 612) are often more effective than direct speech at facilitating it. They developed AltarNation to support shared meditation by providing cues such as sounds and simulated stars and candlelight representing individuals in the meditating community. This work, and especially the use of a candle object to effect the interface, the authors claim, “initiates a longer dialogue about how technology can play a role in domestic experiences of religion and community” (p. 613).

Five years later, Sterling & Zimmerman (2007) presented Shared Moments, a mobile application suite for a Soto-Zen Buddhist community. One app supported remote meditation and enabled people who could not be physically present for group meditation to participate remotely via their smartphones. That app was designed to give remote attendees some aspects of the experience of being present in the community space, such as hearing the meditation bell. The authors found that the meditation app promoted a sense of being present in the community and participating in it.

Most of the meditation technology literature in my corpus focuses on stress relief, health, and well-being. Shaw, Gromala, & Seay (2007), for example, built the Meditation Chamber to use biofeedback and guided exercises to help people learn to meditate, with the aim of aiding them in reducing stress. The Chamber applied visual and auditory stimuli in “an immersive virtual environment” (p. 405) to evoke a meditative state. The authors measured biometric stress indicators, and they found that the Chamber could support relaxation.

Muntean, Neustaedter, & Hennessy (2015) used video-chat technology to support distant yoga partners in practising together, aiming to create a sense of remote presence that would facilitate simultaneous meditation and the viewing of each other’s yoga positions. Even when participants were not looking at the video of their partners, the sounds of body movements and breathing contributed to the sense of shared presence. Participants spoke of sensing a “collective energy” and “an element of being next to someone” (Muntean et al., 2015, p. 190). This contribution of audio cues reinforces the value of similar cues that AltarNation (Hlubinka et al., 2002) had provided with considerably older technology and without the video technology.

Downey (2015) investigated the use of a virtual world to enhance meditation practice for well-being. Sanctuarius, a tablet-based system, led the user into a meditation via an avatar that followed a path through a pleasant environment:

Sanctuarium created the environment and brought [the user] into it, guiding and assisting the meditation experience. Following the avatar or noticing tones and movement provid[ed] focus but without distraction. (p. 127)

Although the study did not explicitly address transcendence as an aspect of the Sanctuarium experience, some of the participants described their meditation practices as spiritual and one reported a powerful emotional experience in which he felt his father's hand on his shoulder.

Kosunen et al. (2016) studied the support that RelaWorld, a virtual reality system that uses neurofeedback provided by electroencephalogram (EEG) on a head-mounted display, provides to help people go into deeper meditative states. In a 43-participant study with a within-subjects experimental design, they found that RelaWorld “elicits deeper relaxation, feeling of presence and a deeper level of meditation” (p. 208) in novice meditators than does a system without neurofeedback.

All of the above well-being studies included visual stimuli to help support meditation, and Vidyarthi and his colleagues took a different tack (Kitson, Riecke, & Vidyarthi, 2014; Vidyarthi, 2012; Vidyarthi & Riecke, 2013, 2014; Vidyarthi et al., 2012). Sonic Cradle operates in a dark environment and provides no visual stimulus, aiming “to prevent visual distractions from stealing attention while encouraging users to actively co-create the experience” (Vidyarthi & Riecke, 2014, p. 675). The system alters the soundscape in response to changes in the user's breathing patterns — which facilitates the meditation practice by helping draw the user's attention to his breathing. It concentrates on the subjective experience of meditation, “foster[ing] a meditative experience by facilitating users' sense of immersion...” (Vidyarthi et al., 2012, p. 408). Their most recent study of Sonic Cradle (Vidyarthi & Riecke, 2014) included a content analysis of participant comments. Participants in 15-minute tests of Sonic Cradle commonly reported “imagery, bodily sensations, and time distortions, paralleling mindfulness meditators on a 2-week retreat” (*ibid.*) and those who had had some experience with mindfulness meditation tended to liken their Sonic Cradle experience to their previous meditation experience.

More recently, Riecke and colleagues (Prpa, Cochrane, & Riecke, 2015; Soyka et al., 2016) have added visual stimuli back into the mix. Citing Chittaro & Vianello's (2014) finding that representing thoughts visually can help novice meditators learn the mindfulness technique of thought distancing, and Karamnejad's (2014) finding that abstract images are less distracting and more relaxing than concrete ones, Prpa et al. (2015) built a prototype system that added abstract visual stimuli to Sonic Cradle's soundscape. Soyka et al. (2016) took it further, exploring the use of immersive VR for relaxation “with the purpose of guiding further design decisions, especially about the visual content as well as the interactivity of virtual content” (p. 85). It will be interesting

to follow the development of the question of appropriate stimuli and feedback for meditation, and to see what insights the investigations may provide that can inform design for transcendence.

Even when not designed explicitly to support transcendence, meditation systems can facilitate experiences that border on it if not actually getting there. Downey (2015) describes Sanctuary participants as being “transported, mesmerized, or taken on a journey” (p. 127), which certainly implies immersion in the narrative and suggests possible transcendence. Vidyarthi and Riecke (2014) report that several novice meditators who participated in the tests of Sonic Cradle related numerous aspects of TX — “perceptual illusions, feelings of floating, and emotional responses” (p. 674), “time distortions” (p. 686), and “personal developments and epiphanies” (*ibid.*) — that they experienced during their time in it. “A few participants”, the authors note, “even explained coming to realizations with actual significance in their lives” (*ibid.*).

Some of the meditation-support work treats transcendence as merely a means to the end of well-being, or at best as an added plus. Kosunen et al. (2016) studied meditation for its value in “the treatment of a plethora of ailments” (p. 208). They used a questionnaire that contained scales called “Transpersonal Qualities” and “Transpersonal Self” (p. 214) — the latter of which covers the mystical characteristics of “feeling of non-duality and infinity of consciousness” (*ibid.*) — and they used those scales to measure the depth of meditation because of its benefits for health and relaxation. Other researchers are more sympathetic to the transcendent potential of meditation — Vidyarthi is aware of and interested in the spiritual aspects (Jay Vidyarthi, personal communication, 2013), and Downey (2015) explicitly mentions spirituality in her accounts of participant interviews — but in both cases their work on meditation systems focuses on the health and well-being benefits⁴⁰. Muntean et al. (2015) acknowledge the downside of this restriction: they note that they “have barely mentioned spirituality” (p. 192), limiting themselves instead “to terms common in HCI literature such as ‘connection’ and ‘presence,’” (pp. 192-193) and precluding speculation about deeper forms of connection and presence in their participants’ experiences of remote shared yoga practice. Their findings, however, “do suggest that further research should explore the extent to which technology can mediate a spiritual experience or connection” (p. 193).

2.5 Gaps in the Techno-Spirituality Literature

This section covers gaps in the literature of techno-spirituality. (Gaps that may exist in the separate literatures of the two fields that my research bridges are beyond the scope of this thesis and I do

⁴⁰ Whether or not it was Vidyarthi’s or Downey’s purpose, no doubt the focus on well-being rather than spirituality has given their work more credibility in the HCI community.

not address them here.) The gaps I address involve, primarily, inadequate definition of the type of experience intended and a failure to cite transcendent experience literature.

Strikingly few papers on experiential techno-spirituality define — or even describe at all — what their authors mean by “spiritual experience” (the most common phrase I found) or what type of experience they studied or aimed to evoke. Most call it a “spiritual experience” and leave it at that. Even more strikingly, almost none cite any TX literature⁴¹. So how do they know what experiences they are aiming to support? How do they know when and whether they have achieved it? *How do they know what they are studying?*

I find this lack of characterisation and understanding especially surprising because of HCI’s deep roots in experimental psychology, which traditionally provides operational definitions of its psychological constructs. But even the field of Religion evinces this oversight, as Fryar (2015) noted: “No literature appears to be available that describes what individuals experience when online resources are designed to promote religious experience” (p. 23).

McCarthy et al. (2005) explain and illustrate the need to characterise key aspects of user experience that we aim to improve. Writing of enchantment, they argue that it is “a complex concept” (p. 369) and thus needs clarification. From their analysis of participants’ accounts, they describe enchantment as “an experience of being caught up and carried away, in which, although we are disoriented, perception and attention are heightened” (p. 370). Using digital jewellery as a case study for exploring how to make technology more enchanting, they suggest other design spaces in which their approach could be useful. Interestingly, along the way they comment that enchantment has the potential to open our eyes to wonder. Perhaps design for enchantment has insights to offer to design for transcendence.

In contrast, Boehner et al. (2008) contend that we should not attempt to define aesthetic experiences for design purposes, arguing that doing so would constrain them and might well lead us to overlook the very thing that drew us to them in the first place:

In abstracting from specific embodied contexts, many of the ineffable aspects of the aesthetic experience—those escaping formal articulation—may be either overlooked or designed away. (12:3)

The authors are arguing against HCI’s tendency to “codify, generalize, and formally model” (p. 12:3) experiences to support design. “Is it possible to design for an ineffable experience”, they ask, “without defining and constraining it?” (*ibid.*). Given this sense of “define” — which connotes “delimit” or “demarcate” — I argue that their caution is valid for transcendent experiences as well.

⁴¹ Or perhaps not so strikingly, given the inadequate attention the HCI field pays to spirituality at all.

On the other hand, I am arguing for *characterising* transcendent experience so that we can make our best guess about what we are designing for. I am not arguing for defining them in the sense that we assume we have said everything that needs to be said about them. But given that transcendent experiences cannot be anticipated with confidence, or planned at all — they can only be invited — we have to say *something* about what we have in mind. TX literature can provide a foundation for doing so.

A few HCI papers show small to medium steps taken in the direction of characterising TX. Wyche, Caine, et al. (2009) observe that Sun Dial’s use of Islamic sacred imagery enabled users “to reflect on and connect their own experiences to bigger communities of practice” (p. 58), but I find that unsatisfying as a characterisation of religious experience because it focuses on behaviour — “reflect on and connect” — and overlooks the subjective aspect of the experience. Wyche, Magnus, & Grinter (2009) initially reach the same level: they write of “ecstatic experiences such as speaking in tongues, prophesying, and faith healings” (p. 147) without defining “ecstatic experiences” beyond “ecstatic” and those examples of behaviour, leaving us largely in the dark about what it is like to live an ecstatic experience. Later they get somewhat closer, reporting that the interactions “centered on wonder, or enchantment with technology” (p. 150). They come closest to a definition when they cite McCarthy et al.’s (2005) description of *enchantment*. But even this movement in the right direction does not get them to a characterisation of *religious* experience — and how could it, absent any reference to TX literature?

Gaver et al. (2010) described one of the motivations for the Prayer Companion as exploring “whether we could address [the nuns’] spiritual experiences more directly in our design work” (p. 2057). Although their paper does not define the “spiritual experiences” they wanted the device to support, they consulted the nuns at every step and relied on their responses — which presumably reflected the sisters’ spiritual needs — to guide the design. In the end, the nuns commented that the Prayer Companion “persistently gives rise to moments of surprise and insight” (p. 2063).

One HCI-related⁴² paper does attempt to characterise the TX it considers. Othman et al. (2013) include an “Emotional and Spiritual Experience” component in their Church Experience Scale (and I quote):

- I felt spiritually involved with the church and its features
- I felt connected with the church and its features
- I felt emotionally involved with the church and its features

⁴² Although this paper did not appear in an HCI-specific publication or conference, I recognise one of the authors (Petrie) as an HCI researcher, so I have labelled this paper “HCI related”.

- I felt moved in the church
- The church had a spiritual atmosphere
- My sense of being in the church was stronger than my sense of being in the rest of the world (p. 679)

Unfortunately, the paper does not cite any TX literature, leaving the reader to guess at the source of the “emotional and spiritual experience” construct and wonder about the authors’ rationale for combining “emotional” with “spiritual”. Spiritual experiences clearly have an emotional component, but are we to assume that any emotion felt in visiting a church necessarily constitutes part of a spiritual experience? The questionnaire development and validation method that the authors describe seems sound and the above questions do not *contradict* any aspects of spiritual experience as reported in the literature, but they omit the transcendent component; and absent any references to the TX literature I cannot but question the source of the items and the construct validity of the instrument with respect to transcendent experience. These authors have described an instrument developed to assess spiritual experience, but without citing any sources on the nature of such experiences.

My literature search found only two HCI papers on experiential techno-spirituality that either give a clear and credible definition for the experience or cite any TX literature at all. Laarni, Ravaja, Kallinen, et al. (2004) define transcendent experience as

a subjective mental state that is characterized by such qualities as strong positive affect, feelings of overcoming the limits of everyday life, sense of harmony with the whole world, feelings of lightness and freedom, and sense of timelessness.
(p. 409)

For this definition the authors cite Williams & Harvey (2001); elsewhere in the paper they refer to other TX research, such as Maslow (1964) and Hood (1977). To this definition Saari (2009) adds “sense of union with the universe” (p. 528). He defines and analyses not only transcendent experience but also peak experience, peak performance, and flow — which, except for peak performance, both Waldron (1998) and Levin & Steele (2005) describe as types of transcendent experience — and he relates all four to presence.

Even outside HCI, most studies of transcendent user experience that I found describe investigating such experiences without saying anything substantive — if indeed anything at all — about what such an experience was like for the experient or how their research determined that someone had had one (Ahmad, Zainal, Abdul Razak, Wan Adnan, & Osman, 2015; Campbell, 2005b; Cosley et al., 2008; Jenkins, 2013; Razak, Haminudin, Wan Adnan, Abd Rahman, & Adbul Rahman, 2014; Woodruff et al., 2007; Wyche, Caine, et al., 2009). Some researchers note the difficulty of defining the concept (Highland & Yu, 2003; Muntean et al., 2015). Others define it without citing a source for the definition: for example, Radde-Antweiler, Waltmathe, & Zeiler (2014), in a work

on video games and religion, write of “religious content and religious experiences, or religion in the game and religion in the gamer” (p. 4). I do not dispute their definition of “religious content” as “religion in the game”, but their definition of “religious experiences” as “religion in the gamer” not only is simplistic but also fails to do justice to subjective experience in general or to agree with any definition I have encountered for transcendent/religious experiences⁴³.

A few works use relevant TX literature to characterise the type of experience they cover (Herman, 2010; Mossbridge, 2016; Van Rysbergen, 2011; D. Williams, 2012; Zijdeveld, 2008), but none of these come from HCI. One offers an excellent example of the use of TX literature and the careful characterisation of the target experience. Latham (2013) defines in clear terms, based in TX literature, numinous experience with museum objects. She uses the three-part Gatewood & Cameron (2004) definition of *numinous experience*: “deep engagement or transcendence...; empathy...; and awe or reverence” (p. 4). These experiences, she writes, are closer to mystical experience than they are to the “traditional learning experience” (*ibid.*) that museums have historically aimed to provide. Citing a 1958 edition of James (1902), she defines mystical experience in terms of ineffability, noetic quality, transiency, and passivity. “Further understanding of numinous encounters in museums”, she writes,

can help museum practitioners make intentional choices about objects, design, and format that can serve to stimulate, connect, and inspire our museum audiences. (p. 3)

She also writes of “numinous experience...as a form of mystical flow” (p. 17). For this she cites a study by Csikszentmihalyi & Robinson (1990) of aesthetic experience and flow in art museums, which yielded “remarkably similar results” to her work and led her “to surmise that the numinous encounter is also one type of optimal experience” (Latham, 2013, p. 13). Unfortunately, she overlooks work such as Waldron (1998), Levin & Steele (2005), and Schouten et al. (2007), which place flow at the less intense end of transcendent experience and mystical or peak experience at the more intense end — in fact, Waldron (1998) calls flow experiences personal rather than transpersonal optimal experiences. However, Latham’s (2013) conflation of flow with mystical experience does not negate the paper’s value as an example of non-HCI research on artefact-supported transcendent experience that cites TX literature and defines the type of experience it aims to design artefacts to enhance.

One might conjecture that a (or perhaps *the*) key reason why HCI researchers find it difficult to characterise transcendent experiences is their ineffability. Aesthetic experiences, too, can be ineffable, as Boehner et al. (2008) stress, noting that attempts to define aesthetic experience have not fully succeeded, although they exhibit some commonalities:

⁴³ “Religion in the gamer” could be taken to mean religiosity rather than religious experience.

Common characteristics...suggest that aesthetic experiences are tied to the particular, invoke the senses, command an immersion of the whole self, and result in a heightened form of engagement. (pp. 12:1-2)

In contrast, the common characteristics of *transcendent* experience have been described rather more fully than have these four characteristics of aesthetic experience.

For the most part, the reason why most techno-spirituality research fails to characterise transcendent experiences adequately is, I argue, that it fails to use TX literature as background for understanding the experiences. The substantial body of this literature covers quite nuanced aspects of TX and also offers assessment instruments, both of which might serve HCI in studying the target experiences and designing to support them.

Chapter 3 – Methodology

Design is a human ritual of understanding.

– Maggie Macnab, *Design by Nature: Using Universal Forms and Principles in Design*

3.1 Nature of Study

This PhD thesis describes a qualitative investigation that focused on obtaining insights, aimed to generate theory from data, and sought to develop an approach to stimulating techno-spiritual design. My two primary research questions — “How does technology facilitate and support transcendent experiences?” and its follow-on, “How might design contribute to that support?” — involved exploring six sub-questions:

1. How do people of diverse faith traditions experience spirituality and transcendence?
2. How do they describe transcendent experiences they’ve had?
3. How do they use artefacts to support their spiritual practices and TXs?
4. What do they value about those practices and experiences?
5. What do they desire in the way of artefact-supported enhancements to those practices and experiences?
6. How can design respond to the above, in envisioning artefacts to facilitate and enhance transcendent experiences?

To answer these questions I needed to gain insights into, and an in-depth understanding of, the spiritual practices and TXs of a diverse sample of people. I did not seek a representative sample from which to gather quantitative data for deriving inferential statistics and generalisability to a larger population. My research goals, like those of a recent study on transformative experiences of guests at retreat centres (Fu, Tanyatanaboon, & Lehto, 2015), “pertain to a less investigated area, where existing...theories and variables are not adequate to address the phenomena” (p. 85).

I used quantitative data to aid in understanding the qualitative data. For example, I began my research by comparing the number and diversity of HCI research works on techno-spirituality with those of spiritually oriented apps in the iTunes App Store (described in Buie & Blythe, 2013b), to get a feel for the size and nature of the gap in HCI’s knowledge of techno-spiritual artefacts. The qualitative data reveal that people are using artefacts in many ways for spiritual and religious practices, including ways that do not appear in the HCI research literature. Numeric data indicate the extent of such usage, but they do not provide any real insight into the reasons why people are using these artefacts or the ways in which artefacts help enrich people’s lives. Understanding those aspects requires a qualitative approach — asking people about the *what*, the *how*, and the *why*.

3.2 Relevant Research Traditions

3.2.1 Qualitative Research

Qualitative research concerns itself with subjective meaning and conducts its investigations by analysing verbal or visual data (Flick, 2009). The qualitative research tradition arose from a growing recognition that, although the standardised, numerical methods of quantitative research are useful for examining the frequency and distribution of psychological and social variables in a population and the relationships among them (*ibid.*), they offer no assistance in understanding or interpreting what is going on. Qualitative research equals quantitative research in importance, write Giacomini & Cook (2000), explaining that it “offers insight into emotional and experiential phenomena...to determine what, how, and why” (p. 357) and that it is useful “when insight into the research is not well established or when conventional theories seem inadequate” (*ibid.*).

Qualitative research in HCI and related fields is well accepted today, but that was not always true. Just over a dozen years ago, Hancock and Szalma (2004) urged researchers in ergonomics — a field that contributed to early HCI and shared with it a focus on human performance and the dominance of quantitative methods — to recognise the value of qualitative research in contributing to knowledge:

Today, we in ergonomics should be more embracing of diverse ways of knowing. Indeed, in dealing with human beings, ergonomics is *categorically unable* to intrinsically limit itself solely to mathematical and quantitative methodologies. Like ethnology and anthropology, ergonomics must seek diverse strategies to comprehend the complexities of behavior in context (pp. 499-500, emphasis mine).

A dozen years earlier, Hughes, Randall, & Shapiro (1992) had presented a qualitative study of air-traffic control (ATC) as computer-supported co-operative work (CSCW), a sub-field of HCI, when qualitative HCI research was relatively rare⁴⁴. The authors comment:

Formal methods are...most heavily stressed where safety-critical systems are involved. Yet a crucial aspect of safety-critical performance is that a system be built on a proper understanding of the qualitative character of the work involved. (Hughes et al., 1992, p. 121)

Thus, even in domains where quantitative, formal methods are vital, success in understanding behaviour requires using qualitative methods to complement them, to obtain insight into how people conduct their activities in context. Qualitative research, observe Giacomini & Cook (2000),

⁴⁴ A Google Scholar search on 18 March 2017 for < hci site:dl.acm.org "qualitative research" OR "qualitative methods"> — i.e., a search of the ACM-DL for “hci” and either or both of “qualitative research” and “qualitative methods” — omitting citations and patents, found only nine publications in 1992 and earlier. From the abstracts, roughly half of these appear to cover qualitative research for product development; the other half were academic research. The same search found 68 works in the subsequent decade and about 2100 works from 2003 on.

can “generate theories and identify relevant variables” (p. 362), and quantitative research can derive and test “the implied hypotheses about relationships between those variables” (*ibid.*).

Qualitative methods have some limitations, which must be considered in conducting the research and interpreting the findings. Qualitative methods, writes Malterud (2001), “are founded on an understanding of research as a systematic and reflective process for development of knowledge that can somehow be contested and shared, implying ambitions of transferability beyond the study setting” (p. 483). These methods do not produce results that can be generalised to whole populations — they lack the statistical power and usually also the representativeness of the sample. Qualitative research may also be more vulnerable than quantitative research to issues such as researcher bias.

Even though qualitative research does not produce generalisable findings — in fact, generalisability is rarely if ever their aim — a qualitative study *may*, Watkins (2012) writes, produce findings that are *transferable*. Findings may be applicable “to other contexts/settings under similar conditions” (p. 157) if the researcher provides an “exact, thorough description of [the] research context [and] clarifies all assumptions made” and if the person applying the research evaluates the “wisdom of the findings” and determines that they can be transferred to a “new situation with similar context” (*ibid.*). Instead of the quantitative criteria of reliability, validity, objectivity, and generalisability, she writes, rigour in qualitative research is defined by dependability, credibility, confirmability, and transferability.

3.2.2 Ethnography

Arising as a facet of anthropology for studying cultures *in situ*, ethnography has come to be widely used in design (Blomberg, Burrell, & Guest, 2003). According to Hoey (2014), ethnographers produce understandings of cultures by representing them from an insider’s perspective.

Ethnography, he notes, “has come to be *equated* with virtually any qualitative research project where the intent is to provide a detailed, in-depth description of everyday life and practice” (p. 1, emphasis his).

I considered taking an ethnographic approach because of its potential for obtaining insights into everyday spiritual life and spiritual practices as they related to some of the conditions under which TXs occur. Three considerations led me to reject this approach. *First*, ethnography focuses on studying cultures (Hoey, 2014; Pels, 2012), and I aimed to collect data from people with a very wide variety of spiritual and religious backgrounds and practices because I wanted the findings to have broader applicability than a community would be likely to provide. Even though the participants in my interviews may share some characteristics, they have too many differences in practices, locations, symbols, meanings, and perspectives to be considered a culture (Geertz,

1993). *Second*, as Blomberg et al. (2003) point out, ethnographic studies “always include gathering information in the settings in which the activities of interest normally occur” (p. 966). My research focuses on *subjective* transcendent experience. It covers practices, activities, and surroundings only to the extent that they provide context for the experience, and those factors may differ from person to person and even from experience to experience. In addition — and perhaps even more importantly — TX cannot be planned or predicted, and even going to the settings to gather information would not have guaranteed that I would observe experiences of the type that interested me. In the words of one interview participant who fairly often has a TX during religious events: “you can’t dial it up”. *Third*, I was more interested in subjective experience than in behaviour and practices, which meant I could not gather the key data by observing people but needed to collect and study the experientists’ own accounts (Mapp, 2008). For this I drew on the perspective of phenomenology.

3.2.3 Phenomenology

Arising from early twentieth-century European philosophy, phenomenology is the study of the creation of meaning through embodied perception (perception via bodily sensations) (Starks & Trinidad, 2007). It focuses on the first-person perspective of the perception of *phenomena*, which Smith (2013) defines as “appearances of things, or things as they appear in our experience, or the ways we experience things, thus the meanings things have in our experience” (p. 2). In this way, phenomenology concerns itself not only with perception but with other factors that surround and enable the subjective experience: “thought, imagination, emotion, and volition and action” (Smith, 2013, pp. 30-31). At this point in my research I didn’t need to delve deeply into the experiences as Petitmengin’s (2006) technique does, but I did need to understand what the interview participants perceived during transcendent experiences, what their immediate reactions to them involved, and what their experiences meant in their lives.

What interested me was the *lived experience* of TX. Chandler & Munday (2016) offer three definitions of lived experience, of which the second is pertinent to my research:

- ...our situated, immediate, activities and encounters in everyday experience, prereflexively taken for granted as reality rather than as something perceived or represented...

Lived experience, explains van Manen (2015), constitutes the entire focus of phenomenological research, which aims to create from the experience a textual representation that tells the story so effectively that its readers are “powerfully animated” (Chapter 2) by memories of their own lived experiences.

Phenomenology concerns itself with people's own descriptions of their experiences *as they lived them*. I used a phenomenological approach in eliciting detail-rich verbal accounts that represented what an experience was like for the person who lived it.

Various methods support the analysis of the rich qualitative data that phenomenological enquiry can produce, key among them being inductive content analysis and grounded theory.

3.2.4 Inductive Content Analysis

Inductive content analysis (ICA) is a qualitative method that involves “open coding, creating categories and abstraction” (Elo & Kyngäs, 2008, p. 109) and grouping data “to reduce the number of categories by collapsing those that are similar or dissimilar into broader higher order categories” (p. 111). Coding addresses the sentence level, and assigns multiple codes where appropriate. Grouping arranges detailed codes into categories of related codes until they form themes. I used ICA in my study of viewer comments on YouTube meditation videos, which aimed to identify themes in viewer reactions to the videos. Section 3.4.3 summarises the process I used, and the paper I presented at the Designing Pleasurable Products and Interfaces (DPPI) 2013 conference (Buie & Blythe, 2013a) gives the details. I did not use ICA for the main part of my research, however, because I intended to build a theory. Although inductive content analysis closely resembles the coding and categorisation that Grounded Theory (GT) methods also use (see Section 3.2.5), ICA has the goal of identifying themes whilst GT proceeds to build a theory from the categories by identifying how they interrelate (Cho & Lee, 2014).

3.2.5 Grounded Theory

Developed in the late 1960s by Barney Glaser and Anselm Strauss (Glaser & Strauss, 1967), the Grounded Theory methodology builds theory and theoretical concepts directly from qualitative data such as text and images. A Grounded Theory study builds its theory from a type of content analysis by taking the data structure — codes and categories — and identifying relationships among them and new concepts that emerge from them (Gioia, Corley, & Hamilton, 2012). GT arose to address research questions in sociology, and its use has expanded to diverse domains:

- nursing (Slatyer, Williams, & Michael, 2015; Taverner, Closs, & Briggs, 2014)
- management and logistics (Bello, 2015; Locke, 2001; Wowak, Craighead, & Ketchen, 2016)
- information systems and software engineering (Birks, Fernandez, Levina, & Nasirin, 2013; Urquhart, Lehmann, & Myers, 2009)
- transcendent experience (Garcia-Romeu, Himmelstein, et al., 2015)
- design, user experience, and HCI (Constantin, Pain, & Waller, 2014; Furniss, Blandford, & Curzon, 2011; Venkatesh, Digerfeldt-Mansson, Brunel, & Chen, 2012).

Grounded Theory involves multiple iterations of coding the data and comparing the codes (Starks & Trinidad, 2007; Thornberg, 2012). GT exists in various forms (Charmaz, 2014; Glaser & Strauss, 1967; Strauss & Corbin, 1998), which define somewhat different approaches to analysis, evident in their models of coding and their consideration of the researcher's knowledge and of existing literature. The techniques I chose belong to Charmaz's (2014) Constructivist GT.

I chose Constructivist Grounded Theory because it explicitly accepts the consideration of existing theory and literature, recognises the researcher's prior knowledge and perspective, and offers the potential for the "richer and more insightful analysis" (Furniss et al., 2011, p. 121) that techno-spirituality research demands. The objectivist stance, write Furniss et al. (2011), "seeks to represent each participant's views accurately and validly like a privileged window into the participant's world" (p. 121), whilst the constructivist stance "tries to create a rendering of the data that communicates an insightful, valid and useful message to an audience" (*ibid.*). An objectivist analysis might have treated "I heard God's voice" and "I heard Mom's voice" as related but different phenomena; instead, constructivist analysis allowed me to consider Stace's (1960) finding that mystical experience has a "common core" of subjectively perceived phenomena that may be consistent across experiences and perspectives, and an interpretive factor that depends on the experient's background and beliefs. By pointing out the substantially different interpretations that mystics of different religions give their experiences, Stace (1960) makes the case for separating mystical experiences — and by extension all transcendent experiences, I argue⁴⁵ — into perceptual and interpretive components and studying them separately. Constructivist grounded theory thus enabled me to code the two "I heard" statements as combinations of perception (hearing a voice) and interpretation (identifying the "speaker"). Chapter 4 of this thesis gives a more detailed description of perception and interpretation in transcendent experience.

Constructivist GT also recognised as appropriate my bringing my own perspective into my GT process. Relevant to this are my spiritual identity as a Unitarian Universalist and my views as an agnostic. I expressed no position on any specific beliefs that my interview participants might hold, although I shared very few of them, and I respect people's right to spiritual self-determination. The Fourth Principle of Unitarian Universalism⁴⁶ expresses very well this latter aspect, as it encourages "a free and responsible search for truth and meaning". To me this means that as long as a person's beliefs are freely chosen and involve no coercion or harm to other people, that person has the right to follow his or her own spiritual path.

⁴⁵ I am tempted to argue this for all types of experience, but that topic is beyond the scope of this thesis. It would make for fascinating future work, though.

⁴⁶ <https://www.uua.org/beliefs/what-we-believe/principles/4th>

In addition, I have always been curious about “extraordinary” experiences. At age 13 I wrote a report on extra-sensory perception, and during my coursework for my second master’s degree I wrote a literature review of near-death experience research (Buie, 1986). My natural reaction to hearing someone mention an extraordinary experience⁴⁷ is, “Interesting! Tell me more!” Thus I was very well suited to conducting these interviews and constructing this grounded theory.

Transcendent experiences are anything but objective. Constructivist GT, I argue, serves TX research far better than does objectivist GT.

3.2.6 Research through Design

Recent developments in design research exhibit potential value for techno-spirituality studies. *Research through design* (Frayling, 1993), or RtD, uses design methods and processes to conduct research (Zimmerman, Forlizzi, & Evenson, 2007). RtD is experiencing growing interest among HCI researchers: from only five items in 2001 or earlier in the Association for Computing Machinery’s (ACM’s) Digital Library^{vii} (ACM-DL), to 16 in 2007-2008, to 214 in 2015-2016⁴⁸, RtD is appearing more and more frequently in the HCI literature; and since 2013 it has been the subject of a biennial conference⁴⁹. Zimmerman et al. (2007) proposed RtD as an ideal approach to “wicked problems” as described by Rittel & Webber (1973), for which “the conflicting perspectives of the stakeholders” (Zimmerman et al., 2007, p. 495) prevent us from modelling them accurately or addressing them “using the reductionist approaches of science and engineering” (*ibid.*). I argue that TXs — by virtue of being not simply ineffable but also tricky to define, difficult to discuss, and impossible to predict — fit squarely alongside wicked problems in the category of challenges that do not lend themselves to modelling or reductionist approaches. Given the wars that have been fought over religious differences through the millennia, and the continuing debate over the validity of spirituality outside of religion (Rousseau, 2014), I argue that TXs have conflicting stakeholders as well, and that they therefore meet all the criteria for being considered wicked problems.

Thus I contend that Zimmerman et al.’s (2007) argument regarding the value of RtD for wicked problems holds for TX research as well. I cite as an example the 2010 “Prayer Companion” study (Gaver et al., 2010) of designing for a cloistered convent a small device that collected news items and “I feel” statements from online sources and displayed them for the nuns to consider in their prayers. Although the Companion was not designed to support TX exclusively — the researchers

⁴⁷ Provided they are not trying to urge their beliefs on me.

⁴⁸ These searches used Google Scholar and specified a scope of site:dl.acm.org. See the endnote for a brief discussion of the changes in the ACM-DL internal search engine.

⁴⁹ <http://researchthroughdesign.org/>

deliberately left its purpose somewhat vague — it often gave the sisters something to carry in prayer for hours or even days, and the Mother Abbess described it as “like putting salt on your dinner. You know[,] to enhance your dinner” (p. 2062). The Prayer Companion project illustrates that RtD can work for the techno-spiritual design space, not only for general HCI research in that space but also for transcendent user experience research in particular.

Three RtD techniques — speculative design, critical design, and design fiction — all have something to offer for techno-spirituality research. All are future oriented, note Coulton, Burnett, & Gradinar (2016), who argue that not only do they all “have their roots in critical thinking” (p. 12) and share the three RtD features that Auger (2013) described — ignoring business constraints, creating or imagining prototypes, and using fiction to explore concepts — they also exhibit a fourth similarity: “the resulting artefacts [prototypes] can often appear subversive and irreverent in nature” (Coulton et al., 2016, p. 2). A fourth technique, design games, also holds promise for this domain because games can invite us to shed our analytical mindsets and adopt a spirit of play, to foster creating speculative ideas.

Speculative design

Speculative design research, write Balsamo, Gorbet, Harrison, & Minneman (2000),

is a methodology that addresses the difficulties surrounding the investigation and creation of *new genres*. Rather than seeking solutions to well-defined problems, we see our work...as *speculations about plausible futures*. (p. 207, emphasis mine).

Auger (2013) and Coulton et al. (2016) share Balsamo et al.’s (2000) view that speculative design must envision a plausible future — or at least a *possible* one, write Coulton et al. (2016). Both Auger (2013) and Coulton et al. (2016) emphasise that the method focuses on the relatively *near* future. Auger (2013) explains that if a speculative design “strays too far into the future[,] to present implausible concepts or alien technological habitats” (p. 12), it will fail to resonate with audiences or engage them in its speculation. For speculative design to succeed, he stresses, it must create “a bridge...between the audience’s perception of their world and the fictional element of the concept” (*ibid.*). I wonder if this view might not be overemphasising the cognitive, evaluative aspects of speculation to the detriment of the emotional or fanciful. I wonder if something else could evoke a willing suspension of disbelief and a tacit agreement to “play along” with an implausible concept. Of course, if the purpose of a speculative design is to facilitate an actual design, plausibility may matter. Or maybe not.

Gaver & Martin, although writing more than a dozen years earlier, seem less concerned with plausibility. They see speculative design concepts as “landmarks opening a space of design possibilities for future information appliances” (p. 216). They call such concepts “placeholders” (*ibid.*) because they mark out locations in the design space that can later be filled by perhaps better

designs. More interestingly for my research, these authors point out that speculative design can serve user research studies beyond general lifestyles and specific reactions to design ideas, conjecturing that its concepts “might encourage people to admit to pleasures and desires that the high technology industry often seems to dismiss as unworthy or nonexistent” (*ibid.*). In light of some of the reasons we hypothesized in Buie & Blythe (2013b) to explain the paucity of HCI studies of techno-spirituality, and especially because Gaver & Martin (2000) include in their examples a techno-spiritual artefact — the Prayer Device, which “allows people to transmit their voices to the skies” (p. 214) — this paper further underscores the potential of speculative design for techno-spirituality.

Critical design

Created by Dunne & Raby (2001), critical design exists, according to Raby (2008), “to challenge narrow assumptions, preconceptions, and givens about the role products play in everyday life” (p. 94). Its primary purpose is to promote debate or even disruption:

... as the name suggests, the primary intention is to make us think: to raise awareness, expose assumptions, provoke action, spark debate, and even entertain in an intellectual way like literature or film. (Raby, 2008, p. 94)

Critical design provokes discussion, comment Bardzell, Bardzell, Forlizzi, Zimmerman, & Antanitis (2012), by seeking “to disrupt or transgress social and cultural norms” (p. 288). Pierce et al. (2015), however, express concern about the aim of disruption and apparently of adversariness, urging HCI to develop “a participatory design criticism” (p. 2090) that recognises the importance of having designers and design critics be “in dialogue in adjudicating how to understand design” (*ibid.*). Techno-spiritual design may well have the purpose of provoking discussion about the role of spiritual and religious technology in society — which would be appropriate, given my finding that HCI research lags far behind techno-spiritual apps “in the wild” (Buie & Blythe, 2013b) and our speculation that the reasons include academics’ relative lack of interest in the topic and their fear of being dismissed as having a religious agenda should they study it — but any disruption that my research offers is aimed at the HCI community only and not at anyone’s spiritual practices or spiritual/transcendent experiences. Some of the speculative design concepts that emerge from my work may well “appear subversive or irreverent”, as Coulton et al. (2016, p. 2) put it, but to say that they “disrupt or transgress social and cultural norms” (Bardzell et al., 2012, p. 288) would be extreme and, I submit, incorrect. Except, perhaps, to the extent that one is referring to social and cultural norms of the HCI research community, I do not see my work as critical design.

Design fiction

Design fiction provides a means of incorporating science fiction (SF) thinking into HCI research. HCI has engaged with SF since at least 1992, when a CHI conference panel of HCI researchers

and SF writers (Marcus, Norman, Rucker, Sterling, & Vinge, 1992) discussed SF and HCI. As of 19 March 2017, more than 250 works mentioning both SF and HCI have appeared in the ACM-DL since 1992, although it is unlikely that all of them address the relationship between the two. “Design fiction is about creative provocation, raising questions, innovation, and exploration”, writes Bleecker (2009a, p. 7), whom Sterling (2013) credits with coining the phrase, although it has appeared in the literature since at least 2003 (e.g., Milton, 2003). Definitions of *design fiction* range from Bleecker’s (2009) simple “making things that tell stories” to Sterling’s (2013) more complex “the deliberate use of diegetic prototypes to suspend disbelief about change.” A *diegetic* prototype, explains Kirby (2010), is a means by which film producers show a technology along with “dialogue, plot rationalizations, character interactions and narrative structure” (p. 41) and thus attempt to convince viewers that it will be a normal, and usually positive, part of their future. Sterling has expanded the term from cinematic SF to the broader world of science fiction in general, and design fiction allows us to explore design concepts — even conduct thought experiments on them — by means of stories in which the concepts play a role. Moreover, science fiction is replete with stories of human beings reacting and responding to mysterious, intelligent machines that seem godlike, and techno-spiritual design fiction can take great inspiration from these narratives (Blythe & Buie, 2014a).

A special kind of design fiction is what I propose to call *design research fiction* — design fiction in the form of fictional design *research*. As of this writing, these fictions appear in three forms: *fantasy advertisements* convey the envisioned appeal of speculative ideas by pretending to pitch them to an audience (Blythe, Steane, Roe, & Oliver, 2015; Near Future Laboratory, 2014); *imaginary abstracts* are short texts that “summarize findings of papers that have not been written about prototypes that do not exist” (Blythe, 2014, p. 703); *fictional research papers* take the form of full research papers and reveal their fictional nature only at the end (Lindley & Coulton, 2016). Fictional research papers develop the diegesis extensively, write Lindley & Coulton (2016), and thus “produce ‘deeper’ design fiction artifacts [than do imaginary abstracts, and] perhaps have the ability to catalyze more meaningful discussion and reflection” (p. 4040). The three types of design research fiction complement each other by operating at successively deeper levels of exploration.

Lyckvi introduced me to “design fictioneering”. She offers these definitions (Lyckvi, 2017):

Design fictioneering: The act of crafting a fiction towards a specific designerly outcome. A combination of the words “design fiction” and “engineering”.

Design fictioneer: Person engaged in and/or skilled in design fictioneering.

I would widen the concept to include fictions crafted for design research purposes, but perhaps those, too, are included in the “designerly outcomes” that Lyckvi has in mind.

Design games

Design games support design research or the design process. Not to be confused with *game design* — the field that focuses on designing digital games (e.g., Hoffman & Torgersen, 1971; Pausch, Gold, Skelly, & Thiel, 1994) — design games arose in the HCI field of Participatory Design, intended to address the power disparity between designers and users by involving both groups in collaborative design (Brandt & Messeter, 2004). Design is itself a game, these authors assert, noting that both designing and gaming “are...social enterprises, evolve over time and are based on a set of rules” (p. 122). Coulton et al. (2014) use climate change as a case study to propose *game design* as an approach to solving wicked problems in particular, by encouraging behaviour change. Coulton et al. (2016) later show, conversely, that *design games* are also suited to facilitating design for wicked problems, by having players explore plausible futures through fiction. Design games, they observe, can be especially suitable for producing speculative design’s subversive and irreverent prototypes, as “games and play...often create a playful subversive and irreverent space...to encourage greater exploration by players” (p. 2). From interviews conducted with several groups of flourishing octogenarians, Blythe et al. (2015) developed a design game and used it in a workshop to generate design concepts. They concluded that such a game can constitute “a means of generating design concepts informed by data and research insights” (p. 3857).

Use of RtD in this research

Techno-spirituality seems a perfect candidate for RtD in the form of design fiction and design games. Its unsuitability for “classic” UX methods and the need to suspend disbelief to design for faith traditions other than one’s own make experiential techno-spirituality a good match for RtD. Using my grounded theory of artefact-supported transcendent experiences — transcendent *user* experiences — I designed a game and conducted game workshops (Section 3.6.1 and Chapter 6) to elicit speculative design ideas for techno-spiritual artefacts (Chapter 7). I drew on the grounded theory again to outline two of those ideas as seeds for preliminary design fictions (Chapter 7), to develop others as imaginary abstracts, and to propose new forms of design fiction (Chapter 8).

3.3 Outline of Research Process

Before beginning data collection with human participants, I conducted three background studies of HCI and techno-spirituality — analyses of the ACM Digital Library, the iTunes App Store, and comments on YouTube meditation videos. Along the way, I explored the use of design fiction to support the techno-spiritual design space. Figure 3 shows the order of the research activities that contributed to this thesis.

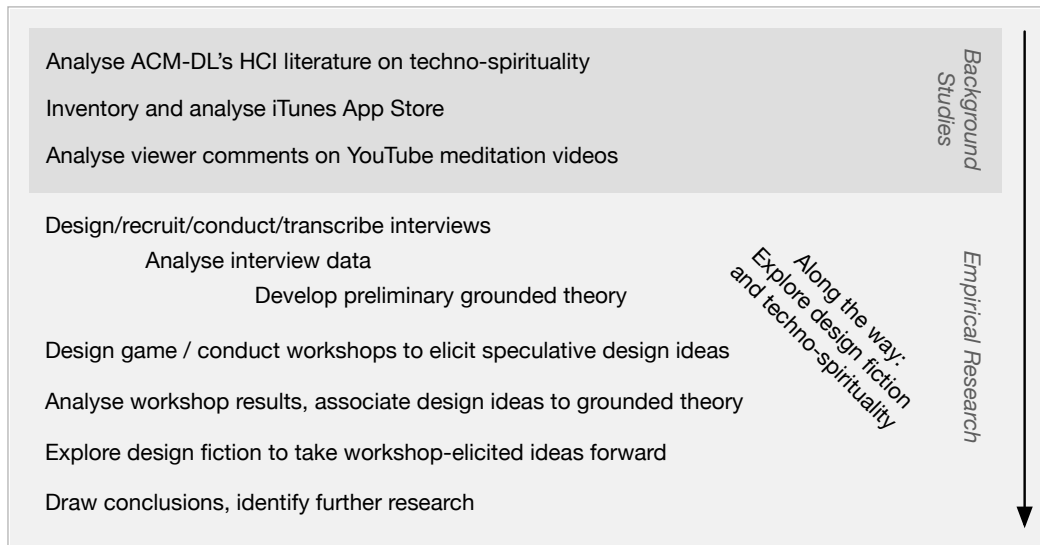


Figure 3. Order of research activities

The largest part of my research involved the following:

Addressing Research Question 1:

- design and conduct of semi-structured interviews with people from a variety of spiritual backgrounds and perspectives
- qualitative analysis of interview data and development of a preliminary grounded theory of transcendent user experiences

Addressing Research Question 2:

- design and development of a game to facilitate techno-spiritual design, and conduct of workshops to use the game in generating design ideas
- analysis of workshop-generated ideas and their associations with the preliminary grounded theory

The remainder of this chapter details these activities.

3.4 Background Studies

3.4.1 Background Study: ACM Digital Library

I began my research by searching the ACM-DL for HCI literature on techno-spirituality. Using six keywords — *religion*, *spiritual*, *spirituality*, *faith*, *numinous*, and *transcendent* — I searched the full text, downloading works according to their abstracts and reading them to determine their relevance. I categorised the final corpus according to each paper’s approach to techno-spirituality:

Focused: Directly and primarily concentrating on techno-spirituality

Covering: Addressing techno-spirituality as one component of several

Finding: Producing relevant findings though not focused on techno-spirituality *per se*

Peripheral: Addressing a different but potentially relevant topic (e.g., bereavement)

Design: Describing digital/technical designs that foster TX

Meta: Encouraging the HCI community to address more research to techno-spirituality, or mentioning the state of such research

I compared these findings with the study of the iTunes App Store (see next subsection).

3.4.2 Background Study: iTunes App Store

Next I conducted a partial inventory of the iTunes US App Store. I did this to get a sense of the number and types of mobile applications that were available to support spirituality and religion in general, among the approximately six million total iOS apps, and to ascertain the match (or mismatch) between the available usage areas and those covered by HCI research. I searched the App Store using non-denominational keywords for spirituality and religion, and my analysis of the results identified several types of use that had not been covered by the HCI literature (Section 3.4.1). The resulting paper, “Spirituality: there’s an app for that! (but not a lot of research)” (Buie & Blythe, 2013b), details the method and speculates about some possible reasons for the paucity of HCI coverage of techno-spirituality. The paper was accepted to the alt.chi venue of the CHI 2013 conference, and I presented it there. Subsequent changes to the App Store search facility precluded my repeating the inventory later, for comparison purposes^{viii}.

My analysis found three uses that HCI had studied:

- **institutional:** religious institutions’ use of technologies
- **experiential:** intended to support spiritual or other transcendent experience
- **practical:** facilitating spiritual practices without having direct involvement in any transcendent experiences that might result

and four that apps covered and HCI had not studied:

- **educational:** information about or instruction in the history, beliefs and practices of one or more faith traditions
- **inspirational:** spiritual inspiration and guidance, general or for a faith tradition
- **social:** exchanges between people, usually of similar or at least compatible faith
- **divination:** predictions of the future or aid in understanding a situation

Campbell, Altenhofen, Bellar, & Cho (2014) found a larger number of uses in their analysis of 488 religious apps in the App Store. Religious apps, they found, fall into two basic categories — “designed around certain religious practices[,] or access to religious information and beliefs”

(p. 167). Their inventory and mine differ in two important ways. First, theirs concentrated on explicitly religious apps whilst I defined a more general scope — for example, my inventory included divination apps with a “spiritual but not religious” purpose. Second, Campbell and her colleagues brought to their analysis a deeper foundation in the sociology of religion and the use of technology for religious purposes. Any further work I may conduct on classifying techno-spiritual artefacts will take their categories into account. However, this thesis focuses on artefact support for subjective transcendent experience, and Campbell et al. (2014) did not consider that aspect. Their lack of consideration of TX aligns with Hutchings’ observation (Timothy Hutchings, personal communication, 2016) that Digital Religion has focused on sociology and has only recently become interested in subjective experience.

3.4.3 Background Study: YouTube Meditation Videos

For this study I was interested in gaining a sense of subjective reactions to digital technology that supported the practice of meditation. I began by searching YouTube for videos tagged with the keyword “meditation”. To obtain a rich set of viewer comments, I retrieved the 100 most-viewed videos, collected metadata on each, and used convenience and purposeful sampling to harvest comments. I worked to obtain a rich variety of content and tone in the comments captured, retrieving 12 to 14 comments for each video. I noted what appeared to be each video’s primary focus of meaning and analysed the comments using inductive content analysis (Elo & Kyngäs, 2008). The resulting paper, “Meditations on YouTube” (Buie & Blythe, 2013a), details the categories of comments and of videos. The comments fell into three main categories — “remarks about the video, reports of subjective experiences and feelings, and responses to other comments” (p. 45) — and the videos into categories of religious, New Age, and secular⁵⁰. This paper (see Appendix H) was accepted to DPPI 2013, and I presented it there. Reports of subjective experiences included potential TXs, such as a feeling that they were out of their body or had been transported elsewhere: “There is something so mystic about the combination of tones & throat singing that transports me to another world, (a place I remember & love to be)” and “After 33 minutes, feel like I did not exist in this world. Outer space.” The percentage of these among the comments was not high — only 31 out of the 1143 collected comments mentioned such reactions — but their presence confirmed that technology could promote transcendent experiences.

3.4.4 Background Work: Design Fiction for Techno-Spirituality

My background work includes two pieces on design fiction. The first presents six imaginary abstracts as a way to explore speculative techno-spiritual design. “Digital Spirits: Report of an

⁵⁰ I defined secular videos as those that appeared to be unassociated with any spiritual orientation, faith tradition, or philosophy.

Imaginary Workshop on Technologies to Support Religious and Spiritual Experience” (Blythe & Buie, 2014b) was a position paper for the CHI 2014 workshop on design fiction, in which my coauthor participated⁵¹. The second sketches non-HCI studies of transcendent experience, briefly outlines how science fiction has treated spirituality and spiritually oriented technology, and uses that work as the basis for a sample imaginary abstract that explores how speculative design prototypes for techno-spirituality might look. The paper, “Chatbots of the Gods: Imaginary Abstracts for Techno-Spirituality Research” (Blythe & Buie, 2014a), was accepted to NordiCHI 2014 and I presented it there.

Chapter 8 presents my work on design fiction.

3.5 Interviews

I began addressing my first research question by conducting in-depth, semi-structured interviews with 24 people from a variety of spiritual backgrounds and faith traditions.

3.5.1 Interview Sampling and Recruitment

Qualitative research sampling strategies aim “to enhance understandings of selected individuals or groups’ experience(s) or for developing theories and concepts” (Devers & Frankel, 2000, p. 264). Four sampling techniques applied to my research: purposeful, convenience, snowball, and theoretical. My first research question required collecting data from people who had a rich variety of spiritual and religious backgrounds and experiences, and this superseded representativeness. For the interviews, therefore, I used a combination of purposeful and convenience sampling for the most part, drawing on snowball and theoretical sampling to a lesser extent.

Purposeful sampling (also called purposive, judgment, or selective sampling) is the selection of samples on the basis of criteria that the researcher defines before beginning data collection. Tongco (2007) describes the process simply: “...the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience” (p. 147). According to Koerber and McMichael (2008), researchers using purposeful sampling should aim to recruit participants that exhibit as wide a variety of perspectives as possible for the purpose of their investigation. I used purposeful sampling throughout the recruitment process, to support my goal of interviewing people from a wide variety of faith traditions.

⁵¹ I was participating in the CHI 2014 Doctoral Consortium (Buie, 2014b) at that time.

Convenience sampling is the selection of data sources that are convenient for the researcher — “participants who are readily available and easy to contact” (Higginbottom, 2004, p. 15). Although convenience sampling is considered to be the least rigorous of the non-random sampling methods (Marshall, 1996), it is also the most commonly used one (Panacek & Thompson, 2007), and its use is often justified by pragmatic considerations such as the availability of people who are willing to participate (Giacomini & Cook, 2000). I began with a convenience sample of three fellow PhD students in the Faculty of Arts, Design and Social Sciences at Northumbria University, to pilot the interview approach, and later I used a hybrid of purposeful and convenience sampling to approach specific individuals because they had a religious background I needed and were geographically accessible for in-person interviews.

Snowball sampling is the selection of participants by referral from one to another. According to Trotter (2012), this approach involves selecting a person who has key characteristics required for the study and asking that person to name other people who also have those characteristics. Vogt and Johnson (2011) consider snowball sampling to be particularly useful for recruiting people with unusual experiences who are likely to be acquainted with one another. I recruited two participants via referrals from previous participants from the same or similar faith tradition.

Theoretical sampling is “the process of data collection directed by evolving theory rather than by predetermined population dimensions” (Draucker, Martsof, Ross, & Rusk, 2007, p. 1137). Although much of the literature considers theoretical sampling to be what Coyne (1997) calls a “central tenet” (p. 624) of GT, Furniss et al. (2011) comment that GT studies should not be subject to “imagined objective ideals” but must take into account practical constraints such as “the scope of the study and its output, the numbers of participants and their accessibility, and the depth of the analysis” (p. 119). Similarly, Garcia-Romeu (personal communication, 16th May 2016) states that purposeful sampling can suffice for “a time and resource limited project like a [PhD thesis] that is only meant to provide a preliminary attempt at a grounded theory” and that needs a broad variety of participants. Charmaz (2012) notes that initial data sources require identification by a sampling method other than theoretical, pointing out that theoretical sampling has the purpose of *further* developing a theoretical category identified by the analysis and that it can involve either obtaining new data sources (such as interview participants) or asking new questions of existing sources. I briefly used theoretical sampling halfway through the interviews, adding a question after one participant volunteered what was clearly a new top-level category, and returning to previous participants to elicit analogous information from them.

Recruitment began with existing personal contacts and used Facebook, Twitter and the Northumbria Chaplaincy to disseminate the request. I defined “spiritual experience”⁵² to potential participants as an experience of feeling deeply connected to something larger than oneself. Both religious and non-religious participants were able to relate to that definition and to describe at least one such experience from their lives.

Interviewing began with the piloting of the technique with the three fellow PhD students, which provided valuable experience for tailoring the approach. It continued with personal contacts in the US and Canada, so that interviews could be conducted in person during a trip to North America in April-May 2014; this yielded 12 interviews. After this trip, the Northumbria University co-ordinating chaplain provided assistance by distributing the recruitment materials to the other university chaplains and other contacts, hoping that this would lead to recruitment of participants whose backgrounds were different from the existing sample — particularly Muslims, Jews, and Buddhists. This effort yielded only three participants, two of them Christian and one Jewish. During a class given by the Graduate School I recruited two additional participants from PhD students outside the Design cohort, one Muslim and one Christian brought up in a family that had a background of traditional African spirituality. Visits to Buddhist centres in Newcastle produced interviews with two people from different branches of Buddhism.

3.5.2 Interview Participants

This section describes the 24 interview participants: 13 women and 11 men, ranging in age from roughly 30 to late 60s. All lived in the UK, the USA, or Canada at the time of the interview; some had migrated from Asia, the Middle East, Europe, or Africa. Their spiritual perspectives ranged from Atheism to Buddhism and Hinduism to Spiritualism to the Abrahamic religions of Judaism, Islam, and Christianity. The following list highlights key demographic and background characteristics; more information appears in Appendix A.

*Alicia*⁵³, a woman in her early forties living in the USA. Initially brought up Catholic in the USA, Alicia has been a Pentecostalist since about age 12, when her family converted.

Barika, a woman of about 30 living in the UK. Brought up Muslim in India, Barika is non-practising but continues to identify as Muslim.

Bob, a man in his mid-sixties living in the UK. Brought up in a non-practising UK Methodist family, Bob grew interested in Judaism at 12 and converted to Progressive Judaism as an adult.

⁵² This was before I switched to the term “transcendent experience”.

⁵³ The names of all the participants and any people they mention have been changed to protect their privacy.

Brian, a man of about 40 brought up and living in the UK. Brought up Church of England, Brian converted to Pentecostalism at about age 20.

Cathy, a woman of about age 50 brought up and living in the USA. Brought up Catholic, Cathy converted to Unitarian Universalism (UU) in her early 30s, when her first child was very young.

Danielle, a woman in her late thirties, brought up and living in the UK. Brought up Caribbean Pentecostalist, Danielle converted to the Church of England, her husband's faith tradition, when she married.

David, a man of about 60, brought up and living in the UK, with 30 years living in Canada as an adult. Brought up Church of England, David considers himself spiritual but not religious.

Ebiundu, a man in his late twenties, brought up in Nigeria and now living in the UK. Brought up Christian in a family and culture with ties to traditional African religion, Ebiundu converted to Pentecostalism in his mid-20s, soon after moving to the UK.

Gloria, a woman in her mid-forties, brought up and living in the USA. Brought up Catholic, Gloria experimented with Buddhism and then Unitarian Universalism, finally converting to Paganism/Spiritualism in her late thirties.

Greg, a man in his mid-sixties, brought up and living in the USA. Brought up United Methodist, Greg has identified as Atheist since childhood.

Helen, a woman in her mid-fifties, brought up and living in the USA. Brought up evangelical Southern Baptist, Helen became a Unitarian Universalist in her forties.

Inge, a woman of about 40, brought up in Germany and now living in the UK. Brought up Catholic, Inge became a Quaker in her early thirties whilst retaining her connection with Catholicism; she identifies with both faith traditions.

Jared, a man of about 40, brought up and living in the USA, with several years spent living in Europe as an adult. Brought up in the Church of Jesus Christ of the Latter-Day Saints (Mormonism), Jared continues to identify as Mormon.

Julia, a woman of about 60, brought up and living in the USA. Brought up United Methodist, Julia converted to Unitarian Universalism in her twenties and continues to identify as Theist.

Keith, a man in his mid-forties brought up and living in the UK. Brought up Church of Scotland, Keith attended a Church of England whilst at university but was not drawn to it. He identifies as spiritual but not religious.

Louise, a woman of about 60 brought up and living in the USA. Brought up Unitarian Universalist, she identifies as UU and Atheist.

Madhu, a woman in her mid-thirties brought up in India and now living in the USA, with a decade spent living in Australia and Europe in between. Brought up Hindu, Madhu identifies as non-practising Hindu.

Parvaneh, a woman of about 50 brought up in Iran and now living in the UK, with time spent in India during university. Brought up Muslim, Parvaneh continues to identify as Muslim and is more religious than her parents.

Rick, a man in his mid-sixties brought up in the USA and living in Canada since his early twenties. Rick was brought up United Methodist and continues to belong to the United Church (the Canadian equivalent of United Methodism).

Sadie, a woman of about 40 brought up and living in the USA. Brought up Unitarian Universalist, Sadie continues to identify as UU.

Sangmu, a man in his mid-fifties brought up and living in the UK. Brought up by non-practising parents who sent him to Methodist Sunday School, Sangmu spent several years as an Anglican in his twenties. He converted to Buddhism in his forties and became an ordained Buddhist teacher.

Scott, a man of about 60, born in and now living in the USA, brought up in Africa and the UK whilst his parents were on overseas assignment. Brought up Episcopalian, Scott spent several years unaffiliated with any faith tradition and became UU at about age 50.

Susan, a woman of about 60 brought up and living in the USA. Brought up United Methodist, Susan continues to identify as United Methodist.

Tenzing, a man of about 50 brought up and living in the UK, with a few months living in Canada. Brought up Church of England, Tenzing converted to Buddhism in his thirties and became ordained as a Buddhist monk.

3.5.3 Design and Conduct of Interviews

Interview methods constitute a continuum of formality and structure (Qu & Dumay, 2011). Structured interviews use a fixed set of predefined questions with standardised wording, allowing the respondents a limited choice of answers. In contrast, unstructured interviews use a conversational style, adapting the questioning to the participant's situation and the interview context, with the intention "to make the interviewee feel relaxed and unassessed" (p. 245). Semi-structured interviews lie between them, encompassing a fair amount of variation and consisting of

questions, probes, and broad themes that the interviewer uses “to help direct the conversation toward the topics and issues about which the interviewers want to learn” (p. 246). Semi-structured interviews can range “from highly scripted to relatively loose” (p. 246), from almost structured to almost unstructured: the questions must be worded so that the participant can understand them and “the interviewer must respond sensitively to differences in the way the interviewees understand the world” (p. 247).

I used a semi-structured interview approach that was situated closer to the unstructured end of the formality continuum than it was to the centre. I used the semi-structured feature of having an agenda of broad themes in a predefined sequence and a very loose, unwritten interview guide, combined with the unstructured approach of letting the conversation influence the probes I used and the wording of the questions I asked.

Spirituality is a topic that people in modern, largely secular culture may find difficult to talk about with people they don't know well or with whom they don't share beliefs — or, as Latour (1999) has observed, may find it difficult to talk about with anyone at all. Spirituality can be deeply personal, and people may feel embarrassed or fear not being taken seriously. It was important, therefore, that the interview process foster an environment of trust, in which participants could feel safe in talking about their spirituality and their transcendent experiences. For this reason, almost all of the interviews were conducted in person and all took place in a location of the participant's choosing. Two used Skype⁵⁴ video call.

The importance of trust, as well as the wide variety of spiritual and religious backgrounds amongst interview participants, drove the choice of a semi-structured interview design and a conversational style, which relied on an outline of topics rather than a specific set of questions. I began each interview by asking about the participant's childhood, family structure, and spiritual/religious practices whilst they were growing up, then moved into their spiritual development since childhood. I enquired what comes to mind when they think of something larger than themselves and probed for how they connect with it and whether they use any human-made tools to do so. I asked for a description of one or more experiences that they had had of such a connection. I probed how they used artefacts in spiritual practice and how the artefacts contributed to their spiritual experiences. Near the end of interview 12 the participant said, “You know what I'd really like? My ideal tool would be...”, and described something she had been looking for but hadn't found. Her comments provided such interesting and valuable data — actually revealing a fifth top-level category — that I added this topic to subsequent interviews, asking participants to imagine a

⁵⁴ <http://www.skype.com>

perfect tool, irrespective of cost or feasibility. I contacted as many of the previous participants as I could reach, to follow up with them about their own desires for artefact-supported enhancement.

An established principle in UX practice is that we don't ask users what technology or features they want⁵⁵; instead, we ask them what they want technology to help them do⁵⁶. This helps us identify underlying needs, so that we can design to satisfy those. Therefore, when I elicited interview participants' desires for artefact-supported enhancements I worded the question along these lines: "If someone could design and build for you a product that would enhance your spiritual experiences⁵⁷, what would it do for you?" Although this question does invite them to think about technology, it explicitly asks how such a product would help them, not what it would be or what it would look like. Where necessary, I followed up with a probe or two. Interviews lasted, on average, just over an hour, and all took place between the end of April and the middle of August, 2014. I recorded them using iPhone Voice Memos⁵⁸ for in-person interviews and Call Recorder⁵⁹ for Skype interviews.

3.5.4 Interview Transcription and Analysis

I transcribed interview recordings using IBM's VideoNoteTakerUtility⁶⁰, a Java-based tool that provides for controlling playback via keyboard. Within each transcript⁶¹ I noted times when the participant laughed, cried, paused, or said "uh", or when their speech was unintelligible.

I analysed the data using Grounded Theory methods, facilitated by Dedoose⁶² and Microsoft Excel[®] software. I used Dedoose for coding, re-coding, and exploring the relationships between codes; I used Excel to sort and filter various views of the code groups. Although Dedoose is meant to support memo writing as well, I found that function unwieldy, so for memos I used paper, Excel, and Evernote⁶³ software.

⁵⁵ We do sometimes involve them in participatory design workshops, where they get a chance to explore and express ideas for designs.

⁵⁶ If they volunteer desires for features, we may take those into consideration, but even then I usually follow up with a probe along the lines of "what will that help you do?"

⁵⁷ For ease of understanding I used the phrase "spiritual experiences" when talking with participants, but I did explain that such experiences were not necessarily religious.

⁵⁸ <http://www.macworld.com/article/2048983/get-to-know-ios-7-voice-memos.html>

⁵⁹ <http://www.ecamm.com/mac/callrecorder/>

⁶⁰ <http://videonotetaker.sourceforge.net/>

⁶¹ Anonymised transcripts can be furnished on request, provided they will not be further distributed.

⁶² <http://www.dedoose.com>

⁶³ <http://www.evernote.com>

Coding

I used a modified version of Charmaz's Constructivist Grounded Theory coding model (Charmaz, 2014). As a sociologist, Charmaz uses GT to understand the processes that people use in resolving problems. I, on the other hand, was researching the processes of TX to support my primary research questions of how people use (and want to use) artefacts to support TXs and how design might contribute. Thus I needed to build a grounded theory that would not only help me understand the processes of transcendent experiences themselves but would also answer my first main research question in a way that would enable techno-spiritual design to make use of the findings. My experience in interactive system design and my understanding of the sorts of questions designers ask about the processes for which they are designing guided my adaptation of the technique. Specifically, I did not limit myself to gerunds for coding, especially at the lowest levels, because I wanted to capture not only processes but *features* of the processes and supporting artefacts that I saw as potentially useful for techno-spiritual design, especially ones that participants found valuable. I used the grounded theory coding methods of initial, focused, and theoretical coding (Charmaz, 2014).

Initial (open) coding

Initial coding scrutinises segments of data to understand their meaning for and importance to the analysis, coding them according to that understanding. Each segment, writes Charmaz (2014), may be as small as a single word or as large as an incident. This type of coding addresses the lowest level of granularity necessary to note its meaning for the analysis, and it should "stick closely to the data" (p. 116). Charmaz strongly recommends using gerunds as codes, noting that they help researchers to study the processes in the stories people tell and to discover implied relationships between processes.

I examined the interview transcripts in detail and coded them to identify concepts that seemed relevant to my first research question. I defined excerpts ranging in length from clauses to paragraphs and assigned one or more initial codes to each, generating 103 initial codes in raw form. Very similar concepts — e.g., Awareness, Noticing, Attention, and Focus — produced a single initial code.

Comparing the initial codes, I grouped and re-grouped them into initial categories of related codes. For example, the following initial codes — Awe, Loss, Grief, Humble / Feeling small, Fun, Joy, Fear / Uncertainty, Comfort, Calm, Peace, Openness, Love, Surprise, Relief, Wonder — became a category of Feelings / Emotions. The initial codes Praying, Meditating, Ceremony / Ritual, Contemplating Nature, and Music Making became a category of Spiritual Practice; and the codes Mystery, Resonance, Beings / Entities, Welcome, and Vastness became a category of Thoughts and Interpretations.

Focused coding

Focused coding involves examining and comparing the initial codes, concentrating on the ones determined to be the most useful. With focused coding the GT analysis begins “to synthesize, analyze, and conceptualize larger segments of data” (Charmaz, 2014, p. 138). Focused coding begins to look at theoretical categories.

To explore in more depth the relationships amongst codes and categories, I used Excel’s search and filter capabilities to examine the codes and excerpts in various ways. I compared the codes with respect to the interview contents, rearranging categories and creating higher-level categories to accommodate the emerging relationships among the codes and excerpts. This process revealed, for example, that the physical context (where they were and what constituted the physical space) and the activity context (what they were doing) could not realistically be separated, so I combined them into the Physical and Activity Context.

I ended up with five main themes of artefact-supported TX: Creating the Context, Living the Experience, Integrating the Experience, Using Artefacts, and Desiring Enhancement. (Chapters 4 and 5 describe these in detail.) Although I could have included artefacts in the context — artefacts clearly form part of the context of an experience of using them — I brought them to the forefront for two reasons: interviews did not constrain the discussion to TXs that artefacts supported, and my research questions focused specifically on artefacts.

Theoretical coding

Theoretical coding seeks to identify links and relationships among the elements of the categories that emerged from the other levels of analysis — what Gioia et al. (2012) call the data structure. Theoretical coding, argues Cutcliffe (2000), along with “the postulating of previously undiscovered or unarticulated links...enables the development of the theory” (p. 1482).

In theoretical coding I explored ways in which the higher-level themes related to each other. This process revealed, for example, that the high-level themes form not only a sequence of stages but a *cycle*: integrating an experience can include making changes to aspects of the context of that experience, which may in turn become aspects of the context of a future TX. It also revealed that artefacts support mainly the context of TX for the interview participants, although they also desire artefact support for living the experience and integrating it afterwards.

Use of gerunds in the codes

Some of my initial codes use gerunds, as Charmaz (2012) advises: “...coding in gerunds allows us to see processes that otherwise might remain invisible” (p. 5). Gerunds in these codes include *questioning, exploring, drawing, designing, reading, praying, and developing personally*. Other

codes involve nouns or other verb forms — such as *connection, creativity, mystery, authenticity, water, larger than oneself, sacred text, priest/minister/leader, beliefs, loss of control, Nature, awe, state of mind, numinous presence, novelty, and familiarity*. Although gerunds are critical to Charmaz’s research because sociology seeks to understand human social processes, they are useful to mine but are not universally applicable to it because techno-spiritual design focuses on artefacts as well as behaviours and processes. All of my top-level categories use gerunds, however, as I was ultimately seeking to understand the human processes involved in artefact-supported transcendent experiences.

Consideration of existing literature

After I had completed my GT analysis, I considered other inductive analyses of TX (Garcia-Romeu, Himmelstein, et al., 2015; Wardell & Engebretson, 2006; Wood, 2013) and added codes that I might have overlooked in my data. Garcia-Romeu et al.’s (2015) mention of stress as an aspect of context, for example, brought to mind that some interview participants had related having TX during periods of stress, so I added “stress” to the psychological context. As I explained in Section 3.2.5, literature on mystical experience separates the experiential component from the interpretive one, so I assigned to separate categories the perception of phenomena and the thoughts and interpretations about what was perceived.

3.6 “Transcendance” Game Workshops

3.6.1 *Game and Workshop Design and Conduct*

The ineffability and unanticipability of transcendent experiences precludes the reliance on “classic” HCI methods involving definition, description, and observation. Some might argue that techniques that work for other types of experiences the HCI literature characterises as ineffable, such as aesthetic experiences (Boehner et al., 2008), could also be used in designing for transcendent experience. As I have previously discussed, however, the approach that Boehner et al. (2008) describe — designing a system for one’s own use, living with it, evaluating it through reflecting on the experiences, and adjusting it to accommodate those reflections — was not feasible for my research because a transcendent experience cannot be assumed to occur during any specific period of living with a system. In addition, the Boehner et al. (2008) project focused on the “sympathetic awareness of the other” (p. 12:14) person’s presence, but most transcendent experiences — as described in the literature, at least — are individual, with any awareness of others as secondary. But even if that approach could be effective for TXs, we would still have the challenge of creating the design idea. We’d still have to come up with a design.

I decided to build an environment of imagination, fun, and play for exploring experiences and creating design ideas: I chose to design a game.

For the game approach I took inspiration from Vines et al. (2012) and from Blythe, Steane, Roe, & Oliver (2015). Both of those explorations involved workshops to explore speculative design concepts for people over 80 years old: Vines et al. (2012) addressed banking technologies and Blythe et al. (2015) addressed design for thriving in old age.

Enter *Transcendhance*^{TM64}. The name, a portmanteau of *transcendent* and *enhance*, reflects the goal of enhancing experiences of transcendence. I needed the game to balance simplicity with analytical fidelity, so that the interview findings could influence the speculative design ideas generated without requiring the players to understand the findings. Chapter 6 describes the game design; details of the game materials appear in Appendix B.

I conducted three Transcendhance workshop sessions, with a total of 12 participants. I recruited the participants from people I knew; one was a retired medical professional and the rest were a mix of PhD students (some in Design and one in social science) and members of a local Unitarian congregation. All participants knew of my research topic and were interested in participating; all had university degrees and none were strong adherents to any specific religious faith. I myself participated in one of the workshops, to achieve the target of four players.

The workshops lasted 75-90 minutes each and produced 69 ideas, which Chapter 7 analyses and Appendix C details.

3.6.2 Workshop Data Analysis

I began analysing the workshop data by compiling a list of all of the resulting speculative design ideas in chronological order and annotating the sketches with their inputs, to the extent that I had captured those data. For each idea, I reviewed the stages and subcomponents of my grounded theory of transcendent experience (Chapter 4), determined which ones the idea addressed, and listed them with the idea. I organised the ideas according to the stages/subcomponents addressed. When an idea addressed more than one stage or subcomponent, I discussed it in the section for the one it supported most strongly; if it was also particularly illustrative of another stage or subcomponent I mentioned it in that section as well. Figure 4 shows an example of the data for a design idea that supports multiple TX stages and subcomponents.

For each group of ideas, I reviewed the desires that the interview participants had expressed for artefact-supported enhancement to their TX and determined which ones the ideas in that section addressed. I also identified HCI literature on similar technologies or purposes (e.g., embodied

⁶⁴ The name is pronounced to emphasise “enhance” — “transcend-*hance*”. It does not sound exactly like “transcendence”.

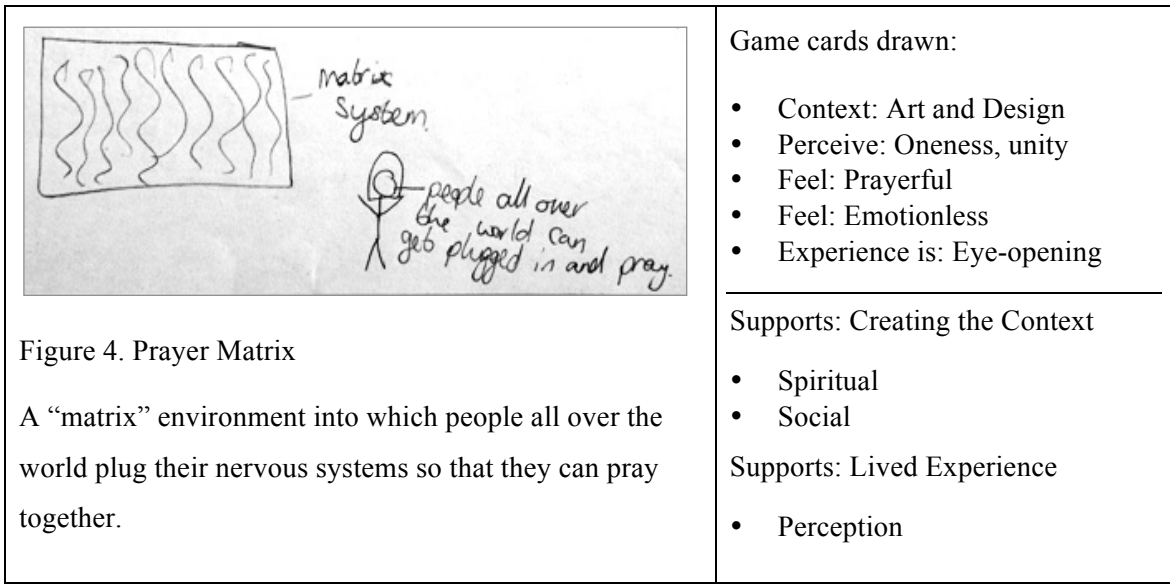


Figure 4. Prayer Matrix

A “matrix” environment into which people all over the world plug their nervous systems so that they can pray together.

interaction, memorialisation, felt presence) from which the ideas in that section might benefit.

I conjectured about ways of expanding on the ideas to generate further speculative techno-spiritual design concepts.

I completed the workshop analysis by developing two of the generated ideas as preliminary design fictions. For these I chose one practical idea that could be built with available technology and one fanciful idea whose feasibility would require significant technological advances. I reviewed the enhancement desires to identify ones that each idea might address, added features to the ideas as the desires addressed them, and wrote an imaginary abstract for each one.

3.7 Design Fiction

To support the further exploration of workshop-generated speculative design ideas, I turned to design fiction because of its storytelling nature and its value in exploring concepts without building anything or involving flesh-and-blood participants. I aimed to advance an exploration of design fiction for techno-spirituality beyond what had previously appeared in the literature and in my background work. I related design fiction to the phases of transcendent experience modelled in my grounded theory (Chapters 4 and 5) and devised and elucidated three new forms. Using one of the workshop-generated ideas as a basis, I explored how each proposed new form might contribute to the use of design fiction, both for transcendent user experience and more broadly.

3.8 Peripheral Design

As I discussed in Chapter 1, Kohls et al. (2008) observe that TXs “are methodologically difficult to capture” (p. 157), advising researchers to approach these experiences “indirectly and implicitly” (*ibid.*). Transcendent *user* experiences, I argue, are difficult not only to capture but also to

envision, and design needs to take a similarly indirect approach to them. I developed my Transcendance game/workshop and followed it by design fiction, to provide such an indirect and implicit way of approaching design for TUX. This game-plus-design-fiction scheme provides a sideways approach to TUX design⁶⁵ — one that takes an oblique perspective on the experiences and on designing for them. I call it “peripheral design” to draw an analogy with peripheral vision: my approach views TUXs “out of the corner of one’s eye”, as it were, rather than looking directly at them. Peripheral design elicits ideas using imagination, fun, and play; it explores and elaborates them using the metaphors (Kohls et al., 2008) and playfulness of storytelling and the “elliptical language” (Robins, 2014, p. 1) of poetry.

⁶⁵ “TUX design” is a shorthand for “designing for TUX”. The phrase does not imply that transcendent user experiences themselves are designed. See my essay at <https://www.wearesigma.com/news/ux-design-is-a-convenient-shorthand-or-why-no-one-can-design-an-experience/>

Chapter 4 – Transcendent Experience: A Framework for a Grounded Theory

I bask in the majesty of the cosmos. I use words, compose sentences that sound like the sentences I hear out of people that had revelation of Jesus, who go on their pilgrimages to Mecca.

...

*Not only are we in the universe, the universe is **in us**. I don't know of any deeper spiritual feeling than what that brings upon me.*

– Neil DeGrasse Tyson, astrophysicist and atheist

4.1 Introduction

In this chapter I present a framework of transcendent experiences (TXs), constructed from the analysis of data from interviews with 24 people from a variety of spiritual and religious backgrounds and perspectives. I do this to build an understanding of the characteristics of such experiences, to lay the ground for building a grounded theory of how artefacts support the experiences and how design might contribute to that support. This chapter covers the experiences only; Chapter 5 completes the grounded theory by adding the use of artefacts in transcendent experiences as well as people's desires for TX enhancements and artefact support for them.

As I explained in Chapter 2, I use “transcendent experiences” to denote experiences of deep connection with something greater than oneself. The participants in my interviews described TXs that, on the surface, may appear to differ dramatically. Let us consider four examples.

Barika

Barika senses in the rain the comforting presence of her late grandfather returning to participate in her life. Her *Nannan* died when she was 14, on a rainy day:

And then every time there was a birthday in the house, or a marriage, or some kind of celebration, it would rain. ... My grandfather died and went to God, but every time we celebrated he came back...through rains, to celebrate with us. ...that's how he communicated or showed *me* that he was still there. ...now I think it's security, that he's there protecting me. He's there to give me what I need, to get me to what I want; and all that I achieve, I do believe that he has a part to play in it.

The sense of her grandfather's presence on rainy days has remained with Barika for two decades, providing her great comfort.

Sangmu

Sangmu had an experience of unity whilst skinny-dipping alone in the North Sea:

...suddenly the sort of sense of being immersed in the ocean — difficult to put into words, but I just felt a complete oneness with the whole ocean, covering the whole

planet...as if the ocean was one thing, that it was conscious. There was something alive about it. And that it wasn't separate from me.

Sangmu continues to have occasional experiences of "a sort of intimacy with the world", which he says are related to his Buddhist practice and most likely to occur in conjunction with certain types of contemplative meditation. These experiences reinforce his sense of being connected to something greater than himself, which is very important in his daily life.

Susan

Susan heard her late mother's voice during a time of crisis in her health. Awake in the wee hours of the night, suffering from pain and insomnia caused by chemotherapy, Susan was doing a healing visualisation to aid her treatment. A small lamp beside her recliner provided a bit of light. The scene changed abruptly:

...all of a sudden everything went black. I mean, just *Bam!* like a... "*pwt!*" in a movie. And I heard Mom's voice. It was as clear as if she was standing there. I didn't see her, but I heard her voice. And I said to her, "No, no, not now — I'm not ready. *Not now.*" {crying} And she said "OK. OK, I'll be here when you are. OK. Not now." And then it went away. And I was like, "Oh boy, *that* was scary!" And so, you know, now it was very comforting, because I know that when my time comes, Mom's going to come get me.

Susan got up, switched on all the lights on the ground floor, and walked around "touching things and getting water and assuring myself that I *was* still alive." After that fright, she felt immensely relieved to have things back to normal.

This experience changed Susan's life. Although as a Christian she has always believed in life after death, her sense of experiencing it herself, by way of communicating with her late mother, has given her a certainty that reinforces her faith:

...you *say* you believe in life after death, because that's what we [Christians] do. But to have actually experienced that personally, that was a really big deal, to *me*, because that was the first time.

Because of this experience, Susan no longer has any fear of death. She worries about the people she will leave behind, but she's not afraid for herself: she takes great comfort in knowing that her mother will accompany her when she dies.

Danielle

Danielle had gone to her bedroom to pray after a day of free-lance writing at home:

...I was just praying, and then I got up from my bed... and I got to the door handle...

Suddenly she heard a voice in her head speaking a friend's name, and she felt herself physically weighed down by her friend's desolation:

...I just heard Anne's name in my head... I couldn't stand up any more; it was like I felt this weight on me. ...I was stooped over and I had to go to the bed and lean on something. And it was just weird because — I was OK in myself; I could just feel... this dark weight... these feelings like there's no point, there's nothing. ...*I* wasn't feeling them [myself], but I could feel the weight of them.

Danielle responded by praying desperately for her friend:

I got back to the bed...and I said "God, you *have* to help Anne!" and I was just praying. And I hadn't spoken to her for...months; I didn't know what was going on in her life. ... And then in the end I just hadn't got anything else to say 'cause I didn't know what the situation was, and I was just crying and crying and crying, and saying "Please help me" and "Please help her".

For some time, all Danielle could do was cry and pray — until the mood shifted:

And then suddenly the weight just lifted, and I forgot about it. I actually went downstairs to eat. {smile} I was like, "Yeah, food." And...later that evening...I tried to call her, and it just went to her voicemail. ... And it was a few weeks later that...she called me, to say she had seen this missed call on her phone, and she said that she'd been in hospital, and she'd taken an overdose and tried to kill herself. And it was the same day that that happened...

After an unsuccessful attempt to reach Anne, Danielle let it go and resumed her life. But when Anne called and disclosed that she had attempted suicide that day, Danielle knew immediately what her experience was about:

I do believe that that was God telling me and wanting someone to pray for [Anne], because...someone found her and got her to the hospital in time... I believe that prayer...might have brought that person to find her...

God, she understood, was urging her *personally* to pray for her friend. Danielle mused about how strange the experience was:

...but that was so mad to me, because that had never happened to me before; it's never happened to me since. But that feeling of just *feeling* what she was going through, and you know, that was just strange; I've never had anything like that happen before.

Danielle has described a major transcendent experience, an intimate connection with her God that she understood to have helped save a friend's life. She found the experience so odd and so meaningful that it has remained present with her for many years: "...it never leaves me because it was so weird."

Commonalities

The four experiences described above appear at first glance to have little in common; and certainly the way the experients understand them differ substantially. What links the experiences, besides the connection with something beyond themselves, is the composition of the three phases that

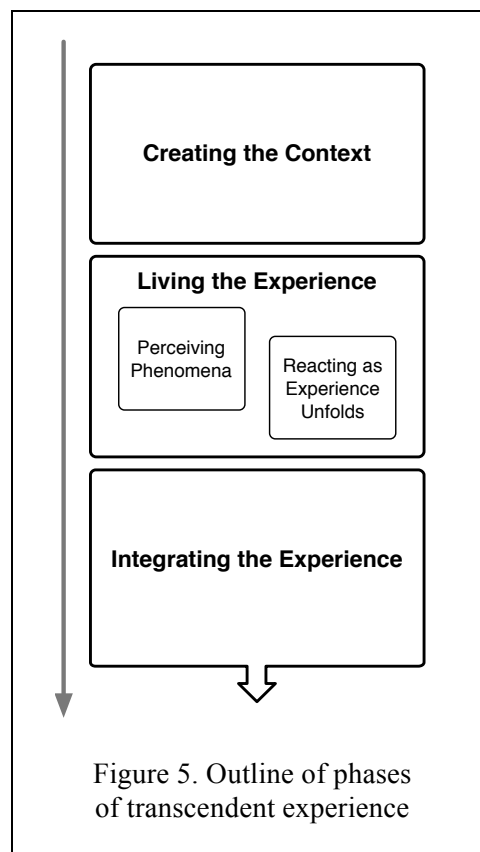
constitute them. The rest of this chapter details these phases and their subcomponents, and explores their inter-relationships.

The analysis of the interview data, informed by the literature, produced three major categories of concepts about TX: (1) a TX occurs in a context, (2) it involves the person’s perceptions and reactions as it unfolds, and (3) it can have a lasting and even transformative effect on the person. These categories by themselves are no surprise; in fact, they align closely with the findings of existing studies of similar experiences (Garcia-Romeu, Himmelstein, et al., 2015; Wardell & Engebretson, 2006) and with McCarthy & Wright’s (2004a) observation: “Any description of an experience...is constituted of things and events, what they did to those involved, and how they⁶⁶ responded” (p. 50). My interview analysis, however, shows a richer picture of the three categories in terms of their composition and their inconNECTIONS. I summarise the categories as follows:

Creating the context. Experiences do not occur in a vacuum, and TX contexts exhibit some features specific to transcendent experience. People create the context of a TX not only by putting together the immediate elements — such as where they are, what they are doing, what time of day and time of year it is, who is with or around them, if anyone, and what is going on in their lives — but also by bringing to the experience long-term influences such as how they have developed mentally, emotionally, and spiritually throughout their lives, up to the beginning of the experience.

Living the experience. People live an experience by means of *perceiving phenomena* and *reacting to them at the time*. Perceptions form the *experiential* part of a TX, as Stace (1960) labelled it; reactions include thoughts (Stace’s “interpretive factor” (*ibid.*)), emotions/ feelings, and immediate effects and actions, all occurring while the experience is unfolding.

Integrating the experience. People integrate a TX into their lives after they have lived it. They may communicate parts of the experience with others, reflect on its meaning and importance, have



⁶⁶ The first “they” in this sentence from McCarthy & Wright (2004) refers to things and events; the second refers to the people who have the experiences.

continuing feelings about it, and/or make life changes to respond to their understanding of its meaning. The life changes can include adjustments to their beliefs, their spiritual practices, their environments or other contributors to their spirituality.

After the categories and their inter-relationships became clear, I realised that the top-level categories occur in sequence, for the most part, and thus that they constitute broad *phases* of TX. Figure 5 depicts the TX phases at a high level, showing their basic sequence. It indicates the overlap in the subcomponents of *Living the Experience* :— although any perception precedes the person’s reaction to it, a single experience may involve multiple perceptions related to transcendence, and later perceptions may occur after the person begins reacting to earlier ones. The figure is not to scale with respect to time, if there even *is* a scale; and in any case, times differ across people and across experiences.

The remainder of this section details the phases and their subcomponents.

4.2 Phase 1: Creating the Context

Whether a transcendent experience occurs serendipitously or arises from a person’s explicitly seeking it, like any other experience (McCarthy & Wright, 2004b) it occurs in a context. My analysis constructed concepts for six subcomponents of TX context: developmental, spiritual, social, psychological, physical/activity, and temporal. These subcomponents are not mutually exclusive: if a person’s spiritual values include social justice and community service, for example, the activity of helping others is likely to play a role in her TX.

4.2.1 Developmental context

The ways in which people develop, both spiritually and otherwise, set the stage for what they experience, how they understand it, and how they respond. Family background, educational history, work experience, major life changes, religious upbringing (instruction chosen by others), and self-directed spiritual development (questioning and spiritual learning sought independently) all contribute to their understanding of their spirituality and their openness to transcendent experience; these factors all influence how people react to such experiences at the time of occurrence and how they respond to them in the long term and integrate them into their lives. It is impossible to tease out the spiritual and religious factors from the cultural, family, and personal factors, so I present the developmental factors in terms of the person’s involvement in choosing and directing them — upbringing and self-directed development.

Most of the developmental context precedes the TX by a substantial amount of time.

Upbringing

I use “upbringing” to refer to the parts of secular and spiritual development during childhood and adolescence *that participants did not choose for themselves*. These comprise mainly participants’ family and cultural backgrounds and the secular and religious instruction and education that other people chose for them.

Interviews focused on the religious aspects of upbringing, spending less time on other facets. Several participants remarked that parts of their religious upbringing remained with them into adulthood. Helen lamented her Unitarian Universalist (UU) congregation’s use of reworded Christmas carols:

I guess there’s a part of me that still sort of identifies with being Christian. I still feel like that’s my base...

The people responsible for participants’ upbringing were, of course, most commonly their parents, although other adults such as teachers, clergy, extended family, and neighbours delivered much of the content and even chose some of it.

Self-directed development

All participants described periods of spiritual development — questioning, exploring, studying, learning, changing — that they pursued for themselves, separately from the instruction and education they received as part of their upbringing.

Brian felt no strong pull toward religion until graduate school, when he went with friends to the Christian Union and then to an Anglican church. When they decided to try a different church, Brian ended up at its Bible Week, which he found eye-opening: “that was kind of the first inkling I had that Christianity was about spirituality.” Helen got to university and began to question the conservative Southern Baptist faith of her upbringing, abandoning it altogether after learning that the denomination had voted to deny ordination to women. Years later she began attending a UU church, and she especially liked the support UUism provided to her search for spirituality: “of the Seven Principles, the one I like best is the “free and responsible search for truth and meaning.” Rick has done a great deal of spiritual study all through his life — ever learning, ever probing — and he has always conducted his questing from the comfort of his Methodist/United faith, which he finds a comfortable home that gives him the freedom to explore what God means to him.

Brian, Helen, and Rick all followed different trajectories. Both Brian and Helen had left their churches of origin during their university days, but Brian ended up embracing a more charismatic, immersive version of his family’s faith, whilst Helen gravitated to a more exploratory church that drew on other faiths as well as her faith of origin. Rick has remained steady, accomplishing his spiritual growth grounded in his faith of origin.

In recounting their self-directed spiritual development, participants mentioned content provided by sacred texts, religious stories, books about spirituality and religion, sermons and formal teachings of religious/spiritual leaders and teachers, informal advice and discussions on spiritual and religious topics, and classes such as yoga and meditation taken outside religious settings.

Secular aspects of self-directed development contributed to who the participants were when they had the experiences they recounted. Secular development included continuing/higher education, jobs and careers, relocations and migrations, friendships, romantic relationships, parenthood, and continuing relationships with their families of origin.

Timing of upbringing and self-directed development

Upbringing does not have a uniform ending time for everything it encompasses: a person may, for example, stop attending the family's church at age 14 whilst continuing to attend the local school until age 18. Some aspects of upbringing continue to influence a person's spiritual perspectives throughout her life, even if she leaves her faith of origin. Some components of self-directed development can run concurrently with upbringing: a person may take a teen yoga class from a local yoga centre or read books on comparative religion obtained from the city library, all the while attending religious services with the family. Tenzing, for example, felt attracted to Buddhist content whilst living with his parents and attending a state school run by the Church of England:

Looking back, ...if I was looking at [bookshops] I'd be more interested in Buddhist things than other things; they sort of drew me a little bit.

Parvaneh began self-directed development even sooner than Tenzing did, persuading her parents to include her in the Ramadan fast years younger than Islam requires girls to start:

[F]rom dawn to dusk you can't eat, so early morning before sunrise you eat. And I woke up...and entered the room in which my mother and father was sitting, and the voice of praying from radio was...very strong, very touching. ...I said "What's happening here? Why they didn't include me?" ...and they say "Because we are fasting; we are eating now. Go, go..." ...I said, "No, no, tomorrow I want to fast..." They said, "You are too young" and...they didn't wake me up. And then I said, "OK—" {laughs} ...So without eating, I started fasting...and the next day they woke me up. {laughs}

Insisting on fasting gave Parvaneh a strong spiritual sense:

...I had a kind of sense of feeling — I don't know how to explain that — a kind of attachment with God and a spirituality and it gave me feeling grown up and respect.

Participants' upbringing generally continued until they left home, usually at age 17 or 18, and their self-directed development began several years earlier.

Identifying the developmental context of a transcendent experience

Although self-directed development can continue throughout life, for any given TX the contribution of development cannot be distinguished from that of the immediate context. Suppose that while contemplating sacred text or music, a person has a spiritual insight and very soon thereafter has a TX. It is impossible to determine exactly when in that process the spiritual content becomes directly contextual to the transcendent experience.

4.1.1 Spiritual context

A TX's spiritual context consists of the religious or spiritual beliefs, views, values, practices, and content that are present and contributing at the time and place of the experience. A person's internal spirituality — his beliefs, thoughts, and values — influence how he sees himself in relation both to the world and to something greater than himself. External religious or spiritual content such as sermons or holy texts, as well as spiritual practices such as rituals, contemplation of nature, meditation, or prayer, also contribute to the experience. Spiritual context can contribute to the experience in two ways: It can furnish an environment in which such experiences more commonly occur; and it can provide the individual with a framework for interpreting and responding to the phenomena and for integrating it into his life.

Something Larger than Oneself

A TX being defined as an experience of feeling connected with something larger or greater than oneself, I asked participants how they thought of *something larger*. They gave answers ranging from a personal deity to a symbolic or metaphorical concept to something literally huge.

Deity. A substantial number of participants described *something larger* as a deity or other conscious being, although their concepts of what that is varied considerably. Six participants from three monotheistic religions illustrate the variety of ideas. Alicia sees God as a kind of container for the Universe, a being who created the Universe out of himself, so that “we are literally wrapped inside of him.” Brian described God as the Christian Trinity, whilst Susan singled out the Holy Spirit — “a spirit that is located in...all parts of the world, in all parts of Nature, all parts of everything”. Barika initially described God as “the grandness in the Universe” and then added a hint of something within herself:

...sometimes I feel that there is something inside me that is larger than myself, that makes me achieve things that I never thought I would achieve.

Bob expressed a view of God as “the Universe plus something more”:

It's the intelligence behind the whole thing. But more even than the intelligence.
And I can't know about it, because it's so enormous that you can only grasp small bits of it, I think.

Parvaneh echoed Bob's view, saying that God is "beyond my imagination", but said she tries to know him through the Islamic approach of "knowing his names and attributes".

All of these participants identified as members of monotheistic Abrahamic religions, yet they expressed rather different views of God as *something larger*. Some see God as personal and approachable, others as more of a force or an intelligence. Yet for all six, *something larger* is a God who at some level is involved in the running of the Universe.

Spirits. One participant spoke of *something larger* as a realm of spirits: "The Other Side", Gloria called it:

...it's God/Goddess, it's spirit guides, angels; it's all those in a realm parallel to ours, connected to ours but not *in* ours.

Gloria mentioned "God/Goddess" only in passing, and went into great detail about the Archangel Michael and some of the spirit guides with whom she communicates. For her, the inhabitants of the Other Side are conscious beings closely involved in our earthly lives.

Force, power. Some participants spoke of *something larger* as more of a force or a power than a conscious being. They portrayed it as ineffable, undefinable, unifying, unexplainable, indescribable. They used words such as *resonance, mystery, a First Cause, an undefinable thing*. Consider Scott's answers to these questions⁶⁷:

EB: *when you think of something larger than yourself, what comes to mind?*

Larger. Larger... {thinking}

EB: *larger, more permanent — in a spiritual sense...?*

Um... {pause} I think — no words that come into my head are sufficing at the moment. It has to do— it, uh, {pause} Larger than myself... Musical, vibrational interrelationships. Attentional — I don't know. In a very solipsistic way, I absolutely believe that I can never know everything. So what I don't know is what's larger than me. The mystery...

Helen attributes to mysterious forces the fact that she has "survived a lot" in her life:

...I feel like there's some forces at work there that are keeping me safe. Then you think about— that seems a little— if something's keeping you safe, why isn't something keeping everybody safe?

Several participants mentioned Nature as *something larger*, including some who call it God. Cathy alluded to Nature when she spoke animatedly about "everything being alive around me." Julia described *something larger* as "kind of a unifying force for all of my experience of existence".

⁶⁷ The italicised text within and between quoted lines are my questions and comments in the interview.

Although her description sounds very similar to the way Bob spoke of God, Julia stated explicitly that she wouldn't use the word "God" for it. Keith called his *something larger* "an ineffable and undefinable thing":

Well, I do believe that there is something beyond ourselves. ...and this is why I'm not an atheist; I do actually think there is a "greater thing" beyond ourselves, an ineffable and undefinable thing. ...there's enough interesting gaps in the reality of the world that we live in, that having a God, or having some sort of ineffable force, does strike me as a perfectly reasonable reaction.

Keith maintained that any relationship with this *something larger* must be a personal one, but he continued to call it a "thing".

Immensity, abundance. Some people view *something larger* in a literal sense — something that gives them feelings of awe and wonder because it is incredibly bigger than they are. In this category, participants most commonly mentioned Nature, the Universe, and huge open spaces.

Greg explained his awe of the Universe:

If I look out on a starry night, or I take a look at the Hubble pictures... I always feel a sense of awe, in that I feel that we're just a tiny speck, just a tiny part of the whole.

These participants expressed the view that no "directive force" influences daily life: "I don't see a puppeteer out there", Louise declared.

Symbol, abstraction. Some participants spoke of *something larger* in a largely symbolic or abstract sense, conveying concepts that included *shared purpose*, *infinity*, and *mystery*. For Sadie, *something larger* is community, the shared purpose that "people who choose to come together as a faith community build every Sunday". Tenzing conveyed a related concept as he elaborated on a meditation visualisation:

...countless Buddhas, and Buddhas in all directions. So...letting the mind expand out to sort of have a sense of all that, if you like, is taking you somewhere which is much bigger than yourself.

David spoke of mystery in moments of unexplainable happenings. Despite their abstract nature, these concepts, too, involved a sense of *something larger*.

"*The Everythingness of Life.*" All of the views expressed above represent different perspectives on the transcendent. David used the word *God* with a more comprehensive meaning than that of the classic deity:

God is basically absolutely everything that the Universe is. And when you think of it as that, as every atom, as every piece of material, every relationship — it's...*the everythingness of life*, basically.

People see the transcendent as a personal being, or an assembly of spirits and angels, or a force, an immensity, an abstraction...

Values

Several participants described their spirituality as encompassing more than a set of beliefs or a subjective feeling of connection with *something larger*. They place great emphasis on extending that connection to the world in general and to other people in particular; they set great store by living their beliefs in the world. The primary values that emerged in the interviews involved relating to other people, in particular being authentic with them and helping them on a spiritual or practical level.

Authenticity. People value *genuineness* in their spirituality and in the religious institutions and people who support it. Several participants reported having felt uneasy with the hypocrisy of their faith of origin. Cathy railed against the use of churchgoing as a licence:

People who go to church on Sunday, and then they felt like that was an excuse to do whatever you wanted in the rest of your life. So not really *living* any faith or principles or anything with regard to social justice...

After a Catholic priest had stunned Cathy and her then-fiancé by advising them to lie about living together, they chose a Presbyterian minister to marry them.

Danielle recalled her discomfort with the church of her childhood:

...it felt as though they'd never had any temptations in life, they'd just been this super Christian person who had never done anything wrong and... they've never lived in the world or on this planet.

She contrasted it with the one she attended in her early twenties:

...they were just kind of real. ...even the pastor would...make it personal so you don't sit there thinking "Oh, I could never tell anyone this because they're super saint and I'm me."

The "amazing" authenticity of the people in her second church gave Danielle the space to admit her fears and weaknesses, and to grow spiritually.

Spreading the message. Some participants view their responsibility to others primarily in terms of communicating their beliefs and values and allowing others to share in the spiritual blessings and benefits that they themselves have found. Sometimes people undergo transcendent experiences during such activities; during a Pentecostal mission to South America, Brian had one that had him lying helpless on the hotel lobby floor for half an hour.

Community involvement and social commitment. For some participants, their responsibility involves working to improve other people's lives on Earth. Rick experiences God when he's

involved with his community, his family, and other people. “The *real* worship”, he explained, “comes in the day-to-day life”:

The desire...for community service, for church service and whatever. ... It’s something I need to do. For my own happiness. ...if you don’t have any compassion, if you don’t see yourself as part of a larger system, a larger living experience, you’ve missed all the joy.

Gloria uses her spiritual gifts to offer Tarot readings and psychic services, to help people make sense of things happening in their lives. Louise participates actively in her congregation’s social justice programme:

...part of my...spiritual values would be the interconnectedness of people in the world and wanting to do something [practical] to make things better.

Bob’s faith stresses the importance of good deeds. “There’s no point in having a faith in God and doing nothing about it”, he declared. “Everything that you do for the sake of God is a mitzvah.”

Religious/Spiritual Content

Some of the participants’ TXs occurred in situations involving explicitly religious or spiritual content. The ones most commonly mentioned fell into two categories: sacred texts and books about religion, and formal sermons and spiritual/religious teachings. Alicia has a Bible with her at all times — a physical book at home and a mobile app when she’s out. Ever aware of God’s presence, Alicia has small TXs almost every day, which she describes as “hearing God’s whisper”.

These often come to her whilst she is consulting the Bible:

...when I feel like I need to hear from God...I open the Bible. I tend to turn to specific places that I know have been a comfort in the past. And...as I was reading one of those, [another] verse came to my mind in the whisper. And I was not at that verse. But I *was* in the Bible. ... And when I heard that verse, I went and turned to it; and as I was reading it, I recognised that that was in fact what I was hearing.

Turning to the Bible for comfort, Alicia ends up finding answers, guided by God’s whisper.

Bob surrounds himself with books of all types, feeling his strongest spiritual connection when reading about Judaism. Danielle listens to sermons and religious leaders, and Ebiundu studies translations and commentaries provided by a Bible app.

Spiritual Practices

Spiritual practices featured prominently in the interviews, often contributing directly to participants’ reported TXs. Participants most commonly mentioned prayer, meditation, ceremony or ritual, and contemplating Nature or the Universe. Danielle’s experience of feeling the weight of her friend’s despair occurred just after she had spent time praying. Sangmu sees a connection between his Buddhist meditation practice and his experiences of feeling unified with the world:

We talked about interconnectedness in Buddhism once, and... I kind of looked out at the mountain opposite and just the idea that the mountain opposite was part of the Big Bang, I was part of the Big Bang, we were inseparable— and that became a complete feeling of identity and sameness with the landscape I was looking at, you know.

David described a meditation technique in which he recites to himself a string of “I’m not” statements: “I’m not a white person, I’m not a male, I’m not 60 years old, I’m not a husband, I’m not a son...” He can go on like that for about 45 minutes without exhausting the possibilities. The resulting experience of nothingness is “absolutely amazing”.

Several participants mentioned rituals and ceremonies as settings of transcendent experiences they’d had. Sadie recalled an early TX as having unfolded during a worship service at a youth conference:

... we’d be in a circle, ... a candle in the middle, and there would be singing and speaking and we’d all be participating...

Rick spoke of ritualised church services as “a chance for self-inspection, self-reflection”.

Several participants spoke of specific types of ceremonies. Cathy’s wedding took place outdoors using vows the couple had written themselves. Jared’s baptism by immersion at age eight had ended in a TX:

And [the pre-baptism counsellor had said] well, you know, ... when you get baptised you come out of the water with your sins washed away. ... And so I felt kind of *different* coming out of that process. ... We [Mormons] talk about it in terms of a burning in your bosom or like a peaceful feeling in your heart... I felt, like, the peace.

Gloria had her first TX during a Spring Equinox ritual honouring Brigid, a goddess of birthing and new life. She smiled as she recalled it:

And the entire ritual... just sort of moved me, ... my whole being just felt light and positive and I almost kind of felt the presence of something.

Participants varied in how regularly they conducted their spiritual practices and how long they had been practising them. Susan had attended Methodist churches for the better part of six decades, and her involvement remained central to her spirituality. Tenzing had matured his Buddhist practices over some 20 years of meditating and going on retreats, eventually coming to live in a Buddhist centre. Gloria had begun her Spiritualist practice about eight years before the interview: having started by attending workshops in communicating with the Other Side, she progressed to using recorded guided meditations, then self-directed meditation, finally achieving the desired communication without needing to begin with a meditation.

Several participants stressed the spiritual importance of contemplating Nature and/or the Universe. For some it constitutes their primary focus; for others it is something in which they find peace, connection, or energy and vitality. Greg has begun each workday for 40 years by contemplating NASA's Astronomy Picture of the Day, as soon as he boots his computer: "I have no plans for stopping *that* little ritual!"

4.1.2 Social context

Transcendent experiences unfold in both solitary and group settings. Groups may be small and intimate or large and communitarian; or they may be just a crowd and not a coherent group. The social setting may be essential to the experience or merely an aspect of the logistics. The presence or absence of other people seems to play a role in a person's subjective experience regardless of whether it is integral to the experience or incidental to it.

Solitary TXs occur when people are alone or when they are in the company of other people but not interacting with them. These experiences are internal or inward-facing, with the person focused on her own sensations, thoughts, and feelings. "There's an inwardness" to practising yoga, Louise observed, "even if you're with other people." Her other spiritual practices — spending time alone observing wildlife and volunteering at an animal rescue centre — also involve considerable inward focus and relatively little interaction with others.

Other participants described a similar inward focus. Keith stressed the importance of solitude for himself:

I think it's only in quiet moments that I would find [the connection with *something larger*]; not in group, not in religious services.

David recalled climbing hills at night when he was young, disrobing at the top and lying there alone for a while. He currently meditates alone in his bedroom every night.

Intimate TXs occur in the company of people to whom the person feels close — an intimate partner, for example, or a few close friends or family members. As a teen, Barika noticed recurring events in her family of origin, events she took to be her late grandfather's presence when it rained. For Jared, meeting his wife "was definitely a spiritual experience." Both Cathy and Louise said that sex could be a spiritual experience.

Communitarian TXs unfold in the company of a community, large or small, and generally involve a common purpose, often an explicitly spiritual one. Sadie's spirituality is centred in a 600-member congregation, and she has a TX almost every Sunday. In her youth she connected deeply to the other participants in the "circle worship" services she found intensely meaningful:

...that really was a mystical experience for me, and made me feel *completely* connected to everybody in that circle, even the people I hadn't met yet.

Inge values sitting quietly with others as part of a faith community, whether a Zazen meditation group or a Quaker Meeting:

Everybody's holding each other in the Light. And it's...this practice of being still and being held.

Louise, Julia, and Scott all feel part of *something larger* whilst singing in choirs. Julia finds this especially true of a large chorus with instruments accompanying the singers:

...it makes it easier to just kind of get caught up in that grand feeling of you're a part of something bigger...

More than one participant said their spirituality involved doing good in the world, although Louise's work at the animal rescue centre was the only such activity that featured explicitly in the account of a specific TX in these interviews.

Crowd TXs unfold in the presence of strangers who have no shared purpose for being together and who may or may not be interacting directly. Crowds can provide an opportunity for TX that pay attention to strangers, or perhaps involve them, such as museum visitors or a concert audience. One participant mentioned having a TX in a crowd of random⁶⁸ strangers. Danielle had been agonising over a decision she needed to make, when a stranger approached her on the busy London Underground during her lunch break:

And as I got to the Brixton platform...and I looked up and I looked at the end of the platform, and there was this man in a suit — there were people in between us — and I just thought, he's going to come and talk to me. And...he just walked over to me...and he said, "I'm so sorry, but God's told me to come and talk to you." ...he ended up sitting there praying for me, on this train, that God would help me make the decision that I needed to make.

Danielle felt the presence of God through the company of this man.

Other social-context factors are less a matter of the company in which one finds oneself and more of the facilitators of that company and providers of spiritual content.

Spiritual and religious leaders and teachers can play a key role in TXs. Some provide inspiration, information, or guidance that help people explore spiritual questions. Others offer welcome and a comfortable spiritual home. Parvaneh spoke of attending retreats at a UK Muslim centre led by a mystic whose presence conveyed such a strong impression of spirituality that when he died, people

⁶⁸ Defining the strangers as "random" has the purpose of distinguishing such a crowd from a group of strangers who have gathered for a shared purpose. A context with shared purpose would count as communitarian, institutional, or leader based, depending on the event.

came from all over the world to pay their respects. “It was a joy to go and to visit him, that special man”, she said. Several participants reported joining churches on the strength of their rapport with the priest or minister.

Tenzing came to Buddhism via a Tai Chi teacher. He had been in constant pain from back problems, and had been told he would be disabled for the rest of his life.

“I did...a standing meditation, and he took me through a series of relaxing the body. The pain...just dropped out of my body. Backache had gone, and I just felt completely different.

Tenzing immediately began practising the standing meditation and following the man’s activities and teachings, and he hasn’t been to a doctor in two dozen years. He became a Buddhist and joined the order in which this man had become a teacher, a rinpoche.

Some people see leaders as unnecessary for personal spirituality, even though they belong to a religious institution. Faith is “just between you and the world,” Susan insisted. “It doesn’t require a leader.” Susan and her husband chose a church on the strength of their feeling for its minister, but she sees the leader as helpful rather than essential to spirituality.

Religious institutions — as distinguished from individual leaders/teachers or communities — also can play an important role. In some cases the role is positive. Brian has had several similar spiritual experiences in the evangelical Pentecostal churches he has attended for more than 20 years. Rick’s experience of being “seized” by a presence occurred as he and his wife were leaving their church after a service.

Sometimes institutions can actually interfere with spirituality and transcendence. Keith described religious services as “not a way of accessing higher belief”; and we have seen Cathy’s and Danielle’s feelings about hypocrisy in their churches of origin. Bob finds much more meaning in contemplating religious topics than in attending services:

When I’m talking about these things, when I’m reading, I feel more alive, and more fulfilled. Which I occasionally feel in synagogue when we’re praying, but not as much.

In synagogue, Bob often finds himself thinking he “could be doing something else.”

4.1.3 Physical and activity context

Transcendent experiences unfold in many different locations and physical environments, and can be surrounded by a variety of activities. Beyond the obvious settings of houses of worship and other spiritual centres, TXs occur in homes, workplaces, charity facilities, natural environments such as beaches and forests, and public places such as parks, art galleries, and swimming pools.

The experiences involve physical factors such as exercise, health conditions, smell, taste, touch, sounds (music, nature sounds, noise, quiet/silence, human speech), surrounding space, and water.

Some participants see their bodies and what they are doing as vital to TX. They perform physical tasks; they climb hills; they run, lift weights, swim, walk; they sing; they have sex. They make small movements; they relax. Inge balances the quiet sitting of Quaker meeting with the move-the-body activity of weight lifting, which “is in a certain sense my Zen practice” because it forces her to focus on her body in the moment. Keith finds fingering Middle-Eastern prayer beads calming and meditative: they allow him to concentrate his attention on tiny, repetitive movements. Barika, on the other hand, finds meditation and yoga boring: “Forget it — make me *do* something!” she exclaimed. She described the high she gets from aerobic exercise:

I reach this stage that is *unbelievable*. ... Any kind of cardio. It has a scientific explanation, but I do feel the higher sense of uplift, like not feeling my body...when I'm pushing myself in cardio or some kind of physical activity. Exercise really pushes me.

Cathy savours her spirituality through her sensory connection with the Earth — gardening, swimming, running. Her experience of sex reflects this: “I literally feel lightning bolts out to my fingers...”

In body-focused activities, physical effort and physical sensation can be instrumental in helping people feel open, connected, and centred. Even if the activity is not itself intensely physical, it can have an effect on the body. Brian speculated that exhaustion from an intense week may have played a role in an early TX he had, helping to leave him more open to it.

People differ in the specific senses they favour. Julia is “not as interested in the visual as in what I'm hearing”; Sadie has difficulty with auditory processing and prefers visual stimuli; Cathy is most connected with the tactile.

Participants also mentioned activities surrounding their TX: teaching, helping others, designing, making art, making music, reading, studying, travelling. Scott finds the greatest spiritual connection in activities of passing on the resonance:

Teaching, conducting... when I'm helping others build their own resonance, that's when I feel the most resonance.

Julia achieves mindfulness by focusing her attention on “sights and smells and tactile feeling” and being completely in the moment, the way one does in meditation. And as I described in Chapter 1, my own TX that prompted this PhD research centred on singing.

Not everyone values physical sensation as a component of TX. Helen thinks the body's capacity for sensation may actually *limit* the kinds of TX that humans can have:

...in some ways I feel that we're sort of trapped in the physical world, and it puts restrictions on what we can experience. Because we can really only experience what we can see or touch or taste...

It is clear, then, that the body can play a central role in TX, whether that is by enhancing experience or by constraining it.

4.1.4 Psychological context

Like the spiritual context, the psychological context includes both internal and external factors. Psychological factors that participants reported comprise the internal factors of emotional state and of focus and immersion, and the external factors of novelty vs familiarity, seeking vs serendipity, and beauty and aesthetics. It seems probable that personality factors also contributed, but that issue lies beyond the scope of this enquiry. The psychological context can influence the person's receptivity toward having a TX and possibly also the reactions they have.

Emotional State

Several participants mentioned emotional states that were present when their TX occurred. Some were strongly negative, and I categorise these as stress. Alicia described a feeling of rejection that dominated her life at age twelve when she had a major TX, her first:

...I had gotten to a point where I felt very, very rejected as a child... [The rejection] was in my peers, but I had translated it to everyone. ... So at one point, that rejection overwhelmed me, and I was ready to run away from home...

Danielle had a TX during a time of anguish at being unable to forgive. She recalled her distress as she related the circumstances:

I was always depressed ...I hated myself; I was very angry. ...I said, "God, you told me to forgive, but I can't actually do it; you have to tell me how to do it."

Other participants told of health conditions, such as Scott's heart disease and Susan's cancer and chemotherapy, as emotional stressors that were present when they had a TX.

Participants reported having TX under conditions of positive emotion as well, including joy. Ebiundu described joy in worship as facilitating his experience of God, Cathy enthused about the joy she receives from beautiful human-made objects, and Parvaneh related "the power of self-control" that she felt in being able to fast every day for a month.

Between negative and positive lie neutral emotional states such as calm, which several participants mentioned. For them, calm is important to being open to connecting with *something larger*.

Focus

The topic of focus vs distraction arose in a number of interviews. Several participants said distraction could interfere with TX. Some distractions are internal, an issue of focus and attention. Gloria finds internal distraction quite frustrating:

I have a hard time focusing. ... I am thinking a hundred things at the same time. I need to do this, I need to do that, and I have all of these different things going on in my head, and I have a hard time quieting my mind.

Other distractions come from external sources, drawing the person's attention toward them and away from the spiritual practice. Participants described these primarily as sounds and the presence of other people. Inge prefers the quietness of a Quaker Meeting or a Zazen Buddhist sitting to the activity of the Catholic Mass with which she was brought up: "It's just the people, and this and that going on, and *oh*." Barika explained that environmental sounds demand her attention and make it difficult for her to hear God's voice:

...there's so much sound that I'm familiar with, that my brain registers more quickly, than [the voice of God] that I don't know how it sounds.

Keith's first encounter with a particular Mark Rothko painting⁶⁹ occurred in a small gallery room that was empty except for himself and three paintings. He found himself forced to sit for several minutes, thunderstruck with awe and connection. Keith says stimuli such as "noise, people, faces" would have undermined his experience: the distraction would have precluded the feeling of awe that made him sit and absorb.

Novelty vs Familiarity

Participants expressed contrasting views regarding the value of novelty and familiarity in their TX. For some, novelty is essential. Keith has seen the Rothko several times, and each time since the first it has struck him as "just a painting". He says:

It's merely an artwork nowadays to me. ... I've never, never experienced it [being overcome with awe] ever since. ... I just don't think I could create the same level of surprise and awe...

Some people have most of their TX regularly and in familiar contexts — their homes, their religious institutions, their favourite nature spots, or even their offices. Sadie gets a spiritual feeling "most Sundays" at church. Greg contemplates astronomy pictures at work. Brian has fairly frequent TX at church functions, and he thinks he knows why such experiences seem to have become more frequent in his congregation:

People have begun to understand how you get that experience, what the conditions are. So, although you can't dial it up, you can kind of put yourself in the way of it.

⁶⁹A photograph of this painting appears in Chapter 5.

It may be that novelty and familiarity play different roles in different types of transcendent experiences.

Keith's experience supports Fisher's (1998) view of wonder — of which awe can be considered an extreme form (Prinz, 2013) — as depending absolutely on novelty. Madhu's would seem to do so as well — whilst living in a place of “amazing beauty”, she felt great wonder at first:

The first six months, I was so aware of it, every single time I walk I am amazed at the beauty of that walk to my work.

For Madhu, that walk was a transcendent experience. But after a while, things changed. For the next two years, she said, “I lost myself — ‘lost’ in the sense as not aware of it any more; I got used to it.” Madhu experienced six months of wonder, followed by two years of habituation due to familiarity — two years of living in a place of remarkable beauty and not feeling wonder in response to it. For her last six months, however, she found wonder anew:

I would just, every now and then, stop in the middle of the road, take in what's in there....

When she learned she would leave that gorgeous place in six months, Madhu *resumed paying attention*. Rather than exemplifying memory as the adversary of wonder, her full experience harmonises much better with Fuller's (2006a) observation that wonder and novelty can be renewed by “meditation and mystical practices” (p. 131). When she would “stop in the middle of the road, take in what's there”, she was engaging in a mindfulness practice, perhaps even a kind of walking meditation. Madhu's experience of wonder giving way to habituation and then transforming into wonder anew illustrates beautifully the possibility that we may reawaken wonder in familiar environments by paying renewed attention.

Seeking vs Serendipity

Some participants feel they must seek TX actively. For Alicia, the very process of seeking God is a vital aspect of connecting with him, and it must be learned over time:

I had a very powerful time learning to seek him while I was [at university], but it was a four-year process. ... It was a *four-year* experience, rather than that instant-moment experience. [emphasis hers]

Jared was clear on the value of seeking: “I say *anyone* can have the Holy Ghost with them as long as they're seeking it.

Other people feel strongly that the act of seeking *interferes* with the experience, and that serendipity is essential. Madhu declared that seeking detracts from TX by making the spiritual practice “a chore”. Keith insisted that he would be unable to have an experience of awe like the one he had with the Rothko if he were looking for it:

I wouldn't go seeking an experience like that... any active search would always inherently logically be blocked by the fact that I was actively looking for it. And...the experience is inherently primed by whether you are actively wanting or not wanting it, and therefore it could only possibly be discovered by accident. ...I still believe that it was the serendipity which was key. So to seek out serendipity is illogical.

Some participants described serendipity in terms of having TX as an integral part of their daily lives. "The real worship", said Rick, "comes in the day-to-day life." Scott described his spiritual growth in terms of shifting from seeking to mindfulness. He has replaced a "striving for" with "an openness and looking for the joy" in everyday life.

Danielle described both seeking and serendipity in her experiences of connecting with God:

I'll pray, and I'll read the Bible. I'll listen to sermons... But sometimes...it can be something random...

Some people have TXs both when they're seeking them and when they're not.

Letting go

A conscious letting-go can help allow a spiritual experience to unfold. David reminisced about "three stages in my life where I've taken myself up onto a mountain and taken all my clothes off." Each time, he had felt a need to connect, somehow — to make sense of life. He stressed the importance of trust in this process:

So there's trust in there somewhere; there's this sort of sense of...giving myself up to Nature, just sort of, you know, tie me to the mast, let it all in, get totally connected.

Madhu, who feels her spirituality most strongly in Nature, immerses herself in the New England autumn colour during her drive to work. "Sometimes I just let go", she said; "it's like driving through a painting."

Beauty, aesthetics

Participants often mentioned beauty as an important part of TX for them. Sometimes the beauty of nature predominates, as Julia observed:

...being in a really wonderful experience of the natural world, looking up at a really beautiful starry sky, or seeing shooting stars, or just experiencing the ocean, a beautiful beach...

Sangmu placed natural beauty at the very heart of TX, calling it "intrinsic to the spiritual life."

Other times TXs respond to the beauty of human creations such as art, music, crafts, and architecture. Keith's awe in the face of the Rothko came in part, he said, from its being something a human had crafted. "You can get deeply spiritual experiences from art", David observed. Cathy

considers human-made beauty to be as important as natural beauty to her spirituality, as it supports her connection with other people:

I absolutely can derive huge amounts of joy out of human-made objects. I *love* baskets, handmade baskets. ... You can *feel* the energy that went into making it.

Music plays a key role for several participants. Ebiundu listens to Christian music quite a lot, often just letting it play in the background. Tenzing and his housemates in the Buddhist centre listen to chants and other Buddhist music. For Scott, music — especially its rhythm — epitomises the resonance that he equates with spirituality, which he has made the centre of his life. Sadie, Julia, and Louise all mentioned music as an important part of spiritual life in their congregations. Brian commented that the music of his evangelical church is much more “contemporary-feeling” and “catchy” than had been the music of his faith of origin; and what he heard at the Bible Week helped make his introduction to Pentecostalism “just vibrant, alive”.

4.1.5 Temporal context

The temporal context of TX comprises elements of time in the context surrounding the experience — specifically, time of day, season of year, frequency and longevity of spiritual practice, duration of the immediate context, and availability of time for conducting the spiritual practice. It does not include the duration or frequency of the TX themselves, as those belong to lived experience rather than to context.

Transcendent experiences occur at all times of day and in all seasons of the year. In some cases, particularly with Nature-based spirituality, the time of day or time of year plays a direct role. For Madhu it’s the drive to work on autumn mornings in Connecticut; for Louise it’s watching aquatic wildlife in the spring and summer. Timing is also a matter of coincidence with other contextual aspects, perhaps most commonly institutional (e.g., religious services at 11am on Sundays, Zazen sitting on Wednesday evenings at 8) but also including social (yoga with a friend on Tuesday afternoons) and physical/activity (timing one’s meditation for just before bedtime or one’s viewing of astronomy pictures just before starting work).

Time can also play a role by being scarce. Julia despairs of finding time for spiritual practice in her busy schedule:

I would *like* to do more... I even took a course in spiritual practices at church, ...and I promised myself that I...would at least try to meditate at least five minutes a day. I haven’t been very successful with that. ... But the nature of being a working person with a family — there's not much time left over.

Keith, on the other hand, ascribed to laziness his difficulty in finding time. Other participants mentioned having a long-term, regular spiritual practice and attributed to that the ease with which

TX came to them. All of the participants who described having relatively frequent TX also had regular practices going back several years or more.

Finally, many participants described the timing of their spiritual practices. They practise for a few minutes to an hour or more, once to several times a day; they practise in the morning, throughout the day, at night. They practise as often as several times a day and as seldom as a vague “occasionally”. The timing and frequency of practice seem to exhibit no common pattern, except that most of these participants have many other obligations and fit their spiritual practice into their lives as best they can. Some have set aside time for spiritual practice; others practise as they can squeeze it into their lives.

All of these contextual elements create the circumstances in which the experience unfolds and the person lives it.

4.2 Phase 2: Living the Experience

The second phase of a transcendent experience is, to draw on the terminology of the UX White Paper (Roto et al., 2011), the process of *experiencing* transcendence. Van Manen (2015) explains *lived experience* in terms of an example of taking a bicycle ride with his primary-school-age son. He writes:

There is a unity to this experience that makes it into something unique, and that allows me, upon reflection, to call it “going for a bike ride with my son.”
(Chapter 2)

Lived experience, he comments, is “the breathing of meaning” (*ibid.*).

Living the experience is the heart of a transcendent experience, the part whose transcendent focus, in van Manen’s words, “makes it into something unique” (*ibid.*). This second phase of TX comprises two groups of subcategories that the analysis constructed from the interview data: (1) perceiving the phenomena that constitute the transcendence, and (2) reacting to those phenomena as the experience unfolds.

Figure 7 shows a word cloud of the 70 most common words and phrases⁷⁰ in participants’ descriptions of their experiences. The larger the letters, the more often the word or phrase appeared in the descriptions.

⁷⁰ In creating this figure I consolidated some of the words. For example, I changed “connected” to “connection” and “ecstasy” to “ecstatic” so that the figure would show them as one concept.

everybody in that circle, even the people I hadn't met yet. And just very— those were very, always, *always* very moving and transformative.

Community is Sadie's *something larger*, and in this experience she is perceiving a spiritual intimacy with other people of her faith tradition.

Julia feels a deep connection when she uses Tarot cards to give focus to her meditation:

I don't believe that they're any kind of magical predictive thing, but what I find I like about them is it's kind of connecting me with that universal human experience. The collective wisdom of people who have lived before me, and sort of our collective consciousness about what it means to be alive.

The "other" with which Julia is connecting here is, in one sense, an abstract concept — "collective wisdom" and "collective consciousness" — but in another sense it is the countless individuals who have used the Tarot throughout the centuries.

Thus we can see that connections of closeness are felt with one identifiable other, with multiple others, and with abstract concepts or unspecified others.

Oneness, or unity, involves a sense of *identity* with the other(s) or with the *something larger*, to the extent that the person feels united with it, no longer separate from it. In addition to — perhaps even *instead of* — feeling close to other people involved, the person perceives herself to be united with the whole, an integral part of something greater than herself. Julia described her experience of singing in a large choir with orchestra:

I felt like we...were sort of almost at one with Britten the composer... It just felt very unifying...

Some people have experiences of both closeness and oneness. Sangmu's explanation of an experience as a "sort of overwhelming sense of connectedness... A sort of intimacy with the world" speaks of closeness. But his account of his experience of swimming in the sea clearly involves oneness:

...suddenly the sort of sense of being immersed in the ocean... I just felt a complete oneness with the whole ocean, covering the whole planet, not just the North Sea but — as if the ocean was one thing, that it was conscious. There was something alive about it. And...it wasn't separate from me.

"And...*it wasn't separate from me.*"

Consciousness and control

A TX can include a shift in consciousness or attention and/or a loss of control. Some involve an increase in focus on the present moment. Inge gets this effect from lifting weights:

...weight lifting is in a certain sense my Zen practice. Because it quietens the monkey mind. The thoughts don't go here, there and everywhere. They focus on what you do; you're completely in the moment of moving a weight. ...when I lift...I have to be in my body.

In some cases this present-moment focus includes an altered sense of time. For Keith, time slowed while he was absorbing the Rothko painting:

The only other time that I can sort of state that level of focus is...when I've been nearly run over or accidents where there is the stamp of slowing down of space and focus....

Some consciousness shifts manifest as a sense of being elsewhere. "I was transported," said Gloria of a guided meditation, "and the next thing, I was on a beach." Keith described the Rothko as "a gateway":

...the colours and darkness moved together, just created this sort of moment of passage through to another place.

Sometimes the consciousness shift involves a sense of nothingness. David described what often happens at the end of his "I'm not" litany:

If I'm not all those things, you know, what am I? But...this is what meditation does for me, I think — is you get down to a point where it all sort of goes away, and actually you are just like this thing in the Universe, and it's okay, it's actually quite okay. {laugh}

From the way David described it and the animation in his face as he did, I got the distinct impression that it's more than just "actually quite okay":

And it's absolutely *amazing*. It's like you're sitting there and your brain actually isn't going anywhere. It's not thinking about the next thing; you're not, you know, any of those things, and it's like, *wow!* The only word I can come up with for where that place feels like is "home". It feels like you've just come back to something.

Some TXs include a loss of control over the body, such as movement or speech. Brian sometimes finds himself lying on the floor, helpless with joy of God:

...you can sometimes feel just...weak, as weak as water, so that you can't stand; you just have to lie there until somebody drags you off or until it passes, kind of thing. ...these things can be inconvenient. Many a time I've been lying there thinking "Oh, if only someone would put me on my back" or "If only someone would put a pillow under my head", or whatever {laughs} — cause physically it can be quite uncomfortable.

Ebiundu often experiences a loss of control of his speech, finding himself saying things that he himself doesn't understand. For him it is worship itself, especially singing and praising God, that brings about the loss of control. "After much worship," he said, "I found myself struggling to hold my words, to control my utterances...."

Numinosity, presence

Common among the reports of the interview participants was the sense of a presence. Several participants used that very word, in fact. "I almost kind of felt the presence of something," Gloria said of her first experience of the Other Side. In Rick's experience of being seized, "there wasn't any pain involved," he said, "but there was definitely another presence." Even people who don't identify as religious may speak of presence. Madhu reported that in contemplating the "sheer magnificent size" of mountains: "I can really feel a sense of presence just for a second."

Others used different language but were clearly speaking of a presence. David recounted an eerie experience:

I was going up the stairs one day, and I *swear* somebody slapped the side of the stairs. And there was nobody there. But I could have *sworn* that there was somebody who just sort of put their hand on the side of the stairs, and that's the stairs where my granny used to walk.

And Barika feels (her grandfather's⁷¹) presence whenever it rains. "And now I live in England", she laughed, "where it rains every day!"

Physicality

TXs can involve physical sensations that involve one or more senses and range from lack of sensation to heightened senses. Participants mentioned sensations from tingling to sounds and visions that cannot be explained by any external physical cause or event. Cathy, when she is "feeling everything alive around me" in the out-of-doors, often perceives a tingling moving through her body. Madhu, too, described as "tingling" her body's reaction to natural beauty, likening it to "an adrenaline rush".

Sadie reacts physically to church services. "It feels like my mind is buzzing", she said, and her senses are heightened:

...everything I look at, the colours are brighter and your earrings are so beautiful and oh my gosh look at her skirt, it's gorgeous. And oh my goodness, wasn't her solo the most beautiful solo ever? And they're all, every week it's the most beautiful solo ever. It is just— it enhances the pleasure of everything. Oh, this

⁷¹ I have placed "her grandfather's" in parentheses because the identification of the presence is an interpretation, not a perception. I cover interpretations in Section 4.2.2.

coffee is so good. Even if my feet hurt, I'll sit down and *oh*, it feels so good to sit down. It just makes me *feel* everything more. Everything positive. And even if something made me cry, it's positive.

Concerned that her reaction might be a manic high, Sadie discussed it with her psychiatrist. To her relief the doctor observed that this happens regularly, predictably, and in specific situations, and said it didn't sound like mood swings but rather "a spiritual feeling".

Some physical sensations are prominent aspects of a singular experience. When Keith found himself stopped dead by the Rothko, "literally I could feel my heart and I could feel a grip in the centre of my chest." Susan experienced abrupt, complete darkness and heard sounds while she was doing a visualisation to assist her chemotherapy. The room suddenly went black and she heard her mother's voice. "It was as clear as if she was standing there. I didn't see her, but I heard her voice." Sangmu described as "almost a physical feeling in the body" a sense of peace he felt whilst praying for proof of God's existence during his struggle with Anglicanism.

Duration, frequency

TXs reported in the literature tend to be of relatively short duration (Rankin, 2005) and the ones these participants related are no exception. In general, each lasted for a short time — several seconds, several minutes, or in a few cases an hour or more. Madhu remarked:

It's not a constant state; it's so ephemeral, like *that*, and you feel it, and that's why it's so beautiful. It's not something that lasts.

When asked how long his experiences of religious bliss last, Brian replied, "I would say half an hour, that kind of time frame. It's variable."

Interview data suggest that transcendent experiences can be unique or recurring. Danielle, Keith, and Susan all emphasised that their experiences — Danielle's of sensing God urging her to pray for her friend, Keith's of being awestruck by a Rothko painting, and Susan's of talking with her late mother — were striking and memorable precisely because they had never happened before, and they have not happened since. On the other hand, TXs can recur, with varying frequency and over different periods of time. Susan very often feels the fleeting touch of the Holy Spirit:

...sitting on a mountain, sitting on a beach, sitting in a beautiful nature place, sitting on my back porch in the morning with the breeze blowing... any place where there's peace and tranquillity, ...when you experience something that is way too coincidental to be coincidence, you know. Something occurs to someone and you think of someone and later that day you hear from them, for no apparent reason, or you— ...over a lifetime there are random things and...it's like something that so soothes and comforts you when you need it the most, you know?

Alicia hears God's whisper almost daily, "if you average it out", adding that at times it happens "every time I turn around". Sadie gets her "spiritual feeling" every Sunday without fail. When

Greg gazes at the stars at night, or when he looks at the Astronomy Picture of the Day, he always feels “a sense of awe, in that I feel that we’re...just a tiny part of the whole.” Gloria’s communication with the Other Side has become so reliable that she offers medium readings to other people.

Quality of experience

Participants used several adjectives to characterise the experiences as a whole: strange, weird, powerful, pure, intense, real...

Transcendent experiences tend to be ineffable, impossible to articulate. “I had no words — and I still don’t have a lot of words — to explain it”, said Rick of being “seized” on coming out of church; “it was deeply personal.” Sangmu mused about his inability to describe his feeling of being united with the ocean:

What can you say about those experiences? There’s no way I can even communicate adequately what that experience was.

Greg endeavoured to convey a sense of how he felt on looking at a new astronomy picture every morning: “You’re having me put into words things I haven’t...put into words before”, he explained. “It’s interesting”, Scott said — “when it comes time to talk about spirituality I kinda go mute. Because it’s not very talkable to begin with.”

Danielle used “weird” several times in describing her experience of God urging her to pray for her friend; she was unable to describe it any more clearly than that.

David struggled to put words to the apparent contradiction between the nothingness and the connectedness he feels when he reaches the end of his “I’m not” meditation:

I mean, it’s weird; it’s not like a void. It’s so strange, ’cause it’s actually a contradiction, in that there’s none of the things that you can put your finger on, to say that you have all these sort of connections; but on the other hand you feel totally connected. So it’s really strange. [laughs] I mean, I guess that’s why it’s so cool. ... I don’t think you can really define it.

David’s words capture both the strangeness and the ineffability of spiritual experiences. And of the experience of lying naked on a mountaintop at night, connecting, David declared, “It’s a really pure experience!”

A TX can seem incredibly real, even when the experient's perceptions cannot be verified by externally observable events or stimuli. "I have a conviction that there's something of the truth" in experiences of oneness, Sangmu said, although he admitted he has no way of proving it. "It was so *intense* and so *real*", said Susan of seeing sudden darkness and hearing her mother's voice:

I know I wasn't dreaming, because I was awake and consciously thinking about something. I remember what I was thinking about.

TXs can be powerful and compelling for those who undergo them. As a child, Parvaneh found her ability to fast for Ramadan to be spiritually powerful:

The experience...was like the purity of soul without any attachments. I felt it was very powerful.

"Very powerful" appeared in Julia's narrative as well, characterising some of the memorial services she has attended at her UU church.

4.2.2 Reacting to the Perceptions as the Experience Unfolds

When researching transcendent experiences, one must be careful not to take experient's accounts at face value regarding what an experience implies about external reality, or even what the phenomena are. Descriptions of the sort given by Alicia and Susan, for example, or of David and Barika in the previous subsection, include interpretations that need to be detached from the perceptual component. Of course, any description at all includes interpretation at some level, and Stace (1960) recognised this. Hood et al. (2001) note, however:

...Stace contended that experience could be identified relatively independent of its interpretation. While admitting that no experience is absolutely unmediated..., Stace nevertheless maintained that one could easily distinguish between minimally interpreted experiences and elaborations of experiences that were possible only within particular ideological traditions. For instance, to identify a luminous light or a figure within a luminous light is to offer a minimal identification of an experience that might otherwise be interpreted as a vision of Jesus. (p. 692)

Hood et al. (2001) therefore referred to experiences described in the most basic terms as "minimally interpreted experiences"; it is this to which I refer when I write of *perceiving the phenomena*. (See below for a discussion of interpretations.)

Participants related three kinds of immediate reactions^{ix} to their perceptions of a TX: feelings and emotions, thoughts and interpretations, and effects and actions.

Feelings and emotions

Not surprisingly, emotions often accompany a transcendent experience. Some attendant emotions are positive, some negative, and still others neutral or ambiguous. In addition, some TXs involve no emotion at all.

Participants described a variety of positive emotions during their TXs. Several reported feelings of peace, calm, or comfort: Jared's peace in having his sins washed away by his baptism; Louise's "peaceful place" at the end of a yoga class; Gloria's calm and relaxation on being transported by a guided meditation to a beautiful beach, "surrounded by these people in these white robes"; Alicia's comfort on hearing God say, "I want to be your friend"; Sangmu's peace whilst praying for proof of God's existence. Rick phrased it in terms of being among friends:

You see the majesty of the mountains and I get to enjoy this. And it's like being with an old friend, especially if you go out repeatedly.

Other positive emotions include fulfilment, being moved, and joy. Bob said he feels "more alive, and more fulfilled" when reading and talking about spiritual topics. Sadie and Julia both reported being moved by aspects of services at their churches. Brian described overwhelming joy:

If you had a joy meter, it's like plugging your meter into the mains; you're connected to someone who has so much joy in his being that it just blows your brain....

Brian described as "bliss" the emotion he feels at being "connected to someone who has so much joy in his being that it just blows your brain".

Although the participants talked more about the positive emotions they had felt during their transcendent experiences than they did ambivalent or negative emotions, previous research (e.g., Burdzy, 2014) has found that transcendent experiences can involve both positive and negative emotions; and Jakobsen (1999) has written about fundamentally negative TXs. Both Susan and Barika reported fear as their first reaction on sensing the presence of a deceased family member. Both women later found their fear transformed into a feeling of being comforted, but in both cases the change occurred after the experience had ended and the women were reflecting on it afterward.

Awe commonly occurs with TXs (Newberg & Newberg, 2005), but it is not universally either positive or negative (Jakobsen, 1999; Keltner & Haidt, 2003). Most of the participants in my interviews who mentioned awe tended to frame it in positive terms. Greg said:

If I look out on a starry night, or I take a look at...the Astronomy Picture of the Day, I always feel a sense of awe, in that I feel that we're just a tiny speck, just a tiny part of the whole.

Greg's words may be seen as negative in the sense that feeling tiny may be seen as a decrease in self esteem, but as he spoke of it his tone was one of wonder and marvelling, not of diminishment.

Parvaneh said she feels "that kind of awe" when she attempts to know God, who is "beyond my imagination". Both Rick and Madhu feel awe in nature, especially in the presence of mountains. "If you spend any time in nature," Rick said, "you get awed by the beauty..."; and he went on to

describe as “overwhelmed” his experience of awe. Madhu described her reaction as a feeling of being humbled:

When I’m in front of nature, I feel completely humbled. ...when I’m looking at mountains, just the sheer magnificent size...

Sometimes awe can be difficult to locate on the positive-negative scale. Keith spent a great deal of his interview describing and musing about his reaction to seeing the Rothko for the first time:

And it just was this moment of falling into it, into the darkness, the centre of it — not in a bad or negative mode, just— and this is why it was odd, because it wasn’t about joy or sadness or anything like that; there wasn’t any emotional content in that sense....

Keith’s statement that his reaction carried no emotional content such as joy or sadness implies that he didn’t feel his reaction to be positively or negatively charged, just striking and compelling. “It’s not emotion in any sense that I would normally describe,” Keith said, “which is why awe is probably the best description.” It was, he says, “an experience beyond logic and beyond analysis”.

Some participants maintained that their TXs carry no emotion of any kind. David’s view of the *nothingness* he experiences during meditation illustrates this:

At those moments I don’t think there’s a lot of feeling. Feeling is actually something that you attribute to it...later.

For David, freedom from emotion is an important part of the beauty of such experiences.

Thoughts and interpretations

Part of the reaction to the perceptions in a transcendent experience is the experient’s thoughts about the perceptions and his interpretations of what they mean. People form impressions of the identity of a numinous presence, for example. Some people identify the presence as a deity: Rick’s perception of being seized and Alicia’s hearing “I want to be your friend” both evoked the description of an experience of God. Some people identify the presence as a deceased loved one: Susan heard her mother’s voice, and Barika took rainfall to be her grandfather coming to celebrate with the family. Some comprehend the presence as more of a mysterious, unspecified power: Madhu feels “a sense of presence just for a second” when she contemplates the mountains and their “sheer magnificent size”; and Sangmu’s experience of feeling unified with the ocean included a sense that the ocean was conscious: “There was something alive about it.”

Experiences that involve similar perceptions can evoke different interpretations. Both Alicia and Susan, for example, heard what to them was an audible voice. Alicia interpreted it as the voice of God; Susan, the voice of her deceased mother. Granted, Susan was familiar with her mother’s voice and Alicia had never before heard God’s, but each women heard a voice without any

accompanying visual information to help her identify its source, and neither had any doubt about who was speaking to her.

Gloria, too, heard voices (during guided meditation), but these auditory perceptions were accompanied by visual ones that seemed to help her identify the speakers. At one point in the meditation she found herself surrounded by what appeared to be “people with long white robes”, but in her first experience they were fuzzy and she was unable to discern any detail or make out any faces. Their voices did enable Gloria to determine their gender, though, and after she had done this meditation a few times “some of them introduced themselves and gave their names” and their identities became clear.

Effects and actions

Transcendent experiences can produce immediate effects on experiencers and immediate actions that they take, usually whilst the experience is still unfolding, when the person is still “in the grip” of it, as it were. Sometimes this manifests as an attempt to confirm the reality of the external world. After Susan’s late mother had gone and the light had returned to the room, Susan was wide awake:

I just had to get up and walk around the house and assure myself that I was still alive.

Having thought that her mother had come to accompany her to Heaven, Susan sought reassurance that her life was real.

Another type of immediate effect is a realisation, the recognition of a change in knowledge or understanding. Alicia had a TX whilst she and her husband were struggling to make a decision about an operation for their newborn daughter, who had a life-threatening heart condition. They prayed about it and opened the Bible to find out what it might tell them. Suddenly into Alicia’s mind came a passage⁷² about a woman whose son has died and a prophet persuades God to bring him back to life, so that the woman will have an heir as God has promised her:

That passage was the one that came to my mind, whispered to me, and when I read that, I knew that was my promise. That God was saying... “You are in this woman’s shoes”, that “I have given you Rebecca and I am not taking her from you.” And that was my confidence in my promise: “Go ahead with the surgery, because she’s yours. She’s yours to raise, and she’s yours to love.” ...I knew, I *knew*, that this was God.

Alicia understood the appearance of that Bible passage in her mind as God speaking directly to her; and she realised immediately that God was telling her the operation should proceed.

⁷² 2 Kings 4:18-37 — <https://bible.org/seriespage/10-shunammite-s-son-resurrected-2-kings-418-37-hebrews-1135>

Although a realisation is certainly a type of thought, the distinction between a realisation and a thought or interpretation (as described above) is important. Thoughts and interpretations are cognitions about the perception itself, an attempt to make sense of the perception, to understand *what is happening*. Realisations, on the other hand, are cognitions about something outside the immediate TX — say, life or God — cognitions *brought on by* the thoughts. In the TX of the Bible passage coming into Alicia’s mind, the interpretation was that God whispered the passage to her and the realisation was the meaning of this message: a promise that her daughter would live.

David, on coming down from lying naked on the mountaintop, described what he realised:

I think just for having done it... you feel like you’ve done something... you’re offering yourself the opportunity to think that things have changed, to think that you *can* change things.

Several participants spoke of an immediate emotional release, an unburdening or letting-go of something⁷³. Julia described a “simple ritual” that her congregation sometimes do, where members are invited to come to the front of the room and drop a stone into a bowl of water, to symbolise letting go of a burden. Gloria’s use of guided meditation for communicating with the Other Side has given her several such releases:

For example, one of the times, I was able to see my mother, and... come to some kind of resolution as to her passing.

Louise, who has been doing yoga for 35 years, often experiences a letting-go at the end of a class:

I can reach a very peaceful place, where all the problems fall away and I feel opened out.”

Participants also described a sense of openness as an effect of a TX. Sangmu, speaking of meditating on a Buddha figure called Manjushri, observed:

There’s just something about really dwelling and contemplating on those enlightenment qualities, that...[can]... open you out in just a sort of sense of stillness and beauty....

The “circle worship” that began the youth conferences Sadie attended in her teens would always, no matter how “underslept and cranky” she was, include “something that just really made me feel wide open.”

4.3 Phase 3: Integrating the Experience

After a transcendent experience ends, it may remain present with the person and become integrated into his life. Interview data suggest three ways in which people integrate TXs into their lives:

⁷³ The letting-go he described earlier has to do with releasing resistance to having the experience. In contrast, this is a letting-go of something as an *effect* of the experience.

reflecting on them; seeing long-term effects on their thoughts, emotions, and behaviour; and sharing them with other people.

4.3.1 Reflection

People may continue to reflect on a TX afterwards, sometimes for many years. They may be seeking to make sense of the experience and what it means for their lives, or they may wish to continue to experience its joys.

After returning home from a youth conference, Sadie sustained the feeling of connection for quite some time. In meditations at regular church services, she visualised connections with the youth she had met at the conference:

I would just imagine a link between me and all my friends, and just the lines arcing out between me and all of them... and because it was Sunday morning maybe they were also in church, maybe they were sending it back to me... that kind of thing. That was in my head.

Even now, more than a decade later, Danielle continues to bring to mind the sense of God's urging her to pray for her friend: "It never leaves me because it was so weird."

Some participants described alterations in their thoughts or feelings about what they had perceived. These could be based on changes such as education or spiritual development, but they always arose from reflection. The most striking example came from Sangmu: whilst at university, he heard a Christian evangelical speaker give a "very stirring talk... about the state of the world, how it needed a spiritual dimension and it needed Christianity." Sangmu had always been concerned about the need for greater spirituality in the world, and this talk spoke to that — but it didn't quite convince him that Christianity was the answer. So he went back to his room and prayed for proof that God exists:

And at some point I just felt this sort of peace, almost a physical feeling in the body, which I interpreted at the time as God saying "Here I am".

This understanding led Sangmu to follow a Christian path, which lasted for five years. Now, more than 20 years later, he interprets the same experience from a Buddhist perspective:

Looking back now, I just think, well, I was meditating, and experienced what we would call Dhyāna, which is a sort of slightly elevated state of meditation. It's just that because of the context, I interpreted that in a particular sort of way... And years later I just sort of made sense of it in a different way...

We see other examples in Barika's and Susan's remarks that their feelings had changed from fear to comfort. These changes, too, came about as they reflected on the experience (for Barika, the initial experience) after it had ended.

4.3.2 Sharing

Several participants said they like to share with other people aspects of a TX they've had. They mentioned recording and communicating parts of their experiences, interacting with others to explore those aspects, and sharing their joy in their spirituality. Sadie receives an "uplift" from something in the church service almost every Sunday, and her first inclination is to share it with her world:

Sometimes something someone says either during a sermon or in a reading or something just really strikes me and I wish I could write it down or put it out there on Facebook or something. And sometimes I do...

After Scott's health scare he began working to communicate the fascination of *resonance* — "my metaphor for spirituality" — to other people, to help them "find the hidden resonances for beauty or spirituality in yourself":

"Check this out!" I say to other people, "check this out, this is really cool."

Louise spends much time photographing wildlife, to capture the experience so she can share her joy in it. "And I think that must be really important to me, to be able to share it."

Sharing came out more strongly in participants' desires for enhancement (see Chapter 5).

4.3.3 Continuing Effects

Transcendent experiences, as discussed in Chapter 2, can have a transformative effect on the lives of the people who undergo them, and participants recounted such effects. For decades Danielle had held on to hatred and anger towards a person who had hurt her deeply in childhood. One day Danielle had ranted at God, crying that her pain was not her fault and begging him to take away either her pain or her life. A few days later, whilst reading the Bible, she started praying, admitting that she needed to forgive the person and asking God to teach her how. Danielle opened the Bible at random and found herself at a passage whose very theme was forgiveness⁷⁴. God was, she felt, directly answering her need:

[And] that changed my life, because this thing I carried for how many years? And from that day, God just took it away from me; I could actually forgive that situation. ... [Before,] I couldn't talk about that person without hating them. And now I can't talk about them without loving them; it's weird. And I can't explain it to you in any other way than that God did that for me, because it's a miracle. And knowing how I was living and... how much it was ruling my life... I kind of get tearful, cause I remember the weight of that. The bondage of it. 'Cause it's like being bound for my whole life.

⁷⁴ A passage in the Epistle of Paul to Philemon: https://en.wikipedia.org/wiki/Epistle_to_Philemon

Although Danielle told me that the change in herself is “not a visible miracle to anyone else”, she had begun her account by describing how her hatred and anger at the injustice had affected her relationships with her sister and her husband. I cannot imagine that people close to her have failed to notice the change. This TX has become integrated into Danielle’s feelings, thoughts, and behaviour.

Susan described a transformation of thought and feeling. Two years after her chemotherapy ended, she is free of breast cancer but suffers lingering neuropathy. Especially with two children still at university, Susan worries about how long she will live. But she found the experience “very comforting” and no longer has any anxiety about dying. “I know that when my time comes,” she says, “Mom’s going to come get me.” She relayed the lift she receives from sensing her mother’s touch in nice surprises that she notices in nature:

...when you have a really bad day and out of nowhere — and it’s not conditions in which you’d normally have one — there’s like a rainbow. And it’s kind of like, “Thanks, Mom!” Like saying hello. It’s weird. And...it’s like Mom is the conduit of the Holy Spirit.

Scott found himself changed after a brush with death. Although not a near-death experience in the classic sense (Greyson, 2007), his need for nine stents after a heart attack woke him up to the need for mindfulness and joy in everyday life:

For me, it’s all about identifying sources of resonance and tuning both sides. And enjoying the outcome.

Scott left his management consulting practice and began teaching music full time; he now has enough students to support himself. Although he earns less from teaching music, he has far more joy in his life, and he wouldn’t dream of returning to consulting.

Sometimes the effects are not easily described. David mused on why he disrobed atop hills:

I don’t know if it was seeking, or looking for something, or just trying to, sort of, you know, make sense of life and the world or what, but it seems to have had an effect.

Several participants said a TX gave them a thirst for more spiritual growth; several reported greater peace. The peace David gains from his nightly meditation helps him cope with life:

Frankly now I think if I didn’t do this...I don’t think I could deal with the world any more! [laughs] Well, I suppose I could, but I prefer to deal with it this way.

“I prefer to deal with it this way.”

4.4 Key Insights

4.4.1 The Phases as a Cycle

It is easy to see how the context influences the lived experience, which in turn can inspire and motivate people to integrate the experience into their lives. Much of the integration that participants reported applied to life in general, such as Alicia's decision to proceed with her daughter's operation or Danielle's forgiving the person who had wounded her in childhood. Some participants, however, spoke of making changes to things that had contributed to the explicit context of their TX⁷⁵ — and that therefore could become context for later transcendent experiences. Participants spoke of making changes in their beliefs and values, their spiritual practices and other activities, their relationships, their self-directed development, their attitudes, their association with religious institutions.

Gloria attended a Pagan ritual out of curiosity and had a TX there that prompted her to make a commitment:

And that's when I knew without a doubt that I was being called to follow the Goddess Path. And that is when I committed myself to a Year and a Day.

Scott described a childhood experience that now directs his life's work:

And while in Africa I came to know African rhythms. And that was one of the — I think — one of the seminal and powerful base influences that got me so interested in rhythm. Being eleven — ten and eleven — I wouldn't have defined it [as spiritual] at the time. But even thinking about it now and what my reaction was to it, I would say it *was* a spiritual experience, in that the music...*filled* me with joy. And it was complex, and it was an escape, and it was infectious, and it was addictive, and it was an order and a world outside of the sometimes really unpleasant world...

Rhythm became a passion for Scott, leading him to study resonance in many forms. He began with the physical — exemplified in music — and expanded into the symbolic and metaphorical. For Scott, spirituality *is* resonance.

Figure 7 shows the TX phases and their top-level subcomponents, and depicts the relationships between them.

⁷⁵ Of course, one could argue that Alicia's worry about her daughter and Danielle's distress at being unable to forgive were part of the context of their TXs, and one would probably be right.

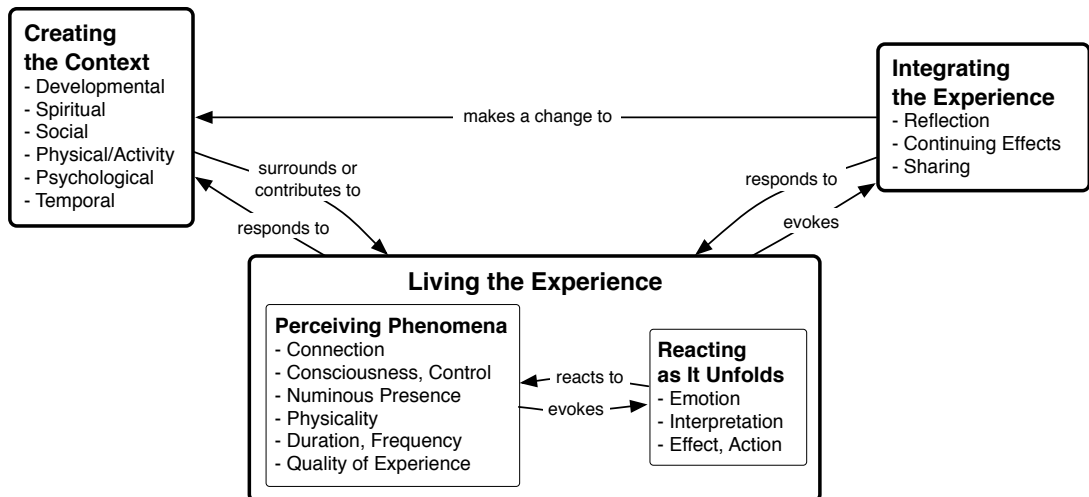


Figure 7. Phases and subcomponents of the transcendent experience cycle

My framework aligns with, deepens, and extends the taxonomy of Wardell & Engebretson (2006) and the grounded theory of Garcia-Romeu et al. (2015). It aligns with them in that all comprise three similar top-level components. It deepens them in that it provides more detail about the structure of the experiences. It extends them in two ways: (1) it recognises and discusses the top-level components as a sequence of phases, and (2) it discovers and defines an important relationship between components, a connection that reveals the sequence to be a cycle. Chapter 9 discusses these connections further.

4.4.2 The Location of Ineffability

As Chapter 2 explained, ineffability is well established as a common quality of transcendent experiences. I found it striking, however, that not only did ineffability commonly appear in the interviews, but almost *all* participants struggled to convey what their experiences were like. Not only did they speak of having trouble finding words for their experiences, they illustrated the difficulty with hems and haws, pauses and false starts, “I don’t know”s. Rick “had no words” for his experience of feeling a presence on leaving church:

And I just had this experience of being seized, I guess... And I had no words — and I still don’t have a lot of words — to explain it. It was deeply personal.

Jared has had transcendent experiences of the kind that his faith tradition considers as receiving communication from God “in a way that often transcends words”.

Sangmu mused about his inability to describe his feeling of being united with the ocean:

What can you say about those experiences? There’s no way I can even communicate adequately what that experience was.

Susan strove to convey her meaning regarding the “little moments” in which she felt her late mother being “the conduit of the Holy Spirit” for her:

...when you just, when you experience something that is way too coincidental to be coincidence, you know. Something occurs to someone and you think of someone and later that day you hear from them, for no apparent reason, or you— I don’t know, I can’t think of a good example..., but— gosh, I don’t know. Like, I don’t know, I’ll have to get back to you on that one, it doesn’t come to me right now. But over a lifetime there are random things and then — you talk about sitting on a beach at the end of the day, when things are just slowing down, and you have time to, not consciously think “oh, this is such a wonderful place; God made this Earth”; no, that’s not how it is; it’s like something that so soothes and comforts you when you need it the most, you know? I can’t really explain it.

Keith struggled to convey his reaction to seeing the Rothko for the first time:

...just a moment that there was something, connection, or there was some form of physicality of the experience beyond “this is a painting on a wall and I’m standing in front of it.” Just a lack of— unlike standard viewpoint on a picture, where you are standing looking at a picture, there was much more of a physicality, that there was something beyond that, that there was something— there *was* a specific experience, and it *was* jaw-droppingly different.

He likened it to a “jaw-dropping” moment in film and theatre, but stressed that this was quite different:

...“jaw-dropping” normally is a sense of shock and surprise — this wasn’t shock or surprise; it was not in that sense. It was a sort of— ...it’s difficult to describe because it wasn’t joyful; it wasn’t fearful; it wasn’t any of those extremes of emotion. It was a sort of completely *at-an-angle different* standard of emotion; and yet it was definitely there, because it was, you know, the physicality, the feel of my heart in my chest...

Keith continually referred to physical sensation to convey a reaction he continues to call “indescribable”. Even the sensation itself is “indescribable”, he said. He eventually settled for explaining what it was *not*.

The motif of indescribability appeared in many of the interviews: “it’s difficult to describe” (Brian); “it’s awfully hard to describe these things” (Louise); “I couldn’t even describe to this day how I felt” (Gloria); “I don’t know how else to describe it” (Sadie); “I don’t know how to explain that...” (Parvaneh); “it’s hard to describe, because I think all religions are an attempt to describe that thing that’s undecipherable” (Julia).

Greg summed it up in one sentence:

You’re having me put into words things I haven’t put into words before.

When participants expressed or exhibited difficulty in describing some aspect of a TX, the perception of phenomena was always involved. Even when Keith laboured to describe his

emotional reaction to his perceptions, that difficulty appeared *alongside* his trouble conveying his sensations.

As I discussed in Chapter 2, I do not find convincing Hood's (1975; Hood et al., 2001, 1993) early argument that ineffability belongs to introvertive mystical experience alone. Stace (1960) had initially assigned ineffability to the interpretive factor, but Hood (1975) conducted a factor analysis and placed it into introvertive mysticism, later arguing (Hood, 2006) that ineffability was consistent with the ego loss that occurred with the introvertive form of the experience. Apparently, though, Hood changed his mind: he contributed to the Z. Chen et al. (2011) article that, citing studies locating ineffability differently for mystical experiences in people of different religious backgrounds, argued that the components of the interpretive factor — positive affect, sacredness, noetic quality, and ineffability — “qualified both types of mysticism” (p. 329). This is consistent with the data from my interviews.

The participants in my interviews related experiences of both types — Sangmu epitomises an extrovertive experience, Danielle an introvertive — and both types were revealed as ineffable. I contend, therefore, that my research supports the placement of ineffability in the interpretive factor — not because anything about interpretation is itself ineffable, but because the recognition of ineffability comes with interpretation. The perceived phenomena are what is ineffable, I argue, and it is when a person attempts to describe them that we discover that aspect.

4.4.3 Changes in Understanding

Some participants described changes in how they interpreted and/or felt about experiences they had undergone. As mentioned above, Sangmu related a TX that he had interpreted in a Christian way at the time but now sees from a Buddhist perspective:

Just going back to that original experience when I was at [city] and this sort of sense of peace in my body and {unintelligible} the rest of it— With the perspective now, when I started sort of meditating, looking back on it, these are sort of common meditation experiences. {laugh} And well, you know, we have words for them. So looking back now, I just think, well, I was meditating, and experienced what we would call Dhyāna, which is a sort of slightly elevated state of meditation. It's just that because of the context, I interpreted that in a particular sort of way, which took me down a sort of path for five years. ... And years later I just sort of made sense of it in a different way, kind of thing. Interesting.

Scott alluded to such a change as well, describing an experience from childhood that he had more recently interpreted as spiritual:

And while in Africa I came to know African rhythms. And that was one of the... seminal and powerful base influences that got me so interested in rhythm. Being eleven — ten and eleven — I wouldn't have defined it [as spiritual] at the time. But even thinking about it now and what my reaction was to it, I would say it

was a spiritual experience, in that the music...*filled* me with joy. And it was complex, and it was an escape, and it was infectious, and it was addictive, and... I wouldn't have said "oh man, this is really spiritual" — that wasn't my language at the time — but that *was* my experience, I think.

And then we have Barika's and Susan's shift in feelings from fear to comfort — due in both cases to a change in how they understood what they had perceived.

Changes in interpretations and understandings of transcendent experiences are, it turns out, a common part of spiritual development. The re-evaluation of such experiences, observe Kohls & Walach (2006), "is an implicit but integral part of most spiritual traditions" (p. 126); and they illustrate by citing the mediæval Christian concept of the mystical journey, in which new understandings of self and others develop "and hence the meanings of experiences change" (p. 127).

Transcendent experiences often remain quite vivid in our memories. "It never leaves me," said Danielle, "because it was so weird." The strength of the memory facilitates ongoing reflection; the insights and growth a TX can spark may motivate a person to do the reflection; new understanding and perspectives can provide a new foundation on which reflection can draw.

Chapter 5 – Transcendent User Experience: Completing the Grounded Theory with Artefact Use and Desires for Enhancement

You're having me put into words things I haven't put into words before. ... But every now and then you gotta step out of a comfort zone.

– Greg, interview participant

It's difficult to know...what becomes useful until you find a way of using it.

– Tenzing, interview participant

5.1 Introduction

In this chapter I complete the grounded theory by adding the two remaining components from the interview analysis: artefact contributions to transcendent experience, and desires for TX enhancements and artefacts to support them. I supplement participants' desires with aspects of their spiritual practices and TXs they value, so that the resulting set of needs can help maintain what they value as we design for enhancement. Where appropriate, I augment the interview data with findings from other sources, such as my iTunes App Store inventory (Buie & Blythe, 2013b), my analysis of comments on YouTube meditation videos (Buie & Blythe, 2013a), and other relevant techno-spirituality literature. I explore these themes to develop an understanding of how artefacts support and facilitate TX and to lay a foundation for exploring techno-spiritual design to contribute to enriching that support.

The addition of artefacts and desires brings user experience into the mix, building my preliminary grounded theory of transcendent experience (Chapter 4) into a grounded theory of transcendent *user* experience (TUX). As Figure 8 shows, the themes of TUX overlay those of TX, maintaining the definitions of the phases (shown with grey backgrounds) and connecting artefacts and desires to them. The figure also shows that artefact support and enhancement desires apply to the phases and that desires for enhancement also apply to artefacts *per se*.

I have organised most of this chapter around the phases and their sub-components, discussing how artefacts support them and what people value about them and desire in the way of enhancements and further support. I have done this to facilitate the investigation of my research question of how design can contribute to artefact support for TX, and specifically to aid the generation of techno-spiritual design ideas. Some of the desires relate to general features of artefacts rather than to specific support for transcendent experiences, and I discuss those at the end of the chapter.

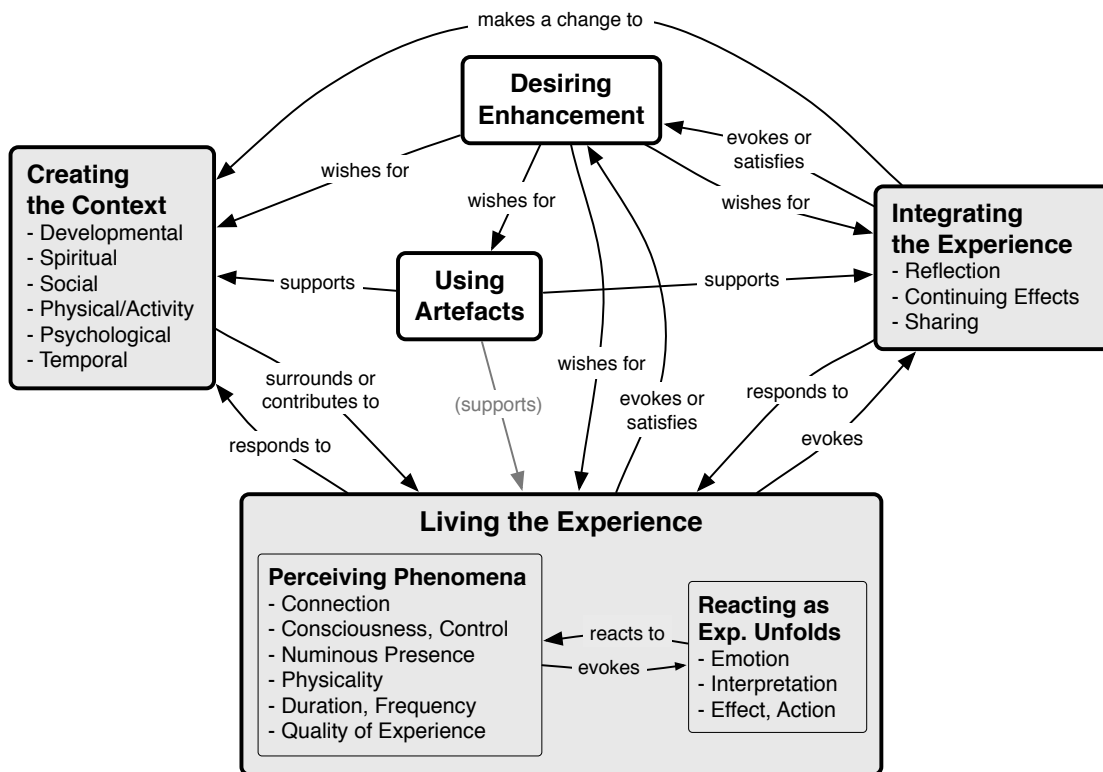


Figure 8. Grounded Theory diagram — transcendent user experience

Finally, a note about terminology. Chapter 4 discusses “TX phases” because it focuses on transcendent experiences themselves. This chapter adds the UX perspective, reflecting my goal of understanding the practices and experiences of people who might use artefacts that I aim to help designers envisage. When I write of transcendent experience *per se* without considering artefact support, I usually use “TX” and “TX phases”; that content relates to the transcendent experience literature, which rarely addresses artefacts. When I write of transcendent experiences where artefact use is key, I use “transcendent user experience” and the abbreviations “TUX” and “TUX phases”. The *phases* are identical in scope; the *study* of transcendent user experience differs in that it explicitly considers artefact use and desires for enhancement.

5.2 Divergent Views on Artefacts in Spirituality

Participants expressed a range of views regarding the value of artefacts in supporting spirituality and transcendent experiences. Two explicitly expressed doubt regarding whether artefacts *could* enhance spirituality or transcendence. Tenzing, when asked to imagine how a product might enhance his practice, demurred at first:

...the practice is basically about changing inside — no, there’s nothing I can think of from the outside {laugh} that helps to do that very much.

In contrast, he noted that the *rinpoche* relies on technology: “He’s got all his teaching on iPads”. Tenzing commented that artefacts could surprise him by being useful — or by *not* being useful:

It’s difficult to know...what becomes useful until you find a way of using it.
...when we gave [our teacher] his first iPad, for example, we didn’t really know how he’d use it. ... We’ve given other things which we thought might be useful, and they haven’t been at all.

David went beyond Tenzing’s scepticism, expressing an outright distrust of technology for spirituality. He expounded at some length about his view that software tools are not creative and that creativity (which he considers essential to his spirituality) comes far more easily with pencil and paper. It turned out, however, that David was objecting specifically to high-tech digital artefacts; he has great respect for certain kinds of lower-tech artefacts. He remarked, for example, that the texture of the paper and the feel of the pen in his hand can greatly influence his transcendent experience of drawing, allowing it to flow smoothly or rendering it an exercise in frustration.

Other participants spoke easily and enthusiastically about the roles that artefacts play in their spiritual practices and transcendent experiences. Sadie described how artefacts as varied as Facebook, a contacts app for mobile, and differently coloured name badges all contribute to her spirituality; Ebiundu waxed ecstatic about the richness of learning and engagement he gains from a Christian radio app and a suite of digital Bible products.

Similarly, participants exhibited great variety in the ease with which they envisioned technological enhancements to spirituality and transcendent experiences.

The next three sections discuss and illustrate artefact use in the phases and sub-components of transcendent experience. They first present the uses and then discuss values and desires.

5.3 Artefacts in Creating the Context

5.3.1 Developmental Context

I have assigned no artefacts or desires to the developmental context of TX. As I discussed in Chapter 4, development occurs before the TX to which it contributes, and we cannot determine when development ends and the immediate context begins. Development shapes other aspects of life as well — knowledge, beliefs, values — that become immediate context to the experience.

This is not to say that artefacts cannot support spiritual development; clearly they can. My inventory of the iTunes App Store (Buie & Blythe, 2013b) found mobile apps, ebooks, and podcasts aimed at upbringing — including, for example, sacred texts and religious stories for children, to help them learn about their faith traditions. The existence of such artefacts, however,

does not imply that we can identify any contributions they may make to the developmental context of a transcendent experience. As discussed in Chapter 4, at the time a TX occurs the contributions of development are indistinguishable from those of the spiritual and psychological contexts. In this thesis I am concerned with artefact support for the immediate contextual elements, and the ambiguity of developmental vs immediate contexts led me to assign all artefact support and enhancement desires to immediate contexts.

5.3.2 Spiritual Context

Artefacts support people in obtaining spiritual content and engaging with it. Participants mentioned sacred texts (both physical and electronic), meaningful objects, photographs and other images, and auditory content such as talks, music, and guided meditations.

Sacred texts have provided religious content in physical form for more than two millennia. Digital versions furnish, at their very simplest, identical content in digital form. They can also afford users greater interaction with the content, even when their features are as simple as searching and note-taking. Many digital texts offer even more, enabling readers to engage with other users and even with spiritual leaders, and they provide more complex interactions via features such as searching and notetaking on various types of content, translations with comparisons and explanations, addenda and commentary from leaders and scholars, and social media facilities for commenting on the text and discussing it with others.

Ebiundu uses a mobile app and a website (Figure 9) to help him study the Bible. These enable him to search for key terms, see commentaries that leaders have made, and add his own notes. He tends to start with the app, but sometimes he needs more than it provides:

At times I have to look for some specific passage, maybe a discussion ensued somewhere. And I think I need more knowledge of this.

Ebiundu finds it easy to locate and explore online discussions of Bible passages using these tools.

He raved about the possibilities that digital technology offers to his spiritual practice:

[W]e have the Sword⁷⁶ version of the Bible now. If you don't want to read, just click the chapter, the book, the verse you want to listen to, and they'll read it for you⁷⁷. So even while you are still asleep you are ready — somebody's reading the Bible to you.

⁷⁶ Ebiundu called it the “Sword” Bible, but a search for “Sword Bible” found multiple apps using the “SWORD” data base (https://crosswire.org/wiki/Choosing_a_SWORD_program). I have illustrated with e-SWORD Bible, by Richard Myers (Figure 9). <http://itunes.apple.com/app/e-sword-It/id634158738>

⁷⁷ e-SWORD enables users to export passages to iTunes as spoken tracks, which can be played back at the user's convenience. It also offers audio sermons, but since Ebiundu said “somebody's reading the Bible to you” I would guess he was talking about exporting passages to iTunes.

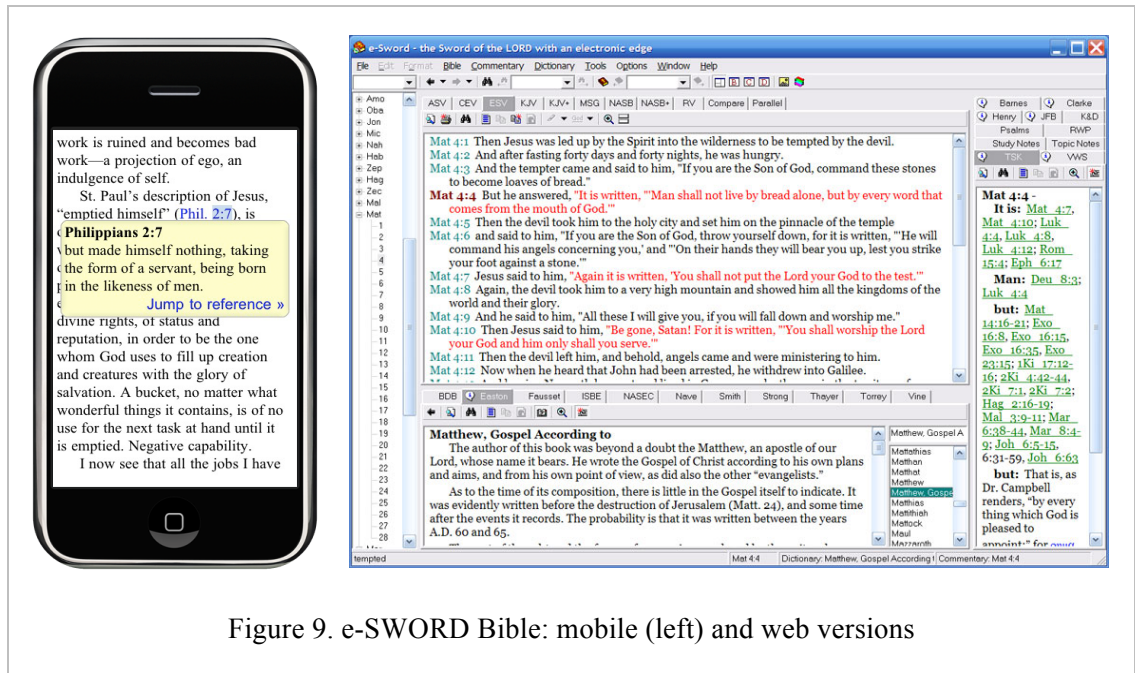


Figure 9. e-SWORD Bible: mobile (left) and web versions

Ebiundu also listens to Christian radio via a mobile app, grateful that this has been arranged for him: “[O]nce I click I can listen for as long as I desire.”

Spiritual content — informational, contemplative, atmospheric, and advisory — featured in many of the desires and needs that participants expressed. Desires for informational content include Ebiundu’s goals in using digital Bible technologies and Sangmu’s wish for help to “keep track of particular [Buddhist] precepts”. Desires for contemplative content are exemplified by Julia’s wish for a simple daily meditation aligned with Nature and the changing seasons:

[A] meditative thought that you would want to hear might be very different in the middle of the winter than it would be in the springtime. Because you're so into what's happening in that season. ...just some little thought that kind of places me where I am in the year and right with what Nature is doing at the time.

Desires for atmospheric content include Gloria’s wish for “... a message of peace, a message of love, a message that is spiritual” and Ebiundu’s for a welcome at his church’s entrance:

...maybe something that says you’re welcome in Jesus’ name. Then I would know it is still part of my faith, welcoming me in the name of Jesus.

The most interesting content needs highlighted practical advice and guidance from a faith tradition. Two participant stories in particular illustrate contrasting approaches to this need. Danielle wanted Biblical guidance for “cloudy” situations in which she doesn’t know what to do. Sometimes, she confessed, she would welcome simple instructions:

It would be nice if it just said, “Turn left, do that.” I would love that. {laughs}

Danielle wasn't actually asking for something to tell her what to do, she admitted; rather, she wanted assistance in finding relevant passages that offer guidance:

[M]aybe if you typed in a word, it could kind of tell you...what the Bible says about...your particular problem... But many times...there's decisions I have to make, and I'm just kind of thinking, "Please say something; please just make it a bit more obvious! I don't know what to do."... Something that could...find helpful Bible verses or helpful encouragements to help you in that situation...

Danielle seeks guidance as a type of spiritual content. Alicia, too, seeks guidance: she begins by reading her Bible prayerfully, trusting that God will "whisper" to her a relevant passage. As described in Chapter 4, when her newborn daughter needed life-saving heart surgery, Alicia and her husband sought guidance by praying and "opening the Bible and reading". Suddenly she made a connection that had never occurred to her before:

I had this recollection of a passage in the Bible I had read many times before, that I never would have equated with this situation before... That passage was...whispered to me, and...I knew, I *knew* that this was God.

Alicia recognised God's "whisper" in the appearance of that passage in her mind — the one from II Kings where God reanimates the woman's son to honour his promise — and in her realisation of its meaning for her situation.

These two methods — one that Danielle desires and one Alicia uses — differ in their very nature. Danielle's is practical and straight-forward, first seeking textual access as a means of obtaining guidance, which can perhaps lead to a connection with God. Alicia's is transcendent, first seeking connection with God as a means of finding the relevant guidance text. Both methods reflect a desire for connection with God and for guidance from their sacred text. Both reflect a desire to obtain guidance for living from the sacred text of their faith tradition. They are fundamentally different, however: Danielle's approach seeks guidance as spiritual content, which can provide context for TX, and Alicia's seeks it as the outcome of a transcendent experience. Alicia's method derives guidance *from* a TX.

Three participants spoke of using Tarot cards (Figure 10) in their spiritual practices. Julia uses them symbolically, to help focus her attention and get in tune with what's going on for her. She explained what she especially liked about Tarot:

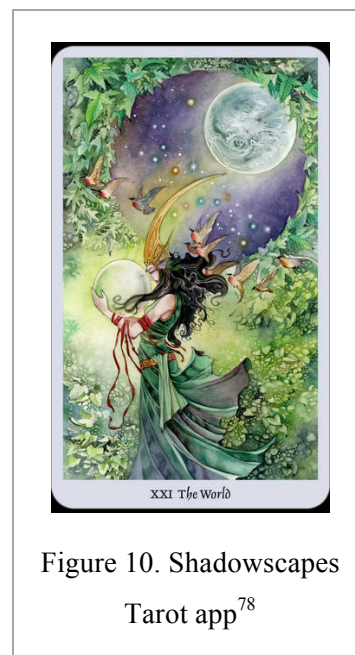


Figure 10. Shadowscaapes
Tarot app⁷⁸

⁷⁸ <http://itunes.apple.com/us/app/shadowscaapes-tarot/id680795363>

...they're based on archetypes...that are very universal in the human experience, and sort of the journey through life and the journey from innocence to wisdom...

Tarot helps Julia look at herself and her experience of the world; it aids her in exploring how she might continue to grow in wisdom, connected to people through the ages via their search for growth and wisdom. For Gloria it serves a more literal purpose: she uses it in giving psychic readings.

For Helen it's somewhere in between: she says "they're just cards" but she uses them to gain clarity:

If it comes up with something that seems to really address what's on my mind, very specifically, then I feel like it's speaking to me.

She gave an example of using Tarot in a time when she had serious concerns about her children's safety and wanted reassurance about a path she was taking:

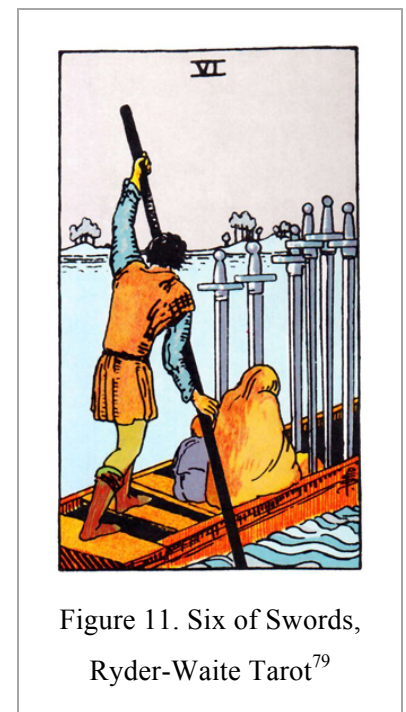
I remember throwing some cards out, and there was this one card that came up, and...there was a guy in a ferry boat and there was a woman with two kids next to her and there were swords, and he was ferrying them across a body of water. ... And it really spoke to me, that I was doing the right thing. And to this day I have a framed picture of that card. ... And it was like God's way of saying "yeah, you are doing the right thing." And I just felt like that one card meant a lot to me ever since. So it's been this thing trying to protect me and my family. [See Figure 11.]

Helen admitted having mixed feelings about using Tarot, commenting that some people from her faith of origin would say it was the devil:

I feel like I'm admitting something that I shouldn't.
{laughs}

Divination card apps such as the *Shadowscapes Tarot* (Figure 11) constituted a sizeable portion of my App Store inventory (Buie & Blythe, 2013b). Whether people use such tools as actual divination aids (as does Gloria), as symbols (Julia), or as something in between (Helen), it is clear that artefacts such as Tarot can contribute to spiritual practice for people of different faith traditions and can assist them in finding a connection to *something larger*.

In addition to providing access to content, artefacts can help in bringing distant content closer. "Photos of a shrine," Parvaneh said, "photos of holy places or holy people." Binoculars help



⁷⁹ https://en.wikipedia.org/wiki/Six_of_Swords#/media/File:Swords06.jpg

Louise bring wildlife closer, and a computer enables Greg to view digital images of distant parts of the Universe and visualise being there.

In summary, interview data suggest that, with respect to the spiritual context, participants value or desire spiritual content that includes information, interpretation, contemplation, atmosphere, and guidance, and that is aligned with their spiritual values. They also value and desire artefacts that provide support for the spiritual practices in which they engage.

5.3.3 Social Context

Artefacts support the social context⁸⁰ of TUX when they specifically facilitate either solitude or interaction with others when and where the TUX occurs. Participants told of using artefacts to support their spirituality in all types of social contexts. They spoke of social media for communitarian spiritual practices and of mobile apps, podcasts, and radio/television broadcasts for leader-based and institutional ones.

Some participants described encountering artefacts in specifically solitary situations. For example, Keith experienced the Rothko painting whilst alone in the small room where it hung. He emphasised the importance of solitude to his experience:

...it was clearly just [me] and the painting. ... So, you know, a crowded gallery is an entirely different thing than...a relatively small gallery, relatively dim, with just you and the painting.

The main value of solitude for TX, the interview data suggest, lies in the relative lack of distractions and the freedom from the awareness of the presence of other people, which can impinge on consciousness even when the sensory distractions are removed. Although Keith was the only participant who called out solitude as essential, others mentioned conditions that could exist only in solitude (or perceived solitude): they stressed the importance of freedom from the sensory and psychological distractions that other people's presence would impose. Artefacts, therefore, may have the potential to support solitary TUX to the extent that they can eliminate such distractions or help people tune them out⁸¹.

Two participants referred to artefacts in intimate settings. Only one of those involved actual use, though: Alicia spoke of reading the Bible with her husband, very often. David mused about their potential for facilitating communication between partners. Having begun a romantic relationship

⁸⁰ Although the social context includes settings associated with religious institutions, my research focuses on individuals' use to support their own institution-centred practices, rather than institutions' use for institutional purposes.

⁸¹ Removing or blocking sensory stimuli appears in the physical and activity context; removing or tuning out attentional distractions, in the psychological context.

just a few months before the interview and having had a TX that included a vision of his partner's face, he talked animatedly about "devices where...you can transmit your emotional state" to an intimate partner:

...it would give some kind of indication of how you were feeling about [the other person] at that moment. ...up until recently I would have said that was kind of a foolish thing, but I actually think it would be quite neat...

Such a device could nurture their connection throughout the day, David explained, and make the contact more personal and intimate than telephones can do:

...something that isn't just voice — like, a telephone just gives you voice and intonation and stuff like that — but transmits a different kind of information; I think that would be very nice.

David's comments align with Cathy's and Louise's statements regarding sex as a spiritual experience; they reinforce sexual intimacy as something people cherish in some TXs.

Turning to a wider intimate social context: Inge values her own TXs and would like to have something to help nurture them in her children. Her expressed desires start with increasing the appeal of church:

What would also help would be an app to make church more fun for my kids
...I can see that my daughter's spiritual, but she's not that much into church.

So she's not getting church — mass has meaning, but that meaning doesn't do it for her. And likewise Quaker Meeting doesn't do it for her. So probably good old-fashioned paper technology, like books, suggesting different activities...

Then she moves on to transcendent experience itself:

...and also different ways for me to recognise when my children are having a spiritual experience so that I can encourage that more.

EB: And what would that look like?

Ooh! Collection of, you know— this is how *I* experience spirituality; this is how *my* kids do it. This is how I do it. Kind of like, almost a site with different options for spirituality, different spiritual paths. Where you can look and see, "OK! Oh, that might be my daughter's path. That might be my son's path. Oh, that might be my husband's path." And that's how I might be able to encourage them in that particular path, without coming on too strong, if you see what I mean.

EB: So, supporting them in pursuing what already seems like the direction that's right for them?

Yeah. Helping me read the signs, so it would be more information...

Communitarian social context has benefitted from Internet technology for more than 30 years. Since the formation of online religious communities in the early 1980s (Campbell, 2010) and the birth of the World Wide Web some ten years later (CERN, 2014), people have used the Internet to

explore and discuss spiritual topics and questions with others around the world. Cooper Ramo/Chama (1996) called the Internet “a vast cathedral of the mind, ...where faith can be shaped and defined by a collective spirit” (p. 57).

Sadie spoke more than any other participant about transcendent user experience in a communitarian social context, describing how Facebook and a mobile app (Figure 12) called Church Life help her stay connected with other members of the faith community on which her spirituality centres. She makes frequent Facebook postings about her participation in congregational life, expressing her thoughts and feelings about events and social justice activities, and she uses the app to help her get into contact with other members. She doesn't find using Church Life a particularly spiritual experience in itself, “but being together with those people is an important part of my entire spiritual life.”

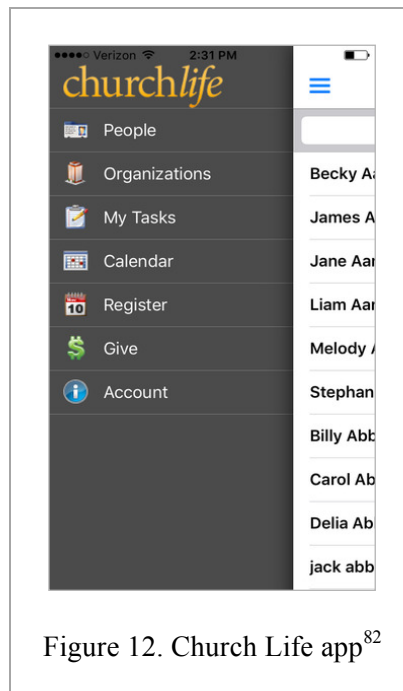


Figure 12. Church Life app⁸²

Sadie's account of her artefact use reveals a value of connection with community, which her desires for techno-spiritual artefacts also reflect. She spoke of wanting to capture snippets of the service — the Joys and Concerns, for example — to enhance that connection:

...the Pastoral Care Committee...listens to the joys and concerns and writes a card to each person... And if I can't quite catch what somebody's saying, then I can go to that table and say what's the deal with so-and-so's husband? Or it'll be in the card. So maybe something to take over that role.

Sadie also wants to be able to capture something for later reflection and sharing (discussed in Section 5.5, below) without disturbing the people around her and impairing her sense of community in the service:

I just feel very awkward about pulling out my phone in church. But I usually can't write it down quickly enough anyway, and it takes away from my listening if I'm writing.

This combination of desires and values suggests a facility to capture parts of the service — including text format — that could be used unobtrusively.

Only one participant, Danielle, specifically mentioned having had a transcendent experience in a crowd of random strangers — and hers involved no artefacts (unless one counts the London

⁸² ACS Church Life app, <http://itunes.apple.com/us/app/acs-church-life/id291375550>

Underground⁸³). No one articulated enhancement desires that addressed the crowd context explicitly, although it is easy to imagine that the desires for eliminating distractions that many of them expressed could apply to crowd situations.

Spiritual and religious leaders/teachers⁸⁴ and religious institutions constitute the other two aspects of social context. Although the reasons why people seek out leaders/teachers or organisations may differ, I discuss the two together, for four reasons: (1) commonly, leaders/teachers who provide online content also lead organisations within their faith traditions⁸⁵; (2) a brief examination of the App Store and Facebook pages suggests that even unaffiliated leaders/teachers tend to provide similar kinds of content and interaction as do leaders affiliated with organisations; (3) most of the interview comments regarding leaders or teachers treated them in terms of their association with an organisation; and (4) differentiating between the uses of these two types of online resources would require conducting additional interviews in more depth.

Both groups — leaders/teachers and institutions — have offered thoughts and guidance regarding spiritual matters for millennia, but until relatively recently the ways available for distributing their content — radio and television programmes, books, magazine articles, etc. — limited people’s ability to *interact* with them from afar. In the last few decades, however, the advent of interactive media provided via the Internet has changed all that: not only do many leaders and institutions supply content through one-way distribution channels such as podcasts and videos, they also provide for two-way interaction by means such as Facebook pages, blogs, and mobile apps (Campbell, 2010, 2012).

The App Store offers apps that provide, in addition to one-way content, the opportunity for interactive engagement (Figure 13). Of course, a description conveys nothing about how people actually use the app, but many leaders and organisations have websites and social media presences that offer readers, listeners, and viewers the opportunity to engage them and sometimes one another in discussions and explorations; many such conversations are public, available for nonmembers to read. Facebook, for example, hosts pages belonging to leaders/teachers as well as to churches and other religious organisations — as of 22 July 2016, LikeAlyzer (2016) listed 115

⁸³ I *don't* include the London Underground, mainly because they were in the station and not on the train, although it might be worth considering.

⁸⁴ When I write of “leaders” and “teachers” I refer to individuals who offer guidance and teaching electronically, whether under the ægis of an institution or not. See Chapter 4 for an explanation.

⁸⁵ This statement is based on my search through approximately 80 Facebook pages and more than 300 iOS apps for offerings by individual spiritual leaders or teachers; I found almost no individuals whose online presence did not indicate a connection with a spiritual/religious organisation.

“Church/Religious Organization” pages⁸⁶ that had received more than 100,000 Facebook Likes — and some leaders and organisations respond to reader comments on their Facebook pages.

Several participants described using digital artefacts for accessing broadcast-type content; none mentioned interacting with the providers of that content unless they knew them personally. As I described above, Ebiundu uses electronic Bible-related media, partly to learn from Christian leaders. Danielle uses a mobile app called Leading the Way⁸⁷ (Figure 13) to receive Christian content from a Bible teacher — radio/television broadcasts, daily readings, and Bible commentary. Tenzing listens to recorded teachings of his Buddhist community’s *rinpoche*. He communicates regularly with the *rinpoche*, but he did not say what technology he uses in that communication.

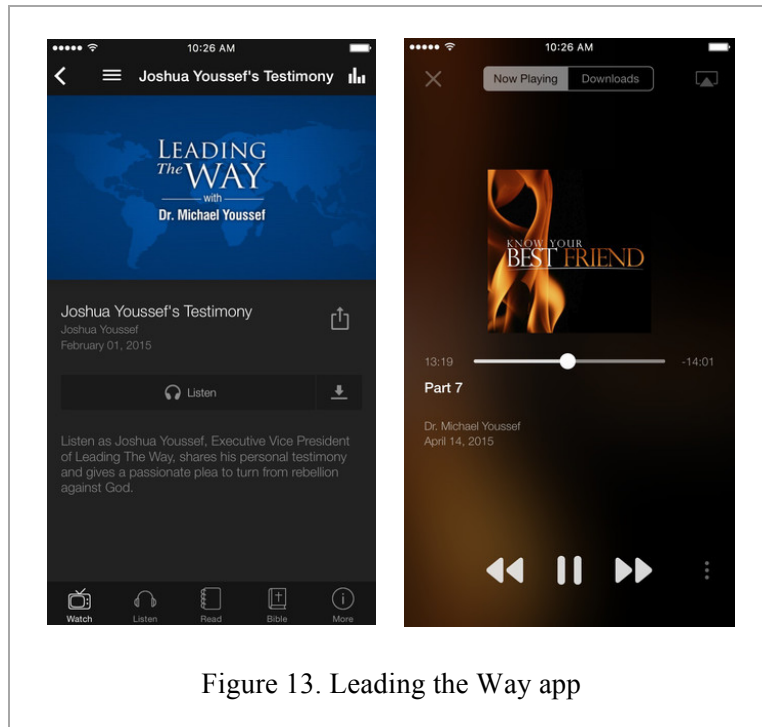


Figure 13. Leading the Way app

In summary, interview data suggest that, with respect to the social context, participants value or desire the sense of solitude, meaningful connections with individuals and communities, and the knowledge and care of leaders.

5.3.4 Physical/Activity Context

Artefacts can play a large part in the physical environment and/or activities in which TUXs unfold. Participants mentioned many different types of personal objects, as well as art and music, buildings, and outdoor locations, plus various means of finding and reaching spiritual centres or other sacred places. They related the effects and importance of physical stimuli (positive or negative) on their subjective experience. They mentioned artefacts used in spiritual activities, such as Tarot cards/apps, candles, meditation stools, paper and pens/pencils, musical instruments, incense, books...

⁸⁶ Some of these organisational pages, such as one named “Sarcasm”, appear to be less than serious.

⁸⁷ “Leading the Way” iPhone app: <https://itunes.apple.com/us/app/leading-the-way/id491118796>

People encounter spiritually evocative artefacts in many ways and in many physical environments, whether intentionally or serendipitously. They may acquire such artefacts themselves, placing them in their homes or work spaces, or carrying them around. Books, photographs, artworks, statues and figurines, incense, candles, beads, name badges, recordings and devices for playing them, holy objects from sacred places, even clothing and furniture — all of these and more are purposefully acquired for spiritual reasons; they all contribute to the physical environment of transcendent user experience.

Sangmu maintains in his home a shrine that contains a Buddha figure, incense, candles, and a meditation stool. Cathy keeps in her office a number of artefacts that have spiritual meaning for her, including a candle (which she *burns!*) and a print of a digital image that she loves (Figure 14), not only for the spiritual meaning she sees in the image but also because the artwork keeps her feeling connected: a friend created it for a purpose that Cathy values — the cover art for *Seeds of Hope: A Physician's Personal Triumph over Prostate Cancer*⁸⁸, which shows the hands of her friend's husband, who later died of prostate cancer⁸⁹. “It's like it evokes the *whole* background, by just looking at it”, she declared.

Alicia uses a physical Bible at home because she loves the feel of flipping pages to locate the passages she seeks.

Sadie takes to church each Sunday a name badge whose colours co-ordinate with what she is wearing that day and help her feel connected with her spiritual community. For

Parvaneh, touching photos and objects from holy places and holding them in her hand gives her extra spiritual energy. Participants also mentioned many types of objects that carry spiritual meaning or support their spiritual activities and practices.

Another key way in which people come into the presence of spiritually meaningful artefacts is by spending time in spaces that house such items for spiritual or religious purposes. Participants of various faith traditions spoke of going to spiritual centres to attend services and other spiritually oriented events, and Tenzeng actually lives in a Buddhist centre. The purpose for entering these spaces varies with the person and the time and place of the visit: it may be religious or spiritual, or it may be touristic (visiting a famous religious building), aesthetic (viewing an exhibition of



Figure 14. Seeds of Hope
by Elizabeth Buie

⁸⁸ <https://www.amazon.co.uk/Seeds-Hope-Physicians-Personal-Prostate/dp/0967880165>

⁸⁹ I am that friend.

religious art, attending a performance of sacred music or dance), social (attending a friend’s wedding), or even practical (taking shelter from a sudden storm). The artefacts *per se* carry varying levels of importance in someone’s purpose for being in the space, but even if peripheral they can play a profound role in TUX that unfold there. When we enter a spiritual centre, for example — church, synagogue, mosque, temple, ashram, shrine — we fully expect to find artefacts used in the faith tradition to which the centre pertains. It would be strange indeed to enter a church and not find hymn books, a synagogue and not find Torah scrolls, a Buddhist centre and not find a



Figure 15. The Calling of St Matthew
by Michelangelo Merisi da Caravaggio
Contarelli Chapel,
Church of San Luigi dei Francesi, Rome

Buddha statue, or a mosque and not find facilities for ritual washing. These artefacts are a natural part of the *milieux* of those faith traditions.

Some spiritual places are not expressly designed or designated as spiritual or religious centres. Such a location comes to be considered a spiritual place for one of two reasons: an individual finds it spiritually meaningful in a personal sense, or a spiritual group see something in it that resonates with their beliefs, as Pagans have done with Stonehenge (Mayell, 2002). People visit personal “spiritual places” at least partly for spiritual reasons, even if they do so for other reasons as well.

Louise volunteers at an animal sanctuary:

[It] gives me this wonderful feeling whenever I’m there. Even though I’m...cleaning out pig poop and cow poop and stuff, it’s just the expansiveness, the beauty of the location, being out in the fresh air— ...*that’s* a spiritual place for me. And there my tool would be a pooper scooper. {laugh} A shovel or a rake, or...

Making the world better is one of Louise’s spiritual values, and her voluntary work puts that into practice. Even such mundane artefacts as shovels, rakes, and pooper scoopers can support spiritual practices.

Artefacts also help people find and discover spiritually meaningful places, whether they be institutional spiritual centres or personally significant places. Inge uses the Web to find Quaker

meetings and soto-Zen sittings when she travels. Louise uses her mobile to find places along Maryland's Chesapeake and Ohio Canal where she can watch aquatic wildlife:

...I went on the Internet and downloaded all the locks, so I have 17 locks on my phone and can identify which is where.

Greg uses a computer to view photos of galaxies, nebulae, and other parts of the far-flung Universe. Although he will never visit any of them in person, every morning he does so in his imagination. The stars are Greg's spiritual place, and technology helps him explore them.

People can experience transcendent responses to artefacts they encounter by chance, in places that were not explicitly designed to facilitate spirituality or evoke TX — places we rarely think of as specifically spiritual or religious settings or destinations. Keith's experience with the Rothko painting (Figure 16), described in Chapter 4, occurred in London's Tate Gallery⁹⁰, where he found himself overcome by awe and



Figure 16. Mark Rothko paintings in the Tate Modern Gallery, London (photo by Elizabeth Buie)

connection. Even outside representational art that is clearly religious, some artists have transcendent experiences in mind when they create their work, as Rothko himself told Selden Rodman (Lipsey, 1988):

The people who weep before my pictures are having the same religious experience I had when I painted them. (p. 316).

Keith's experience recalls the story told by French architect Le Corbusier, credited with introducing the concept of "ineffable space" (Britton, 2011), about an experience he had whilst contemplating deeply one of his paintings. Le Corbusier wrote:

...I saw inexpressible space come into being before my eyes: the wall, with its picture, lost its limits: it became boundless. (Lepine, 2016)

Art galleries and museums have the express purpose of evoking aesthetic experiences, of course, and some of them consciously foster TUX in visitors' encounters with the art they display (Herz,

⁹⁰ These paintings now hang in the Tate Modern.

2015). But if experiencing a connection with *something larger* were inherent in viewing art, Herz would not have needed to ask the following two questions:

Numerous artists write or speak about the relationship between their art and the spiritual... But to what extent is *viewing* art about connecting with something larger, something cosmic, something beyond the self? And what are the conditions that allow for this experience? [emphasis hers]

Certainly, TUX can occur in secular art spaces. Sometimes people enter these spaces explicitly seeking higher connection. Madhu, for example, when asked how she connects with something larger than herself, listed several activities and ended by saying she goes to museums “to look at art”. She compared viewing art with seeing Mt Fuji for the first time:

Not everything is so humbling, but certain things, there’s something about it that’s very humbling.

“You can get deeply spiritual experiences from art”, observed David.

The same goes for music, which for millennia has played a key role in religious and spiritual life. Noting that religions make “ubiquitous” use of music, Atkins & Schubert (2014) comment: “There is something about music that makes it an effective vehicle for the expression of an ultimate reality that we can call spirituality” (p. 77). Several participants mentioned music — most of which involves the use of artefacts — as important in their spiritual lives and transcendent experiences.

Often the space or edifice itself serves as a very large spiritual artefact, especially if it has been “built to symbolize the meanings and accommodate the rituals of the particular belief systems of its time” (Barrie, 1996, p. 1). For some participants, a small space — such as the “relatively small gallery” where Keith encountered the Rothko — enhanced the privacy of the experience. For others, expansiveness fostered a sense of openness and a feeling of calm. David remarked that he always responds with calm when he enters a church:

...it just immediately puts you into this feeling of thinking about being in a non-consumer/material way. ...it’s got a sense of open space or something, and quiet...

An important aspect of the physical and activity context is the stimuli that artefacts and surroundings can produce and the sensations that they elicit in us. In this way, artefacts and surroundings involve the body in the creation of the experience. Art and architecture stimulate mainly the visual sense whilst music and other sounds stimulate the auditory, but other senses can be important as well: some faith traditions, for example, use incense. Cathy places physicality at the heart of her spirituality: it’s her way of connecting, “feeling everything being alive around me.” David spoke passionately about the importance of touch in the feeling of connectedness on which his spirituality is based. Inge, a lover of books and quiet places, commented that smell is an important component of TX for her: “There’s a musty smell about [city] library that I love,” she

said. Touch also received a strong mention from the participants. Parvaneh spoke of the importance of holding in her hand “simple things, kind of material from holy places” of Islam:

...some of the object[s]...came from holy places — touching them and, you know, holding them in the hand, it gives you extra energy—

This physical contact deepens Parvaneh’s sense of connection to her faith.

Participants differ in which senses matter to them. Julia prioritises hearing; Sadie prefers vision; Inge treasures smell; Keith and Barika place great importance on kinæsthetics. Gloria wants all her senses stimulated. Greg craves enhanced visuals of the stars:

I wish I could also see some of those [astronomy] pictures in other wavelengths. Sometimes I want a VISOR like Geordi La Forge⁹¹, you know, I want to *see* these other wavelengths...

Louise wants a clearer, closer view of the wildlife that inspires her:

I’d love to have some binoculars...that I didn’t have to use with [eye]glasses. That compensated for all those things and gave me really clear vision. ...something that would cut through the glare and make everything larger and more visible.

Participants also expressed desires for moderate or even no stimulation, saying that physical sensations can interfere with TX by creating distractions. After saying she wanted all her senses stimulated, Gloria stressed the need for balance:

I would like something that would stimulate ideally a variety of my senses — not only visual but auditory, sensory — anything that could kind of stimulate all of my senses would be great. Something that could help me to focus. Something that— and by the same token, stimulating the senses but not overwhelming the senses. So there’d have to be a balance. Because there can also be overstimulation of the senses; and then your senses are stimulated and you’re focusing on that and not on— So there has to be a balance; you can’t be overstimulated.

Several participants expressed desires to reduce or even eliminate sensory stimulation. Barika wanted complete “sound blocking” from the outside world:

Even the sound of the ocean shouldn’t reach me; I should create my own sound.

Location, too, featured in participants’ accounts of the role of artefacts, specifically in finding, reaching, and having a sense of spiritual places. Inge wished for an app that would let her find the right spiritual centre whenever and wherever she needed one:

...an app that would point me to the nearest Quaker Meeting House, the nearest Sōtō-Zen. ’Cause it takes such a long time to find them on the Web. You know, what sort of meditation is it, when are they sitting, what’s it like? The amount of

⁹¹ Geordi La Forge, a blind character in the television series “Star Trek: The Next Generation”, wears a VISOR instrument that enables him to “see” wavelengths that normally sighted people cannot perceive. http://www.startrek.com/database_article/la-forge-Geordi

time I'm spending finding Quaker Meeting houses, and then finding out that they're not really sitting, or that they won't have a meeting when I'm there—

Some participants dreamed of transport assistance to take them to spiritual places: “space travel to special places or special people” (Parvaneh), “a transporter, that took me to a right place” (Inge).

A sense of place can play an important role in the spiritual feeling of a space. David reflected on the role of sound in his sense of being in a church and mused about how that might be created:

...what would be really neat is the feeling of the sound that you get when you walk into a church, which I *always* respond to with calm... If you could bottle that, I'm sure people would respond to that, that wouldn't typically go to church. ...if some sort of technology could give you that feeling, that would be cool. That would be really cool.

Inge mentioned the smell of a library, Louise described “the expansiveness” of her animal sanctuary, and Ebiundu suggested a warm, welcoming voice at the entrance to his church,. Sensory stimuli contribute strongly to participants' sense of place.

Artefacts provide practical support for activities and practices that can lead to TUX. Bob often reads aloud from the Torah at his synagogue, which requires a great deal of advance preparation because of the ambiguous way the written Torah presents many of the words⁹²:

For a Bar Mitzvah boy, or a Bat Mitzvah girl, it takes at least six months' practice to read probably two chapters, and it really does take that time.”

He uses an app that reads Torah aloud to him, helping him learn to pronounce it.

David feels fully connected to *something larger* when drawing on paper, and he emphasised that the feel of the pencil or pen and the texture of the paper shape the immediacy of his experience. Finger paints are best of all, he said:

...you're connected more with your fingers. Getting your hands dirty, and actually working directly with your hands, for sure it's — I mean, that's why clay is so nice, because...you're moulding it and feeling it directly with your hands.

Some participants find the physicality of activity spiritually meaningful. Some activities are repetitive and soothing: the rhythmic character of fingering prayer beads, for example, calms Keith and helps focus his attention:

Focusing on sort of very tiny movement, ...going beyond yourself in the moment, ...imposing a control over a moment or a number of moments...

⁹² The Torah as written omits the vowels, and the reader has to know the passage to disambiguate some of the words.

Other activities are energising and exhilarating: Barika finds spiritual uplift in running and other strenuous exercise, and any artefact that would help her achieve TX would help her move her body freely, without worry.

Participants listed numerous artefacts that support the activities they find spiritually meaningful. From Scott's guitar and piano to David's sketchbook and pencils, to Barika's trainers to Louise's swimming costume — artefacts contribute to activities that give people spiritual satisfaction even when the artefacts have not been designed or even acquired for spiritual practices *per se*.

In summary, interview data suggest that, with respect to the physical and activity context, participants value or desire spiritually meaningful spaces and objects, an appropriate level of sensory stimulation, and practical and aesthetically pleasing support for spiritually meaningful activities.

5.3.5 Psychological Context

Focus and beauty emerged as the largest themes in participants' use of and desires for artefacts for aspects of the psychological context. As Chapter 4 explained, psychological distractions involve internal challenges to focus, such as Gloria's "mind that just keeps going going going" or Barika's burden of worries:

...worry that you are a girl... that the world is a bad place... who is looking at me?
who is talking what about me?

Several participants described how they use artefacts to reduce internal distractions and improve focus. Some use artefacts that engage them aesthetically. The beauty of Tarot helps Gloria "to focus on the cards...and listen to spirit...rather than to my own thoughts". For Julia, music that is "floating in the background" helps her focus on meditation by reducing her awareness of being in the room:

...it helps you just take yourself out of that immediate physical space... helps me get more focused on the breathing, on the meditation practice, than on where I'm sitting.

Keith said he "would need an objective focus" to take him out of himself and concentrate on something external. He elaborated on his view of mindfulness apps:

I find the apps quite interesting, in the sense that they are not a person. ...in terms that a person imposes a value. ... But spiritual belief and spiritual meaning must be found by yourself, not through an Intercessor. So I think the apps are interesting in that sense, in that they are guided by the beliefs of the person but not necessarily—you're not getting a sense of belief specifically human and in the moment.

Sangmu said something that seemed at first to address the surface issue of time:

...something that sort of tracks what time I go to bed or whether I'm spending too much time playing games on the Internet or —

This sounds very like a desire for assistance in making sure he devotes enough time to living the kind of life that his spirituality demands. But immediately he elaborated:

I suppose just things that...remind you from time to time of what your purpose is and what you're sort of trying to do.

Sangmu's addendum reveals more of a psychological or spiritual goal — he wants something to help him stay in the right frame of mind to live his spirituality.

In summary, interview data suggest that, with respect to the psychological context, participants value or desire beauty, engagement, and assistance in focusing their attention.

5.3.6 Temporal Context

Participants spoke of using artefacts to support the frequency, duration, and timing of their spiritual practice. Sangmu meditates for at least 20 minutes every day, using the Insight Timer⁹³ app (Figure 17) to alert him when his pre-set meditation period has ended. He appreciates the app for eliminating his need to keep track of time:

I find it a really useful thing to sort of sharpen my sort of sense of purpose about how long I'm going to practise.

This app directly supports Sangmu's temporal context by helping him manage time. It facilitates the psychological context as well, by freeing him from the distraction of time. Inge uses a similar app to enable her to meditate whilst on the bus, without missing her stop.

Lamenting her struggle with “carving out the time” to do just five minutes a day of meditation, Julia said:

One of the things I've tried to find is a daily meditation, ...keyed in with the turning of the seasons, so that it's kind of related to where you are in the wheel of the year.

Finding the specific type she was seeking, Julia felt, would help her make time for practice.

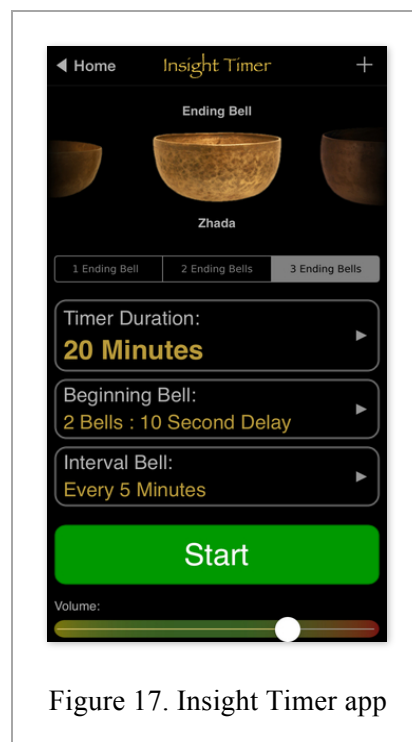


Figure 17. Insight Timer app

⁹³ <http://itunes.apple.com/us/app/insight-timer-meditation-timer/id337472899>

Keith named structure and timing as important to him in mindfulness practice:

...there are mindfulness apps, which...might work, in terms of being able to give a structured moment and timing to it.

In summary, interview data suggest that, with respect to the temporal context, participants value or desire seasonality, structuring and managing time for spiritual practice (including regularity), having triggers or reminders, and making/finding time to practise.

5.4 Artefacts in Living the Experience

Living the experience is a subjective matter, contained inside the person, and participants described almost no use of artefacts that corresponded to this phase of TX. The exceptions were artefacts to support immediate actions while the experience is unfolding (Section 5.4.2). Although they had described very little artefact *use* in this phase, participants did express several desires for artefact support for it.

5.4.1 Perceiving Phenomena

Participants did not describe using any artefacts to support perceiving the phenomena. Four desires and needs for this component appeared in the interviews, however: connection, going beyond oneself, entering a meditative state, and having a longer experience. David wished for an artefact that that could influence the mind:

It would give you opportunities to go into that state of mind, or in that space. ...to go into a meditative state, ...to bring you back to moments where you're thinking in a certain way.

Most TXs are fairly short in duration (Rankin, 2005). Madhu wished for longer ones, although she expressed doubt about how possible that would be for her:

Yes, it would be wonderful if it can last, but I think I would have to be enlightened to be in that lasting feeling.

It seems likely that, instead of longer single experiences, Madhu was referring to what Levin & Steele (2005) call a “mature” transcendent experience and Mossbridge (2016) calls “full transcendence” — a continuous state of awareness of being part of *something larger*.

Many participants indicated that they place great value on the sense of connection they perceive during TX, and some mentioned connection as an important reason for engaging in their spiritual practices. David said: “You just lie there and, you know, try and, sort of, connect.”

In summary, interview data suggest that, with respect to perceiving the phenomena, participants value or desire entering a meditative state, going beyond oneself, having longer experiences, and sensing the connection with something greater than themselves.

5.4.2 Reacting as the Experience Unfolds

As explained in Chapter 4, reactions that occur during a TX involve feelings and emotions, thoughts and interpretations, and effects and actions. All of the artefact use declared for this phase involves actions: many are consciously undertaken and we can easily see them as involving the intentional use of an artefact. Taking photographs of a glorious natural scene, for example, if done while still in the grip of awe at its majesty, occurs (I argue) during the unfolding of the experience. Such actions have the unfortunate potential to detract from the quality of experience, especially if the person must pay attention to operating the artefact, and participants wanted ways of achieving immediate actions that would reduce the need for them to attend to the mechanics of carrying out those actions. Sadie wanted a way to capture textual snippets of a church service — perhaps for sharing in the moment, perhaps for later reflection and discussion — without disturbing the mood in either herself or her neighbours that pulling out and using her mobile in church would have done. Louise envisioned a sort of combination of binoculars and camera that she could control with her mind:

...it would be like having a fancy Nikon with a good telephoto, like I used to have when I had film. ...I could will it to be on or off. ... I could just kind of will it to be there and will it not to be there... Or I could easily drop it down and there it is. It's on my hat and it just drops down, everything is perfect. I can see four times or eight times as far. ... And I could take pictures. I could both see the things that are further away in more detail — see the colours, cut through the glare — and also get pictures.

Such a device, Louise said, could enhance her experience in the moment because she would know she could share parts of the experience later.

Participants expressed almost no desires for artefacts to enhance their immediate reactions directly. No desires emerged for having artefacts facilitate emotional reactions to perceived phenomena. For example, although David expressed enthusiasm for something that would re-create the sound of a church (see Section 5.3.4) — “I *always* respond to that with calm” — he framed the artefact's contribution as producing a sound. Therefore, although his desire for the *experience* is for calm, his expressed desire for the *artefact* relates to its audio output. Only one desire mapped to an interpretation: Helen imagined something to help her get out of her physical body, and she described it as something to facilitate astral projection.

In summary, interview data suggest that, with respect to their immediate reactions to the phenomena, participants strongly value or desire feelings of calm, peace, comfort, ecstasy, and joy.

5.5 Artefacts in Integrating the Experience

As explained in Chapter 4, integrating the experience involves reflecting on it, having continuing feelings and emotions about it, sharing the experience with others, and making life changes in response to it.

5.5.1 Reflection

Participants often mentioned reflecting back on a transcendent experience, sometimes even after many years: “It never leaves me,” said Danielle of an experience from 20 years earlier. They value the insights and inspirations they obtained from their TX and the understandings of their own spirituality.

Almost every week, Sadie hears something in church that she wants to capture for later reflection, but she feels uncomfortable trying to write it down during the service. She imagined an artefact that would capture and save the text of something she has just heard:

...I wish I had access to the written words... Google is my friend, but it doesn't have access to the text of every reading. I can look at the order of service and say, so-and-so, and if I can remember a phrase from it I can put that in, but I may or may not be able to get it. Better to have audio capture than nothing, but what I would really like is written.

The artefact would then find and retrieve online information about the material — the source of a quote, for example — and would enable her to review the material and keep the inspirations that she got from the service. Sadie could also have it post the material to Facebook to invite her friends' thoughts, to support further reflection.

Participants spoke of reflection in terms of keeping the experience and its inspirations with them, to continue to learn from it and to comprehend its significance for their lives. They articulated desires for understanding their own spiritual selves and retaining the inspiration they had received from an experience. Some spoke of understanding spirituality in more abstract terms: Keith phrased it as “the light and shadow of spirituality” and “a length and breadth and depth of human meaning”.

In summary, interview data suggest that, with respect to reflection, participants value or desire reliving a TX and improving their understanding of it and of spirituality in general.

5.5.2 Continuing Effects

Continuing effects and actions did not stimulate much discussion about artefact use or desires for artefact support. Participants often mentioned a lasting feeling of comfort, peace, or gratitude after

the TX as something they valued from it; but they did not describe using artefacts to enhance that feeling, nor did they express any desires for such artefacts.

In summary, interview data suggest that, with respect to continuing effects and actions, participants value or desire feelings of long-lasting peace and comfort.

5.5.3 Sharing

Some participants expressed desires for sharing a transcendent experience with others as a way of integrating it into their lives; they desire to convey to others what it was like and how they understood its meaning. Participants seemed to want to communicate their experience to people they care about because they found it meaningful and important.

Scott expressed enthusiasm for sharing his discovery of resonance:

And it sort of comes down to wanting...to find the hidden resonances for beauty or spirituality in yourself, then — as I kind of feel like I have; I've found something, through my own experience... and now I'm just "check this out!" I say to other people, check this out, this is really cool.

Scott shares his love for resonance in two ways: implicitly by conducting music, and explicitly by giving presentations and talking to people. He uses digital media to explain and illustrate the concepts.

Participants discussed the use of artefacts for replicating a transcendent experience and sharing it with others. Sharing would be the only way to enhance hers, Susan said, and she thought replication would be tricky:

I don't know what would be an enhancement of [the experience], other than being able to share it. ...not intensifying it or making it any better or any worse or any more defined, but...being able to share it rather than just telling about it. ... So someone could experience what I had experienced. I don't know how you would do that, except for me to write a script and direct a movie and supervise the special effects... I could tell you about what it was like, but until you sat in a darkened theatre and heard it and felt it, it still wouldn't mean that much to you...

Susan emphasised that visual reproduction would be insufficient: the person with whom she wanted to share the experience would have to hear and feel what she had heard and felt. But she made it clear that by "felt it" she intended impressions and emotions — "it still wouldn't mean that much to you *unless it was your own mother, who had passed away*" (emphasis mine). Susan was confident a way could be found: "But I'm sure that could be done, for anybody."

In summary, interview data suggest that, with respect to sharing, participants value or desire conveying what they experienced and what it meant to them, to people they care about.

5.6 Overall Characteristics of Artefacts

Participants articulated a number of desires for features of artefacts themselves, independent of specific support they might provide for transcendent experience. These desires concerned both functionality and design/operation.

5.6.1 High-Tech vs Low-Tech

Participants revealed considerable variation in their preference for high-tech electronic/ digital artefacts vs low-tech physical ones. Some spoke enthusiastically about the advantages of high-tech artefacts, citing greater information content, automatic functions, interaction with like-minded people. Ebiundu waxed ecstatic about the possibilities that ICT offers for his spiritual practice. Others were less enamoured: Alicia strongly prefers a physical Bible to a digital one. “One of those page-flip people”, she can find a passage much more quickly in a book than in her mobile app — she knows the content well enough to have a good idea of where to look, and a book makes that easy:

For me, technology is something you use to research, not to get into the heart of something.

Some people prefer high-tech artefacts for some spiritual practices and low-tech ones for others: Julia uses electronic technology for guided meditation and a physical book for journaling. A computer or audio player lets her start a recording going and immerse herself in the meditation without having to pay attention to anything else until it ends. In contrast, she finds that the feel of a book deepens the spiritual satisfaction she finds in journaling. Julia has taken one or two courses in online journaling, but she finds that a book “just feels more solid”:

I like to just kind of sit with the physical object and write in it. It just feels more permanent to me somehow.

Julia’s comment recalls Seligman’s (2012) observation that spirituality involves a feeling of connection with something greater *and more permanent* than oneself. The impression that physical objects are more permanent than digital ones may contribute to the sense that they more fully support certain spiritual practices. Perhaps this preference also has to do with embodiment as an aspect of aesthetic appreciation.

People who prefer low-tech artefacts may nonetheless use high-tech ones in circumstances when convenience is important. As the mother of a two-year-old with extensive medical needs, Alicia uses a mobile app for access to the Bible when she’s out with her daughter:

...you know, I already have to carry my phone; how much else am I going to carry with me? So that’s really why I do the online one; it really *is* more of a practicality thing than it is anything else.

Some participants who strongly prefer low-tech artefacts expressed concern about the lack of a spiritual quality in the interaction that high-tech artefacts offer and the distractions that they can impose. As previously mentioned, David talked at length about his view that computers are not “creative” tools and that creativity is best activated with pencil and paper. He acknowledged that the computer is useful for capturing the ideas once they have become more solid, and for making revisions quickly, but he stressed that physical tools are better for helping to *begin* the creative process.

5.6.2 Effortless, Non-Distracting Use

Participants spoke of wanting to use artefacts with little or no effort and without distracting themselves or people around them. Sadie and Louise both expressed a desire for this, Louise wanting the binocular/camera to drop down from her hat and follow her wishes without requiring her to use her hands or think overmuch about how to control it, and Sadie wanting to capture part of a service without disturbing herself or those around. David noted the importance of predictability: “You don’t want stuff happening that you don’t expect.”

5.6.3 Mobility

Several participants wanted mobile artefacts, for use whenever and wherever they were. Sometimes they wanted to lighten their load by carrying fewer objects; sometimes they wanted the functionality whilst travelling.

5.7 Key Insights

5.7.1 Articulating Desires

As I explained in Chapter 3, I elicited interview participants’ desires for artefact-supported TX enhancements by asking a question along these lines: “If someone could design and build for you a product that would enhance your spiritual experiences, what would it do for you?” Some participants had difficulty with the question; they often began by expressing surprise and saying they had never thought about it. Many were able to answer straightaway, some speaking easily and excitedly. Several who had initially demurred came up with something as we talked.

Considering how much trouble participants had shown in talking about their transcendent experiences, on the whole they evinced surprisingly little difficulty in articulating desires for enhancement and artefact support for TXs. Possibly their greater ease in talking about this topic was due in part to their having already overcome to some extent the greater hurdle of talking about their spirituality, and this seemed much less frightening in comparison.

5.7.2 Differential Artefact Support for the Phases

Two notably divergent findings about artefact support emerged from the interview data analysis: (1) artefacts provide participants with a wide variety of support for the phases of transcendent experience, and (2) most of that support involves the creation of context although participant desires covered the other two phases as well. It is very easy to support most areas of context, and it should be easy to support most integration activities. It is much harder to imagine how technology could affect the lived experience directly.

Chapter 6 – Transcendance, a Game for Eliciting Speculative TUX Design Ideas

Whereof one cannot speak, thereof one must be silent.

– Ludwig Wittgenstein

...or perhaps playfully pretend.

– Elizabeth Buie

6.1 Introduction and Motivation

In this chapter I present *Transcendance*, a game that uses interview findings to elicit speculative design ideas for artefacts to enhance transcendent experiences. Inspired by approaches from other design games, *Transcendance* fosters an atmosphere of imagination, fun, and play to stimulate creative ideas for techno-spiritual artefacts that respond to data from the interviews.

Design to enhance transcendent experiences is anything but straight-forward: TXs are both ineffable and largely unanticipatable. In Chapters 2, 4, and 5 we saw that not only do people have tremendous difficulty describing the experiential aspects of such experiences — what they perceived and sometimes how they reacted to those perceptions — but also, when asked to envision enhancements, they tend to focus on the non-experiential components — context and, to a lesser extent, integration. Yet it is the experiential, ineffable part that prompts people’s short-term reactions and long-term transformation. This ineffability, along with the variation in how people understand and interpret what may be very similar transcendent perceptions of phenomena, means that when design aims to enhance TX it cannot take the usual UX design approach of clearly defining — or even satisfactorily describing — the user experiences it aims to support.

Furthermore, in Chapters 2 and 4 we learned that transcendent experiences cannot be anticipated with precision or even with confidence; they can, as Gaggioli (2016) says, only be *invited*. Their unanticipatability means that designs for TX enhancement are not easily tested: we cannot just ask people to use a techno-spiritual artefact and be sure of observing them having transcendent user experiences via which we can assess the artefact.

HCI is not new to ineffable experiences; it has tackled them primarily via the somewhat related aesthetic experience. As Boehner et al. (2008) observe, HCI lends itself to various approaches to “the ineffable, ill-defined, and idiosyncratic nature of aesthetic experience” (p. 12:1). The most direct one, they note, would involve attempting to convert the ineffable aspects of aesthetic experiences into definitions that can feed design specifications,

...producing systems that are well-defined and testable but may miss the fullness of the experienced phenomenon. But without formal models and codified methods,

how can we design and evaluate for a phenomenon we aren't sure can be adequately captured? (Boehner et al., 2008, p. 12:1, emphasis mine)

The authors illustrate with a case study of building and evaluating a system that they describe as “lived into being” (p. 12:1). Formal methods, they warn, can produce systems that fail to support the intended experiences because they will miss many of the ineffable aspects. They ask whether designing for an ineffable experience necessarily involves “defining and constraining” the experience (p. 12:3) and whether we can assess support for ineffability when we cannot formulate criteria against which to test the product.

Boehner et al.'s (2008) questioning of formal methods is well taken: a straightforward approach may indeed miss much of the ineffable quality (although as I pointed out in Section 2.5, defining does not imply constraining, if the definition addresses basics and allows for expansion and nuance). The authors addressed ineffability by designing a system for their own use and reflecting on their experiences in using it. “The ineffable eludes definition”, they write (p. 12:7), “yet we know it when we experience it.” Designing for their own use allowed them to consider the subtleties in their experiences “without needing formalized measures to recognize them” (*ibid.*) I argue, however, that although their approach worked very well for the aesthetic experience they were studying, it is not universally applicable to all types of ineffable experience.

Specifically, I argue, Boehner et al.'s (2008) reflective approach is infeasible for designing for transcendent experience. It works for aesthetic experiences because the authors could use the system with the confidence that they would have an aesthetic experience in some form. It would fail for TUX, however, because we have no such confidence: as I noted earlier, we cannot simply give someone — even ourselves — a techno-spiritual artefact with any certainty of observing a transcendent user experience in the foreseeable future.

I argue, however, that design for ineffable experiences can characterise the experiences without taking a formal, straightforward approach; I contend, in fact, that design for transcendent experiences benefits from — even calls for — a certain amount of definition. Otherwise, how are we to know whether and how well we have succeeded? Are we simply to ask people if they've had a TX whilst using the artefact? Are we to go to the trouble of designing and validating our own instruments for assessing TUX?

Design for TUX, I maintain, requires us to consider the characteristics of the experiences we aim to support. In Chapter 2 we saw how few HCI studies of experiential techno-spirituality define the target user experience beyond the non-specific “spiritual experience” or even cite any literature at all on transcendent experiences. This oversight persists despite the common UX practice of describing target experiences, the abundance of TX literature on the nature of the experiences, and

the few HCI papers that have explicitly brought this literature to our attention (Laarni, Ravaja, Kallinen, et al., 2004; Saari, 2009). Transcendent experiences have so far remained elusive to HCI.

Or can we draw on the rich characterisations in the TX literature and use those in ways that honour the experience of transcendence without reducing it to a structured set of attributes and missing all the mystery and wonder of the lived experience? I submit that we can. I propose an approach that, rather than taking a straight-forward tack and missing much of the ineffability, “sneaks up” on the experience by coming at it *sideways*. In designing to enhance them, it takes the advice of Kohls et al. (2008) to approach transcendent experiences “indirectly and implicitly” (p. 157).

To explore this concept, I decided to create an environment of imagination, fun, and play, which would invite participants to explore scenarios of transcendent user experiences and generate speculative design ideas for them. I chose to design a game.

6.2 Transcendence Game Design

Enter *Transcendance*. The name, a portmanteau of *transcendent* and *enhance*, reflects the goal of enhancing experiences of transcendence. I needed the game to balance simplicity with analytical fidelity, so that the TX characteristics gleaned from the interview findings and the TX literature could influence the speculative design ideas generated, without either requiring the players to understand the findings or constraining the designs overmuch. For example, the interview analysis distinguished between what a person perceived during a TX and how she interpreted it — e.g., sensing a numinous presence vs identifying it as God or a deceased loved one. Clearly this distinction was too fine to ask players to consider without benefit of considerable explanation — and even then I couldn’t ensure that the difference would be reflected in their ideas — so I included interpretations with perceptions. For simplicity’s sake, I also omitted consideration of longer-term integration. (Details of the Transcendance materials appear in Appendix B.)

Transcendance is a board game (Figure 18) that I describe as a combination of Pictionary and Snakes & Ladders. For its design I took inspiration from the game in (Blythe et al., 2015), in which players move

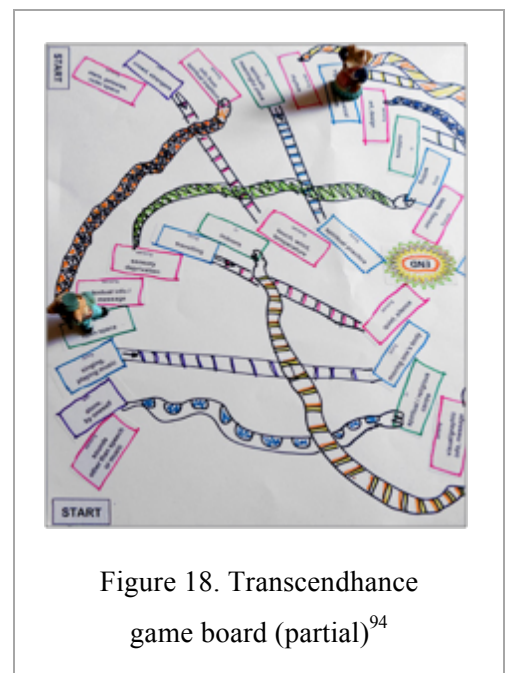


Figure 18. Transcendance game board (partial)⁹⁴

⁹⁴ A photo of the complete board appears in Appendix B.

around a board and use categories of cards to inspire speculative design ideas. Each Transcendence board space represents an aspect of the context of a transcendent experience. At each step, players roll a die to determine how far to move their game pieces along a spiral path towards the centre. Landing on a space with a snake or a ladder moves the player to a different arm of the spiral after that space is played — closer to the “End” point (if a ladder) or farther from it (if a snake).

After the players roll the die and move their game pieces, each draws four experience cards (Figure 19) — one perception, two reactions, and one overall characterisation of the TX — the contents drawn from the interview data and the TX literature. Players sketch as many ideas as they can, to illustrate scenarios of a person having an TX that involves an artefact and that includes the context (the board space) and the words on any or all of the experience cards. This goes on for three or four rounds, until participants seem to be winding down. When play ends, each player selects one of her ideas and builds a low-fidelity model of it, using cardboard, construction paper, pipe cleaners, cellophane tape, coloured markers, and glue. For this they can take additional inspiration from “desire” cards (Figure 20), which represent interview participants’ desires for techno-spiritual enhancements.

Some specifics of the game design require elaboration here. *First*, I required workshop participants to use the context (the board space on which they had landed) in the scenario. Requiring context aligns with Auger’s (2013) guidance:

The designer must consider the environment and context in which speculative future products or services would exist; this could be a specific space such as the home or office or a cultural or political situation based on current developments or trends. This could be described as an ecological approach to speculative design and assists in grounding the concept in a familiar or logical reality. (Auger, 2013, p. 13)

Auger was not referring to TUXs, of course, but the principle is the same.



Figure 19. Two samples of experience cards



Figure 20. Sample of enhancement desire cards

Second, I did not require them to use all of their experience cards. They might draw cards they would see as incompatible — *excited* and *detached*, for example, or *anxious* and *joyful* — and I did not want to make their task seem impossible.

Third, I did not constrain them to envisioning feasible ideas in the relatively near future, as Auger (2013) and Coulton et al. (2016) recommend. Instead, I gave them free rein because my purpose was to seed further thinking and ideas: interview participants had, after all, described transcendent experiences that involved “pleasures and desires that the high technology industry often seems to dismiss as unworthy or nonexistent” (Gaver & Martin, 2000, p. 216).

Fourth, I did not use scoring or competition. Pilot runs of used scoring — one point per idea — to promote competition among players and aim to stimulate the generation of a large number of ideas. The workshops as conducted omitted the scoring, because in piloting I concluded that a competitive atmosphere was not conducive to creating a spirit of self-transcendence.

6.3 Application

The next step would be to analyse the ideas and develop them in some way, so that they could be explored further and evaluated. Chapters 7 and 8 discuss those steps.

Chapter 7 – Transcendence Workshop Analysis

The trick to having good ideas is not to sit around in glorious isolation and try to think big thoughts. The trick is to get more parts on the table.

– Steven Johnson, *Where Good Ideas Come From: The Natural History of Innovation*

7.1 Introduction

In this chapter I present and examine a sample of the speculative design ideas that emerged from the Transcendence workshops. Mapping these ideas to the phases and subcomponents of transcendent experiences, I analyse how they support interview participants’ desires for TX enhancement and stimulate the generation of further ideas. I discuss how the workshop’s “sideways” approach facilitates techno-spiritual design by accommodating the ineffability and unanticipatability of TXs and mitigating their unsuitability for the straightforward approach that “classic” UX practice takes. I do this to support my proposal of *peripheral design* as a promising strategy for facilitating design to enhance transcendent experiences and for stimulating ideas that can seed design fictioneering.

The workshops generated 69 ideas for techno-spiritual artefacts, ranging from the practical and down-to-earth to the fanciful and far-fetched. Ideas at the practical end take currently available technologies and adapt or repurpose them to support TXs; these include a bin into which people can toss their mobile devices, an enhanced digital version of a sacred text, and augmented-reality eyeglasses that guide the wearer to spiritually interesting people and places. At the fanciful end, the ideas posit new technologies beyond what seems feasible at the time of this writing; these include a mind link with an object of pilgrimage, a person’s own robotic clone, a device that enables everything nearby (both animate and inanimate) to participate in spoken conversations, and a dream recorder with playback capability. Somewhere in the technological middle, perhaps, lie ideas such as a co-ordinated techno-cultural system in which people go around holding in front of themselves large tablet computers that display famous paintings that change as each new person looks at them, or a device that scans the person’s face and reads her innermost being, projecting its image onto the surface of the lake as if it were her reflection.

This thesis presents workshop ideas by means of the participants’ pencil drawings, some of which include explanatory words. The drawings represent glimmers of design concepts: the participants did not describe them in any detail or even indicate which of the cards⁹⁵ they incorporated. Thus the sketches convey, as Blythe (2014) phrased it, “an impression of a design rather than a precise

⁹⁵ As I explained in Chapter 6, participants were not required to use all five drawn cards for any idea.

account” (p. 708); many offer considerable ambiguity and the opportunity to explore them, as suggested by Gaver, Beaver, & Benford (2003). The ideas carry evocative names, some that the participants gave them during the workshop and some that I devised afterwards. For some of the workshop ideas I explore a few “creative misunderstandings and further ideas” (Blythe, 2014, p. 708), to illustrate the potential of the Transcendance *peripheral design* approach to evoke generative ideas that can spin off further techno-spiritual design research. Ideas vary in generativity — at least, I found that some suggested spin-offs much more strongly than others.

The analysis below organises ideas around their mappings to TX phases — creating the context, living the experience, integrating the experience. Each drawing is accompanied by a summary of the idea, the game inputs that seeded it, and the phases and subcomponents to which it maps. Ideas that map to multiple TX phases or subcomponents appear primarily under the one to which they contribute the most; ideas that have important relevance to an additional component may receive a brief mention in that section as well.

This chapter presents and examines one or two illustrative ideas per TX component. Appendix C provides the complete set of workshop ideas and their mappings to TX components and to desires for artefact-supported enhancement.

7.2 Ideas for Creating the Context

All but one of the 69 Transcendance design ideas support creating the context of TX, and many of them support context *primarily*. Because of the prominence of context, I have subdivided the context section into the contextual sub-components that the ideas support.

7.2.1 Spiritual Context

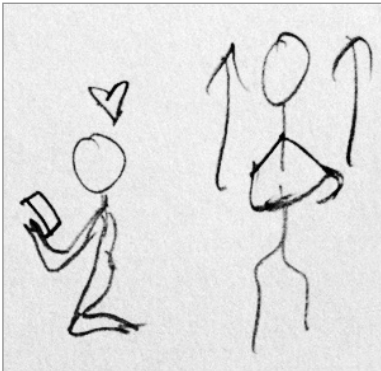
Ideas for enhancing the spiritual context⁹⁶ range from using different media for traditional content to stimulating spiritual contemplation by targeting the unconscious⁹⁷ mind. These ideas draw on sacred texts, symbols, spiritual practices, holidays and rituals, and representation of numinous presences.

Sacred texts

Holy eBook (Figure 21) offers interaction with the text in addition to perusal of it, including the capability to discuss the content with other readers. Closely resembling currently available digital

⁹⁶ As I discussed in Chapters 4 and 5, for any given TX the spiritual aspect of the developmental context is effectively indistinguishable from the spiritual context, and for design purposes the theoretical difference does not matter. Therefore, I mapped no workshop ideas to the developmental context.

⁹⁷ I use Carl Jung’s term “unconscious” in preference to Sigmund Freud’s “subconscious”.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Spiritual practice • Perceive: Closeness • Feel: Inspired • Feel/Have: Insight • Experience is: Indescribable
<p>Figure 21. Holy eBook</p> <p>Kneeling, person reads e-book of sacred text and prays. Feels connection with deceased loved one.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual

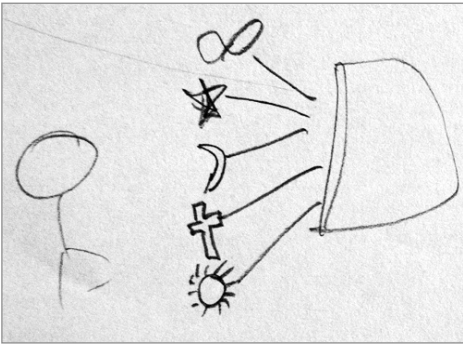
sacred texts such as the e-Sword Bible (see Chapter 5), it presents the opportunity to imagine additional capabilities — for example, comparisons of language and meaning between conceptually similar passages in sacred texts from different faith traditions. Perhaps we could go beyond Danielle’s desire for guidance for living (Chapter 5) and imagine allowing a reader to mark a passage, a person, a problem: “What guidance does Hinduism offer about this life situation?” “Does Judaism say anything about this person?” “What do different religions suggest I do about this?”

Symbols

Symbols can be a powerful means of conveying spiritual content. Symbol Monitor and Symbol Path present symbols of various types — musical, mathematical, and alchemical symbols, for example, as well as spiritual and religious ones — in different settings and using different means.

Symbol Monitor (Figure 22) displays its symbols outside the area where the person’s attention is assumed to be concentrated (say, the text he is editing) whilst he goes about ordinary activities. Symbols appear at the side of the screen, at unpredictable times and positions. They stimulate the unconscious mind and promote a sense of connection with the spiritual content they represent.

The passive way in which the person receives Symbol Monitor’s content suggests that it could draw on the concept of *interpassivity*, which Pelletier (2005) writes “is defined in reaction to the more common notion of interactivity, and refers to the way digital technologies position people as responders” (p. 318). Commenting that interpassivity involves *choosing* to be passive with technology, Blythe et al. (2010) explain that, as a form of the “pleasant idleness” (p. 168) of

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Symbols • Perceive: Clarity • Feel: Pensive, thoughtful • Feel: Integrated, whole, healed • Experience is: Private
<p>Figure 22. Symbol Monitor</p> <p>Symbols randomly appear on the monitor on which the person is working.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Temporal

*far niente*⁹⁸ — Italian for “doing nothing” — interpassivity can be an important part of a person’s experience with technology. Clearly it appears in Symbol Monitor; the person sets it up and accepts that it controls its provision of content. Interpassivity also plays a key role in Woodruff et al.’s (2007) study of Sabbath home automation.

In contrast, Symbol Path (Figure 23) requires not only active interaction and conscious attention but also whole-body involvement; it demands to be the focus of the person’s activity during use. Fading in as she approaches, the glowing symbols entice her and lure her onward; fading out as she passes, they recede into the mists of time. Her long-term path ahead is indeterminate, her origin obliterated. No breadcrumb trail traces where she’s been.

The design of a Symbol Path might benefit from a consideration of embodied interaction (e.g., Huck et al., 2015; Sakamoto & Takeuchi, 2014; Vallgård, 2014), particularly van Rheden and Hengeveld’s (2016) findings, which “suggest that more embodied interaction styles...lead to more mindful engagement in interaction” (p. 349). We could also locate Symbol Path in a physical space designed for the ineffable, drawing on Lepine’s (2016) observation: “Architecture does not teach us what the sacred is, but it may touch it and draw others to it” (p. 1). The architecture of the surrounding space may help draw the walker along the Symbol Path.

We could imagine Symbol Monitor to have intelligence, perhaps to detect the person’s mood from his facial expressions and from the ferocity or gentleness with which he types, and to adjust the symbols accordingly. Perhaps it is a monitor in two senses: not only the usual “computer monitor” but also something that monitors the person’s need. Symbol Path could be a walking meditation,

⁹⁸ The more common version of the expression is *il dolce far niente* — “the sweet doing nothing”.

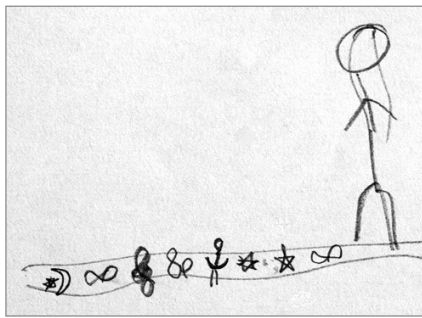


Figure 23. Symbol Path (drawing)

A person walks a path lined with symbols. Each symbol glows as she approaches and fades as she passes.

Game cards drawn:

- Context: Symbols
- Perceive: Clarity
- Feel: Pensive, thoughtful
- Feel: Integrated, whole, healed
- Experience is: Private

Supports: Creating the Context

- Spiritual
- Physical/Activity

encouraging mindfulness or reverie; or it might increase the enticement of a journey into a mysterious and exciting future.

These symbol-oriented ideas may benefit from insights on the use of religious and spiritual symbols in techno-spiritual design. HCI studies have explored candles as religious symbols (Bayley & White, 1997; Uriu & Odom, 2016), museum objects as symbols of “larger issues in life such as death, patriotism, or the meaning of life” (Latham, 2013, pp. 9-10), the power of symbols and other elements to foster experiences of the numinous (Nelson, 2007), and the meanings of and reactions to certain Christian symbols in design (Wyche & Grinter, 2012). Lin (2003) explored archetypes in icons as a resource for design for wondrous engagement: “there are some symbols and images common to all individuals, and therefore have a communicable power, which is potentially unlimited” (p. 44).

Other literature contains considerable material on spiritual and religious symbolism, general as well as faith specific. On the obverse side of the “universal” coin from Lin’s (2003) archetypes, Weisbuch-Remington, Mendes, Seery, & Blascovich (2005) found that positive and negative Christian symbols, displayed imperceptibly to Christians and non-Christians, produced different cardiovascular responses from Christians whilst they were performing a speech performance task afterwards, with negative images evoking a response pattern consistent with threat. Neutral, non-symbolic images had no effect, nor did Christian images presented to non-Christians⁹⁹:

⁹⁹ I suspect that by “non-Christians” the authors mean people who had no Christian upbringing. I think it is safe to assume that Christian images might have an effect on people who were non-Christians at the time of the study but had been brought up in a Christian faith.

This finding furthers our argument that the influence of the symbols derived from culturally learned meaning of the symbols rather than some incidental quality (e.g., color). (p. 1212)

Johnson et al. (2014) used functional magnetic resonance imaging (fMRI) to study the effects of positive and negative religious symbols, and found that believers' visual cortex was much less active whilst they viewed negative religious symbols than it was whilst they viewed positive/neutral or nonreligious symbols. One of the authors makes some intriguing comments in a separate article (Newberg, 2014):

The implications...for psychology may be profound in that we can begin to understand the neurological basis for how our beliefs and emotions shape our perceptions of the world around us. From the psychological perspective, *we might consider the power of using various spiritual or psychological interventions to modify one's beliefs and, ultimately, one's reality.* (p. 107, emphasis mine)

The question of universal/archetypal vs specifically religious symbols hints at a fascinating source of variation in symbol-oriented designs.

Humankind has created a huge number of symbols, which differ in meaning and emotional significance across people and contexts. Although Johnson et al. (2014) used the cross as a positive religious symbol, based on pre-testing with university students, Wyche & Grinter (2012) found that Brazilian charismatic Pentecostals saw it as negative because it represented "dead Jesus" whilst their faith centred on building a relationship with the "living Christ" (p. 67). Nature also features prominently in symbolism: Ashley, Kaye, & Tin (2013) report that wilderness images in art often symbolise sacred space and the divine; wilderness art, they suggest, "can communicate ideas of wilderness being a symbol of the sacred" (p. 114) and can offer a connection via "mediated experiences of wilderness spirituality" (*ibid.*) when people cannot experience it directly by spending time in wilderness. Williams & Harvey (2001) found that natural environments "move us to deep emotional response because of general and symbolic meaning rather than the unique characteristics of a given place" (p. 256).

Architecture often uses surface media to convey meaning. Barrie (2013) writes:

Symbols occupy a middle ground, an in-between area bridging the known with the unknown, and can be understood as mediators between the present and the past; the individual and the collective. (p. 44)

Architecture places symbols on external and internal surfaces, he explains, "and spatial relationships and sequences choreograph [the] dynamic serial experiences" of symbolic content (p. 45). Techno-spiritual design should pay attention to these "spatial relationships and sequences" of envisioned symbolic content, and when proposing *moving* symbols might also look at the effects of rearrangement.

These research findings can inspire many variations on the symbol-oriented workshop ideas: wilderness images and symbols could replace the abstract symbols that the workshop drawings depict; symbols could move and change, shifting their respective positions and altering their spatial relationships and sequences.

Spiritual practices

Some ideas support spiritual practices, particularly meditation, by presenting spiritual or religious content whilst the person meditates on the artefact. Prayer Ball (Figure 24) combines a Tibetan Buddhist prayer wheel with a glittery, mesmerising disco ball; the rhythmic sparkle increases the hypnotic effect of the spinning and enhances the mind-stabilising power of the practice. It can have specifically spiritual meaning for some people and can be merely a hypnotic visual for others. As with Symbol Monitor, Prayer Ball makes use of interpassivity: the person consciously focuses on it, accepting its activity as driving the experience. We could build on this idea by imagining variations in symbols, colours of light reflected, speed of rotation. We could have it emit sounds — perhaps music, speech, “binaural beats”, or ambient sounds to evoke an atmosphere of, say, a home, a forest, a house of worship, or a seashore.

Some ideas, rather than providing explicitly transcendent content, offer the opportunity to reflect on spiritual and even existential questions. DichotomiCans (Figure 25) is a space in which a small tree grows, flanked by watering cans labelled “Quiet” and “Curious”. The person enters the space and meditates on the scene, not knowing that the contents of “Quiet” will nourish the tree and “Curious” will poison it. Does he water the tree? If so, how does he react to the effects of his choice? Does he discover somehow that the other choice would have had the opposite effect? I have found no HCI or TX research that offers design inspiration for this idea, but it seems an ideal candidate for design fiction because it could raise existential questions and it would be infeasible to build — a system that poisoned a plant would surely not pass ethics review.

Holidays and rituals

Festival Chef (Figure 26) is a buffet on which trays of food for religious festivals such as a Passover seder or Eid al-Fitr meal appear at the relevant times, enabling cultural and spiritual exchange. An obvious place for Festival Chef would be an inter-faith service, but it could be more interesting if installed in, say, a university cafeteria or a community centre, and if the food appeared unexpectedly when the religious holiday began.

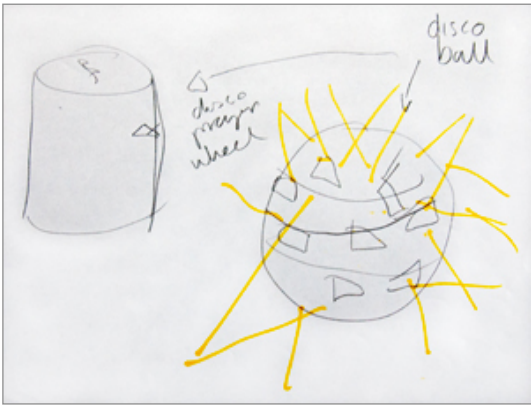


Figure 24. Prayer Ball

Spinning disco ball, adorned with mantras and symbols like Tibetan Buddhist prayer wheel, sparkles with reflected light.

Game cards drawn:

- Context: Rhythm
- Perceive: Brightness
- Feel: Joyful
- Feel: Fulfilled
- Experience is: Fun

Supports: Creating the Context

- Spiritual
- Physical/Activity
- Psychological



Figure 25. DichotomiCans

Watering cans “Quiet” and “Curious” flank a small tree. Person meditates on scene, unaware that “Curious” contains poison.

Game cards drawn:

- Context: Outdoors
- Perceive: Out of body
- Feel: Curious
- Feel: Quiet of mind
- Experience is: Heavy, weighty

Supports: Creating the Context

- Spiritual
- Psychological

Representation of numinous presence

Some ideas involve representations of divine beings or other numinous presences, some speaking and some silent. Dinner Table God (Figure 27), a holographic manifestation of a divine being that offers spoken guidance and instruction to people seated at dinner, could be surprising and overwhelming at first but might eventually become a familiar presence to people whose space it “inhabits”. We could vary its gender, personality, age, ethnicity, frequency and predictability of

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and design • Perceive: Oneness, unity • Feel: Prayerful • Feel: Emotionless • Experience is: Eye-opening
<p>Figure 26. Festival Chef</p> <p>Trays of food for festivals of world religions appear at the relevant times, enabling cultural/spiritual exchange.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social • Physical/Activity • Temporal

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Spiritual practice • Perceive: Divine being, God, Goddess • Feel: Thunderstruck, stupefied • Feel: Expansive, large • Experience is: Sacred
<p>Figure 27. Dinner Table God</p> <p>A god image rises out of a dinner table as people dine, and speaks to the diners.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social • Physical/Activity • Temporal

appearance, content or understandability of advice, number (a host of angels?), species (an Egyptian dog god? Ganesha, the Hindu elephant god?)...

Desires addressed

The ideas in Subsection 7.2.1 address interview participant desires such as guidance from their faith tradition, help with spiritual focus during practice, religious level of symbology (religious, non-religious, or no symbology), and being tuned in to the seasons of the year¹⁰⁰.

7.2.2 Social Context

Some of the ideas that address the social context may facilitate the interaction (or the impression of interaction) with people; others support the solitary nature of the experience. As I explained in Chapter 4, the social nature of the setting may be essential to the experience or it may be merely an aspect of logistics. This section discusses ideas in which the social setting is key to the experience; it starts with solitary experiences, expands through experiences occurring in the company of other people, and ends with experiences involving crowds of strangers.

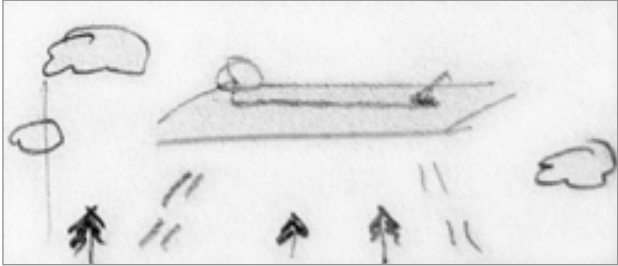
Solitude

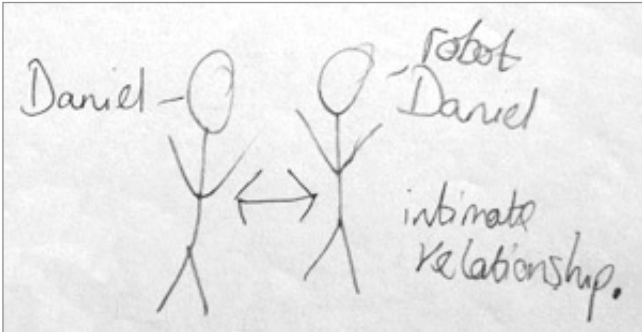
Some ideas revolve around experiences where solitude is key. Hover Carpet (Figure 28) takes a person hovering alone over natural environments, enabling her to contemplate them without distraction from other people. We could vary the scenery and its features — gentle or rugged, peaceful or dangerous, flat or mountainous, bare or forested, inhabited or wild, wet or dry, hot or cold, familiar or new... We could vary the altitude, bringing the person into close contact with the natural scene or keeping her a distant observer. We could vary the speed of flight, changing the time to contemplate one scene before another appeared.

Intimacy

Some ideas support one-on-one, emotionally intimate experiences, the closest involving relationships with oneself. Robot Daniel (Figure 29), not a doppelgänger but a robotic clone made specially for Daniel, provides intimate interaction and allows Daniel to know himself more deeply and intimately than any human being, and to have spiritual sexual experiences with himself. What if Robot Daniel has Daniel's physical characteristics, appearing to be a clone in every sense including the literal, biological one? What if it is visibly a robot that also has all of Daniel's emotional, mental, and spiritual characteristics including knowledge, movements, speech patterns, and psychology? How does Daniel respond to knowing himself so intimately? Does he feel spiritual uplift from the intimacy? Does it depress him to go deeper into his darker side? How does his new self-understanding affect his life?

¹⁰⁰ Although the interview participant meant the seasons of Nature, religious seasons could also be relevant.

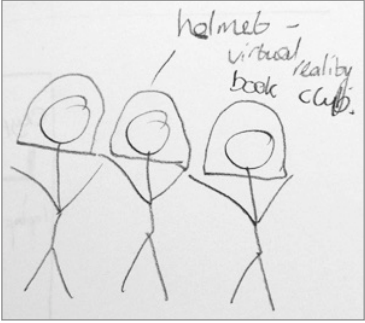
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Alone • Perceive: Divinity, sacredness • Feel: Sad, unhappy • Feel: Engrossed, engaged, absorbed • Experience is: Religious
<p>Figure 28. Hover Carpet Person lies on carpet, which goes hovering above nature.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Physical/Activity

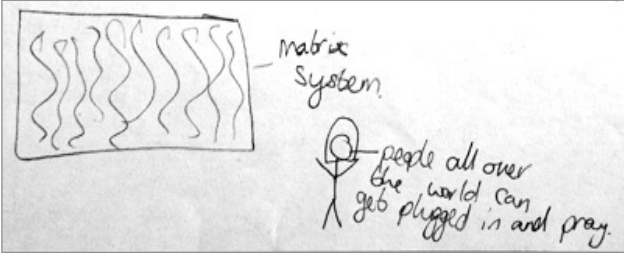
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and Design • Perceive: Oneness, unity • Feel: Prayerful • Feel: Emotionless • Experience is: Eye-opening
<p>Figure 29. Robot Daniel A robotic clone of himself gives Daniel an intimate partner with whom sexual union creates unity and oneness.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Spiritual • Physical/Activity

Connected group

Some ideas involve interactions between people who have some connection but are less close than intimate partners; others support less than intimate contact between people who are already close. Several ideas involve small groups of people who presumably have some prior acquaintance with one another, such as book clubs and dinner parties. Virtual Reality (VR) Book Club (Figure 30) uses VR headsets to enable a shared experience of a book and the book club’s discussion about it. Prayer Matrix (Figure 31) is a strongly shared experience, as the participants — who may or may not know each other but have come together willingly — plug their nervous systems directly into it, à la William Gibson’s 1984 cyberpunk novel *Neuromancer*¹⁰¹, so that they can pray together. The participants can sense each other’s thoughts and feelings, and their prayers are truly shared.

¹⁰¹ <http://en.wikipedia.org/wiki/Neuromancer>

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Reading • Perceive: Heightened/altered senses • Feel: Compassion, empathy • Feel: Homecoming, belonging • Experience is: Shared
<p>Figure 30. Virtual Reality Book Club</p> <p>VR headsets enable shared experience of the book and the discussion.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Physical/Activity


	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and Design • Perceive: Oneness, unity • Feel: Prayerful • Feel: Emotionless • Experience is: Eye-opening
<p>Figure 31. Prayer Matrix</p> <p>A “matrix” environment into which people all over the world plug their nervous systems so that they can pray together.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social <p>Supports: Lived Experience</p> <ul style="list-style-type: none"> • Perception

Dinner Table God (Figure 27, above) appears during a group dinner, giving the diners a shared experience and perhaps prompting conversation. We can envision scenarios in which the group consists of people with common values and wishes, whose individual prayers are compatible; and we can imagine that these participants find deep spiritual satisfaction and hope in their shared prayers. We can also envision scenarios in which group members are at odds with one another, holding conflicting values and wishes, with incompatible individual prayers. We can imagine that some of these participants might become frustrated, angry, or hostile at the “counteracting” of their prayers, whilst others might gain from the shared thoughts and feelings a sense of compassion and understanding for people who hold different values.

It would be interesting to explore variations in group attributes such as language (does everyone speak the same language?) and in content attributes such as prayer subject (are they free to pray about anything or has the gathering a specific purpose?). What if it did more than enable participants to connect their minds — what if it offered mental stimuli as well? How might that affect the prayer contents, the group dynamics, the spiritual effects?

Strangers, crowds

ConvoEnlarger (Figure 32) enables everything nearby, both animate and inanimate, to participate in spoken conversation, promoting universal communication and, at least on the surface, a sense of connection. The people around sense it as truly mysterious and magical.

	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: Crowd, strangers• Perceive: Beauty• Feel: Engrossed, engaged, absorbed• Feel: Reverent, worshipful• Experience is: Miraculous
<p>Figure 32. ConvoEnlarger Enables all creatures and objects to join in conversation.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Social• Psychological

Desires addressed

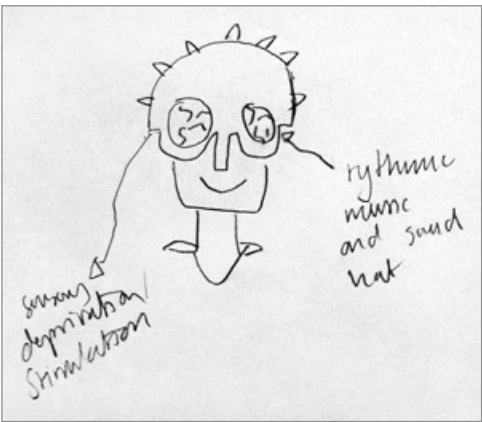
Ideas discussed in Subsection 7.2.2 map to social context desires such as having a shared emotional state and understanding other peoples' joys and concerns.

7.2.3 Physical and Activity Context

The physical and activity context received by far the largest number of mappings from ideas — almost twice as many as the next largest TX component. Some of the ideas support physical aspects such as sensory deprivation or stimulation, guidance for wayfinding, or transport; others support activity aspects such as movement, painting, or music-making.

Sensory deprivation/stimulation

The SensoRhythm Hat¹⁰² (Figure 33) surrounds the person’s head and alternates sensory deprivation with rich, rhythmic sensory stimulation. We could vary the sensory input and the intervals of deprivation and stimulation. We could add virtual reality (VR) to enrich the stimulation further. We could provide sights, sounds, and scents from disparate environments — say, a forest, a music concert, and a cathedral, respectively — to see what kind of impression they might evoke.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Rhythm • Perceive: Brightness • Feel: Joyful • Feel: Fulfilled • Experience is: Fun
<p>Figure 33. SensoRhythm Hat</p> <p>The hat controls the person’s visual/auditory/olfactory input, alternating sensory deprivation with rhythmic stimulation.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Social

Physical exercise

RhythmiCave (Figure 34) is a dark room with a hand cycle and a bright light that flashes in sync with the rhythm of the cycling. RhythmiCave ties sensory input to physical activity, similarly to the way Sonic Cradle (Vidyarthi & Riecke, 2014) supports meditation by using changes in the person’s breathing to effect changes in the sounds it produces. Hand cycling is quite unlike breathing, however: breathing can be automatic and very relaxed, whilst hand cycling requires

¹⁰² I would have called it a helmet, but the participant wrote “hat” on the sketch, so “Hat” it was.

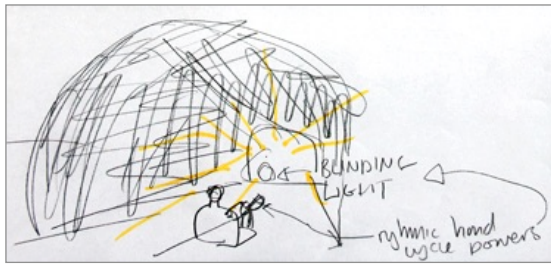


Figure 34. RhythmiCave

A person operates a hand cycle in a dark, cave-like room. The cycle powers a blinding light that pulses with the rhythm of the cycling motion.

Game cards drawn:

- Context: Rhythm
- Perceive: Brightness
- Feel: Joyful
- Feel: Fulfilled
- Experience is: Fun

Supports: Creating the Context

- Physical/Activity

conscious action and can be very strenuous. It would be interesting to learn whether and how hand-cycling rhythms might change in response to the pulsing light and how people would respond to the strenuousness of the activity. The light might pulse with symbols, figures, or abstract patterns; it could project them onto the cave walls or simply appear in front of the person.

Intentionality Stone (Figure 35) engages the kinæsthetic sense alone, involving neither interaction nor specific sensory input. The Stone is a heavy weight that the person wears like a millstone around his neck as he labours uphill toward a luminous (and perhaps numinous) unknown goal. The weight amplifies the intensity of his labour and makes it seem more worthwhile, increasing its intentionality and the value of accomplishing the goal. Interestingly, the Intentionality Stone idea

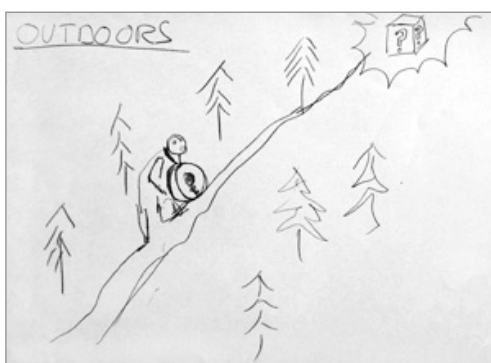


Figure 35. Intentionality Stone

A millstone burdens a person as he trudges toward a luminous mystery box. The stone increases the intentionality of his labour and the value of accomplishing the goal.

Game cards drawn:

- Context: Outdoors
- Perceive: Out of body
- Feel: Curious
- Feel: Quiet of mind
- Experience is: Heavy, weighty

Supports: Creating the Context

- Spiritual
- Physical/Activity

echoes interview participant Barika’s comment that she feels “the higher sense of uplift” from pushing herself physically towards her goal and is consistent with findings (e.g., A. J. Cohen, 2015) that physical exertion can contribute to transcendent experience.

Location, sense of place

Chant Helmet (Figure 36) has the potential to transport the wearer psychologically or spiritually: it plays traditional chants from the wearer’s selected faith tradition and adds co-ordinated visual and olfactory stimuli to evoke a sense of spaces where those chants have traditionally been sung. We could add appropriate resonance and overtones to the chants, rendering the sound even more like that of the space. We could have the stimuli adjust to the wearer’s position within the space as she walks around it, letting her know where she is.

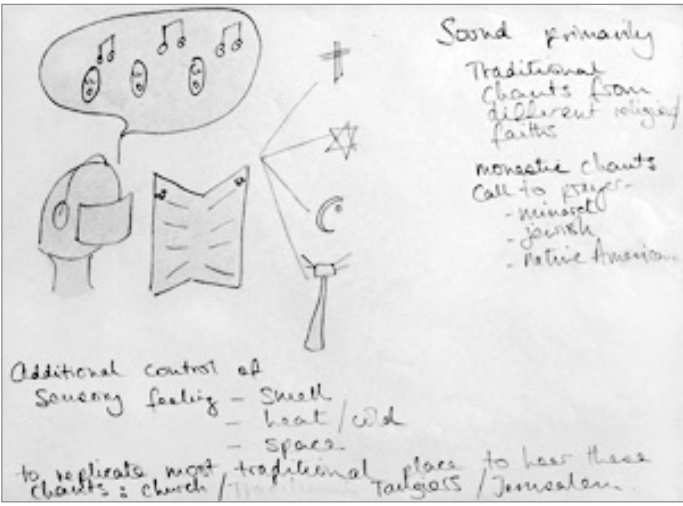
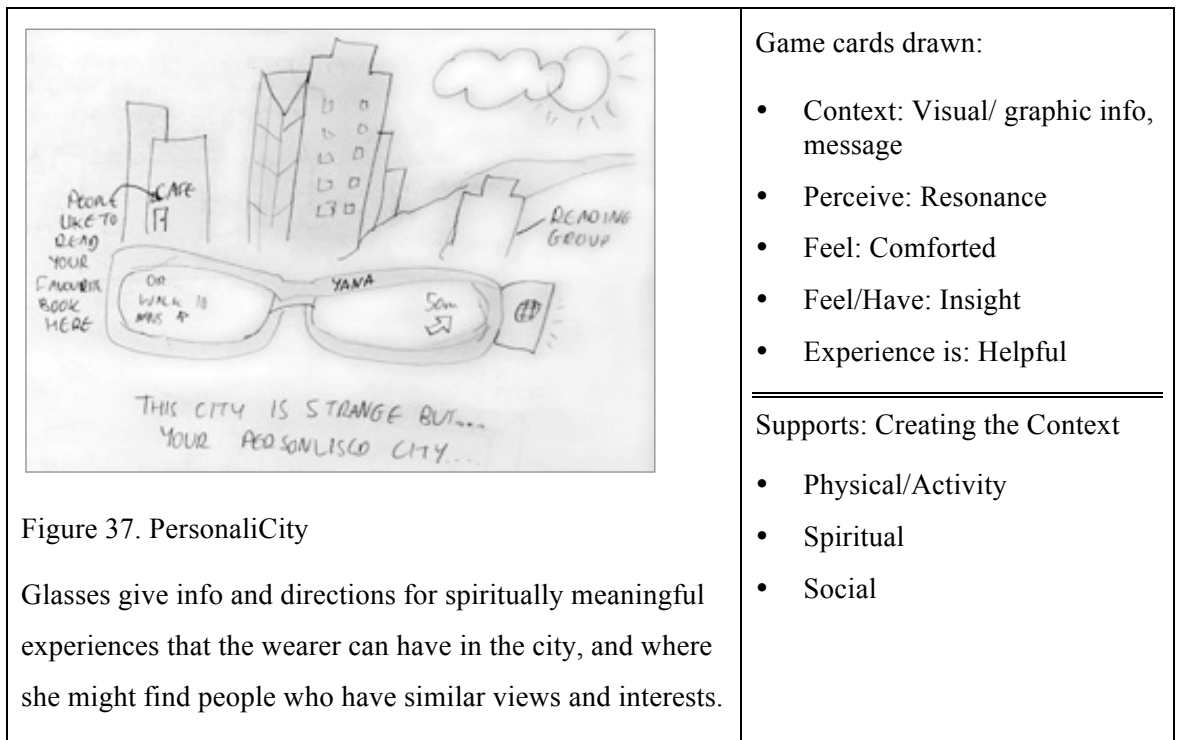
 <p>Sound primarily Traditional Chants from different religioy faiths monastic chants Call to prayer - - minarell - jankh - Native American...</p> <p>Additional control of Sounery feeling - - Smell - heat/cold - space to replicate most traditional places to hear these chants: church / synagogues / mosques / Jerusalem...</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: Voice(s) • Feel: Peaceful, calm, serene • Feel: Refreshed, renewed • Experience is: Gentle <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Physical/Activity
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Figure 36. Chant Helmet

Helmet plays traditional chants from wearer-selected faith tradition. It adds input to other senses, to replicate a sense of place where chants have traditionally/historically been heard.

PersonaliCity (Figure 37) is a pair of eyeglasses that offers an augmented-reality view of places and people nearby, with suggestions for ones that might pique the wearer’s spiritual interest. As he walks a city, it highlights and labels places such as churches, art galleries, monuments, historical plaques, bookshops, twelve-step fellowship meetings (Yarosh, 2013), choir concerts, séances, philosophy discussions, and even impromptu conversations about topics that interest him spiritually. Perhaps, as he sets out from his accommodation, he asks PersonaliCity to direct him to a specific type of place or event. We could vary the idea by having it read the wearer’s thoughts and mood, selecting people and places of interest on that basis. Perhaps it introduces him to people



on the street, when it senses a shared spiritual interest. Perhaps it ties into the city's network of PersonalCity glasses and brings compatible wearers to a place that interests them all, nourishing connections among them.

Creative activities

Some ideas envision support for visual arts and music. SketcHelper (Figure 38) takes from the person's mind an idea for a drawing and helps put it on paper, smoothing the flow of sketching. It may foster a feeling of creativity in its users, or it may create an impression of helplessness. SketcHelper can support people with hand tremors or low hand-eye co-ordination, helping them produce sketches that reflect their ideas.

YourArranger (Figure 39) supports music making. Reading the person's mind, it plays real-time accompaniment to what he sings, arranges a tune he thinks of, or creates ambient music from phrases that come into his mind. It picks up his mood and plays music to lift it. It compensates for inadequate skill in composing and playing, enabling him to take joy and spiritual uplift in expressing himself through his musical creativity.

Desires addressed

Ideas in subsection 7.2.3 map to desires such as sensory deprivation, blocking out the outside world, providing certain sensory modalities, gaining a sense of place, discovering and visiting spiritually interesting places, seeing with altered senses, and supporting bodily movement. Chant


	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: Silence • Feel: Distracted • Feel: Ecstatic • Experience is: Hazy, fuzzy <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Psychological
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Figure 38. SketcHelper

Reads a drawing in the person’s mind and helps turn it into a sketch. Makes sketching flow more smoothly.

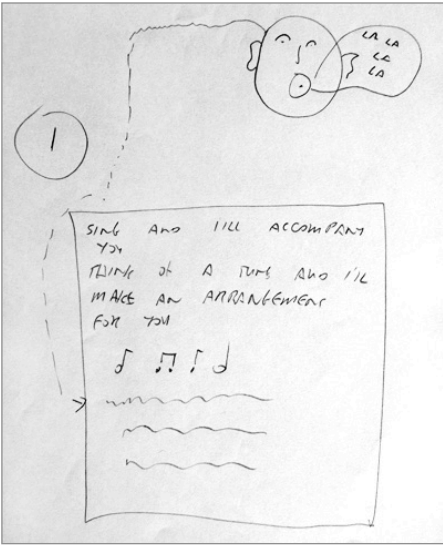
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Singing, playing music • Perceive: Vision(s), images • Feel: Fantastic, wonderful • Feel: Happy, glad • Experience is: Familiar, frequent <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Psychological
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Figure 39. YourArranger

Reads the person’s mind. Accompanies in real time anything he sings; arranges any tune he thinks. Creates ambient music from phrases that come into his mind. Picks up his mood, plays music to lift it. Person feels peaceful.

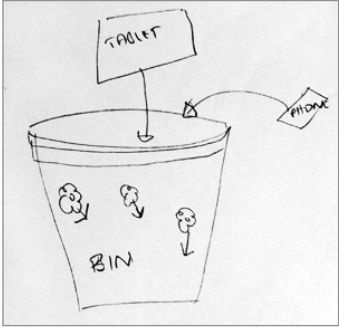
Helmet, for example, aligns with David’s desire for technology that could “bottle” the sound of a church interior and Inge’s desire for smell to foster a sense of place.

7.2.4 Psychological Context

The psychological context comprises the factors that relate to the mental or emotional state at the time of the experience begins.

Focus, distractions

MobiliBin (Figure 40) offers people a place to discard their mobile devices and reduce their external distractions. Flowers and leaves adorn the bin, enhancing the sense of peace it offers to those who use it. Perhaps it could speak to passersby, inviting them to discard their devices. Maybe it sits at the entrance to a place of worship or meditation, inviting all comers to consign to it not only their devices but also their worries for a time. Perhaps it might relieve them of internal as well as external distractions, while they conduct their spiritual practice or just sit in silence.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceives: Nothingness • Feels: Curious • Feels: Watched • Experience is: Mystical
<p>Figure 40. MobiliBin</p> <p>A bin decorated with flowers receives mobile devices to help people eliminate their distractions.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Psychological

Drift Mask (Figure 41) provides the wearer an escape not only from external distractions and, more importantly, from his own unwanted, invasive, persistent thoughts. It also enables him to connect with the spirit world, to obtain guidance from benign beings.

Self reflection

Inner Mirror Lake (Figure 42) is a device hidden in a tree next to a small lake, which a person happens on whilst walking in the woods. As she gazes at the lake, the device scans her face and reads her spirit, projecting onto the lake an image of her face as it would be if she were always her authentic self. Contemplating this image, the person knows herself more deeply, in both welcome and unsettling ways. Maybe Inner Mirror Lake helps her ask her inner self about a decision she must make and discover what she really wants. Maybe it helps her learn why other people don't see her the way she sees herself. Maybe it shows her who she will be in 5, 10, 25 years.

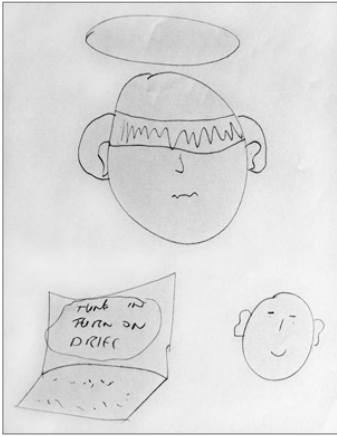


Figure 41. DriftMask

Mask provides escape from unwanted, invasive thoughts, draws wearer out of anxieties and into calm. Connects with spirit world; provides guidance from benign entities.

Game cards drawn:

- Context: Sensory deprivation
- Perceive: Increased mental focus
- Feel: Humble, small, unworthy
- Feel: Longing, yearning
- Experience is: Spiritual

Supports: Creating the Context

- Physical/Activity
- Psychological
- Spiritual

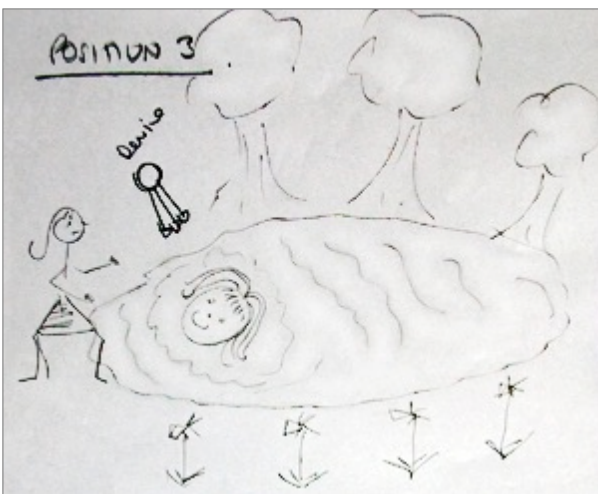


Figure 42. Inner Mirror Lake

Device scans the person's face, projects image of her inner self onto the surface of the lake, as if it were a reflection.

Game cards drawn:

- Context: N/A
- Perceive: Something greater than oneself
- Feel: Released, unburdened
- Feel: Weak, powerless
- Experience is: Important

Supports: Creating the Context

- Psychological
- Social

Beauty

ArtFaces (Figure 43) is a co-ordinated techno-cultural system in which people hold in front of themselves large tablet computers that display famous paintings. Each person can see through his own tablet to the world beyond it, but everyone they meet sees what the tablet displays, and the displays change as each new person sees it. Everyone sees artistic beauty instead of the faces of the people holding the tablets. Tablet holders might choose the type of art their devices display;

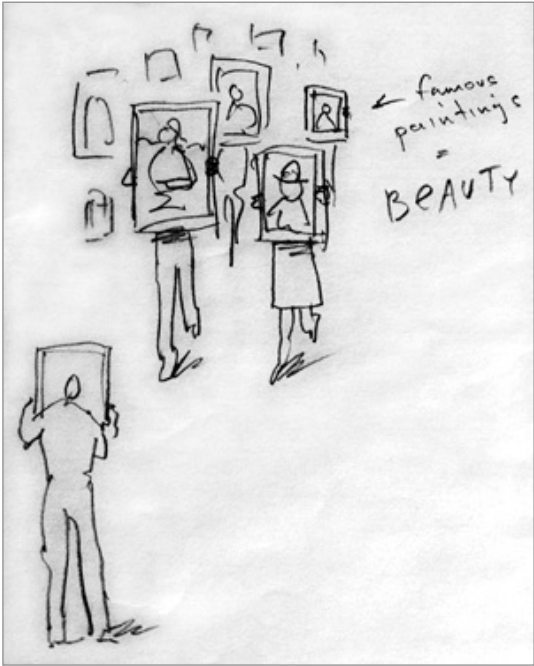
	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: Crowd, strangers• Perceive: Beauty• Feel: Engrossed, engaged, absorbed• Feel: Reverent, worshipful• Experience is: Miraculous <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Social• Psychological
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Figure 43. ArtFaces

People walk around holding large tablet devices that look like famous paintings. They see through their own tablets; other people see what tablets show. Displays change according to who's viewing them.

beholders might place constraints on the type of art they saw. Event T-shirts could incorporate the technology; at Glastonbury they'd show album covers; at the [Giubileo](#), Catholic paintings. Do people know what their own tablets display?

Desires addressed

The ideas in Section 7.2.4 map to desires such as tuning out distractions, tremendous ease of use, artistic or verbal input, and understanding one's own spirituality. In addition, all of the ideas that support creative activities in the physical/activity context also support the desire for having an atmosphere of creativity in the psychological context.

7.2.5 Temporal Context

The temporal context includes everything that surrounds the experience and has to do with time. Most of the ideas that map to the temporal context either revolve around seasons of the year or make themselves continually available as part of everyday life. In addition, Festival Chef (Figure

26), described in the section on Spiritual Context, above, relates to the seasonal holy days of various faith traditions.

Some ideas integrate the artefacts into everyday life, which several interview participants said was important to their spirituality. Showerfall (Figure 44), for example, displays Nature images of water falling onto stones during a shower. Extensions of these ideas might draw on HCI research on *peripheral interaction* — interaction that occurs as part of a secondary activity while people are engaging in a primary activity (e.g., Bakker et al., 2014; Hausen, Loehmann, & Lehmann, 2014). Showerfall in particular lends itself to a great many variations, which I explore in Chapter 8, in the consideration of design fiction.

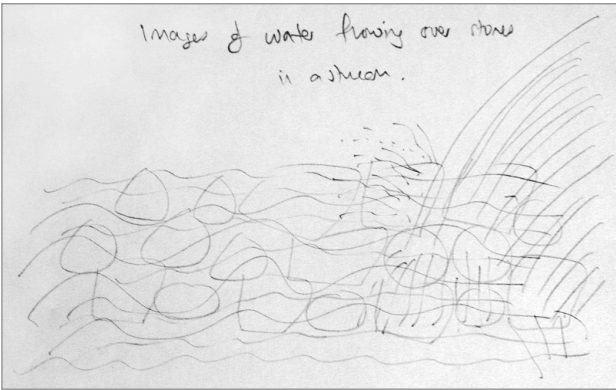
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: Darkness • Feel: Speechless, lost for words • Feel: Detached, distant • Experience is: Simple <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Temporal
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Figure 44. Showerfall

Images of water falling onto stones appear on the surface of the bath whilst the person showers.

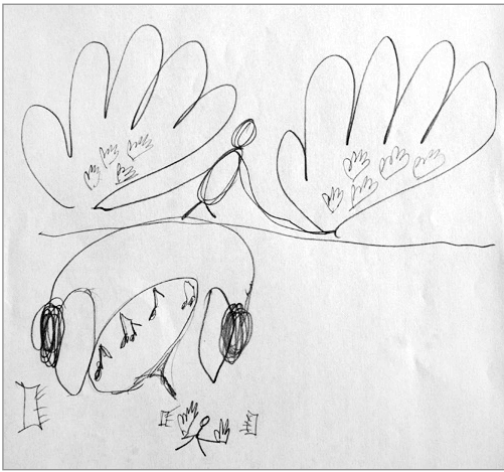
Desires addressed

The ideas in Section 7.2.5 map to desires such as being seasonal, being structured, and in particular being integrated with everyday life.

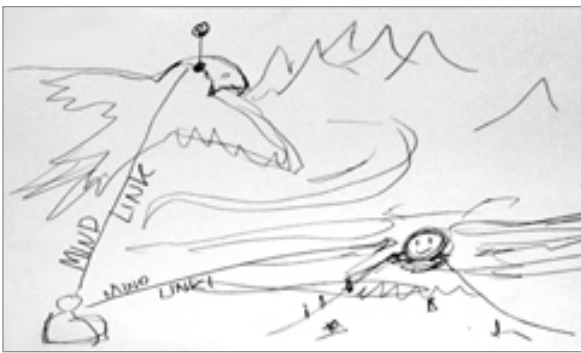
7.3 Ideas for Living the Experience

Perceptions of consciousness and control

ArtistiChanneler (Figure 45) involves headphones that play music to help the wearer tune out the world, whilst a pair of gloves guides his hands in re-creating a painting exactly as the artist painted it. The gloves give the person the sensory experience of the artist’s hands creating the painting and thus foster a sense of channeling the artist, even of *being* the artist.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Creating • Perceive: Tingles, twitching, gooseflesh • Feel: Prayerful • Feel: Loved • Experience is: Mysterious <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Psychological <p>Supports: Living the Experience</p> <ul style="list-style-type: none"> • Perception: Consciousness/Control
<p>Figure 45. ArtistiChanneler (drawing)</p> <p>Headphones play music whilst gloves guide hands in re-creating painting exactly as artist painted it. Person feels to be channeling the artist, even to <i>be</i> the artist.</p>	

Being the Mountain (Figure 46) enables the person to participate in pilgrimage from two perspectives wholly different from the usual: instead of travelling as a pilgrim to the holy site (Japan’s Mt Fuji, in this example), mind links allow her to view the pilgrimage from above and to experience *being* the venerated one — the object of pilgrimage.


	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Outdoors • Perceive: Out of body • Feel: Curious • Feel: Quiet of mind • Experience is: Heavy, weighty <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Psychological <p>Supports: Living the Experience</p> <ul style="list-style-type: none"> • Perception: Consciousness/Control
<p>Figure 46. Being the Mountain</p> <p>Person participates in pilgrimage from perspectives wholly different from the usual. Instead of being a travelling pilgrim, she uses mind links to experience being the venerated one (the object of the pilgrimage, here Mt Fuji), or viewing pilgrimage from above.</p>	

Prayer Matrix (Figure 31), described above under Social Context, provides a beyond-virtual-reality environment that enables people all over the world to pray together by plugging their nervous systems directly into it. Although one might argue that this type of input essentially equates to physical context but merely bypasses the senses, I contend that it has the potential to stimulate the brain and nervous system in ways the senses cannot, and that therefore it might provide direct experiential content.

One might argue also that ArtistiChanneler works by controlling the wearer’s movements and sensory stimuli, and thus belongs only in the physical/activity context and not in living the experience; and one might well be correct. I suggest, however, that this idea might have a much stronger influence on the user’s perception than pure sensory stimuli, no matter how complex, but the question is worth considering. Being the Mountain and Prayer Matrix clearly may affect perception directly, as they provide input straight into the brain.

Perception of numinous presence

ArtCompeller (Figure 47) is a wearable device that induces in the wearer an irresistible compulsion to steal works of art. The wearer is unaware of the source of the compulsion but feels it as a mysterious presence, not something within himself.

 <p>Figure 47. ArtCompeller</p> <p>Person looks at art and senses a mysterious presence urging him to steal it. The same presence induces a compulsion to buy the app for his smart watch.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and Design • Perceive: Another presence • Feel: Compelled • Feel: Confused • Experience is: Impersonal <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Psychological <p>Supports: Living the Experience</p> <ul style="list-style-type: none"> • Perception: Numinous presence
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Desires addressed

The ideas in Section 7.3 map to desires for lived experience such as connecting with another life, sharing the experience with others in the moment, going beyond oneself.

The challenge of producing perceptions directly

Living a transcendent experience involves the person's internal perceptions of stimuli (including possibly imagined ones such as apparitions unseen by others) and their reactions to those *internal* perceptions (rather than to verifiable external stimuli). Therefore, virtually any technology that could contribute directly to the lived experience would, I maintain, need to do so via either subliminal means or input straight to the brain. Subliminal "creation" of lived experience, I would argue, is due to indirect contributions implied by sensory inputs rather than direct input to perceptions. Direct brain input includes not-yet-realised mind-to-mind links (such as we see in the ideas Being the Mountain and Prayer Matrix) and two avenues under study: psychoactive drugs (Garcia-Romeu, Griffiths, & Johnson, 2015; Yaden et al., 2016) and electrical stimulation of sensory cortices (Stingl et al., 2013).

Technologies have been developed that induce felt presence in two quite different ways. Blanke et al. (2014) built a machine that combines touch with delay: a blindfolded person operating it cannot see what is touching him and cannot attribute the sensation to touch from anything physical, and thus perceives a presence behind him. A more interesting example — more interesting because it involves emotion — is Frantova et al.'s (2011) "The Other", a home-like space that draws on the concept of sleep paralysis:

Daydreams of the dwelling, intensified by the hidden references to sleep paralysis and familiar phenomenological landscapes, outline the subliminal level of the experimentation space. They breathe life into the experimentation space and charge it with potential to evoke thoughts and images. Once the space starts to radiate an uncanny energy, the meaning of every rustle and jet of air starts to revolve around it. This subliminal level creates a framing of the experiment without which enchantment is not possible. *However, it needs to be delegated through the objects on the surface level its physical form and media content which have an immediate contact with the participant.* (p. 184, emphasis mine)

Frantova et al. (2011) state unequivocally that the evoked experience is "delegated through" the context.

An example of using drugs to evoke experiences appears in John Brunner's 1970 science fiction novel *The Gaudy Shadows* (Figure 48). The book features a man who entertains the rich and powerful by combining a hallucinogen with a euphoric and using minimal environmental cues that draw on his clients' fantasies to produce experiences that are fantastic in both senses of the word. The story revolves around the protagonist's investigation of a death that this man had caused by

substituting a depressant for the euphoric and removing the carpet in the deceased’s posh penthouse bedroom. Perceiving himself to be dirt-poor again, seeing and hearing imaginary rats skittering across the bare floor, the victim had died of terror.

More to the point of this thesis, drugs can trigger transcendent experiences. For centuries, some religious ceremonies have used psilocybin, the active ingredient in so-called “magic mushrooms”, to elicit mystical experiences (Griffiths et al., 2011). Medical researchers are currently using the hallucinogen to explore TX effectiveness in healthcare, for example in treating tobacco addiction (Garcia-Romeu, Griffiths, et al., 2015).

Clearly these lived experiences receive direct influence from — and can even be occasioned by — substances or other inputs to the brain. I maintain, however, that they also depend on some kind of stimulus from the physical and activity context, the psychological context, and possibly other contexts as well: although two people may have similar perceptions and reactions, even if they both consider the experience wonderful or terrifying their lived experiences will not be identical because their personalities, beliefs, memories, and fantasies/fears are not identical.



Figure 48. Cover, John Brunner’s *The Gaudy Shadows*

7.4 Ideas for Integrating the Experience

One idea maps to TX integration: Dream Recorder (Figure 49) captures dreams while the person sleeps, enabling the dreamer to review and relive them once awake. When the person has had a TX during a dream, Dream Recorder supports the integrative activities of recalling it, reflecting on it, and sharing it with others.

This idea goes beyond Portocarrero, Cranor, & Bove’s (2011) Pillow-Talk system, which records the dreamer’s spoken memory of the dream, in that the Dream Recorder records and interprets the brain activity, thus enabling playback of a greater part of the subjective experience. This provides for different, and possibly deeper, reflection on the TX of the dream. Although as yet we are not able to record the subjective experience of an entire dream, neuroscience research has made progress in this direction; in particular, they are learning to reconstruct perceived images from brain activity via functional magnetic resonance imaging (fMRI) patterns (Horikawa, Tamaki, Miyawaki, & Kamitani, 2013; Schoenmakers, Barth, Heskes, & van Gerven, 2013). In particular,

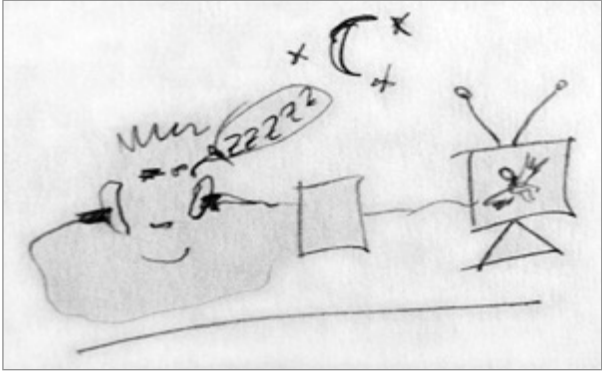
	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: N/A• Perceive: Silence• Feel: Distracted• Feel: Ecstatic• Experience is: Hazy, fuzzy <hr/> <p>Supports: Integrating the Experience</p> <ul style="list-style-type: none">• Reflection• Sharing
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Figure 49. Dream Recorder

Records dreams to be watched or shared later.

Horikawa et al. (2013) are using fMRI to explore capturing images from dream; they state that their findings may lead to “a means to uncover subjective contents of dreaming using objective neural measurement” (p. 639). Of course, even after we succeed in recording phenomena perceived in dreams, we will still have the problem — arguably far more difficult — of playing back those recordings in a way that allows the dreamer to relive the dream or someone else to experience it. To (re)experience a recorded dream authentically, would a person need to be asleep? How closely might another person’s experience match the original dreamer’s? What about differences in beliefs and values such that duplication of perceptions would not produce the same interpretations, effects, and emotions? Dream Recorder addresses the integration phase of the dreamer’s TX, but to allow him to share the dreamed TX with someone else it would have to produce a similar lived experience in the other person. Perhaps we could seek inspiration from research on technology to support lucid dreaming (Liu, 2016).

Another possibility may be research on triggering emotion. Braun & Cheok (2014), for example, reviewed the research on using smell to influence emotion, even in dreams, and they proposed

an experiment to determine the effects of olfactory stimuli on the emotional content of dreams. ... By researching the effects of olfactory stimuli on our subconscious perception, during sleep, we may...encounter an entirely novel form of entertainment. (p. 54:2)

I would not necessarily call sharing a transcendent experience a “form of entertainment”, but these authors’ point about the power of smell to influence emotion in dreams might apply to the concept of playing back a recorded dream.

Desires addressed

Dream Recorder maps directly to four desires for integration enhancement: remember or relive an experience, retain inspiration from an experience, replicate an experience, and share an experience after it ends. Dream Recorder might support other integration desires as well, depending on the content of the TX in the dream. These might include finding meaning in life, having more insight, and understanding one's own spiritual self.

7.5 Analysis of Workshop

7.5.1 Common Themes in Workshop Ideas

The ideas described above appear to contain several themes that cut across workshop participants and TX components:

- Nature
- Self understanding
- Music and art
- Sensory stimulation
- Direct mind communication

A detailed analysis of these themes would require a content analysis of the workshop participants' descriptions and is out of scope of this thesis, although it suggests future work.

7.5.2 Mappings to TX Components and Desires for Enhancement

The workshop ideas map widely to interview participants' desires regarding TX and enhancements¹⁰³. As I discussed in Chapter 5, those desires include not only wishes that participants expressed specifically for artefact-supported enhancement but also aspects of TX that their accounts revealed that they valued. The ideas mapped to a minimum of three desires each and a maximum of 17.5, with a mean of 9.5¹⁰⁴. As a group, the ideas mapped to 69 of the 72 desires, leaving only three desires unmapped; the mean of mapped ideas over all 72 desires was slightly more than nine. The top three desires were mapped by more than 40 ideas each; the most-mapped desire, at 51 ideas, was that the product should have no religious symbology. This strong mapping may be due to the fact that most of the workshop participants were not strongly religious, if at all.

The ideas vary substantially *less* in the phases and subcomponents of transcendent experiences (Chapter 4) to which they map. Whilst the desires for enhancement skew somewhat toward creating the context, a large majority of the *ideas* (85%) address context alone, and more than two-

¹⁰³ These spreadsheets containing these analyses can be provided on request.

¹⁰⁴ If it was unclear whether an idea mapped to a desire, I gave it half a mark.

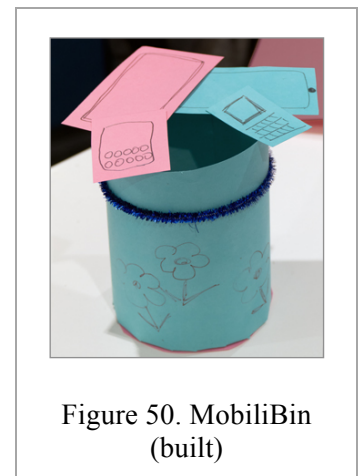
thirds of those map to the physical and activity context. Only ten ideas map to anything other than context — nine to lived experience and one to integration — and all but one of these map to context as well. That they map to context is not surprising — the rules of the game required players to consider their contextual element (represented by the game board space) in generating ideas. What I find interesting is that they support it primarily or exclusively.

7.6 From Design Workshopping to Design Fictioneering

To explore the possibilities for taking the workshop ideas further, I selected two of the workshop ideas and amplified them into preliminary concepts for design fictions, inspired by those of Blythe, Steane, Roe, & Oliver (2015). For these concepts I chose a simple idea that could be built with current technology and a complex one that is far beyond today's capabilities.

Distracti-Bin

The workshop idea called MobiliBin gave rise to the speculative design concept that I named Distracti-Bin. The idea drew on the physical/activity context (the game-board space) of *being indoors* and on TX experience cards for *perceives nothingness*, *feels curious*, *feels watched*, and *experience is mystical*. Figure 40, above, shows the participant's drawing of this idea; Figure 50 shows the low-fidelity construction that the participant built. From the interview participant desires for TX enhancement I identified five relevant ones: focus the mind, tune out distractions, a message of welcome, help with time management, and a reminder for spiritual practice. Drawing on these I added several features to the participant's idea: a welcoming voice inviting visitors to bin their distractions; electronics to block telephony and wifi signals so the devices would not sound; an interface for specifying how long they wanted to leave an item in the bin; and the ability to accept paper, which would support people in letting go of their worries for a time.



Decorated with leaves, a Distracti-Bin could sit just outside a worship or contemplative space, receiving devices and worries that people consigned to it.

The Distracti-Bin is a fairly practical idea, and one that we can well imagine might be buildable with current technology. It directly addresses stated user needs — in fact, removing distractions and aiding mental focus appeared among the most commonly mentioned interview participant desires for techno-spiritual enhancement.

Pilgrimage Perspectivator

The workshop idea called Being the Mountain (Figure 46) gave rise to the preliminary design fiction concept I named the Pilgrimage Perspectivator. This idea drew on the context of *being outdoors* and on cards for *perceives out-of-body, feels quiet of mind, feels curious, experience is heavy/weighty*. In the participant's drawing, mind links with cameras and transmitters connect the remote pilgrim to the object of the pilgrimage (Mt Fuji) and to a bird soaring overhead. The person can feel the worship of the approaching pilgrims and the detachment of the birds-eye view. To this idea I added a third mind link, which connects the user with individual pilgrims and provide yet another perspective of the pilgrimage. I identified four interview participant desires that the idea might address: detach from body, remove distractions, give a sense of place, and enhance/alter senses. The Pilgrimage Perspectivator concept goes well beyond the "Pilgrim Trail" remote pilgrimage system that I envisaged (Blythe & Buie, 2014b) for the CHI 2014 workshop on design fiction (Linehan et al., 2014).

The Pilgrimage Perspectivator is fanciful and does not presume to solve any problem. It helps ask questions about the nature of pilgrimage and how people might experience it in ways that differ from the traditional.

Value of these concepts

Distracti-Bin and Pilgrimage Perspectivator are not, of course, fully fleshed out design fictions. For that they would require further elaboration and narrative; they would need a diegesis. I argue, however, that they illustrate my claim that the Transcendhance game can elicit ideas that have good potential for being transformed into design fictions.

7.7 Key Insights

This analysis shows that the Transcendhance game can elicit speculative design ideas that can inspire spin-offs and variations, and that have strong potential for seeding design fictions for transcendent user experiences.

Chapter 8 – Design Fiction for Transcendent User Experience

You see [a product idea] in this movie and your response is not just, “Oh, what’s...that?” But “That would be cool if it existed.”

– Bruce Sterling¹⁰⁵

8.1 Introduction

As I showed in Chapter 7, the Transcendance workshop produced a substantial number of generative design ideas — ideas that can inspire the generation of other ideas. In this chapter I use those ideas to advance an exploration of design fiction for techno-spirituality beyond what has appeared in the literature so far. Specifically, I relate design fiction to the phases of transcendent experience modelled in my grounded theory (Chapters 4 and 5), and I propose three new forms of design fiction and discuss how they might contribute to its use, both for transcendent user experience and more broadly.

Design fiction offers important benefits to design research: it carries much less cost and virtually none of the risk that studies involving built prototypes and flesh-and-blood participants entail. It also offers specific benefits to TUX research in particular. First, the ineffability and unanticipatability of transcendent experiences requires research to rely on *non-observational* methods to explore the design space. Second, because artefacts for TUX often support beliefs that their creators do not themselves hold, fiction’s “willing suspension of disbelief” (Coleridge, 1817) provides TUX researchers and designers with a vehicle for suspending their disbelief regarding the tenets of target faith traditions.

As I have observed, the design fictions called imaginary abstracts (Blythe, 2014) “help us conduct thought experiments on design ideas” (Buie, 2014a)¹⁰⁶. Described as “devices of the imagination used to investigate the nature of things” (J. R. Brown & Fehige, 2016, p. 1), thought experiments exhibit four common features:

1. we visualize some situation that we have set up in the imagination;
2. we let it run or we carry out an operation;
3. we see what happens;
4. finally, we draw a conclusion. (p. 5)¹⁰⁷

¹⁰⁵ http://www.slate.com/blogs/future_tense/2012/03/02/bruce_sterling_on_design_fictions_.html

¹⁰⁶ <https://www.youtube.com/watch?v=a-5bb0XYYwI>

¹⁰⁷ The wording is theirs; the enumeration is mine.

Commenting that the analogous physical experiment is often impossible¹⁰⁸ for reasons such as “physical, technological, ethical, or financial” limitations (p. 6), these authors assert that a thought experiment can help us “get a grip on nature just by thinking” (p. 6). I submit that it can help us get a grip on the potential value and impact of design ideas as well.

I argue additionally that, by virtue of its position as imaginary, design fiction offers techno-spirituality researchers and designers the opportunity to tap into “the willing suspension of disbelief” (Coleridge, 1817) — suspending disbelief not only about the narrative and the diegesis, as we usually think of such suspension, but also about the spiritual and religious beliefs that the fiction portrays and the fictional artefacts support. In this way, design fiction can help us envision artefacts to support spiritual and religious practices that involve beliefs we do not ourselves hold.

Imaginary abstracts, a form of design fiction, are “summaries of papers that have not been written about prototypes that do not exist” (Blythe, 2014, p. 703). Inspired by Stanislaw Lem’s (1985) imaginary introductions to imaginary books, these fictions help us conduct thought experiments by posing hypothetical artefacts and summarising imagined research papers that envision people’s reactions to the posited artefacts. Being short and conceptual, imaginary abstracts can be developed quickly and in larger numbers than can longer forms such as Lindley & Coulton’s (2016) fictional research papers.

Research and design must approach transcendent experiences obliquely and *peripherally*, rather than trying to address them directly. I argue that, supported by my grounded theory of TUX, design fiction offers a means of exploring design ideas and how people might respond to them.

In the following subsections I provide key background on design fiction for techno-spirituality research. I illustrate imaginary abstracts in this research area, summarise the value of science fiction in creating techno-spiritual design fictions, and relate design fiction to the framework that my grounded theory describes.

8.1.1 Background: Imaginary Abstracts in Techno-Spirituality Research

As I discussed in Chapter 3, one of the background studies for my research (Blythe & Buie, 2014b) involved creating six imaginary abstracts for a fictional submission to a conference workshop on techno-spirituality. In this subsection I illustrate such fictions by quoting one of the six in full and summarising two of the others.

¹⁰⁸ I would add “or infeasible”.

Pilgrim Trail: Presence and absence in religious pilgrimages

Below I quote this imaginary abstract in full, to illustrate the form and show it applied to techno-spirituality:

The act of pilgrimage figures heavily in a number of religions. This paper describes “Pilgrim Trail”, a website and mobile app designed to enable adults who cannot make a pilgrimage in person to join one remotely and experience it in spirit with those who are there in the flesh. The person uploads a photo as an avatar and searches for forthcoming group pilgrimages on the basis of religion, geography and/or date. Once the person has joined the pilgrimage, the system depicts the pilgrims’ progress from beginning to end. It enables the person to participate in group activities remotely and to share thoughts and feelings with other pilgrims. We chose two types of pilgrimage for testing, a Hajj to Mecca and a Camino de Santiago walk, and recruited one tour operator of each type to provide the venues for the in-person side of the system. To help us test the remote participation we recruited six Muslims and six Catholics, all in their eighties. We chose these two pilgrimages because they differ in three ways — choice, movement and duration. The Camino de Santiago is a voluntary pilgrimage that involves walking miles (perhaps hundreds) over weeks or months along one of the many hiking routes from Spain, France, Italy and Portugal that lead to the city of Santiago de Compostela in northwestern Spain. The Hajj is a five-day annual gathering of Muslims in the holy city of Mecca, required by Islam for every adult Muslim who is physically and financially able, at least once in his or her lifetime. For the Camino we chose the one-week route to minimise the time required for the testing. Six of the remote participants felt inspired and moved, grateful that they could participate in some way in an act that was so important to their spiritual lives. Five people said they felt more remote from the pilgrimage rather than closer. The ability to see the sites on route and speak with the people there [exacerbated] rather than diminished their sense of not being there. One person dropped out, describing the experience as completely artificial. The paper suggests that a successful experience with online pilgrimage may be influenced by characteristics of the pilgrimage itself, such as choice factor, nature and length. Future work will delve more deeply into differences in people’s subjective experience with the different types of online pilgrimage.
(Blythe & Buie, 2014b, pp. 2–3)

This abstract exhibits all of Brown & Fehige’s (2016) four main characteristics of thought experiments:

1. It visualises an imaginary situation (pilgrimage with remote participation)
2. We carry out an operation (recruit participants and let them use it)
3. We see what happens (envision participant responses)
4. We draw a conclusion (influence of pilgrimage characteristics on experience of remote participation)

Other forms of design fiction may exhibit some or all of these characteristics as well, but it is clear that imaginary abstracts in particular support thought experiments.

Ganesha Me: Learning Hindu stories via role play

The “Ganesha Me” imaginary abstract describes a study of a mobile app that aims to engage children in learning stories of Hindu figures via an avatar that has the child “accompany and interact with the holy figure as the story unfolds” (Blythe & Buie, 2014b, p. 3). The abstract summarises recruitment and what the study’s participants were asked to do, then describes at a high level the results: two families seeing the app as sacrilegious, two children unable to suspend disbelief, five children becoming very engaged and learning a great deal, and two families concerned that their children were engaged with the story rather than with the holy figure. “The paper argues”, the abstract concludes, “that engagement and suspension of disbelief are different for different children” (p. 4).

Divinitarium: Designing the impossible

The “Divinitarium” imaginary abstract describes a study of a system that situates a reclining person in a planetarium-like environment, surrounding her with sights and sounds that people commonly describe as aspects of spiritual experiences they have undergone. Ten research participants from various faith and non-faith traditions chose a setting (a forest, a mosque...) and spent up to 30 minutes in the Divinitarium. The abstract posits numbers for the choices of settings the imaginary participants made; it describes their varied descriptions of and responses to their experiences of the Divinitarium. “This paper argues”, it concludes, “that such a system can facilitate spiritual experiences for people of many different faith traditions but this experience is a gestalt of what the system provides and what the user brings” (Blythe & Buie, 2014b, p. 4).

8.1.2 Background: Science Fiction for Techno-Spiritual Design Fiction

The development of design fiction for techno-spirituality can draw valuable insights from science fiction (SF), as Blythe and Buie (2014a) explain. Many SF works, we show, explore the role that technology might play in spiritual and religious practice and in numinous experience, imagining how people might perceive and react to artefacts. Our paper begins with a summary of HCI’s long history of engaging with science fiction and some highlights of the shared interests and key differences between HCI and SF. Both HCI and SF envision the future, we note, and predict future technology, although SF tends to pay much closer attention to how the technology is socially and politically situated in that future.

We then summarise design fiction and describe SF’s relevance to techno-spirituality research. Noting that techno-spirituality presents ethical challenges for Research through Design¹⁰⁹, we observe that SF’s intentionally and explicitly imaginary nature avoids some of those challenges.

¹⁰⁹ Our reference to RtD here assumes that the envisaged designs are actually built.

We then present an imaginary abstract developed to help explore SF's potential to contribute to design fiction for what we then called "spiritual and numinous experiences" (Blythe & Buie, 2014a, p. 229). The abstract, titled "Chatbot of the Gods: an ambiguous and numinous conversational agent", summarises an imaginary paper that "reports findings from a user study of a 'digital prophet', a conversational agent" (p. 232) that responds to queries with words, music, and imagery drawn from sacred texts and spiritual values of major faith traditions around the world. Describing the study's location and number of participants, this abstract lists some diverse participant reactions, notes that the findings "confirmed Foerst's [(1998)] finding that such systems can be experienced as numinous" (*ibid.*), and concludes that "such systems show promise in delivering old messages in new formats" (*ibid.*).

8.2 Extending Design Fiction for TUX

Although the imaginary abstracts created for my background work all support techno-spiritual design, only one pays substantial attention to its artefact's support for transcendent experience *per se*. Specifically, the *Divinitarium*¹¹⁰ was designed "to surround the user with sights and sounds that people commonly describe as aspects of their spiritual experiences" (Blythe & Buie, 2014b, p. 4). *Divinitarium* describes both observable reactions (one participant falls asleep, one cuts the session short...) and aspects of lived transcendent experience: the sense of a numinous presence, a vision of a deity or an angel, "physical reactions such as tingling or feeling warm" (*ibid.*). It also acknowledges that a TUX depends on more than what is designed: "This paper argues that...this experience is a gestalt of what the system provides and what the user brings" (Blythe & Buie, 2014b, p. 4).

All of the design fictions in my background studies were developed without the benefit of my grounded theory of TUX and the important distinction it makes between a short-term reaction to a transcendent experience and the longer term integration of the experience. But resources exist, I argue, to support design fictioneers in covering all three phases of TUX. Context creation is easiest: we know a great deal about situations in which real-life transcendent experiences often occur, and the Transcendhance game workshop showed how easy it is to generate ideas for artefacts that contribute to context.

Integration seems somewhat more difficult than context and, as it has been somewhat less studied, we have fewer resources to aid our explorations. Science fiction, however, contains many stories in which characters have numinous experiences of technology (Blythe & Buie, 2014a); some of

¹¹⁰ Although *Chatbot* explicitly mentions TUX — "such systems can be experienced as numinous" (Blythe & Buie, 2014a, p. 232) — it does not describe the imagined transcendent experiences in any detail.

these stories portray lasting responses that, I contend, qualify as integration and can offer inspiration to techno-spiritual design fiction. In Philip K Dick's *A Maze of Death*, for example, an artificial intelligence functions as a deity, and the characters are so in awe of it that when the technology fails they decide to pray (Blythe & Buie, 2014a).

Lived experience is the hardest TX phase to address — as Chapter 7 discussed, it is more difficult both to conceptualise and to influence directly via technology — but resources do exist. They reside in the many descriptions of transcendent experience, not only in the TX literature and in my interview data, but also in SF stories.

I submit, therefore, that design fiction constitutes fertile ground for stimulating thinking about how artefacts might facilitate all three phases of transcendent experiences and how design research might explore them.

Three features of an idea stand out as driving its potential for TUX design fiction: novelty, current infeasibility, and ability to provoke questions about all three phases of transcendent experience. First, the idea must be substantially different from any technology already built or already described in the literature¹¹¹. Second, it should enable us to explore questions that are difficult or expensive — or even impossible with current technology — to study using built prototypes and human participants; else why use fiction instead of just building and testing a prototype?

Third, an idea should enable us to explore at least these four TUX-specific questions:

1. *Lived experience*: What characteristics of transcendent experiences can imaginary study participants convincingly report having when they use the envisioned prototype?
5. *Integration*: Can we envision participants reporting credible transformative effects similar to those reported for actual transcendent experiences?
6. *Integration*: Can we credibly claim long-term changes such as increased well-being amongst imaginary participants who have transcendent experiences with the envisioned prototype?
7. *Context*: Can we identify features of the prototype and the fictional scenario that foster claims of transcendence and long-term integration?

The key here is *credibility*. To be useful as a framework for a thought experiment on transcendent user experience, a design fiction should enable the exploration of relevant questions about TUX

¹¹¹ This should be obvious, but it needs to be said because some of the ideas produced in the workshop are very similar to systems that have already been studied (although, to be fair, most of the participants were not HCI specialists and may not have known about them). Perhaps future workshops might stipulate that generated ideas should be original or at least have important original features.

and the generation of possible answers whose credibility we can argue. Otherwise we are merely enjoying ourselves.

8.3 Design Fictions from Transcendence Workshop Ideas

Transcendence workshop ideas can serve not only to generate further techno-spiritual design concepts, as Chapter 7 showed, but to motivate design fiction. In this section I develop some of the workshop ideas into imaginary abstracts¹¹², to illustrate their potential for TUX design fiction.

8.3.1 Strong Potential for Design Fiction

A strong candidate for TUX design fiction is an original idea that stimulates a large number of intriguing questions that could be richly explored through fiction. In this section I present an imaginary abstract for Showerfall (Figure 44) and discuss its strong potential and that of ArtFaces (Figure 43), Robot Daniel (Figure 29), and DichotomiCans (Figure 25).

Imaginary Abstract: Showerfall

Spirituality is often connected with Nature (Ashley, 2012; Ferguson & Tamburello, 2015), and many people in today's busy world are unable to spend enough time in Nature to satisfy their spiritual needs. Technologically mediated images of natural beauty, however, can be spiritually uplifting (Ashley et al., 2013; S. Thomas, 2013). This paper describes "Showerfall", a system that projects onto the bath a video of water falling onto rocks whilst a speaker and a scent generator produce sounds and smells of Nature. Participants were twelve busy London professionals — a mix of genders, ages, and faith traditions — all of whom commuted to work via public transport at least an hour each way during morning and evening rush hour. We installed Showerfall in each apartment and asked participants to shower at their usual times for four weeks and to keep a journal of their experiences. We assessed their spiritual well-being before and after, and we analysed the journals to discover themes in their responses. Results indicate that Showerfall improved most participants' moods. Six showed increased spiritual well-being, three showed no change, and one showed a decline. Two dropped out of the study, one saying he found the stimulation overwhelming when he was not yet fully awake and the other saying she needed "the real thing" from Nature and Showerfall "didn't cut it". The latter also reported that her few days in the trial had brought to the forefront her growing dissatisfaction with her London life and its disconnection with Nature, and had prompted her to give notice at her job and prepare to move to rural Northumberland. Whilst acknowledging that Nature

¹¹² The imaginary abstracts that appear in Section 8.2 and before were quoted from my background work on design fiction. The ones in Section 8.3 and later are new ones that I created for this thesis.

itself might have a larger effect on mood and well-being than would a system such as Showerfall (Hamann & Ivtzan, 2016), this paper argues that this kind of technology can provide spiritual uplift for people who have little or no opportunity for being in Nature.

Other Strong Candidates: ArtFaces, Robot Daniel, DichotomiCans

Other workshop ideas stand out as strong candidates for design fiction. ArtFaces is a co-ordinated set of tablet computers that show changing artworks to display beautiful and obviously artificial façades to others in a crowd. It mediates interactions between strangers in a crowd, each tablet allowing its holder to see through it whilst hiding the holder and displaying a different famous painting to everyone who looks at it. Robot Daniel is a robotic clone who knows Daniel more intimately than another human being possibly could. Their intimacy — so deep that Daniel feels it as a spiritual connection — makes Robot Daniel an intimate partner with whom sexual union creates transcendent oneness. DichotomiCans is a space in which a small tree grows, flanked by two watering cans labelled “Quiet” and “Curious”. The person enters the space and meditates on the scene, not knowing that the contents of “Quiet” will nourish the tree and “Curious” will poison it. DichotomiCans is a highly ambiguous system that raises many questions.

I present Showerfall, ArtFaces, Robot Daniel, and DichotomiCans as strong candidates for design fiction because they fully satisfy the criteria I described above: they are new ideas that stimulate many intriguing, unanswered questions that could be richly explored through fiction and that would be difficult or costly (even impossible, in the case of Robot Daniel) to study with functioning prototypes. Showerfall would not be difficult to build or particularly expensive to study in a single setting, but the number of possible studies is very large, and design fiction could help us identify ones we might want to conduct. In addition to the four questions required of TUX design fiction, Showerfall offers many more. What might we learn if we installed Showerfall in other environments — in a facility for young offenders? a care home? university student accommodation? a spiritual retreat centre? a gym? a public swimming pool? Can it be used with a group of people in a shared shower room? What if we varied its sights, sounds, and scents to correspond to the season of the year — snow, hail, thunder, birdsong, insects, autumn leaves crunching underfoot, the fragrance of roses or summer rain or new-mown grass? Are there any differences in experiences of morning and evening showers? How soon into the shower does TUX tend to begin? Is there a novelty effect and (if so) can we ameliorate it? What habits do people settle into — frequency, time of day, shower length, etc. — in the long term? How often do they use Showerfall instead of an ordinary bath or shower? Do people with Nature-based spirituality find Showerfall more meaningful than do people with other spiritual perspectives, and do those others feel differently about Nature after using Showerfall? Does Showerfall increase environmentally conscious behaviour? Do people spend more time in Nature after using it? The

reasons for selecting the various characteristics depend on the questions we want the prototype to help us answer.

ArtFaces, Robot Daniel, and DichotomiCans, too, suggest many interesting questions, such as the following: *ArtFaces*: What kinds of individual and group interactions occur in crowds using ArtFaces? Does it bring people closer together? Does it serve as a mask behind which they hide? Does it provide a focus for conversation? Does the content or style of the artworks influence the interactions or the apparent mood of the crowd? What would happen if the displays were coordinated so that any two people see compatible artworks on each other's tablets? discordant ones? How would the knowledge or ignorance of what one's own tablet was showing to another person affect personal interactions or crowd mood? How would it affect interactions and mood if people could choose the artistic genre or medium their tablet displayed? the colour scheme? the specific painting shown to any individual? What if we positioned the displays differently, perhaps on a T-shirt, so as not to hide the face or identity of the person carrying it? *Robot Daniel*: How close does a "duplicate" have to be to engender a sense of intimacy? What effect does meeting his robotic clone have on a person's sense of self? On his sense of his place in the world? *DichotomiCans*: What kinds of thoughts does this dilemma engender? Do they include existential or ethical questions? Do participants try out the watering cans? How do they react when they realise they have poisoned the plant? Do they react with guilt, anger, or something else entirely?

8.3.2 Weak Potential for Design Fiction

Some Transcendence workshop ideas have relatively little potential as bases for design fictions. Some of these are, or are closely based on, existing ideas (e.g., sensory deprivation chambers and electronic sacred texts); others fail to stimulate adequate research questions or would be too easy to study with built prototypes and flesh-and-blood participants — e.g., a video screen that enabled prisoners to attend religious services remotely. In this section I present an imaginary abstract for the Virtual Reality Book Club (Figure 30) and discuss its weak potential and that of the Holy eBook (Figure 21).

Imaginary Abstract: Virtual Reality Book Club

Book clubs support spiritual life in a number of faith traditions. The number of online spiritual book clubs¹¹³ suggests that people find meaning in exploring spiritual and religious materials together. This paper describes the *Virtual Reality Book Club*, a system that takes spiritual book clubs one step further. Participants wear interconnected VR

¹¹³ On 23 November 2016 a Google search for the exact string "online book club" combined with one of several other terms returned the following results: "religious", 574,000; "spiritual", 99,100; "muslim", 244,000; "christian", 140,000; "jewish", 397,000; "pagan", 173,000; "buddhist", 316,000.

headsets that not only enable discussion without external distractions but support simultaneous reading of passages in the book. The VRBC offers interaction with the spiritual content and with other participants — immersive interaction designed to foster a stronger, deeper feeling of shared experience than would be facilitated by more traditional video chat technology. We loaded VRBC with books for four different faith traditions — Pentecostalism, Buddhism, Spiritualism, and Unitarianism. We recruited six long-term members of local congregations in each tradition, half of whom had participated in face-to-face book clubs. VRBC meetings occurred in our lab; participants sat in different rooms to simulate remote meetings. Each group met one hour a week for eight weeks, after which we conducted individual semi-structured interviews to gain insights into participants' experiences and understand how well the VRBC supported shared experience.

Results were mixed. Of the 12 participants with experience of in-person book clubs, five expressed disappointment with the VRBC, saying that other people's physical presence was essential to shared spiritual exploration and a feeling of connection, and three preferred the VRBC because they valued gaining new perspectives from people they did not know. The remaining four were ambivalent, wanting both the intimacy of in-person contact and the opportunity for exposure to new perspectives. Of the 12 participants with no prior book-club experience, three found the VRBC intensely meaningful and helpful and six found it interesting enough to inspire them to explore ideas they had not previously considered. The rest felt something was missing and speculated that they might prefer an in-person book club. Among all 24 participants, four liked the simultaneous reading of passages because the groups could ensure all members were "on the same page" whilst reviewing a passage; and five liked the possibility of participating from home without having to go out to a meeting. The paper argues that reactions to a VRBC can be quite mixed and that they may depend on factors the paper did not consider. Further research will investigate in more depth the differences in the experiences and impressions of people with and without prior experience of face-to-face book clubs, to identify and analyse factors that people feel VR clubs lack and to develop some possible strategies for addressing them.

Although this scenario does raise some interesting questions, in particular regarding what the posited results mean, a VRBC could be built with currently existing technology, without excessive difficulty or cost, and so the scenario does not demand the use of fiction.

Rationale for defining ideas as weak candidates for design fiction

The Holy eBook (Figure 21) is another example of a weak candidate for design fiction. I present the VRBC and the Holy eBook as weak candidates because they essentially duplicate existing technologies and we could conduct empirical research using those technologies rather than using design fiction to speculate about the answers to research questions. The Holy eBook closely resembles digital sacred texts such as the e-Sword Bible (see Chapter 5); and although the VRBC is not exactly a duplicate of an existing collaborative system, synchronous online book-reading environments have existed for at least 15 years (e.g., Rozema, 2003), VR-based collaborative environments such as games even longer (Bates & LaMothe, 2001). We do not even need to ask what research questions any of these might stimulate: even an idea that supports intriguing questions or is difficult to study in the flesh is a weak candidate for design fiction if it fails to satisfy the criterion of originality: we might just as well study the original.

An idea may be a weak candidate for design fiction yet stimulate interesting research questions and inspire research projects. So even “weak” ideas in terms of design fiction can still be valuable products of the Transcendhance game.

8.3.3 Moderate Potential for Design Fiction

Some ideas fall in between strong and weak candidates for TUX design fiction, and I designate them as moderate candidates. Such ideas are less stimulating than strong candidates in the questions they evoke, or perhaps they are more feasible to study with current technology or are twists on existing ideas rather than fully original ideas; but they could potentially be worked into something worth doing as design fiction. In this section I present an imaginary abstract for Symbol Path (Figure 23) and discuss its moderate potential and that of DichotomiCans (Figure 25) and Prayer Matrix (Figure 31).

Imaginary Abstract: Symbol Path

This paper describes a system that draws on different aspects of spirituality — embodied, symbolic, and metaphorical — to support spiritual contemplation. Symbol Path uses augmented reality glasses in ways that take inspiration from Mason (2016) and from Vainstein, Kuflik, & Lanir (2016) to show glowing, glittering symbols on the surface in front of the person and underneath her feet, calling her to follow the ones ahead. Symbols fade in as the walker approaches them and fade out as she passes, creating an enticing, ephemeral path for a walking meditation. By showing only the present and the immediate future, and not the past or the way ahead, Symbol Path helps the person stay focused on the moment. By using a variety of transcendence-related symbols, both religious and secular, and displaying them in pseudo-random order, it invites different and sometimes

unexpected spiritual contents into the person’s mind. By involving the physical activity of walking, its embodied interaction ties into the traditions of walking meditation (Kabat-Zinn, 2016) and labyrinth walking (McGettigan & Voronkova, 2016; Zucker, Choi, Cook, & Croft, 2016). By leading the walker on an unknown, unpredictable path, Symbol Path evokes the metaphor of a spiritual journey.

We built a prototype Symbol Path and loaded it with religious and mystical symbols¹¹⁴ from various faith traditions and with classic symbols from music, astrology, and mathematics. We rented a booth at a two-day spiritual fair in the North East of England, where we installed a smooth, featureless floor and invited passers-by to try out the prototype. We asked volunteers to walk the Symbol Path for ten minutes, and we conducted five-minute interviews afterward to gain preliminary insights into their experience. The small size of the booth severely limited the length and variability of the walkable path, but the insights we gained from this pilot were sufficient to support our sense that we had a concept worth exploring on a larger scale. For our next step we plan to approach several local spiritual centres to explore Symbol Path’s potential to support walking meditation or prayer in different faith traditions. We also plan to investigate other possibilities, such as combining symbols with sonified biophysical data (S. Chen, Bowers, & Durrant, 2015), varying the sets of symbols, and using a defined path such as a labyrinth.

One might argue that Symbol Path belongs among the strong candidates for design fiction, as it asks some very interesting questions, has relevance to real-world spiritual practices, and has a number of attributes that could be varied to create different scenarios for exploration. I’ve placed it among the moderate candidates, however, because it seems relatively straight-forward to prototype and test, weakening somewhat the feasibility case for fiction.

Other Moderate Candidates: DichotomiCans and Prayer Matrix

Other Transcendhance workshop ideas are, I argue, moderate candidates for TUX design fiction. DichotomiCans (Figure 25) is a space in which a small tree grows, flanked by two watering cans labelled “Quiet” and “Curious”; the person meditates on the scene, not knowing that the contents of “Quiet” will nourish the tree and “Curious” will poison it. Prayer Matrix (Figure 31) is a strongly shared environment into which participants plug their nervous systems directly, so that they can pray together.

¹¹⁴ http://en.wikipedia.org/wiki/List_of_symbols#Religious_and_mystical_symbols

I present Symbol Path, DichotomiCans, and Prayer Matrix as moderate candidates for design fiction because they satisfy somewhat the criteria I described in Section 8.2. Each may stimulate some interesting questions that fiction could help explore; it may be somewhat difficult to study with a built prototype; rather than being completely new, it may add substantial features to an existing idea.

8.4 Proposed Variations on Imaginary Abstracts

The imaginary abstracts I presented in Section 8.3 contain the same level of detail as Blythe's (2014) original ones and the techno-spiritual examples on which they drew (Blythe & Buie, 2014a, 2014b). The original form of imaginary abstracts is appropriate for many conference venues such as CHI papers and late-breaking work. In this section I propose five variations on the form: *extended*, *terse*, *comparative*, and *radical* imaginary abstracts, and *design poetry*.

- *Extended imaginary abstracts* describe in greater detail the envisaged prototypes, test conditions and procedures, and findings.
- *Terse imaginary abstracts* are very short pieces that give just a hint of the design idea and perhaps of some findings that might emerge from testing them or some benefits they might provide.
- *Comparative imaginary abstracts* are a set of co-ordinated variations on a single design research project, which together enable the exploration of variations on the idea, including potential differences in testing and results.
- *Radical imaginary abstracts* posit extreme or unrealistic findings, aiming solely to stimulate discussion and further exploration.
- *Design poetry* is just what it sound like: design fiction written in the form of poetry.

I illustrate each form with examples and discuss their strengths, limitations, and possible uses.

8.5 Extended Imaginary Abstracts

Sometimes it can be valuable to describe fictional studies in more detail than appears in the original form of imaginary abstracts. To provide such detail — about the envisaged prototypes, test design and participants, and findings — I propose *extended imaginary abstracts*. This variation more closely resembles abstracts in journal articles or submissions to conferences that review abstracts rather than full papers. I illustrate this proposed form with an extended imaginary abstract for Showerfall¹¹⁵.

¹¹⁵ This abstract extends the original one presented in Section 8.3.1 and thus duplicates some of its content.

8.5.1 Extended Imaginary Abstract: Showerfall

Spirituality is often connected with Nature (Ashley, 2012; Ferguson & Tamburello, 2015; B. Johnson, 2002; Solom & Frost, 2008; Vining, Merrick, & Price, 2008); and in the bustling cities of today's busy world, many people lack the opportunity to spend as much time in Nature as they'd like. Technologically mediated images of Nature, however, can have a spiritually uplifting effect (Ashley et al., 2013; S. Thomas, 2013). This paper describes "Showerfall", a system that projects onto the surface of the bath or the shower cubicle a video of water falling onto rocks whilst hidden speakers play wilderness sounds relevant to the season and a scent generator emits subtle smells to match. Showerfall starts and stops automatically with the shower, offering the impression of showering under a waterfall, immersed in nature. To help us test Showerfall, we recruited busy professionals who lived in large apartment blocks in the London area and commuted into central London via public transport for at least an hour each way during morning and evening rush hours. We recruited six men and six women of varying ages and faith traditions, half of whom normally showered in the morning and half at night. We installed Showerfall in each of their flats and asked participants to shower at their usual times for four weeks and to keep a journal of their experiences (including timing and duration of showers) and their thoughts and feelings about the experiences. We administered the Measure of Spiritual Well-Being (MSWB)¹¹⁶ at the beginning and end of the study, and at the end we performed an inductive content analysis (Elo & Kyngäs, 2008) on the journals to discover themes in participants' responses to Showerfall.

Participant comments ranged from humorous to grateful to strongly positive. Journal analysis results indicate that, overall, Showerfall tended to improve participants' moods. Those who showered in the morning generally reported that they had more energy and positivity to face the day; those who showered in the evening largely said it helped them relax and wind down at the end of a stressful day. Six participants showed increases in MSWB scores (indicating greater spiritual well-being), three showed no change, and one showed a decline. Two participants dropped out of the study, one saying he found the stimulation overwhelming when he was not yet fully awake. The other dropout said she needed "the real thing" from Nature and declared that Showerfall as a substitute "didn't cut it". She also reported, however, that in ten days of using Showerfall she realised how much she loved and missed spending time in Nature, and that the experience had prompted her to give notice at her job and prepare to move to rural Northumberland, where she could have "the real thing".

¹¹⁶ The MSWB is a fictional instrument.

Whilst we acknowledge that Nature itself might have a larger effect on mood and well-being than would a system such as Showerfall (Hamann & Ivtzan, 2016), our findings suggest that Showerfall can provide spiritual uplift for people who have little or no opportunity to spend time in Nature. We plan two follow-on studies as next steps: (1) a controlled experiment using a larger sample, to test the hypothesis suggested by this study's findings, and (2) a longitudinal qualitative study in which we modify the visual, auditory, and olfactory stimuli as the seasons change.

8.5.2 Discussion of Extended Imaginary Abstracts

The above extended imaginary abstract illustrates the greater length of this form over the original form of imaginary abstract and the increased amount of detail it provides about the fictional research. I do not necessarily argue that, on its own, an extended abstract is any more useful than a “regular” one, but the additional detail it contains provides a more solid foundation for comparing abstracts and so forms the basis for comparing one fictional research idea with another — i.e., two or more extended abstracts can outline a co-ordinated set of variations on a research idea and thus form a set of *comparative* imaginary abstracts (Section 8.6). In principle, an extended imaginary abstract could take the form of a four-page “extended abstract” as used by SIGCHI for its conferences¹¹⁷; the possible value of that is a subject for future exploration and elucidation.

8.6 Comparative Imaginary Abstracts

Finally, sometimes it can be useful to explore variations on a single idea. In this section I introduce and explore *comparative design fiction* as a way to take the thought-experiment concept further. I do this by taking the extended imaginary abstract for Showerfall, developing an alternative version of it, and speculating about different research findings the two might yield. I identify alternatives to the design of the prototype (the envisioned content and how it is presented) and the study (setting, participants, and procedures). I develop and explore the alternative for two reasons: to illustrate and begin to explore the technique of comparative design fiction, and to offer a richer view of the possibilities that extended imaginary abstracts offer for considering design concepts, how they might be studied, and what kinds of findings might emerge.

8.6.1 Variations on Showerfall

The variations described in this section arose from reflection on the Showerfall design and testing as described above and from consideration of alternative approaches to the design of the prototype (content, presentation, and technology) and of the testing (setting, participants, and procedures).

¹¹⁷ <http://chi2017.acm.org/submission-formats.html>

Showerfall prototype design variations

In the original extended abstract, the Showerfall system projects onto the surface of the bath or the shower cubicle a video of water falling onto rocks whilst hidden speakers play wilderness sounds relevant to the season and a scent generator emits subtle smells to match.

This prototype design offers rich possibilities for variation, from what content falls to how and even whether it moves if it doesn't fall; and the content needn't have a known transcendent connection. For an after-work shower, the system could show contents of emails received or documents written by the person during the day, to convey the impression of washing oneself clean of the stress of the workday. The person could be showered with images of confetti in a stadium or along a parade route, amidst the sounds of a cheering crowd. A rejected lover could watch images of the ex spiraling towards the drain whilst "I'm Gonna Wash that Man Right Outa My Hair"¹¹⁸ plays. Images could be abstract rather than representative of actual objects or situations. Projected motion could be narrative and responsive to the person's movements, placing him inside a historical battle, an orchestra, a football match, a religious service, a favourite video game, a mosh pit. Instead of falling *around* the person, the content could move *towards* the person, as if she were flying a spaceship through the stars. Slower, more gentle movement and relevant sounds and scents could evoke being in an ocean, a lake, a swimming pool, or a rainforest. Image movement could disappear altogether, replaced by static surroundings such as a city, a medieval castle, or a cabin in a snowy wood. Showerfall could even be prototyped with visuals only, to explore the value of a more affordable product. Even with the original approach, we could (as mentioned above) vary the sights, sounds, and scents to correspond to the season of the year — snow, hail, thunder, birdsong, insects, autumn leaves crunching underfoot, the fragrance of roses or summer rain or new-mown grass. We could allow participants to choose the type of stimuli that a specific Showerfall session would provide.

Showerfall study design variations

In the original extended abstract, the Showerfall study involved the following:

- Setting: Installed in private flats in large apartment blocks.
- Participants: Busy London professionals, apartment-block residents, six men / six women, varying ages & faith traditions, ≥ 1 hr rush-hour commute by public transport, six shower in the morning / six at night.
- Procedure: Participants showered at usual times, kept journal of experiences, study lasted four weeks, MSWB given before and after, inductive content analysis of journals.

¹¹⁸ https://en.wikipedia.org/wiki/I'm_Gonna_Wash_That_Man_Right_Out_of_My_Hair

The study design, too, offers many possibilities for variations on the imaginary abstract. First, we could vary the setting, installing Showerfall in public or shared spaces instead of private homes. Public spaces for shower content could include swimming-pool shower rooms, play fountains (Figure 51), or recreational lakes; potential shared spaces include private gymnasias, spas, university student accommodation, campgrounds, retreat centres — even care homes or facilities for young offenders. For prototypes not tied to physical showers, the possible study settings are myriad: kitchens, music rooms, bedrooms, workplace lunchrooms, automobile repair garages, religious and spiritual centres, hospitals and clinics, museums and galleries, theatres and opera houses, auditoriums, cinemas, dance floors, planetariums, skating rinks — even SIGCHI



Figure 51. Child playing
in a public play fountain
Photo by Elizabeth Buie

conferences. We could install Showerfall in similar locations around the world — cities of similar size to London, for instance, such as Bangalore and Lima (World Population Review, 2016). Some of these places, however, may be less interesting and fruitful as settings for TUX research: people who frequent them may already be aware of doing or viewing something that is related, and some places already use technologies that arguably produce somewhat similar stimuli — dance floors, for example, often feature rotating “disco balls” that hang from the ceiling, sparkling and throwing small spots of reflected light like confetti around the room. Actual spaces would have to be chosen carefully and consciously, of course, with attention paid to the benefits they could offer to the research; I mention these just to illustrate the variety of possibilities.

Second, we could vary the participants. We could recruit people who do and do not consider Nature an important aspect of their spirituality. We could recruit a different demographic: young offenders, new parents, elderly people, university students, job seekers, chemotherapy patients, nuns. We could select for faith tradition, meditation experience, previous transcendent experiences, overall stress level, mental or physical health condition, population density of home neighbourhood, household size.

Third, we could vary the study procedures. We could conduct follow-up studies after usage ends, to explore possible long-lasting effects on mood, spiritual well-being, behaviour. We could vary the length and/or frequency of usage and compare single uses to longer-term use. We could have

participants use Showerfall in pairs or in group settings, perhaps comparing that with solitary use. For participant-initiated sessions we could collect specific usage data such as date, time, duration, and (for participant-selected content) selections made.

Selecting variations

Realistically speaking, the cost of conducting a wide variety of tests would make it infeasible to explore a large number of identified variations, whether with built prototypes or with design fictions: the number of possibilities is too large. The aforementioned variations are not entirely independent, of course: installing Showerfall in a care home implies recruiting elderly people as participants, and installing it in the bathroom of a family home implies studying use by individuals or intimate partners. However, even with dependencies the variations offer too many possible combinations to support considering them all. Therefore, we must choose intentionally and carefully. A ten-page paper for an ACM conference, for example, could consider perhaps three alternative fictions; a longer article for, say, the *International Journal of Human-Computer Studies*¹¹⁹ might consider a larger number, but it would need to analyse them more deeply and still could not do justice to very many.

The selection of attribute variations for comparison depends on the research questions we intend to explore. Note that the purpose here is not to define an alternative to the original designs of the prototype and the research study, but to conduct a *comparative* thought experiment — to explore via imagination the different kinds of results we might get from conducting a somewhat different study or studying a somewhat different prototype.

For the purposes of illustrating the concept, I defined the following parameters:

- Setting: A shower room in a chemotherapy clinic.
- Participants: Twenty recently diagnosed cancer patients of diverse ages, genders, and faith traditions, each about to begin a chemotherapy treatment that involves at least eight sessions; cancer type unspecified.
- Procedure: Each participant showers (alone, if able) after every chemotherapy session; study continues until the last participant has completed this treatment or discontinued participation.
- Prototype: Displays video images of cancer cells being washed out of the body with the shower, spiralling down the drain as the chemotherapy does its work, replaced with bursts of white and golden light on the body. Plays recording of guided meditation to improve mood and reduce treatment side effects (Cancer Research UK, 2015).

¹¹⁹ <http://www.journals.elsevier.com/international-journal-of-human-computer-studies/>

For this fiction I have retained the physical shower connection of the original setting and prototype. Clearly, the location, procedure, and participant populations of this version are inter-dependent.

On reading this last design fiction, one may find oneself thinking that it sounds rather like a proposal for an actual research study. This is no accident, I suspect: I tend to be drawn most strongly to research I'd love to see carried out, feasibility and other considerations permitting. I argue, however, that such fictions can help us think through possible research ideas before we write the proposals, even help us "feel" the appeal. This is no bad thing.

8.6.2 Alternative Extended Abstract: Showerfall 2

The following paragraphs present the alternative extended abstract for Showerfall¹²⁰, as described above.

Studies have found that a connection with spirituality and religion is associated with a lower risk of developing cancer or a better prognosis afterward (Koenig, 2012). This association, Koenig (2012) maintains, may be due in part to "lower stress levels and higher social support" (p. 11) attained by people who have a connection with spirituality or religion. Guided meditation, in particular, can help improve cancer patients' subjective well being. Charlson et al. (2014) found that guided meditation for self-healing can help reduce stress and improve quality of life in cancer survivors, and Millegan et al. (2015) found that it can help reduce patient distress during chemotherapy treatments. Sohl et al. (2016) have begun to investigate a Yoga Skills Training protocol they designed to be administered during chemotherapy and practised at home between sessions, meant to "reduce fatigue, circadian disruption, and psychological distress" (p. 1). Cancer Research UK themselves (2015) suggest guided meditation as a way for cancer patients to help reduce their stress.

This paper describes "Showerfall", a system that operates in conjunction with a shower, projecting onto the person's body and the surface of the shower compartment moving images of cancer cells being washed out of the body¹²¹ and down the drain. The cells spiral into the drain as the chemotherapy does its work, replaced with flecks of white and golden light on the body. Showerfall also plays a recorded guided meditation to enhance the effectiveness of the projected images. It starts and stops automatically with the shower, beginning and ending gradually. To help us test Showerfall, we recruited twenty recently diagnosed cancer patients

¹²⁰ Created for this thesis.

¹²¹ This design was inspired by interview participant Susan's description of the visualisation she was doing when she had her transcendent experience: she was imagining the chemotherapy drugs attacking her cancer cells and driving them out of her body.

of various ages, genders, and faith traditions, each about to begin a chemotherapy treatment of at least eight sessions. We installed Showerfall in a shower room in an NHS chemotherapy clinic and asked participants to shower (alone, if they were able) after every chemotherapy session and to continue practising the meditation when they showered at home. The study continued until the last participant had completed treatment or discontinued participation. We administered measures of mood, subjective well-being, and stress at the beginning and end of each person's participation.

We found that Showerfall improved the moods of twelve of the twenty participants. Five said they found the visualisations so helpful that they continued doing them at home between treatments. Three dropped out of the study because they found the meditation artificial and hard to get into. Some were unaffected, some find it takes too long, some struggle to explain/justify it to a skeptical family member, two participants have transcendent experiences.

As described in the last subsection of 8.6.1, this imaginary abstract differs from the original Showerfall one in setting, participants, procedure, and prototype.

8.6.3 Value of Comparative Design Fiction

Comparative design fiction extends the “thought experiment” model of imaginary abstracts, allowing us to consider the designs in more depth and to consider more aspects of the fictions. By enabling explicit comparison of specific aspects of the design research ideas, it supports exploring and analysing in more depth the alternative possibilities.

8.7 Design Poetry

At times we want to appeal to imagination and emotion more strongly and deeply than we can do with academic language, and to trigger the imagination and evoke design ideas more profoundly or fancifully. This is especially important in considering TUX, and I argue that it may apply to other types of elusive experiences that are not easily modelled, such as aesthetic experiences. For this purpose I propose *poetry* as a form that this design fiction could take. Poetry, notes Robins (2014), has a history of conveying the ineffable, hinting at unconscious contents by using metaphors and “elliptical language” (p. 1) that make real “the ambiguity, subjectivity and ineffability of the unconscious” (*ibid.*). I initially conceived this form as a poetic version of imaginary abstracts specifically, but I have decided to call it *design poetry*, as it need not be limited to summarising fictional research papers.

Although I do not specify a length for design poems — that is a topic for possible future work — two very short forms come instantly to mind. I illustrate these here with two poems about Showerfall: a limerick (left) and a haiku:

There once was a digital shower,
Belovéd for spiritual power.
A treat for the senses —
Sight, sound, scent — it rinses!
I feel like a delicate flower.

Showerfall system
bathes me in sight, sound, scent, touch —
I bask in Nature.

Haiku seem somehow more appropriate than limericks for techno-spiritual artefacts — and especially for TUX, as haiku tend to be pensive and nuanced where limericks are humorous, irreverent, and often risqué — but both may have a place in the exploration of fictional prototypes and research studies. Researchers could write them and invite people to respond; they could write a small number as a sample and invite contributions from readers.

I envision a design poetry event, similar to a poetry slam that for TUX would be congenial rather than competitive — let's call it an *encounter* — building on the Transcendhance game and taking it further, inviting participants to write and perform poems about technologically enhanced transcendent experience¹²². Performance poetry, Robins (2014) argues, conveys ineffable content through the performer's body and voice. Ineffability, she writes, “lurks on the peripherals [*sic*¹²³] of language, experienced through evocation, rather than mimetic words” (p. 3). She stresses the criticality of the performative aspect in expressing the ineffable:

The ineffable is beyond speech, and so ineffability... can only be expressed and articulated without speech, in the gaps in between speech, by silent gestural evocations made after an exclamation, or by indirect metaphors that refer to something without explicitly naming anything. Ineffability appears in the cracks of language; the performance poet is able to make these cracks visible. (p. 4)

A design poetry encounter might incorporate some aspects of the Transcendhance game (Chapter 6) — the cards, for example — to continue building on the interview findings. Or it could give participants no assistance from TUX research but leave them free to follow their own inspiration. A design poetry encounter might foster an atmosphere of imagination, fun, and play, as did the Transcendhance game; or it could encourage depth of thought and feeling in the poems performed, the better to convey the ineffable. Participants could range from designers to experienced poets to members of the public who feel drawn to the topic but have little poetry-writing experience.

¹²² Invitations would use plain language, not “technologically enhanced transcendent experience”.

¹²³ I'm sure she meant “periphery”.

Design poetry has, I suggest, another use beyond conveying design research ideas: we could invite research participants to write poetry to express their own lived experience of artefact-supported transcendence.

'Midst soundless snowflakes
I breathe winter's fragrant depths,
Showerfalling free.

This haiku expresses a subjective experience of using Showerfall in “snowfall” mode. Whilst suggesting a quiet stillness (“soundless snowflakes”), the poem also uses fricatives and sibilants to convey the faint susurrus of falling snow and perhaps also evoke memories of feet shuffling through fresh snowfall. It hints at aspects of experience it doesn't describe directly — that winter has “depths” intimates that a full experience of the season somehow eludes our grasp; breathing “fragrant” depths alludes to the enticement of the experience.

In addition, this haiku works especially well for TUX because it manages to convey something of all three TX phases and to mention the artefact as well.

- *'Midst soundless snowflakes*: Creating the context
- *I breathe winter's fragrant depths*: Living the experience — perceiving the phenomena and maybe perhaps also a little of reacting to them in the sense of interpreting them
- *Showerfalling...*: Using the artefact
- *...free*: Living the experience, perhaps also Integrating the experience

Finally, the use of the artefact's name as a verb form — “Showerfalling” — transforms a simple use of technology into a conscious act of involvement with it; and the last word — “free” — conveys a sense of being without limitations or constraints during the act itself and also lends itself to interpretation as a longer-term sense of being released from such constraints.

I wrote this haiku to hint at unconscious contents by using metaphors — winter's depths, showerfalling — and what Robins (2014) calls “elliptical language” (p. 1) to give a sense of an experience that does not lend itself to direct description. Design poetry, by its very nature, and arguably more than any other form of design fiction, approaches experience *peripherally*.

8.8 Key Insights

The development of such a variety of imaginary abstracts raises as many questions as it answers. Most importantly, it asks us to consider what makes for good design fiction. In this chapter I have offered some thoughts on this but have only scratched the surface. In Chapter 9 I will say a little more about where I think this may lead.

In any case, however, I argue here that, like the Transcendhance game, design fiction provides a peripheral approach to design, one that gets at it sideways.

Chapter 9 – Discussion

Q: How many Zen Buddhists does it take to change a light bulb?

*A: Two: One to change the bulb and one to **not** change the bulb.*

– unknown

In this thesis I have considered the research questions of how artefacts support transcendent experiences and how design may contribute to enhancing that support. Chapter 2 presented a literature review that provided a basis for conducting and analysing interviews about transcendent experience, and together with the interview data enabled a grounded theory of transcendent user experience. Chapter 3 described how I approached this work and why I chose those methods. Chapters 4 and 5 presented the analyses of the interview data and the grounded theory of transcendent user experiences that I constructed from those analyses. Chapter 6 described the development and conduct of a design game workshop that used themes from the grounded theory to inspire design ideas for techno-spiritual artefacts. Chapter 7 presented ideas that emerged from the workshop and analysed them for their relationships to the phases and subcomponents of transcendent experience. Chapter 8 explored the use of design fiction to support transcendent experience and proposed new forms of it. In this chapter I discuss the research findings, relating them to existing literature and identifying and exploring their limitations, their implications, and possible further research. I outline the ways in which my research has addressed its goals of exploring techno-spiritual design and proposing a design strategy for supporting transcendent user experiences.

I have posed two primary research questions: “How does technology facilitate and support transcendent experiences?” and its follow-on, “How might design contribute to that support?” To address them I explored six sub-questions:

1. How do people of diverse faith traditions experience spirituality and transcendence?
2. How do they describe transcendent experiences they’ve had?
3. How do they use artefacts to support their spiritual practices and TXs?
4. What do they value about those practices and experiences?
5. What do they desire in the way of artefact-supported enhancements to their practices and experiences?
6. How can design respond to the above, in envisioning artefacts to facilitate and enhance transcendent experiences?

I sought to gain insights into, and an in-depth understanding of, spiritual practices and transcendent experiences of a diverse sample of people, and to develop an approach to design that could respond to that understanding.

9.1 Discussion of Findings

9.1.1 The Structure of Transcendent Experience

The themes that arose from my analysis closely relate to previous work in the two fields that my research bridges — transcendent experience and user experience. The structure of my grounded theory of transcendent user experience closely aligns with the components of experience as presented by literature in both fields. As previously mentioned, UX scholars McCarthy & Wright (2004a) observe that narratives of experience comprise “things and events, what they did to those involved, and how they responded” (p. 50). Similar three-part structures have emerged from TX research, two studies in particular. Wardell & Engebretson (2006) developed a taxonomy of spiritual experiences by conducting an inductive qualitative analysis of spiritual experiences reported in writing by a large number (477) of practitioners of an alternative medicine technique called Healing Touch. Their taxonomy consists of three “domains”, which they name “circumstances, manifestation, and interpretation” (p. 220). Garcia-Romeu et al. (2015) built a grounded theory of self-transcendent experiences from in-person semi-structured interviews with a small number of people (15) of varying spiritual backgrounds. Their structure, too, comprises three major themes, which they name “context, phenomenology, and aftermath” (p. 636).

Thus, all of these structures of experience — McCarthy & Wright’s (2004a), Wardell & Engebretson’s (2006), Garcia-Romeu et al.’s (2015), and mine — contain three components: (1) what surrounds and sets the stage for the experience, (2) what the person underwent and some aspects of how she understood it, and (3) at least some part of the person’s response to what she underwent. The components connect the *before*, the *during*, and the *after* of experience (although the *before* and *after* parts have varying definitions and durations).

The UX perspective on the timing of user experience is relevant to my framework. Although some researchers have argued for user experience as a narrow slice of time — the present moment — and others for UX as spanning the entire length of a person’s exposure to the technology in any way, Roto et al. (2011) decided on the verb “experiencing” for the “present-moment” focus and the noun phrase “user experience” for the entirety of the technology exposure. Thus the “user experience” begins with anticipated use (the *before*) and continues through actual use (*during*) to reflections on past use (*after*), even cycling through use of later versions of the artefact. McCarthy and Wright go into considerably more depth about the *before*, *during*, and *after* in their book *Technology as Experience* (McCarthy & Wright, 2004b). Drawing heavily on Dewey’s book of 70

years earlier, *Art as Experience* (Dewey, 1934), and discussing aesthetic experience as an aspect of user experience, they write:

...for Dewey[,] experience is more than what happens between the beginning and the end of an activity. ... Our experience of a play or a movie is not confined to what we do and what we undergo for the two hours we are in the theatre. It includes the recommendation from a friend or a reviewer that enticed us to go in the first place and that sets up expectations that color our experience for those two hours. It also includes reflections on how we will talk about it with friends. ... Reflection on those processes takes us...to an analysis of the processes through which we make sense of our experience—*before, during, and after*—and to a consideration of the continuous transformation of self through experience. (McCarthy & Wright, 2004b, p. 104, emphasis mine)

Not all of the above quotation applies unambiguously to TX. When we plan to go to a play we can be certain that we will have an aesthetic experience, even if it turns out to be a bad one. However, although TXs *have* an aesthetic aspect, transcendent experiences are not predictable or plannable in the same way that predominantly aesthetic experiences are: when we pray, or meditate, or walk in the woods, we have no such confidence regarding whether or not we will have a transcendent experience — in fact, the possibility may not even occur to us. Furthermore, not only does Brian’s comment that “you can’t dial it up” have relevance here, so do Madhu’s declaration that seeking the experience makes spirituality “a chore” and Keith’s statement that seeking a TX would make it impossible for him to have one. These assertions raise doubts about whether we would even *want* TXs to be anticipatable. A TX does involve a *before* — the creation of the context — but that does not necessarily include anticipation: one seldom knows that one is going to have such an experience (unless, perhaps, one has a long-term, regular practice that usually triggers TX); and in fact very few of the interview participants alluded to anticipating their TX. Those who did, I argue, knew they were going to put themselves in the way of it.

The rest of Section 9.1.1 highlights some important distinctions between my structures and other structures of TX, particularly those of Wardell & Engebretson (2006), which I here call “W/E”, and of Garcia-Romeu, Himmelstein, & Kaminker (2015), which I call “GR/H/K”. The three structures have the obvious *before/during/after* in common, but their components exhibit some major differences. Although W/E and GR/H/K do not use the terms “phases” or “stages” to refer to their top-level components, their descriptions show those components to be sequential (or at least roughly so) — in fact, GR/H/K specifically note that theirs “were structured in part according to their temporal dimensions” (p. 643). Because the top-level components of my grounded theory are phases, I label the following subsections as such.

Phase 1 – Creating the Context

The first top-level component in each of the three structures addresses what surrounds the experience. All of these themes capture similar aspects: W/E use “context” in the description of their “Circumstances” domain and its subcomponent names, and GR/H/K use it as the name of their top-level theme. Both the GR/H/K theory and mine treat context as related to a specific TX and involving activities, which aligns with Dourish’s (2004) phenomenological view: “context is particular to each occasion of activity or action” (p. 22) and “*context arises from the activity*” (*ibid.*, emphasis his).

The subcomponents of the three structures show clear similarities and also major differences:

- Creating the Context (this thesis): developmental, spiritual, social, physical/activity, psychological, and temporal contexts
- Circumstances (W/E): external, internal, relational, and temporal contexts
- Context (GR/H/K): set, setting, and catalysts

Wardell & Engbretson’s (2006) “temporal” context shows no resemblance to my context of that name: theirs is “the timing, frequency or intervals at which the spiritual event occurs” (p. 222), and mine is “the elements of time in the context surrounding the experience”. I contend that TX timing and frequency not only do not belong to the temporal context but are not contextual at all, being instead an aspect of the lived experience. Rather than the temporality of *having* a TX, I argue, what belongs to the temporal context is the timing and frequency of the *presence* of the overall context. My temporal context includes part of what W/E seem to have in mind and characterises it as “frequency and longevity of spiritual practice”. I will explore expanding the spiritual or psychological context to consider the familiarity of the lived experience of TX in addition to the familiarity of the stimuli; and I will certainly consider how TX frequency fits into my structure of living the experience. But the context of a TX is the factors that surround any specific TX, and the frequency and timing of any type of TX are not temporal with respect to the specific TX they surround as context.

My differences with Garcia-Romeu et al. (2015) are much smaller. Specifically, GR/H/K include the duration of TX in the context while I place it in perceiving the phenomena; and theirs is the only one of these three inductive studies to include the use of psychoactive substances (perhaps their participants were the only ones who mentioned them). The growing body of literature on hallucinogens and TX (Garcia-Romeu, Griffiths, et al., 2015; Griffiths et al., 2011; M. W. Johnson, Garcia-Romeu, & Griffiths, 2016; MacLean et al., 2012; Yaden et al., 2016) leads me to argue that the consideration of psychoactive substances is appropriate in any theory of TX.

Both W/E and GR/H/K distinguish between external and internal contexts and place the distinction at the top level of context; and I do not call it out at all. Clearly, some parts of both the spiritual and psychological contexts in my framework are internal and some are external. I view the *content* of context as more important to my purposes, however, because it is more easily designed.

Phase 2 – Living the Experience

The second top-level component in each structure addresses how the person experiences what is happening, largely as the experience unfolds. These capture rather different aspects of TX: W/E define categories described as “modes of awareness (how it is manifested) and the phenomenon itself (what is manifested)” (p. 223); GR/H/K define sub-themes of “somatic manifestations, perceptual alterations, and cognitive-affective shifts” (p. 639); and I define subcategories of perceiving the phenomena and reacting to the perceptions.

- Living the Experience (this thesis): perceiving the phenomena, reacting to the perceptions as the experience unfolds
- Manifestations (W/E): modes of awareness, phenomena
- Phenomenology (GR/H/K)

At first glance, the “phenomena” subcomponent of W/E’s Manifestation domain may appear equivalent to my “perceiving the phenomena” subcategory of Living the Experience. W/E, however, include in “phenomena” a number of thoughts and interpretations — the assignment of an identity to a presence, for example — that I maintain are more appropriately categorised as *reactions* to the perceptions, in the sense of being thoughts about or interpretations of the phenomena. My perspective aligns with Stace’s (1960) finding that mystical experiences have a “common core” of perceived phenomena across religions and an “interpretive factor” that understands its meaning, including seeing it in terms of the perceiver’s spiritual perspective. My view is also supported by Rossi & Berglund’s (2009) distinction between perception and interpretation as being separately measurable, and by MacKenna’s (2009) caution that although we may find ourselves tempted to interpret a numinous experience as an experience of the sacred, numinosity may indicate merely the presence of archetypal material having meaning to the experient. Literature more recent than Stace — e.g., Hood (2001), Anthony et al. (2010) — reinforces this separation of perception and interpretation.

Ineffability shows up in my data as a characteristic of *Living the Experience*, primarily belonging to *perceiving the phenomena*. The literature exhibits a lack of consensus among researchers regarding exactly where it belongs. In particular, Hood and his colleagues (Hood, 2001; Hood et al., 2001, 1993) include ineffability in the “experiential” factor of mystical experience (analogous

to the perceptual aspect of *living the experience* in my model¹²⁴), whilst Stace (1960) and others (Anthony et al., 2010; A. Lazar & Kravetz, 2005) argue for its inclusion in the interpretive part of the common core. Blum (2014), however, cites evidence from neuroscience and psychology indicating the existence of a “built-in, natural human capacity for nonlinguistic experience” (p. 168) as possible support for the experiential rather than interpretive nature of ineffability. I would argue that the assignment of ineffability to the interpretive factor may come from the fact that it is not until we attempt to describe an experience — which clearly requires interpretation — that we can realise it is ineffable. Therefore, unless and until new evidence arises for considering it interpretive, I shall leave ineffability under *perceiving the phenomena*.

Phase 3 – Integrating the Experience

The third top-level component in each structure addresses what the person does with a TX after it ends. These components capture overlapping but somewhat different aspects of TX:

- Integrating the Experience (this thesis): reflection, continuing effect, sharing
- Interpretation (W/E): personal meaning, resonance
- Aftermath¹²⁵ (GR/H/K): short-term effects, long-term effects, perceived meanings

This component exhibits substantial differences among the structures. W/E’s subcategory names, for example, do not explicitly call out lasting effects, and their structure does not treat immediate effects separately from longer-lasting ones. It does cover the longer term, however: the subcategory of Personal Meaning includes long-range actions such as enrolling in seminary, as well as aspects that I place under “reflection”, in the sense of understanding the experience and insights gained from it. Interestingly, W/E assign interpretation exclusively to what comes *after* the experience. Although I agree that interpretation can be ongoing — reflection includes re-evaluation and possible re-interpretation, as Sangmu’s re-interpretation of a single experience illustrates — the literature strongly suggests that interpretation occurs in the moment as well, and in my opinion Wardell and Engebretson (2006) overlooked this.

GR/H/K differentiate between short- and long-term aftereffects of the experience whilst W/E and I do not, although from the perspective of techno-spiritual design it may be worth considering. GR/H/K’s short-term effects probably overlap somewhat with the immediate effects and actions in

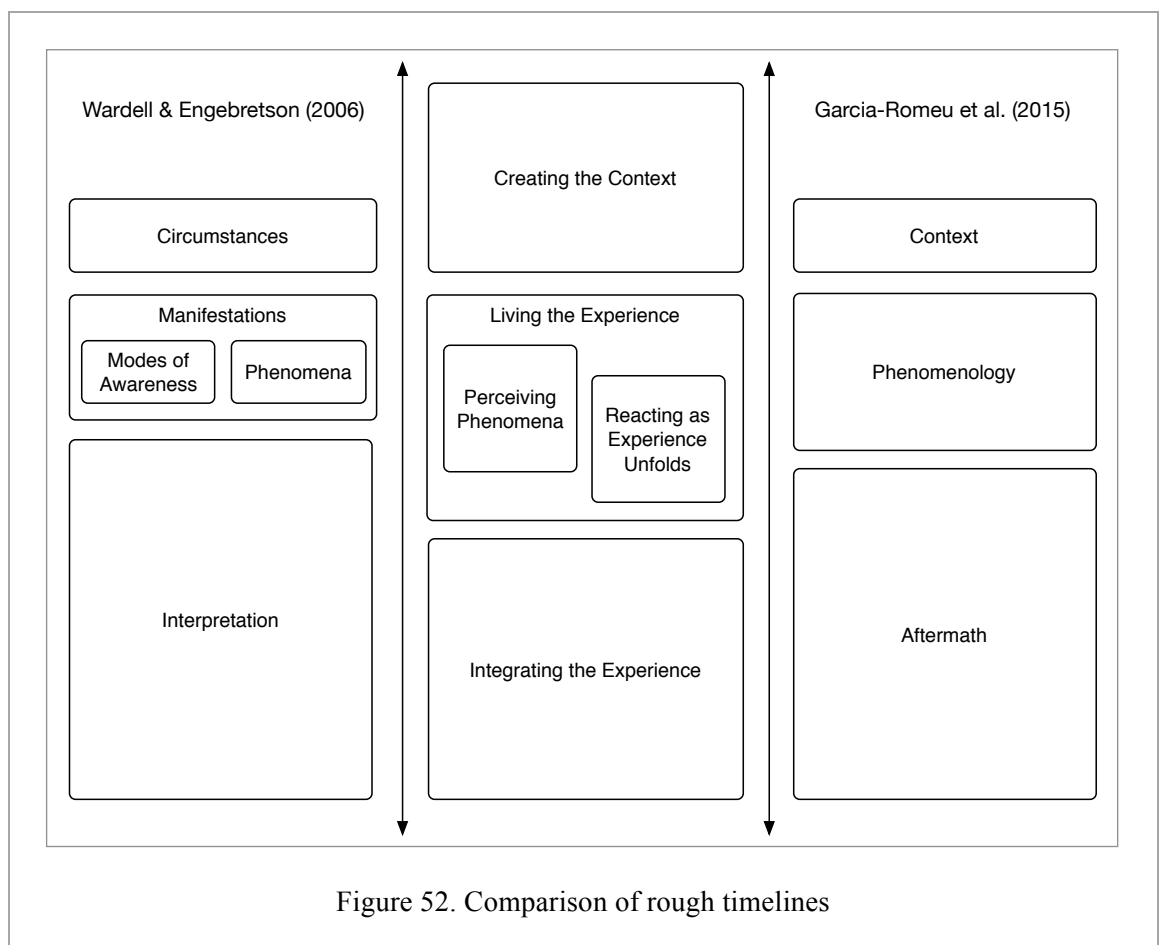
¹²⁴ Studies of mystical experience tend use “experiential” and “interpretive” as if interpretation were not an integral part of the experience. I prefer to use “experience” and “experiential” for the whole of the experience and to use “perceptual” as the counterpart of “interpretive”.

¹²⁵ “Aftermath” seems a counter-intuitive name: the word usually connotes undesirable or unpleasant effects (‘aftermath, n.’, 2016), and Garcia-Romeu et al. (2015) describe mostly positive effects.

my Reacting as the Experience Unfolds subcomponent of *Living the Experience*, but their short-term effects include ones that continue longer than do the immediate effects and actions I describe.

Sequence and timeline

One way in which these structures of TX differ is in the relative timing of the various components. Figure 52 shows a comparison of the sequences at a high level¹²⁶: my sequence appears in the centre, with the rough sequences I inferred from Wardell & Engebretson (2006) to its left and Garcia-Romeu et al. (2015) to its right. As I mentioned earlier, neither of those defines its components as phases, but both describe them well enough to allow me to place their top-level components into a relative time frame and compare them with the phases of my framework.



Both W/E and GR/H/K define the context as what is present when the experience occurs; although I agree in principle, my framework adds to it the influence of development, which is why the figure shows *Creating the Context* to begin earlier than the circumstances and context of the other structures. The developmental context begins at birth and continues until some time before the

¹²⁶ The durations are not to scale; they also vary between people and between experiences.

experience begins; in contrast, the other two structures consider the contexts that are present at the time of the experience but not how they came to be what they are. Wardell & Engebretson (2006) include the person's beliefs as an influence in the Interpretation domain and Garcia-Romeu et al. (2015) imply the existence of prior beliefs when they write of "value re-orientation" (p. 644) and a shift towards pantheism in their Aftermath theme. I argue for including existing beliefs in the context of TX, as they can influence the lived experience (Anthony et al., 2010; Hood, Hill, & Spilka, 2009). Perhaps the origin and development of beliefs does not matter for understanding the experiences themselves — although I would argue that it does, given the controversy in the literature regarding whether religious background influences perceived phenomena of mystical experience or only their interpretation (see the discussion of ineffability, below) — but considering the artefacts available to support spiritual development and the interest that the religious education field shows in nurturing religious experience (Court, 2013; Fryar, 2015), I argue that the developmental context matters for techno-spiritual design.

9.1.2 Characteristics of Phenomena Perceived

Closeness vs oneness

As I discussed in Chapter 4, participants' descriptions of transcendent experiences indicated that they perceived two different kinds of connection with something larger or greater than themselves, and that those could be characterised as closeness (or intimacy) and oneness (or unity). Although the literature speaks of spirituality as a sense of (or a seeking for) connection with or belonging to something greater than oneself, and of transcendent experience as subjective experience of such a connection (Paal, 2013; Salsman, Fitchett, Merluzzi, Sherman, & Park, 2015; Seligman, 2012; Tsaour et al., 2013), I found no consensus in the literature regarding the concepts of closeness vs oneness in characterising TXs. The terms "oneness" and "unity" tend to appear in works specifically regarding mystical experience (Byrd et al., 2000; D'Aquili & Newberg, 1998; King, 1988; MacLean et al., 2012); moreover, Maclean et al. (2012) describe unity as one of "the major dimensions of classic mystical experience" (p. 723). Some of the literature uses "oneness" or "unity" to describe more general TX (Akyalcin, Greenway, & Milne, 2008; Barnby, Bailey, Chambers, & Fitzgerald, 2015; Bergland, 2015; Levin & Steele, 2005; Pakizeh, Hoseini, & Bassagh, 2016). Other works use "connection" or "connectedness" for general TXs and describe the concept in a way that implies intimacy rather than unity, or perhaps in addition to it (Castro, 2009; Di Giacomo, 2015; Johnstone et al., 2016); and still others use both terms without making a clear distinction between them (Pruitt, 2013; Sandoz, 2013). I see value in differentiating between the types of connection — the subjective experience, according to the literature and to the people I interviewed, is markedly different (see Section 4.2.1) — and I have chosen "closeness" and "oneness" to refer to them.

Consciousness and control

As I discussed in Chapter 4, participants' descriptions of transcendent experiences included themes of shifts in consciousness and loss of control. David's "nothingness" fits descriptions of TXs in the literature, in particular Stace's (1960) *introvertive mysticism* — loss of self and immersion in a higher power — and the nothingness of Beasley's (2013) transcendence as "an attitude or way of life" (p. 3):

The nothingness of transcendence... cannot be encapsulated in words: it is beyond the concepts of "no-thing" and of nothingness or emptiness. ... Nothingness is far from being a "lack" of something; rather it is an immense reservoir of all things possible. (p. 289)

Beasley (2013) explains the transcendent way of thinking about nothingness:

Rather than being about the lack of physical things, in the context of transcendence nothingness is more about the lack of attachment to particular things or ideas, it is about having a mind that is empty of fears and preconditions and is thus able to be a true, pure, channel from which the depth of Beingness can be manifested in the human world. Thus: I am nothing yet All. Through giving up labels, identities and attachment one allow oneself to be freely immersed in the fullness of the experience of Being and therefore able to be whole, fulfilled and joyous. (p. 291)

Beasley's explanation sounds very like David's meditation litany of "I'm not" statements — "I'm not a man; I'm not 60 years old; I'm not a father..." — which he continues until his ego drops away and he finds himself in a nothingness that feels like "home".

The TX literature describes other types of loss of control during transcendent experiences, such as rolling on the floor in uncontrollable laughter and "speaking in tongues" (Singleton, 2014).

Novelty vs familiarity

Keith and Madhu both cited novelty as key to their experiences of awe, although an examination of their descriptions in light of the literature on awe and wonder reveals an important difference between them. Keith stated emphatically that surprise was crucial to the experience and that he "wouldn't be able to get the same level of awe" on a second viewing of the Rothko. Keith's experience supports Fisher's (1998) view of wonder — of which awe can be considered an extreme form (Prinz, 2013) — as depending absolutely on novelty. "For wonder", Fisher declares, "there must be no element of memory in the experience" (p. 18). In other words, according to Fisher the experience must be utterly new; the experient must not have any memory of it. He goes on to describe wonder as an "involuntary and, at least at first, purely aesthetic experience" (Fisher, 1998, p. 18) and to explain that memory creates expectation, which he says is counter to the surprise that gives rise to wonder.

Madhu's experience, too, would seem at first to support this view. Whilst living in a place of "amazing beauty", she initially felt tremendous wonder. "The first six months", she says, "I was so aware of it, every single time I walk I am amazed at the beauty of that walk to my work." Madhu characterises that walk as a spiritual experience. But after a while, things changed; the wonder disappeared. For the next two years, she says, "I lost myself — lost in the sense as not aware of it any more; I got used to it." Madhu experienced six months of wonder, followed by two years of habituation due to familiarity. Two years she had, of living in a place of remarkable beauty and not feeling wonder in response to it.

If we ended Madhu's story there, we would be excused for thinking that her experience supported Fisher's view of wonder. But after those two years of habituation, Madhu found wonder anew: "I would just, every now and then, stop in the middle of the road, take in what's in there..." When she learned she would leave that gorgeous place in six months, Madhu *resumed paying attention*. Rather than exemplifying Fisher's (1998) pronouncement of memory's being antithetical to wonder, Madhu's full experience harmonises much better with Fuller's (2006a) observation that wonder and novelty can be renewed by "meditation and mystical practices" (p. 131). These practices, Fuller writes, "temporarily deactivate a person's accustomed way of experiencing the world. As a result, experience appears novel, fresh, unaccustomed. This alteration in our accustomed ways of making sense of the world introduces the element of surprise..." (p. 131). When Madhu would "stop in the middle of the road, take in what's there", she was engaging in a mindfulness practice, perhaps even a kind of walking meditation. Although Fisher (1998) viewed objective novelty as essential to wonder, Fuller (2006a) points out that only *perceived* novelty matters: we can learn to see the world with new eyes, he says. Madhu's experience — of wonder giving way to habituation and then transforming into wonder anew — illustrates beautifully the possibility that we may reawaken wonder by paying renewed attention. It also suggests that the design approach of defamiliarisation (Bell, Blythe, & Sengers, 2005) may have something to contribute to helping people see familiar surroundings in new ways, thus facilitating the rekindling of wonder. Alternatively, design might find something in meditation and mystical practices on which it could draw, to help people defamiliarise themselves with familiar objects and see them with new eyes.

Seeking vs serendipity

One might imagine that a relationship would exist between the themes of novelty/ familiarity and seeking/serendipity; one might think, perhaps, that people who explicitly seek spiritual experiences might be more likely to have them multiple times. The interview data, however, neither support nor challenge this idea. Participants who reported having repeated experiences did tend to engage in regular spiritual practices, but they were not always the participants who described seeking as

an important factor in the experience *per se*. As Brian put it, "...it's not the experience itself that I'm interested in; it's the one [God] who *gives* the experience...".

It is not clear what lies behind the differences between seeking and serendipity in the roles they play in spiritual experiences. Perhaps the differences relate somehow to the main qualities of the experience — for example, it may be easier and more effective to seek experiences of connection and joy than to seek experiences of awe, assuming that, as Keltner & Haidt (2003) proposed, feeling awe depends on having a need to accommodate the vastness perceived.

9.1.3 Characteristics of Reactions to the Phenomena

Interview participants related three kinds of immediate reactions to their perceptions of a TX: feelings and emotions, thoughts and interpretations, and effects and actions. These categories are consistent with literature on experience, which often describes reactions to experience as comprising affect, cognition, and behaviour (Klein et al., 1961). They also align with Underwood & Teresi's (2002) statement that spirituality "may influence emotion, cognition and behavior" (p. 22) and with the findings of Hill et al. (2000) that a person's search for the sacred may emphasise feeling, thinking, or behaving.

Emotions

Participants reported a wide variety of emotions in reaction to what they perceived. These were all consistent with emotions that appear in the literature, and I do not address them further.

Thoughts and interpretations

As McCarthy & Wright (2004b) observe, "one of the characteristic features of being a person is the urge we have to interpret and understand our experience..." (p. 105). James (1902) observed "an eternal unanimity" (p. 407) in descriptions of mystical experiences across religions. "In Hinduism, in Neoplatonism, in Sufism, in Christian mysticism", he wrote (*ibid.*), "we find the same recurring note..." Giving different interpretations to similar perceptions is consistent with the "common core features" thesis of mystical experience proposed by James (1902), developed by Stace (1960), and supported by later work (Z. Chen et al., 2011; Hood, 1975; Hood et al., 1993; Levin & Steele, 2005; Perovich, Jr., 1985; Smart, 1965).

Hood et al. (2001) provided empirical evidence for the view that subjective experiences have common features that are interpreted differently. Describing Hood's (1975) findings from the development and validation of his Mysticism Scale, they note:

...under relevant conditions, persons agreeing with the experiential items were able to display differences on the interpretative items, confirming Stace's basic claim that identical experiences can be differentially interpreted... (p. 692)

Hood (1975) had thus shown that different people can interpret “identical” experiences differently. (I would argue that the experiences are not precisely *identical*, as the contexts most certainly differ in some ways, but it seems reasonable to argue that the salient mystical features can be similar enough, perhaps even identical with respect to certain attributes, that they can be considered identical for the purposes of validating Stace’s common core thesis.) Hood et al. (2001) administered the Mysticism Scale to 188 Christians in the United States and a Farsi version to 185 Muslims in Iran. They found considerable commonality in the phenomena:

American Christians and Iranian Muslims displayed clear similarities in their self-reported mystical experiences. ... This finding conformed with recent descriptions of introvertive mysticism as a “pure conscious experience” that exists independent of any tradition-specific interpretation. In conclusion, this investigation supported Stace’s (1960) claim that a common phenomenology defines the core experience of mystical unity (p. 704)

All of the literature I have seen that discusses experience vs interpretation does so in the context of similar experiences reported by different people — a “between-subjects” analysis, as it were; I have seen no coverage of “within-subjects” research — investigation of single experiences being interpreted differently by the same individual at different times — although Kohls et al. (2008) note that re-interpretation of TXs is very common in some faith traditions. I see Sangmu’s story as a call for TX research on changes in an individual’s interpretation of a single experience, as another means of exploring the experiential/interpretive divide.

Although Stace (1960) and Hood and his colleagues (Hood, 1975; Hood et al., 2001, 1993) have focused on mystical experiences in studying the divide, I maintain that the distinction between experience and interpretation — or, rather, perception and interpretation, given that an experience *includes* interpretation, as I discussed in Chapter 2 — applies to all forms of transcendent experiences, and that it supports my defining separate categories in this grounded theory.

9.1.4 Characteristics of Integration

The biggest limitation of this thesis in regard to TUX integration was that I didn’t pay enough attention to it. I would like to consider this component in more depth in future studies, perhaps relating it to Gaggioli’s (2016) *transformative* experience design. Burch (1990) wrote:

...the meaning of my experience is essentially something constituted; it lies in what is made of what is lived through. Moreover, the full meaning of experience is not simply given in the reflexive immediacy of the lived moment but emerges from explicit retrospection where meaning is recovered and reenacted, for example, in remembrance, narration, meditation, or more systematically, through phenomenological interpretation and “inscription.” (Burch, 1990, p. 134)

In particular, I’d like to explore more about the timing of changes in interpretation and how technology might support that.

9.1.5 Transcendent Experience as a Cycle

The examples that participants reported of making changes to contextual factors after a TX are consistent with findings reported in the literature that spiritual experiences are often followed by changes in spiritual beliefs and spiritual practices (Kremer & Ironson, 2009) and that mystical experiences occasioned by psilocybin are often followed by “increased spiritual practice” (Griffiths et al., 2012, p. 13).

9.1.6 Peripheral Design

The *peripheral design* approach that I have described in this thesis — the Transcendance game to elicit ideas, followed by design fiction to elucidate and explore them — aims at facilitating design for experiences that are truly ineffable and thus not amenable to the formal, straight-forward design and evaluation approaches that are ubiquitous in HCI. Peripheral design, as I propose it, both incorporates key aspects of my grounded theory of TUX and takes advantage of metaphors (Kohls et al., 2008) and “elliptical language” (Robins, 2014, p. 1) to come at these experiences obliquely, rather than directly and from the centre of vision. As Chapter 7 demonstrates, the Transcendance game produces generative ideas for TUX designs; as Chapter 8 shows, new forms of design fiction support elaborating such ideas and exploring their potential for products and for research studies.

What I have not demonstrated here is the utility of peripheral design for the creation of products that support transcendent experiences in practice. Doing so would require the development of a method for evaluating such designs as “classic” HCI testing cannot. Although extended and comparative imaginary abstracts can help explore a product’s potential and design poetry can help convey an envisioned experience, these tools are thought experiments only and need to be complemented with methods that can discover how well a design actually supports TUX. Besides the impossibility of arranging or anticipating TXs, another key reason why observational user studies cannot serve for evaluating TUX designs is that lived experience cannot be observed as it occurs (Petitmengin, 2006; Yamane, 2000) and its capture requires reflection. I’d like to study the use of retrospective, reflective techniques such as narratives (Yamane, 2000) or detailed phenomenological interviews (Petitmengin, 2006).

9.2 Discussion of Methods

This section discusses the methods I used in this research, focusing mainly on their limitations and how those might have influenced the results, and speculating about follow-on work to address still-open questions.

9.2.1 Consideration of Existing Experiential Technologies

My analysis of TUX and my exploration of peripheral design might have been enhanced by a more in-depth consideration and analysis of the attributes of existing technologies and how they do and do not support TX; my App Store and YouTube analyses looked at the technologies at a very high level. Further work in this area should consider explorations of this topic such as Mossbridge's (2016) analysis of "transcendence tech" (p. 1).

9.2.2 Application of Grounded Theory Methods

The Grounded Theory methodology calls for interleaving data collection and analysis, so that emerging themes and emerging theory can influence further sampling. For a study like mine, which had very specific requirements for interview participants in terms of their breadth of religious and spiritual perspectives, adjusting the sampling in this way would have been problematic because of the difficulty I encountered in recruiting the final few participants. I could, however, have started coding the data with the very first interview and then interleaved data collection and analysis more tightly. I do not see that my failure to do so affected the results in any meaningful way, but doing so might have smoothed the analysis process.

9.2.3 Game and Workshop Design

Some aspects of the Transcendhance game appeared to work well:

- The "reaction" subcomponents of lived experience seemed particularly effective. Even though feelings and emotions are elusive with respect to the provision of *direct* input, they are easy for nonspecialists to understand, and they give a depth and richness to TX descriptions for which players are generating design ideas.
- Participants shared components of ideas. For example, a figure called Daniel featured in ideas from different participants in one workshop, first in the All-Seeing Eye of Public Transport and then in Robot Daniel. This kind of sharing indicated a camaraderie and congeniality that I was hoping to foster among the participants.
- Participants seemed to enjoy the game; one group even said they would play it just for fun.

Several aspects of the game and workshop design could be improved:

- The game required participants to consider context in creating their ideas.
- The game did not ask participants to consider aspects of integrating the experience, even though some of its aspects appear high among interview participants' desires for TX enhancement.

- The game treated internal perceptions as separate from context, and workshop participants found this difference difficult to grasp.
- The game did not have clear criteria for when to move on to the next round or end the game.
- Recruitment for the workshop used mainly convenience sampling, with no attention paid to design education or training among the participants.

The above aspects may have contributed to the results. First, of all the inputs the game offered participants in generating their ideas, only context was required — and that turned out to be the easiest one to consider and most likely contributed to the mapping skewed in favour of context. Future incarnations of the game may vary the TX components that make up the game-board paths and may also experiment with having different components required for consideration.

Second, the subcomponents of integrating the experience came into play only to the extent that players inferred them from interview participant desires, which were provided during low-fidelity construction of already generated ideas and which players were not required to use. This omission seems likely to have contributed to the very low number of workshop ideas that addressed desires related to integration.

Third, the difference between some of the context and lived-experience subcomponents of TX can be very difficult to grasp, and the instruction given to workshop participants may have been insufficient to enable them to understand the difference adequately. Smell, for example, can belong to the physical and activity context, such as the smell of candles in a church; or it can be a perception belonging to the lived experience, such as the scent of roses when a person senses the spirit of a deceased loved one nearby. Evidently this difference was not clear to workshop participants: many of the ideas translated game cards for lived-experience perception into sensory input supplied by the envisioned artefacts. Even the workshop participant who summarised the distinction as “context happens outside the person; perception happens inside” produced ideas that treated physical context as a perception. This may not be surmountable, however: Although the separation is defensible as an approach to the issue of external reality vs a person’s perception of it, the limitations of current technology make subjective perceptions nearly impossible to control directly, and from a design perspective the distinction may not matter.

Another possible explanation for the very low numbers of mappings of ideas to lived experience, despite the fact that the game involved three times as many inputs for it as for context, is that it is far easier to imagine technologies that influence lived experience *indirectly* or *peripherally*, by contributing to context, than it is to imagine ones that produce a perception, an emotion, or an interpretation *directly*. This explanation aligns rather well with the interview data: as Chapter 5

stated, participants related no accounts of artefacts having supported them in living the experience of TX, although they desired several artefact-supported enhancements.

Fourth, a game should normally have clear criteria for moving to a new round and for ending the game. The next time I run Transcendhance I will ensure that I have developed such criteria.

Fifth, the workshop participants varied quite a lot in their familiarity and comfort with generating design ideas and representing them in sketches. Not all of the most evocative ideas came from people with design training (Showerfall came from a non-designer), but I did notice a difference in comfort and fluency between some of the participants. It would be interesting to discover whether and how design training influences the transcendence possibilities in the ideas that workshop participants generate, and even whether such training might limit it.

9.2.4 Design Fiction

As I reflect on my work on design fiction for techno-spirituality, viewing it through the lens of the grounded theory of transcendent user experience that I later developed, I notice that my background work in design fiction imagined transcendent experiences in relatively little depth and that it focused on people's immediate reactions to the technologies without exploring how they might integrate the experiences into their lives. Pilgrim Trail, for example, mentions subjective experience only briefly — participants felt “inspired and moved” (p. 3) — and relegates transcendent experience to future work; and it completely overlooks possible integrative effects such as transformation even though pilgrimage is often described as a transformative experience (Lopez, 2014; Sharma, 2013) and the growing phenomenon of “transformational tourism” is beginning to receive research attention (Robledo & Batle, 2015). Ganesha Me considered neither transcendence nor long-term effects, but to be fair it was aimed at educational rather than transcendent aspects of techno-spirituality. The Chatbot (Blythe & Buie, 2014a) *was* aimed at numinous experience but considered very little of the quality of that experience (although it described some aspects of context).

9.3 Follow-on Research

In this subsection I speculate on research ideas sparked by this work and not tied to its limitations.

9.3.1 How does the framework presented in this thesis compare with related frameworks of transcendent experience?

As I discussed in Section 9.1.1, the transcendent experience framework that I have presented in this thesis shows some similarities with and key differences from components of TX presented in

other literature. I'd like to do a more in-depth analysis to explore possible reasons for the differences and what insights the other structures might offer for deepening mine.

9.3.2 *Is ease in envisioning and expressing desires for enhancement related to familiarity/comfort with technology?*

Some interview participants spoke much more easily of desired enhancements than did others. What is behind this? Is there a relationship between ease of envisioning desires for TX enhancement and ease of describing a transcendent experience? Is there a relationship between ease of envisioning TX enhancements and ease of describing artefact support for desired enhancements — i.e., do people who find it easier to envision TX enhancements also find it easier to describe artefact support for them? Is there a relationship between technology familiarity and either ease of envisioning/expressing enhancement desires or ease of describing artefact support for enhancement?

9.3.3 *Are there specific types of design research fiction that might be useful to industry?*

The exploration of design fiction I have presented in this thesis, as well as what its antecedents have described, has focused on its role in supporting academic research. “Imaginary abstracts”, write Blythe & Buie (2014a), “place design fictions in the context of research” (p. 235). Looking at the topic from an industry perspective, I ask: Are there forms of design research fiction that are particularly suited to industry and could be tailored to real-world projects? Perhaps instead of summarising research papers with imaginary abstracts, we could summarise industry projects with imaginary usability tests, to study how well they might help a project explore design alternatives before incurring the cost and risk of building out a design and assessing it via usability testing involving human participants.

9.3.4 *Are there other forms of imaginary abstract that might be useful?*

Whilst developing the new forms of imaginary abstracts that Chapter 8 describes, two more possible types occurred to me, which I call *terse* and *radical*.

Terse imaginary abstracts would suit situations in which we want to give even less detail about fictional studies. Perhaps we need to present a large number of ideas in limited space; perhaps we want to convey the breadth of ideas we have; perhaps we want to stimulate the generation of new research ideas. This version gives just a hint of the design idea and what people might gain from it; it may or may not include anything about the research design. Perhaps a collection of them could convey the flavour of a set of papers, presentations, or products, with the aim of evoking interest in a conference, symposium, or exposition. Another collection could read like a set of Google search results, showing only the first 150 characters of each fictional abstract, truncating it even in the

middle of a word. This form may resemble teasers in fictional advertisements — slightly more substantial, perhaps, than the ones Bleecker (2009b) presents, more similar to those that Blythe and his colleagues depict (Blythe, Andersen, Clarke, & Wright, 2016; Blythe et al., 2015).

Radical imaginary abstracts would take the “imaginary” nature of these short fictions literally, in a sense, proposing concepts and/or findings that strongly challenge credulity. They intentionally posit extreme or unrealistic findings, for example, rather than using imagination to explore potential outcomes. They would have the purpose of stimulating discussion and further exploration by evoking incredulous reactions and inviting readers to consider *why* they find it so difficult to suspend their disbelief in considering the imagined designs or outcomes.

Future work could explore these two types and how they might be useful.

9.3.5 How do we evaluate ideas as candidates for design fiction?

As I was defining the criteria I proposed in Chapter 8 for evaluating an idea for its suitability for design fiction, I was wishing I were able to explore them in some depth. Perhaps a future project could generate and evaluate a framework to help determine what constitutes an idea worth developing as design fiction.

It is conceivable that weak design-fiction candidates might lead to stronger ones, given a certain kind of approach. We would also need to investigate how such generative candidates would be identified and how the generation of stronger candidates would be accomplished.

9.3.6 How can peripheral design contribute to the evaluation of ideas?

In this thesis I have developed and explored peripheral design as an approach to *generating* design ideas for transcendent user experience. Beyond offering a few hints in my discussion of imaginary abstracts, however, I have not addressed the question of *evaluating* such ideas. As I pointed out in Section 1.3, we cannot evaluate TUX design ideas in the same way as we do other design ideas, because we cannot be sure of observing a TUX whilst watching people use something we’ve designed. Is there anything in this thesis that might lead to the development of TUX evaluation methods? Perhaps we might develop a TUX version of diary studies.

Perhaps we can develop an approach that will help us make effective use of imaginary abstracts as thought experiments. Showerfall would not be difficult to build or particularly expensive to study in a single setting, but the number of possible studies is very large, and design fiction might well help us identify ones we might want to conduct. Can we construct a satisfactory hypothesis generation and testing approach in which imaginary abstracts might be useful? Can we find a way of reducing designer bias in imagining possible outcomes of tests on imaginary products? Can we

find a retrospective technique that can function for TUX evaluation as user observation and think-aloud methods do for “classic” usability evaluation?

9.3.7 How can this work contribute to the field of Digital Religion?

It is beyond the scope of this thesis to analyse the kinds of interaction that individuals choose to have with religious and spiritual leaders and with organisations. The field of Digital Religion covers this topic, studying what Helland (2016) calls “a blending of all of the societal and cultural components we associate with religion with all of the elements we associate with a digital society” (p. 177). Dating from the early 2000s, Digital Religion takes a largely sociological perspective (Timothy Hutchings, personal communication, 22 July 2016), and is beginning to consider online religion from an individual perspective and even to look at emotion (*ibid.*). HCI, and in particular techno-spirituality, should have much to contribute to the Digital Religion literature if we support and collaborate with its growing interest in subjective artefact-facilitated experience.

9.3.8 Can this grounded theory of transcendent user experience contribute to the general theory of user experience?

A considerable portion of the grounded theory of TUX appears on the surface to be relevant and possibly applicable to user experience in general. Might we construct a similar diagram for user experience? Where and in what ways would it be different? Would it be useful at all? Figure 53 shows a preliminary concept for such a theory, an idea of what that might look like.

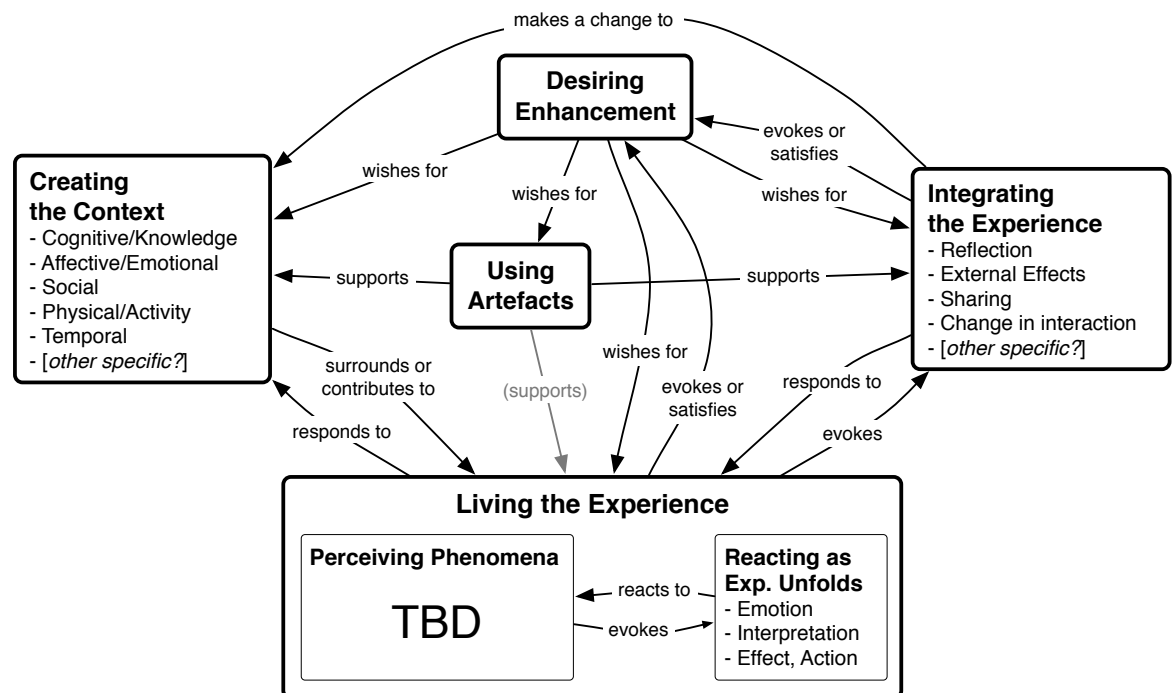


Figure 53. Preliminary concept for a theory of user experience

9.3.9 Can this work foster a broader theory of experience?

This is doubtless the boldest question I present in this thesis, but given what I said in the previous section it had to be asked: Does this preliminary grounded theory of transcendent experience have anything to offer to a general theory of experience? Might we construct a similar diagram for experience? Where and in what ways would it be different? Would it be useful? Figure 54 shows a preliminary idea of what that might look like.

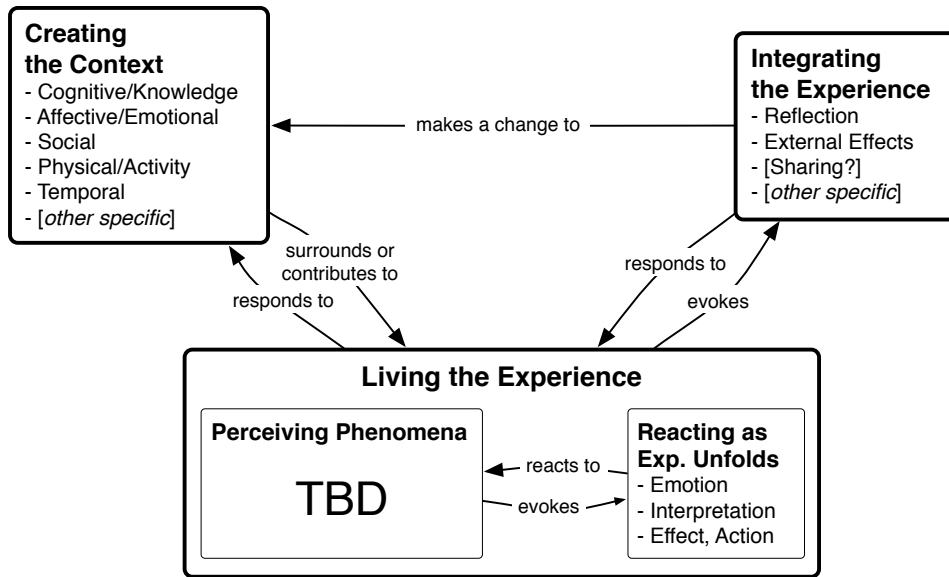


Figure 54. Possible structure of a general theory of experience

9.4 Potential Areas of Application

9.4.1 Design for Spiritual and Religious Applications

In the most literal sense, my findings regarding desires for enhancement can provide designers of techno-spiritual artefacts with practical information that can seed a user needs analysis for such artefacts. In addition, my *peripheral design* approach offers a method that may help designers create products that meet unexpressed desires for transcendent experience.

One result that intrigues me is the difference between Danielle’s and Alicia’s methods for obtaining guidance from the Bible (see Section 5.3.2). It is not clear how techno-spiritual design could aid Alicia’s method, but it would be very interesting to explore the question.

9.4.2 Design for Other Hard-to-Define Experiences

Transcendent experiences may be the most ineffable of all experiences. Other types of experiences — such as aesthetic and flow experiences that do not reach the level of

transcendence — can also be difficult to articulate and thus difficult to define when designers are deciding what to aim for. I argue that *Peripheral design* could support the generation of design ideas for any kind of product whose users may have experiences that are hard to define. These may include engagement, immersion, and flow.

9.4.3 Design for Well-Being and Personal Transformation

Transcendent experiences can result in personal transformation, not only in terms of spiritual insight or religious conversion. William James (1902) wrote of greater enchantment with life, and later work lists other commonly reported transformations:

- reduced fear of death (Castro, 2015; Kavar, 2015; Parra & Corbetta, 2014)
- increased ability to cope with hardship or trauma (Castro, 2015; Shewchuk, 2015)
- heightened sense of spirituality (Castro, 2015; Palmer & Braud, 2002; Parra & Corbetta, 2014; T. W. Smith, 2006)
- improved relationships (Castro, 2015; Garcia-Romeu, 2012; Kavar, 2015)
- enhanced subjective well-being (Garcia-Romeu, 2010; Levin & Steele, 2005; Palmer & Braud, 2002)
- improved health, mental health (Levin & Steele, 2005; Palmer & Braud, 2002)
- increase in compassion, empathy, altruism (Castro, 2015; Garcia-Romeu, 2012; Garcia-Romeu, Himmelstein, et al., 2015; Vieten, Amorok, & Schlitz, 2006)
- changes in beliefs, attitudes (Hirsh, Walberg, & Peterson, 2013; Palmer & Braud, 2002; Schouten et al., 2007)
- personality change (R. F. Paloutzian, Richardson, & Rambo, 1999)
- career change (Castro, 2015)
- shift in world-view, perspective, or self-concept from the individual to something beyond oneself (Braud, 2010; Castro, 2015; Garcia-Romeu, Himmelstein, et al., 2015; Schouten et al., 2007; Shewchuk, 2015; Vieten et al., 2006)

Some writers note that certain effects (some of which undoubtedly overlap) seem to be more or less immediate and others take time. Gaggioli (2016) defines a transformative experience as sudden:

a sudden and profound change in the self-world, which has peculiar phenomenological features that distinguish it from linear and gradual psychological change (p. 98)

Such an experience, he writes, has both epistemic and personal dimensions: it changes “not only...what you know, [but] how you experience being yourself” (*ibid.*).

Other writers discuss the development of continuous awareness of transcendence, which Levin & Steele (2005) call the “mature” type of transcendent experience:

The feeling associated with the mature transpersonal experience is a more enduring serenity and equanimity. It is not so much about transient mystical feelings or phenomena as about entering into a new state of awareness. It is more likely to be experienced as a self-transformational shift in one’s consciousness or spiritual perception. (pp. 89-90)

They call the brief experience “green” and speculate on “the possibility of a developmental continuum between the two” (p. 89). Mossbridge (2016) describes such development as a path from a noetic experience to “full transcendence or living deeply” (p. 8), and suggests “transcendence tech” to support the practices. “Doing the practice will lead to the next step, in the time that it takes”, she writes (p. 10).

I argue that technology to support transcendent experiences might make it easier for people to realise such transformations in their lives.

Chapter 10 – Conclusions

I conclude this thesis by summarising the foundations, approach, and conclusions of my research, then presenting a statement of the contributions to knowledge that I have made herein.

10.1 Summary: Transcendent (User) Experience

10.1.1 Foundations, Motivation

In what ways can interactive technology facilitate experiences of transcendence? Technology plays an ever-increasing role in spiritual life: individuals and families use ICT to support their spiritual growth and spiritual practices; organisations use it to communicate their messages and promote their members' spiritual growth. People have transcendent experiences whilst using technology, including digital artefacts. But outside of what we know about good ICT design in general, we have little in the way of design strategies and practices for artefacts to facilitate and enhance transcendent experiences.

The HCI field continues to expand its scope beyond work environments and cognitive task orientation to where it increasingly, as urged more than a decade ago, “embrace[s] people’s whole lives” (Bødker, 2006, p. 6) and focuses on “the worthwhile, that is, things that will be valued” (Cockton, 2006, p. 168). These considerations include emotion and other aspects of subjective experience, and contexts such as home, play, and the arts. As Bell (2006) discussed, they also include spirituality, as evidenced by “techno-spiritual re-purposing” (p. 142) of ICT to support spiritual practices.

Despite the clear need for increased research into techno-spirituality, the HCI community has given the topic less than its due. HCI research on *subjective* techno-spiritual experience, in particular, lags substantially behind closely related constituents of subjective user experience such as aesthetics and emotion, and behind research into institutional and practical uses of such artefacts (Buie & Blythe, 2013b). Moreover, as I discuss in Chapter 2, HCI pays essentially no attention to transcendent experience during artefact use. Some HCI research does mention “spiritual experience” (e.g., Wyche, Caine, et al., 2009; Wyche & Grinter, 2012), and some of it explores spiritual aspects of the experience (Othman et al., 2013; Wyche, Magnus, et al., 2009), but with two exceptions (Laarni, Ravaja, Kallinen, et al., 2004; Saari, 2009) HCI research makes little or no attempt to define what is meant by a spiritual or transcendent experience; and it largely overlooks the substantial body of transcendent experience literature that is available to aid in understanding the experiences.

10.1.2 Approach

To gain insight into and an in-depth understanding of people's spiritual practices and transcendent experiences, I conducted 24 semi-structured interviews with adults from diverse spiritual backgrounds and faith traditions, including agnostics and atheists. I elicited participants' spiritual/religious upbringing, perspectives, and practices, plus one or two TXs that they considered important and meaningful. I probed how they used artefacts in spiritual practice and how the artefacts contributed to their transcendent experiences. I ended interviews by asking them to imagine how a product might enhance their experiences. I analysed the data using Grounded Theory methods.

10.1.3 Conclusions

My interview analysis produced a grounded theory of transcendent user experience, beginning with a preliminary grounded theory of transcendent experience and completing it with artefact use and desires for enhancement. My analysis revealed that a transcendent experience is not only a sequence of phases but a *cycle*: integrating a TX into someone's life can result in a change to contextual factors of the experience they've just had, which could influence future such experiences. Further analysis revealed that artefacts currently support contextual components more than anything else but that participants want them to support other aspects of transcendent experience as well. My analysis also separated the components of transcendent experience such that the ineffable part became identifiable: what people find difficult to put into words is their perceptions of transcendent phenomena and sometimes also their mental and emotional reactions to phenomena they perceived.

10.2 Summary: Design to Enhance Transcendent Experience

10.2.1 Foundations, Motivation

Transcendent experiences pose specific challenges to design. Not only are TXs ineffable, they can be neither arranged nor anticipated but only *invited* (Gaggioli, 2016). Ineffability alone precludes approaching TXs with the formal methods of "classic" HCI (Boehner et al., 2008); unanticipatability further precludes using Boehner et al.'s (2008) own method of designing a system that is "lived into being" (p. 12:1) but requires collecting and analysing *retrospective* narratives (Yamane, 2000). Thus, we cannot design for transcendent experience by employing the usual direct methods of UX design; we must approach them obliquely.¹²⁷ We need new methods.

¹²⁷ Many thanks to Alastair Somerville for suggesting the word "oblique".

10.2.2 Approach

To construct an indirect, oblique approach to designing for TX, I first developed a game to elicit design ideas in an atmosphere of imagination, fun, and play. My *Transcendhance* game took inspiration from *Pictionary* and *Snakes & Ladders*: players rolled a die and moved their tokens around the board, at each turn drawing four cards and sketching scenarios of someone having a transcendent experience facilitated by an artefact. Each board space and game card contained one characteristic from my grounded theory of TUX (summarised below in Section 10.3.3), to guide players in devising the scenarios they sketched. I analysed the resulting 69 ideas for their correspondence to the grounded theory components and their ability to seed further ideas. I then used one especially evocative and flexible idea as a basis for illustrating and examining proposed new forms of design fiction.

10.2.3 Conclusions

My analysis of workshop results revealed that the *Transcendhance* game can elicit many generative design ideas that incorporate the components of transcendent user experience as modelled in my grounded theory. Exploration of design fiction for techno-spirituality revealed that existing forms — specifically, imaginary abstracts (Blythe, 2014) — show promise as a technique for envisioning artefacts to support TXs (Blythe & Buie, 2014a, 2014b). Development, elucidation, and examination of new forms — extended imaginary abstracts, comparative imaginary abstracts, and design poetry — revealed additional types of support. Design poetry, in particular, shows great promise for conveying the impression of ineffable aspects of transcendent experiences.

10.3 Original Contributions to Knowledge

The research I present in this thesis makes nine original contributions to knowledge. These contributions cover both of the fields my research bridges: seven apply to my “home” field of design for user experience and two apply to transcendent experience. My contributions to design cover both design fiction and techno-spiritual design.

10.3.1 Contributions to Knowledge — Transcendent Experience

My research contributes to the knowledge of transcendent experience in two key ways:

1. Recognition of transcendent experience as *phased* and *cyclical*
2. New thoughts about the *position of ineffability* in transcendent experience

This subsection summarises these contributions.

Recognition of transcendent experience as phased and cyclical

Although previous literature has noted the largely sequential nature of TX components (Garcia-Romeu, Himelstein, et al., 2015), this thesis is the first to describe them as *phases* (Chapter 4). Additionally, I explicitly recognise that the effects and actions arising from a transcendent experience often include changes to beliefs or practices that formed part of the context of that experience, and that those changes sometimes facilitate further transcendent experiences. Thus, a TX may influence the number and quality of subsequent TXs for the experient, perhaps even their timing and frequency. Transcendent experiences can iterate, forming a cycle. Although the cyclic potential of TXs can be inferred from literature on various types of transcendent experience, I have found none that states it explicitly. The largely sequential nature of the components appears in TX literature (Garcia-Romeu, Himelstein, et al., 2015), as does the recognition that a TX can be followed by changes in beliefs or practice (Mossbridge, 2016; Palmer & Braud, 2002; Schouten et al., 2007). This thesis, however, is the first work that combines these characteristics and depicts the top-level components of transcendent experience as *a cycle of phases*.

New thoughts about the position of ineffability in transcendent experience

The TX literature has long considered ineffability one of the most common characteristics of transcendent experiences, but most of them say merely that the *experience* is ineffable. Studies of mystical experience constitute an exception in that many of them assign ineffability to a position in the structure, placing it in either introvertive mysticism or the interpretive factor. As I discuss in Chapter 4, my interview analysis suggests that ineffability falls within *living the experience* of TX — primarily in *perceiving the phenomena* and to a much lesser extent in *reacting to the phenomena as the experience unfolds*. All interview participants who struggled to put words to their experiences had trouble describing *what they perceived*. A small number also had difficulty in describing the emotions they felt while the experience was unfolding. Both types of experience (unity with the whole and connection with a higher power) were experienced as ineffable, suggesting that identifying an experience as ineffable requires *attempting* to put it into words — i.e., interpreting it.

10.3.2 Contributions to Knowledge — Design Fiction

My research contributes to the knowledge of design fiction in one main way:

3. Proposal and exploration of *three new forms of design fiction*

My exploration of design fiction yielded the creation of three proposed new forms. The first two are variations on the imaginary abstract:

- *Extended imaginary abstracts*: longer abstracts that describe in greater detail the envisaged prototype, test conditions/procedures, and findings

- *Comparative imaginary abstracts*: co-ordinated variants on an idea, exploring differences in design, testing, and/or results

The third proposed new form does not summarise an imagined research paper but aims to convey a sense of the experience:

- *Design poetry*: poems written to convey ambiguous, subjective, and ineffable aspects of the envisioned user experience

The *extended* imaginary abstract depicts a fictional study in more detail than appears in the original form of imaginary abstracts. It goes into more detail about the envisaged prototypes, test design and participants, and findings, and it more closely resembles abstracts in journal articles or submissions to conferences that review abstracts rather than full papers. It allows for a more in-depth exploration of the design concept than does the original imaginary abstract. It also provides the basis for building a set of *comparative* imaginary abstracts.

Comparative imaginary abstracts take the thought-experiment concept further, presenting a set of alternative versions of an extended imaginary abstract that enable speculation about the different research findings they might yield. Alternatives are created via identification of variations in the designs of the prototype (the envisioned content and how it is presented) and of the study (setting, participants, and procedures). *Comparative* imaginary abstracts offer a rich view of the possibilities for considering design concepts, how they might be studied, and what kinds of findings might emerge.

Design poetry appeals to imagination and emotion more strongly and deeply than can the academic language of imaginary abstracts; it aims to trigger the imagination and evoke design ideas more profoundly or fancifully. This is especially important for transcendent experiences, as well as perhaps for other types of elusive experiences that are not easily modelled, such as aesthetic experiences. It takes advantage of poetry's ability to convey the ineffable, its hinting at unconscious contents by using metaphors and "elliptical language" (Robins, 2014, p. 1) that make real "the ambiguity, subjectivity and ineffability of the unconscious" (*ibid.*).

It will be interesting to discover how these forms of design fiction might be useful to HCI research and design in general, beyond techno-spirituality.

10.3.3 Contributions to Knowledge — Techno-Spiritual Design

My research contributes to the knowledge of techno-spiritual design — in particular, design for transcendent experience — in five primary ways¹²⁸:

4. *A grounded theory* of artefact-supported transcendent experience — transcendent user experience
5. Identification and analysis of a *rich body of transcendent experience literature* that very rarely appears in techno-spirituality work
6. The *Transcendhance game*, which elicits speculative, generative TUX design ideas that explicitly draw on aspects of the target lived experience
7. *A framework for mapping artefacts and design ideas* to components of my grounded theory of TUX
8. An understanding of *design fiction's benefits to techno-spirituality*

The remainder of this subsection describes these contributions.

Grounded theory of transcendent user experience

My grounded theory of transcendent user experience provides an in-depth understanding of how artefacts support spiritual practices and transcendent experiences, and supplies insights into what people value about those experiences and what they desire in the way of enhancements and specific artefact support for them. This knowledge can aid designers in identifying needs for techno-spiritual products. It also provides a set of attributes of transcendent user experience that can support techno-spirituality research and design.

Identification of transcendent experience literature on which HCI can draw

In Chapter 2 I showed how very few studies of experiential techno-spirituality cite any literature on transcendent experiences or define the experience of interest beyond the vague “spiritual experience”, despite the common UX practice of describing target experiences and the abundance of TX literature on the nature of transcendent experiences. The experiences themselves thus remain elusive to HCI research and design. My review of extensive literature on the nature of transcendent experience reveals a rich source of descriptions of such experience that HCI researchers and designers can use to understand the nature of the experiential aspects they are studying or for which they are designing.

¹²⁸ This numbering is what I intend: I am enumerating my contributions to knowledge.

Transcendhance game for eliciting speculative, generative design ideas

My design game, *Transcendhance*, provides an oblique approach to generating design ideas for artefacts intended to facilitate experiences that are tricky to define, difficult to discuss, impossible to anticipate, and thus challenging to design for in a direct manner. Even with the aforementioned rich description, these ineffable experiences remain elusive and difficult to imagine, especially for designers who have not had one themselves. Using insights from interviews in a congenial atmosphere of imagination, fun, and play, *Transcendhance* evokes design ideas that not only address the components of transcendent experience and respond to expressed desires for enhancement and artefact support, but can generate further ideas when considered in light of relevant research.

Framework for mapping artefacts and design ideas to components of my grounded theory of transcendent user experience

The *Transcendhance* workshop analysis presents an initial mapping of the generated ideas to the phases and subcomponents of transcendent experience, furnishing insights that could help facilitate design for transcendent user experience. This may allow for more specific tailoring of designs to address TX components that researchers or practitioners wish to support, and it lays the ground for a more detailed mapping following further research.

An understanding of the benefits of design fiction to techno-spirituality

In exploring design fiction for techno-spirituality research and design I have observed that, by virtue of its position as imaginary, design fiction offers the opportunity to tap into “the willing suspension of disbelief” (Coleridge, 1817). Design fiction thus allows us to suspend disbelief not only about the narrative and the diegesis, as we usually think of such suspension, but also about the spiritual and religious beliefs that the fiction portrays and the fictional artefacts support. In this way, design fiction can help us envision and even become engaged with artefacts to support spiritual and religious practices involving beliefs that we do not ourselves hold. This additional suspension, I argue, can aid us in designing for people who hold such beliefs.

10.3.4 Contribution to Knowledge — Peripheral Design

My final contribution to knowledge draws on contributions 3 and 6, above:

9. *Peripheral design* as a synergy of the *Transcendhance* game and design fiction

In Chapter 7 I showed how the *Transcendhance* game could use imagination, fun, and play in a non-competitive environment to elicit generative ideas for artefacts aimed at enhancing transcendent experience. In Chapter 8 I introduced new forms of design fiction and illustrated their use in building on ideas by increasing detail, by varying certain characteristics, and by conveying

envisaged experiences in poetry. These methods take a sideways approach to techno-spiritual design, drawing on unconscious contents via playfulness and “indirect metaphors that refer to something without explicitly naming anything” (Robins, 2014, p. 4). Both are peripheral, oblique approaches, I argue, and I call the combination *peripheral design*.

10.4 The Value of Peripheral Design

As I discussed in Section 9.1.6, *peripheral design* enables us to elicit, elucidate, and explore design ideas for supporting experiences that are truly ineffable and not amenable to the formal, straight-forward design approaches that are ubiquitous in HCI. Incorporating key aspects of my grounded theory of TUX, it takes advantage of metaphors and oblique language to come at these experiences from the periphery, rather than directly and towards the centre. My Transcendance game produces generative ideas for TUX designs, and new forms of design fiction support elaborating such ideas and exploring their potential for products and for research studies. It will be interesting to discover whether and, if so, how peripheral design might facilitate the development of products that support transcendent user experiences in practice.

Endnotes

ⁱ I attended what I call the “proto-CHI” conference, the precursor to the series that became the CHI conferences. It was held in the spring of 1982 at the US National Institute of Standards and Technology, which was 18 miles from my home; and since I was doing user interface work at NASA-Goddard Space Flight Center and my attending didn’t require long-distance or overnight travel, NASA agreed to send me to it. The light bulb, so to speak, went on. I have attended slightly more than half of the CHI conferences, which have occurred annually since then with the exception of 1984.

ⁱⁱ Some references for the topics listed are as follows (in alphabetical order by topic):

- accessibility for people with disabilities (Rode et al., 2016; Sears & Hanson, 2012; Yesilada, Brajnik, Vigo, & Harper, 2012)
- ageing, designing for older adults (Blythe et al., 2015; Plaza, Martín, Martín, & Medrano, 2011; Vines, Pritchard, Wright, Olivier, & Brittain, 2015)
- ageism (Durick, Robertson, Breton, Vetere, & Nansen, 2013; Vines et al., 2015)
- citizen participation and policymaking (J. Lazar et al., 2013; Normand, Paternò, & Winckler, 2014)
- death and bereavement (Massimi & Baecker, 2011; Massimi, Moncur, Odom, Banks, & Kirk, 2012; Uriu & Odom, 2016)
- developing world (Kumar et al., 2016; J. C. Thomas, 2015)
- feminism and gender issues (Bardzell, 2010; Breslin & Wadhwa, 2015; Erickson, Hemphill, Menking, & Steinhardt, 2016)
- health and well-being (Baños Rivera et al., 2014; Churchill & Schraefel, 2015; Demiris, Thompson, Reeder, Wilamowska, & Zaslavsky, 2011; Wijnand IJsselsteijn, de Kort, Midden, Eggen, & van den Hoven, 2006; Jung, Song, & Vorderer, 2012; Lee & Kempf, 2012; Moncur, 2013; Qiu, Lin, & Leung, 2010; Shklovski, Kraut, & Cummings, 2006)
- housing and communities (Crivellaro et al., 2016)
- peace (Hourcade, Bullock-Rest, Jayatilaka, & Nathan, 2012)
- positive psychology/computing/design and subjective well-being (Calvo, Riva, & Lisetti, 2014; Desmet & Pohlmeier, 2013; Villani et al., 2015)
- racism (Hankerson et al., 2016; Pritchard & Vines, 2013)
- sustainability (Håkansson & Sengers, 2013; Knowles, Blair, Hazas, & Walker, 2013)
- value-sensitive design (Borning & Muller, 2012; Friedman, 1996; Friedman, Kahn Jr, & Borning, 2008)

ⁱⁱⁱ It is possible to use Google to search the US App Store, using the criterion “site:itunes.apple.com/us/app”. Of course, this doesn’t guarantee that the results include the same apps as in my original search. However, it is possible to get a rough order of magnitude and to compare the apps in the same general group with the total number of apps. I conducted a search on 20 April 2017 using the following criteria (using the “-“ terms to eliminate irrelevant results):

```
religion OR spirituality OR spiritual OR holy OR "inner peace" OR  
inspiration OR meditation OR mindfulness OR sacred OR spirit OR  
faith OR prayer -jeans -nightclub -alcohol -level -wrestling -vitek  
-diagram -"graphics and design" -vpn -"spirit hunter"  
site:itunes.apple.com/us/app
```

The search returned 123,000 apps, approximately 20 times the 6000 that the late-2012 inventory had found. A search using no terms other than the app store returned about 3,160,000 results, of which 123,000 is approximately 3.8%. To build this search string I started with the terms of interest, looked through the first few pages of search results to identify common irrelevant results (such as “spirit level” or “True Religion Jeans”), and excluded the key words in those results from subsequent searches. I repeated this step until the first ten pages of search results presented only relevant apps.

^{iv} In doing the 2012 inventory of HCI literature on techno-spirituality I constrained my search to the ACM Digital Library because the paper was aimed at the ACM's HCI community and I was writing about their work. There is of course HCI literature outside the ACM-DL: a search on 9 September 2016 for the search terms

`(spirituality OR religion) AND "human-computer interaction"`

found a total of 4,650 results from 2012 and earlier. Few of those were in the ACM-DL, however, and a brief review of the search-results summaries of the works represented on the first 12 pages (120 items) revealed that almost none of the ones outside the DL dealt with techno-spirituality. They included religion as, for example, a demographic variable, a cultural factor influencing interaction preferences, a word in the title of a referenced paper, or something entirely different from what would indicate techno-spirituality (e.g., "the religion of open source"). The works that did appear to address techno-spirituality, and that my 2012 inventory had not found, came almost entirely from outside ACM and even some of them from outside HCI proper. Example domains include religion (Karaflogka, 2002) and Internet studies (Campbell, 2005a), and several of the works were HCI papers by ACM members but published by the Institute of Electrical and Electronics Engineers (IEEE) (Sengers et al., 2004).

^v I found five main themes in various definitions of spirituality:

- *The core of one's being.* (Connelly & Light, 2003; Kourie, 2007; McGinn, Meyendorff, & Leclercq, 1985)
- *Ultimate values.* (Griffin, 1988; Kourie, 2007)
- *Purpose and meaning.* (Chuengsatiansup, 2003; Mascaro, Rosen, & Morey, 2004)
- *Self-transcendence.* (Helminiak, 2008; Hill et al., 2000; Kourie, 2007)
- *A way of relating to the sacred or the divine.* (Hill et al., 2000; Jordan, Masters, Hooker, Ruiz, & Smith, 2014; MacKenna, 2009)

^{vi} According to the OED, the word *numinous* has been in use since at least 1647: "N. Ward *Simple Cobler Aggawam* 62 The Will of a King is very numinous; it hath a kinde of vast universality in it" (Numinous, 2013). Almost three hundred years later, however, Rudolf Otto appears to have claimed coinage of it:

For this purpose I adopt a word coined from the Latin *numen*. *Omen* has given us *ominous*, and there is no reason why from *numen* we should not similarly form a word '*numinous*' (Otto, 1923, p. 7)

Some writers (e.g., Lipe, 2002; McAvan, 2007; Rankin, 2005; Solomonova et al., 2010) accept Otto's claim and credit him with coining the term. Although Otto's definition of *numinous* to regard experiences of a mysterious Other made a major contribution to the study of transcendent experience, his work popularised the word and extended its meaning beyond a direct reference to a divinity. Otto did not coin *numinous*.

^{vii} The ACM-DL's own advanced search was redesigned during the course of my PhD programme, so that a search found substantially fewer papers after the change than it had found before. This raises a concern that the new search may not be finding everything relevant, so I have repeated all searches using Google and specifying a search scope of `dl.acm.org`. For example, I used the search string `<"research through design" site:dl.acm.org>` and specified a date range of 2014-2015 and the exclusion of citations and patents. This produced the figure of 161 RtD papers in the ACM's repository of HCI literature in 2014 and 2015. In contrast, a search using the DL's own advanced search for "research through design" AND "HCI" in the same date range found only 41 items.

^{viii} The late-2012 search of the App Store had used the App Store search on an iPad, which gave the total number of results for each search but did not allow me to use the search capability itself to exclude unwanted terms, so I had to record the data for the apps and go through them to delete duplicates and irrelevant results manually.

Using Google, I searched the US App Store on 31 August 2016 for the same keywords I had used in 2012:

```
religion OR spirituality OR spiritual OR holy OR "inner peace" OR inspiration  
OR meditation OR mindfulness OR sacred OR spirit OR faith OR prayer  
site:itunes.apple.com/us/app
```

The inclusion of the "site:" parameter limited the search to a specific subdirectory in a specific site — the US App Store.

I iterated the search until the first ten pages of results contained only relevant items. Each time, I excluded additional terms to eliminate irrelevant apps — such as True Religion Jeans on the first pass and the Spirit Hunter role-playing game on the last — that appeared within the first ten pages. The tenth and final search string excluded ten terms:

```
-jeans -nightclub -alcohol -level -wrestling -vitek -diagram  
-"graphics and design" -vpn -"spirit hunter"
```

The second search used considerably less time and effort than the first one had. I was unable to repeat the process I had used in 2012 because the App Store search facility no longer supports that search method (see Buie & Blythe, 2013b) — it gives no customer ratings and doesn't provide for sorting the search results. Also, this time I was seeking only to obtain a rough order of magnitude for how the numbers might have changed, and a rigorous method was unnecessary for that.

As of December 2012, the App Store offered an estimated six thousand apps tagged with general terms for spirituality and religion, (Buie & Blythe, 2013b), less than one percent of the more than 731,000 iOS apps available at the time ('Count of Active Applications in the App Store', 2012). On 31 August 2016, my second App Store search found an estimated 14 times as many offerings for the same keywords — more than 85,000 — while the total number of iOS apps had grown to more than two million (Costello, 2016). A Google search of the App Store with no search terms specified (i.e., requesting everything on the site) returned pages for roughly 2.2 million iOS apps, which is consistent with what Costello (2016) had reported just two months earlier. Therefore, assuming the figures for the two 13 September searches were comparable to each other and at least roughly to the previous numbers, apps for the same set of keywords had increased from 6,000 out of 731,000 in late 2012 (0.8%) to 85,000 out of 2,200,000 (3.9%). and show the first five results from the two 13 September searches, respectively.

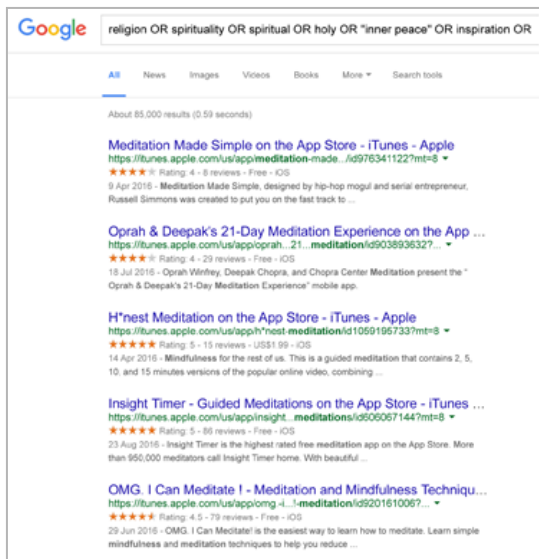


Figure. Sample App Store results using spiritual and religious keywords

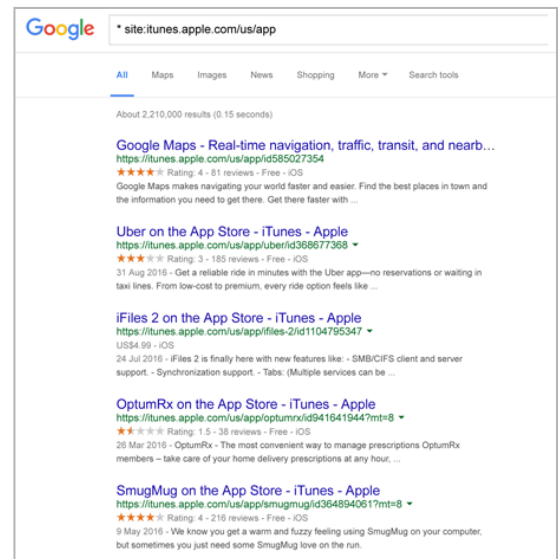


Figure. Sample App Store results using wildcard (no keywords)

Appendix A – Interview Participants

This appendix describes interview participants in detail. It gives demographics and some details about their spiritual and religious backgrounds. Ages are approximate (estimated except where I knew it).

Participants are listed in order of the false names I gave them to protect their privacy.

Alicia

Gender: Female

Estimated age: 45

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Pentecostalist

Faith of origin: Roman Catholic

Notes: Family switched to Pentecostalism when she was about 12 years old.

Barika

Gender: Female

Estimated age: 30

Country of origin: India

Country of residence (at time of interview): United Kingdom

Faith of current identification: Muslim (non-practising)

Faith of origin: Muslim

Bob

Gender: Male

Estimated age: 65

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Jewish

Faith of origin: Methodist (non-practising)

Notes: Attracted to Judaism since about age 12, converted as an adult.

Brian

Gender: Male

Estimated age: 45

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Pentecostalist

Faith of origin: Church of England

Notes: Converted about age 20.

Cathy

Gender: Female

Estimated age: 50

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: Roman Catholic

Notes: Converted when first child was very young. Spirituality centred on “feeling everything being alive around me”.

Danielle

Gender: Female

Estimated age: 40

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Church of England

Faith of origin: Pentecostalist

Notes: Converted to husband’s religion on marriage.

David

Gender: Male

Estimated age: 60

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Spiritual but not religious

Faith of origin: Church of England

Notes: Seems to share much philosophy with Buddhism; does not identify as Buddhist.

Ebiundu

Gender: Male

Estimated age: 30

Country of origin: Nigeria

Country of residence (at time of interview): United Kingdom

Faith of current identification: Pentecostalist

Faith of origin: Christian with ties to traditional African religion

Notes: Converted in mid-20s, soon after moving to UK. (Not sure it can really be called a conversion.)

Gloria

Gender: Female

Estimated age: 45

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Spiritualist, Pagan

Faith of origin: Roman Catholic

Notes: Converted at about age 40.

Greg

Gender: Male

Estimated age: 65

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Atheist

Faith of origin: United Methodist

Notes: Never believed; played hooky from Sunday School.

Helen

Gender: Female

Estimated age: 55

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: Southern Baptist, evangelical

Inge

Gender: Female

Estimated age: 40

Country of origin: Germany

Country of residence (at time of interview): United Kingdom

Faith of current identification: Quaker, Roman Catholic

Faith of origin: Roman Catholic

Notes: Practising Quaker, retains affiliation with Catholic Church

Jared

Gender: Male

Estimated age: 40

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Mormon (Church of Jesus Christ of Latter-Day Saints)

Faith of origin: Mormon (Church of Jesus Christ of Latter-Day Saints)

Notes: Questions church institution but not faith.

Julia

Gender: Female

Estimated age: 60

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: United Methodist

Notes: Theist. Spirituality centred on Nature, Seasons.

Keith

Gender: Male

Estimated age: 45

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Spiritual but not religious

Faith of origin: Church of Scotland

Notes: Attended Anglican church during university; was not drawn to it.

Louise

Gender: Female

Estimated age: 60

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: Unitarian Universalist

Notes: Atheist. Spirituality centred on Nature.

Madhu

Gender: Female

Estimated age: 35

Country of origin: India

Country of residence (at time of interview): United States of America

Faith of current identification: Hindu

Faith of origin: Hindu (non-practising)

Parvaneh

Gender: Female

Estimated age: 50

Country of origin: Iran

Country of residence (at time of interview): United Kingdom

Faith of current identification: Muslim

Faith of origin: Muslim

Notes: More religious than her parents

Rick

Gender: Male

Estimated age: 65

Country of origin: United States of America

Country of residence (at time of interview): Canada

Faith of current identification: United

Faith of origin: United Methodist

Notes: Spirituality centred on community service. (United is Canadian equivalent of United Methodist in USA.)

Sadie

Gender: Female

Estimated age: 40

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: Unitarian Universalist

Notes: Spirituality centred on community.

Sangmu

Gender: Male

Estimated age: 55

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

Faith of current identification: Buddhist

Faith of origin: Quaker, Methodist

Notes: Went through period of Anglicanism as young man; ordained Buddhist teacher.

Scott

Gender: Male

Estimated age: 60

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: Unitarian Universalist

Faith of origin: Episcopalian

Notes: Spirituality centred on resonance and appreciating the moment.

Susan

Gender: Female

Estimated age: 60

Country of origin: United States of America

Country of residence (at time of interview): United States of America

Faith of current identification: United Methodist

Faith of origin: United Methodist

Notes: Spirituality centred on Holy Spirit.

Tenzing

Gender: Male

Estimated age: 50

Country of origin: United Kingdom

Country of residence (at time of interview): United Kingdom

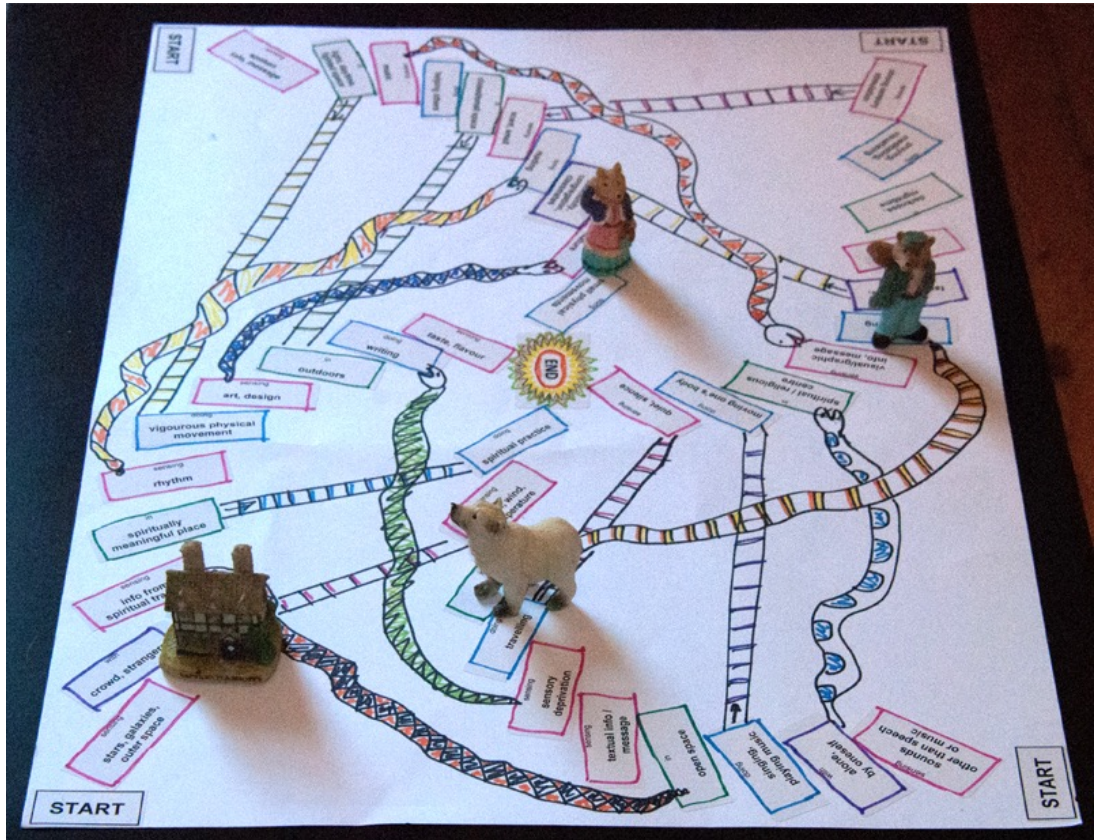
Faith of current identification: Buddhist

Faith of origin: Anglican

Notes: Attended Church of England junior school; ordained Buddhist monk (novice).

Appendix B – Transcendence Workshop Materials

B.1 Game Board with Game Pieces



B.2 Context Spaces for Game Board

These stickers went onto the game board and became spaces for the context of the experience for which players were designing.

with alone, by oneself	sensing art, design	in closed/small space
with community, congregation, classmates	in darkness, nighttime	with family, friends, intimates
in indoors	sensing info from spiritual tradition	in light, daytime, lighted space
doing moving one's body	sensing music	in Nature
in open space	in outdoors	doing singing, playing music
sensing physical pain	doing praying, meditating, visualising	sensing quiet, silence
doing reading	sensing rhythm	sensing scent, smell

sensing sensory deprivation	doing small physical movements	sensing sounds other than speech or music
in spiritual / religious centre	doing spiritual practice	in spiritually meaningful place
sensing spoken info, message	sensing stars, galaxies, outer space	sensing strong sensory stimulation
sensing symbols	sensing taste, flavour	sensing textual info / message
sensing touch, wind, temperature	doing travelling	doing vigorous physical movement
sensing visual/graphic info, message	doing singing, playing music	doing helping others
START		doing creating

B.3 Perception of Phenomena Cards

notice, observe, perceive altered consciousness	notice, observe, perceive heightened/ altered senses
notice, observe, perceive another presence	notice, observe, perceive beauty
notice, observe, perceive divine being, God, Goddess	notice, observe, perceive brightness
notice, observe, perceive clarity	notice, observe, perceive closeness
notice, observe, perceive becoming cool, cold	notice, observe, perceive divinity, sacredness
notice, observe, perceive darkness	notice, observe, perceive guidance, direction, advice
notice, observe, perceive becoming warm, hot	notice, observe, perceive immersion

notice, observe, perceive intimacy	notice, observe, perceive loss of control of body/speech
notice, observe, perceive increased mental focus	notice, observe, perceive movement, motion
notice, observe, perceive new smell	notice, observe, perceive new sound (non speech)
notice, observe, perceive new taste	notice, observe, perceive new touch
notice, observe, perceive nothingness	notice, observe, perceive oneness, unity
notice, observe, perceive resonance	notice, observe, perceive silence
notice, observe, perceive timelessness	notice, observe, perceive tingles, twitching, gooseflesh

notice, observe, perceive something greater than oneself	notice, observe, perceive ultimate
notice, observe, perceive being elsewhere	notice, observe, perceive vastness, boundlessness
notice, observe, perceive vision(s), images	notice, observe, perceive voice(s)
notice, observe, perceive out of body	

B.4 Reaction as Experience Unfolds Cards

feel, have accepting	feel, have afraid, frightened, alarmed
feel, have alert, attentive	feel, have welcome
feel, have irritated, annoyed, angry	feel, have anxious, nervous, worried
feel, have weak, powerless	feel, have awe and wonder
feel, have detached, distant	feel, have comforted
feel, have homecoming, belonging	feel, have compassion, empathy
feel, have compelled	feel, have confused, bewildered

feel, have creative	feel, have curious
feel, have distracted	feel, have ecstatic
feel, have emotionless	feel, have grateful, thankful
feel, have engrossed, engaged, absorbed	feel, have epiphany, realisation
feel, have excited, energised, alive	feel, have expansive, large
feel, have exposed, vulnerable	feel, have fantastic, wonderful
feel, have fascinated	feel, have fulfilled

feel, have happy, glad	feel, have hopeful
feel, have humble, small, unworthy	feel, have insight
feel, have inspired	feel, have integrated, whole, healed
feel, have longing, yearning	feel, have joyful
feel, have loved	feel, have loving
feel, have meaning, purpose	feel, have meditative
feel, have moved, stirred	feel, have open, receptive

feel, have peaceful, calm, serene	feel, have pensive, thoughtful
feel, have prayerful	feel, have protected
feel, have quiet of mind	feel, have refreshed, renewed
feel, have relaxed	feel, have released, unburdened
feel, have sad, unhappy	feel, have reverent, worshipful
feel, have speechless, lost for words	feel, have strong, powerful
feel, have surprised, startled	feel, have supported

feel, have transported	feel, have thunderstruck, stupefied
feel, have tired, exhausted	feel, have watched
feel, have confused, bewildered	

B.5 “Experience Is...” Cards

The experience is brief	The experience is complex
The experience is creepy	The experience is dark, ominous
The experience is ephemeral, fleeting	The experience is extraordinary
The experience is eye-opening	The experience is familiar, frequent
The experience is fun	The experience is hazy, fuzzy
The experience is heavy, weighty	The experience is helpful
The experience is gentle	The experience is impersonal

The experience is important	The experience is indescribable
The experience is intense	The experience is intimate
The experience is mystical	The experience is life changing
The experience is light, effortless	The experience is lengthy
The experience is miraculous	The experience is mysterious
The experience is ordinary	The experience is personal
The experience is powerful	The experience is private

The experience is profound, deep	The experience is real
The experience is religious	The experience is sacred
The experience is shared	The experience is simple
The experience is strange, odd	The experience is sudden
The experience is traditional	The experience is transcendent
The experience is unreal, weird	The experience is vivid
The experience is wonderful	The experience is spiritual

B.6 Desires for Enhancement

auditory content	evocative smells
calming, peaceful sounds	focus mind/attention
capture/record experience	free bodily movement
colours, aesthetic stimulation	geographic mobility
connect with cycle of year	guidance from faith tradition
connect with my body	reflect on experience
connect with faith tradition	reminder for spiritual practice
connect with history, ages past	remove distractions
connect with nature	sense of place
connect with other people	sense of permanence
detach from my body, senses	share experience
discover spiritual centres/places	spiritual message
effortless, non-intrusive use	symbolic content
enhance/alter senses	time management
enhance understanding	written content

Appendix C – Speculative Design Ideas from the Transcendence Workshop

This appendix presents, in alphabetical order by name of idea, all of the ideas that the Transcendence workshop participants produced.


	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: Art and Design• Perceive: Another presence• Feel: Compelled• Feel: Confused• Experience is: Impersonal
<p>Figure C-1. All-Seeing Eye of Public Transport</p> <p>System knows where Daniel means to go and directs him accordingly, in real time, through his headphones.</p>	<hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Physical/Activity



Figure C-2.a. ArtCompeller (drawing)

Person looks at art and senses a mysterious presence urging him to steal it and to buy the app for his watch.

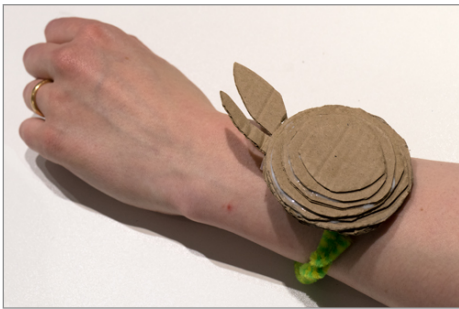


Figure C-2.b. ArtCompeller (built)

Game cards drawn:

- Context: Art and Design
- Perceive: Another presence
- Feel: Compelled
- Feel: Confused
- Experience is: Impersonal

Supports: Creating the Context

- Psychological
- Supports: Living the Experience
- Perception: Numinous presence

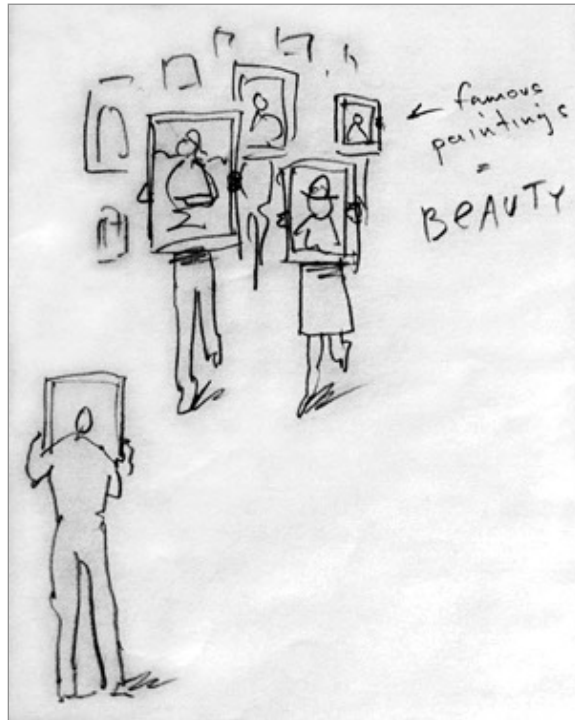


Figure C-3. ArtFaces

People hold in front of them large tablets that look to others like famous paintings in frames. They can see through the backs of the tablets they themselves carry, but people who look at them see what the tablet displays. The displays change according to who's looking at them.

Game cards drawn:

- Context: Crowd, strangers
- Perceive: Beauty
- Feel: Engrossed, engaged, absorbed
- Feel: Reverent, worshipful
- Experience is: Miraculous

Supports: Creating the Context

- Social
- Psychological

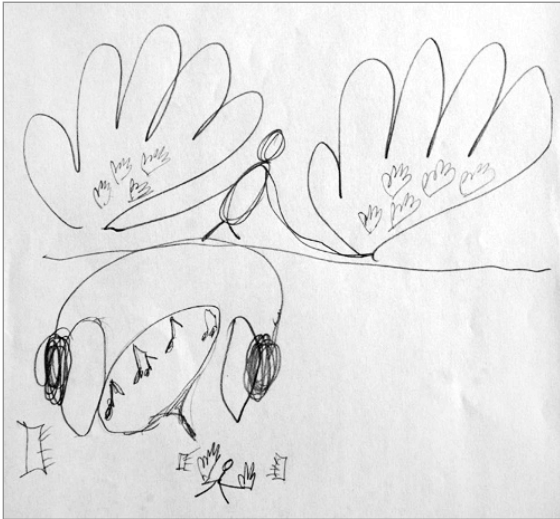


Figure C-4.a. ArtistiChanneler (drawing)

Music plays in headphones whilst gloves guide person's hand in re-creating a painting exactly as the artist painted it. Person feels to be channeling the artist, even to *be* the artist.

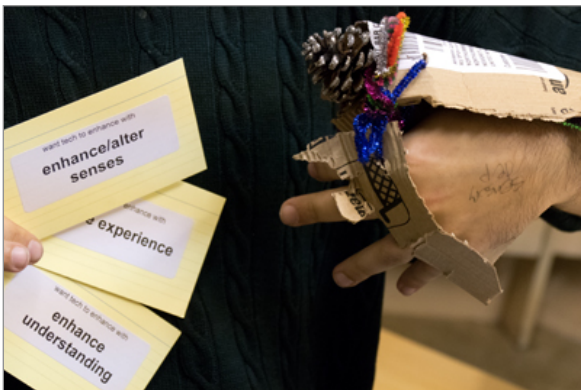


Figure C-4.b. ArtistiChanneler (glove, built)

Game cards drawn:

- Context: Creating
- Perceive: Tingles, twitching, gooseflesh
- Feel: Prayerful
- Feel: Loved
- Experience is: Mysterious

Supports: Creating the Context

- Physical/Activity
- Psychological

Supports: Living the Experience

- Perception: Consciousness/Control

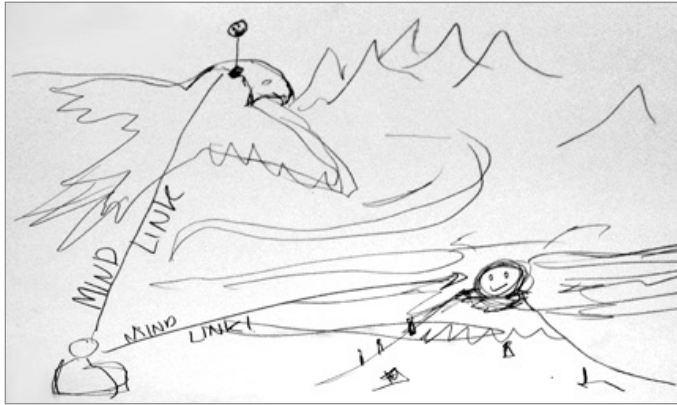


Figure C-5. Being the Mountain

Person participates in pilgrimage from perspectives wholly different from usual. Instead of travelling as a pilgrim, she uses mind links to experience *being* the venerated one (here, Mt Fuji), or viewing the pilgrimage from above.

Game cards drawn:

- Context: Outdoors
- Perceive: Out of body
- Feel: Curious
- Feel: Quiet of mind
- Experience is: Heavy, weighty

Supports: Creating the Context

- Psychological

Supports: Living the Experience

- Perception: Consciousness/Control

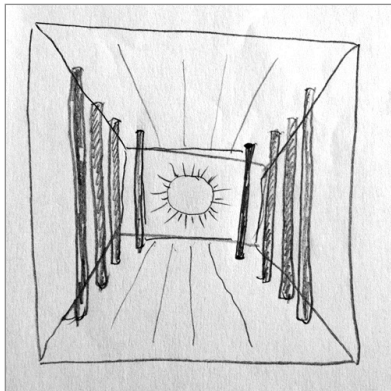


Figure C-6. Brightness Room

Enclosed room with sunshine-enhancing window.

Game cards drawn:

- Context: Light, daytime, bright space
- Perceive: N/A
- Feel: Exposed, vulnerable
- Feel: Meditative
- Experience is: Lengthy

Supports: Creating the Context

- Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: Voice(s) • Feel: Peaceful, calm, serene • Feel: Refreshed, renewed • Experience is: Gentle
<p>Figure C-7. Chant Helmet</p> <p>Helmet plays traditional chants from wearer-selected faith tradition. It adds input to other senses, to replicate a sense of place where chants have traditionally/historically been heard.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Crowd, strangers • Perceive: Beauty • Feel: Engrossed, engaged, absorbed • Feel: Reverent, worshipful • Experience is: Miraculous
<p>Figure C-8. ConvoEnlarger</p> <p>Enables all creatures and objects to join in the conversation.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Psychological

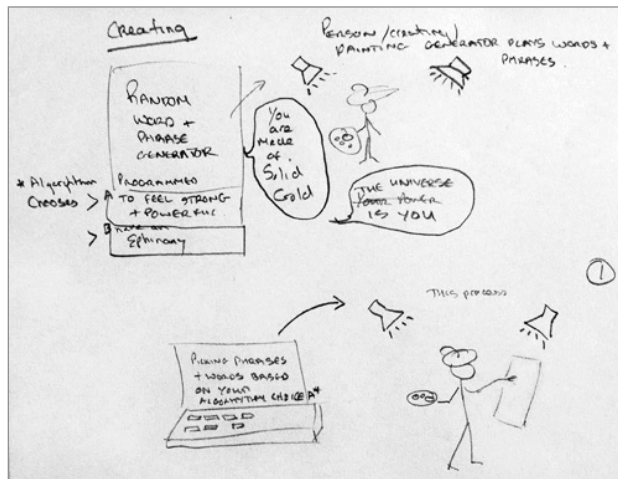


Figure C-9. Creativator

Artist or other creative type hears the device speak phrases or sentences that are generated randomly but are appropriate to the person and the activity. They stimulate and motivate creativity and guide the creative work.

Game cards drawn:

- Context: Creating
- Perceive: Guidance, direction, advice
- Feel/Have: Epiphany, realisation
- Feel: strong, Powerful
- Experience is: Strange, odd

Supports: Creating the Context

- Physical/Activity
- Psychological

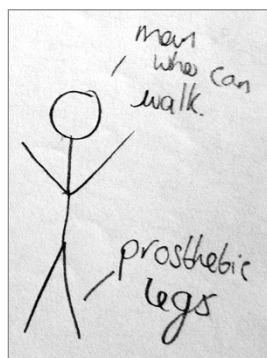


Figure C-10. DanceLegs

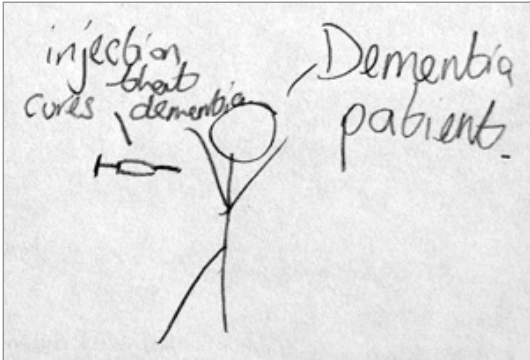
Prosthetic legs let the person walk, even dance. Being able to move so freely gives him hope and inspiration.


Game cards drawn:

- Context: Closed/Small Space
- Perceive: Movement, motion
- Feel: Loving
- Feel: Hopeful
- Experience is: Powerful

Supports: Creating the Context

- Physical/Activity
- Psychological

 <p>Figure C-11.DementiaJect</p> <p>An injection cures dementia, giving the person hope.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Closed/Small Space Perceive: Movement, motion Feel: Loving Feel: Hopeful Experience is: Powerful <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Psychological Physical/Activity
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 <p>Figure C-12.DichotomiCans</p> <p>Watering cans “Quiet” and “Curious” flank a small tree. Person meditates on scene, unaware that the “Curious” can contains poison.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Outdoors Perceive: Out of body Feel: Curious Feel: Quiet of mind Experience is: Heavy, weighty <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Spiritual Psychological
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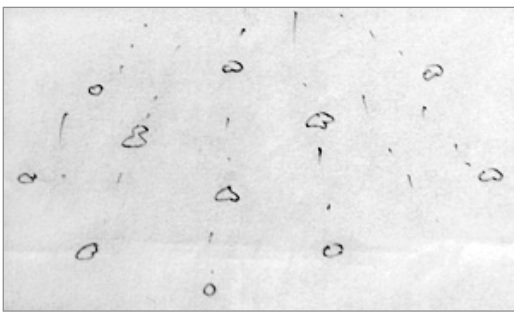
 <p>Figure C-13.Digital Snowflakes</p> <p>Snowflakes are projected onto a surface, falling gently and peacefully.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: N/A Perceives: Nothingness Feels: Curious Feels: Watched Experience is: Mystical <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Physical/Activity Temporal
--	--



Figure C-14. Dinner Table God

A god image rises out of the centre of a dinner table as people are dining.

Game cards drawn:

- Context: Spiritual practice
- Perceive: Divine being, God, Goddess
- Feel: Thunderstruck, stupefied
- Feel: Expansive, large
- Experience is: Sacred

Supports: Creating the Context

- Spiritual
- Social
- Temporal

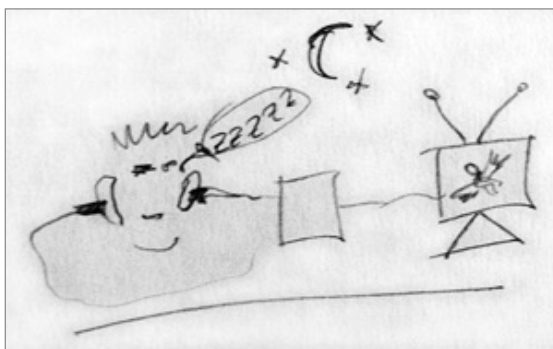


Figure C-15. Dream Recorder

Records dreams; person can watch them after awakening.

Game cards drawn:

- Context: N/A
- Perceive: Silence
- Feel: Distracted
- Feel: Ecstatic
- Experience is: Hazy, fuzzy

Supports: Integrating the Experience

- Reflection
- Sharing

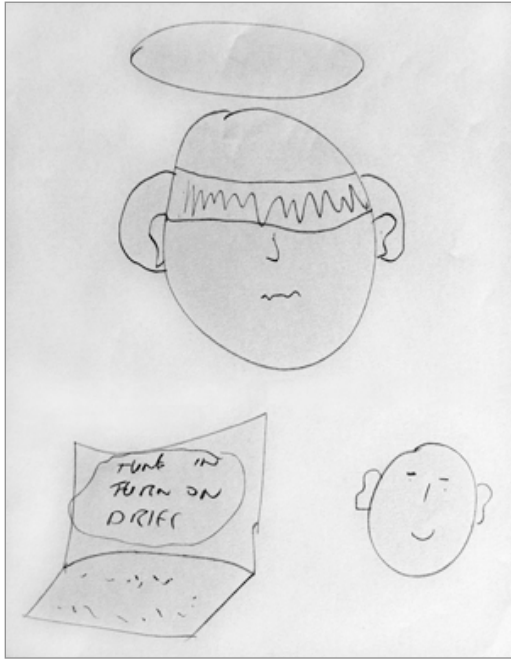


Figure C-16.a. DriftMask (drawing)

Mask provides an escape from unwanted, invasive thoughts, draws wearer out of anxieties and into calm. Can connect with spirit world, provide guidance from benign entities.



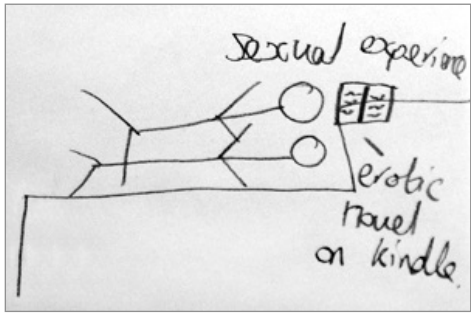
Figure C-16.b. DriftMask (built)

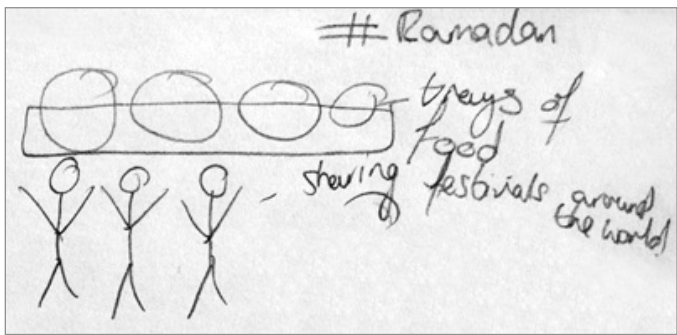
Game cards drawn:

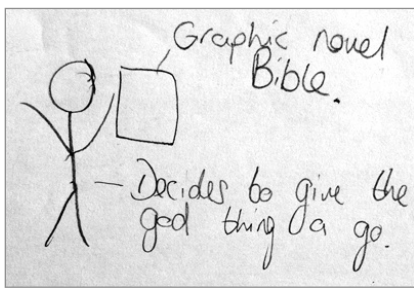
- Context: Sensory deprivation
- Perceive: Increased mental focus
- Feel: Humble, small, unworthy
- Feel: Longing, yearning
- Experience is: Spiritual

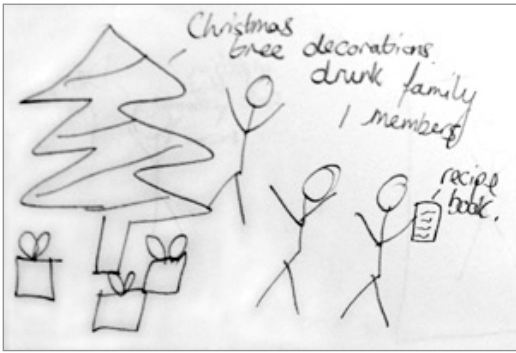
Supports: Creating the Context

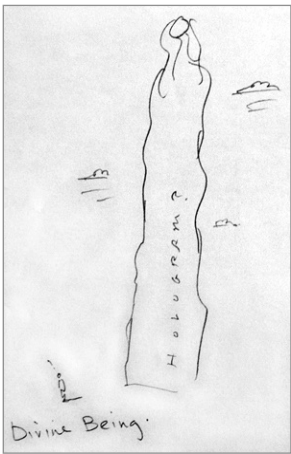
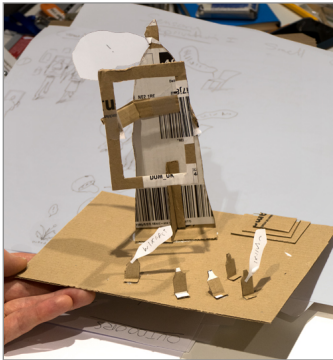
- Physical/Activity
- Psychological
- Spiritual

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Reading • Perceive: Heightened/altered senses • Feel: Compassion, empathy • Feel: Homecoming, belonging • Experience is: Shared
<p>Figure C-17. ErotiKindle</p> <p>e-book reader whose “e” stands for both “electronic” and “erotic”. For intimate partners, enhances their connection during sex.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Spiritual • Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and design • Perceive: Oneness, unity • Feel: Prayerful • Feel: Emotionless • Experience is: Eye-opening
<p>Figure C-18. Festival Chef</p> <p>Trays of food for festivals of world religions appear at the relevant times, enabling cultural/spiritual exchange.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social • Physical/Activity • Temporal

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Art and Design • Perceive: Oneness, unity • Feel: Prayerful • Feel: Emotionless • Experience is: Eye-opening
<p>Figure C-19. Graphic Novel Bible</p> <p>A Bible in graphic novel form appeals to a person and draws him in. He decides to try believing in God.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Reading • Perceive: Heightened/altered senses • Feel: Compassion, empathy • Feel: Homecoming, belonging • Experience is: Shared
<p>Figure C-20. Holiday Home Companion</p> <p>Electronic book helps family celebrate religious holiday, offering songs / recipes, assisting sober family members in dealing with drunk ones.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social • Physical/Activity • Temporal

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Spiritual practice • Perceive: Divine being, God, Goddess • Feel: Thunderstruck, stupefied • Feel: Expansive, large • Experience is: Sacred
<p>Figure C-21.a. Hologod (drawing)</p> <p>A hologram of a giant divine being shimmers to its worshippers, creating an aura of mystery.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Social
	<p>Figure C-21.b. Hologod (built, holding ArtFace)</p>

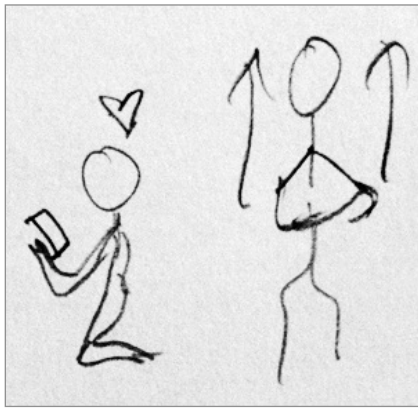


Figure C-22. Holy eBook

Kneeling, the person reads e-book of sacred text and prays. Feels connection with deceased loved one.

Game cards drawn:

- Context: Spiritual practice
- Perceive: Closeness
- Feel: Inspired
- Feel/Have: Insight
- Experience is: Indescribable

Supports: Creating the Context

- Spiritual

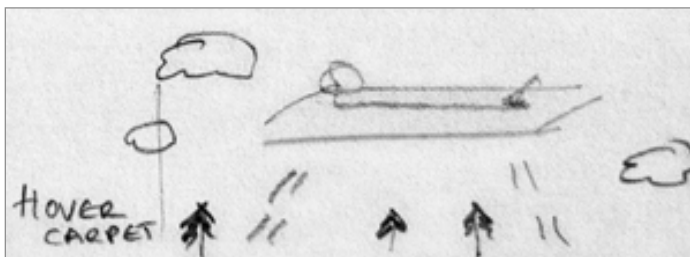


Figure C-23.a. Hover Carpet (drawing)

Person lies on carpet, which goes hovering above nature.

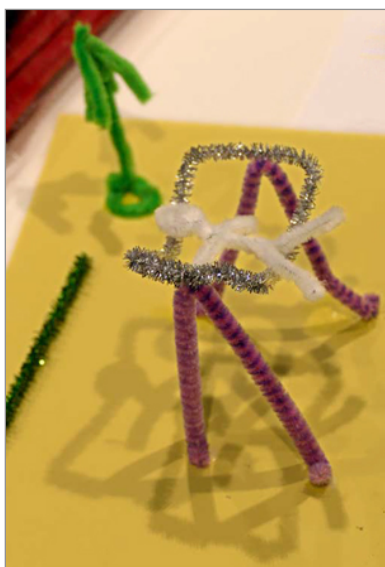


Figure C-23.b. Hover Carpet (built)

Game cards drawn:

- Context: Alone
- Perceive: Divinity, sacredness
- Feel: Sad, unhappy
- Feel: Engrossed, engaged, absorbed
- Experience is: Religious

Supports: Creating the Context

- Social
- Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Darkness, night-time Perceive: Immersion Feel: Afraid, frightened, alarmed Feel: Alert, attentive Experience is: Personal <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Physical/Activity
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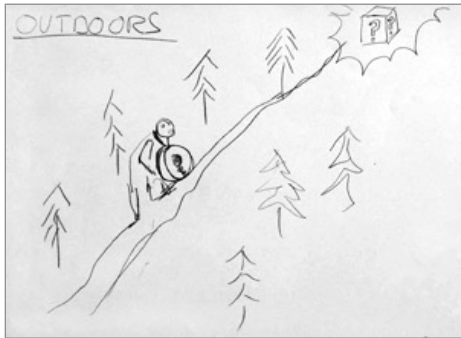
Figure C-24. ImmersiRoom

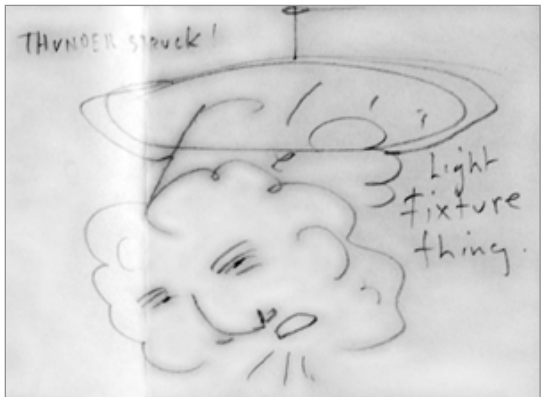
In a dark room, nonverbal sounds come randomly from various directions and small lights move randomly around the room. Person meditates on the input and feels to be in the moment.

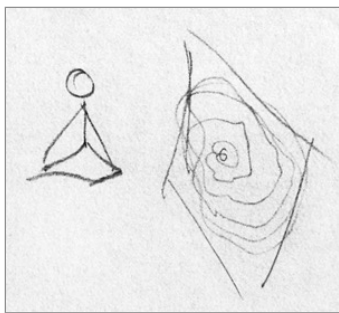
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: N/A Perceive: Something greater than oneself Feel: Released, unburdened Feel: Weak, powerless Experience is: Important <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Psychological Social
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Figure C-25. Inner Mirror Lake

Device scans the person's face, projects image of her inner self onto the surface of the lake, as if it were a reflection.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Outdoors • Perceive: Out of body • Feel: Curious • Feel: Quiet of mind • Experience is: Heavy, weighty
<p>Figure C-26. Intentionality Stone</p> <p>A millstone burdens a person as he trudges toward a luminous mystery box. The stone increases the intentionality of his labour and the value of accomplishing the goal.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Spiritual practice • Perceive: Divine being, God, Goddess • Feel: Thunderstruck, stupefied • Feel: Expansive, large • Experience is: Sacred
<p>Figure C-27. Light Fitting God</p> <p>A god head descends from a light fitting and speaks.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Temporal

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Alone • Perceive: Divinity, sacredness • Feel: Sad, unhappy • Feel: Engrossed, engaged, absorbed • Experience is: Religious
<p>Figure C-28. MandalaPulse</p> <p>Person sits and meditates by a giant screen that shows a pulsating mandala.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Spiritual • Psychological

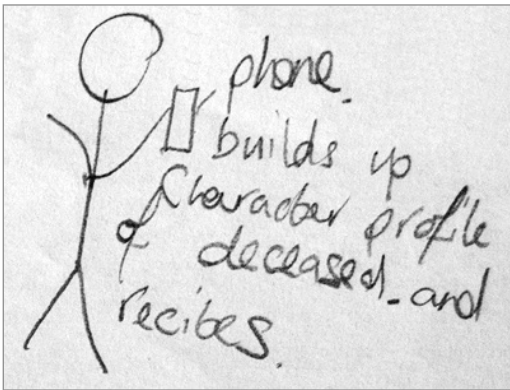


Figure C-29. Memorial Servicer

Mobile app records voices and written notes describing a deceased person and searches the Web for information about her, then builds up a character profile from which it writes and recites a eulogy.

Game cards drawn:

- Context: Art and design
- Perceive: Oneness, unity
- Feel: Prayerful
- Feel: Emotionless
- Experience is: Eye-opening

Supports: Creating the Context

- Spiritual
- Social

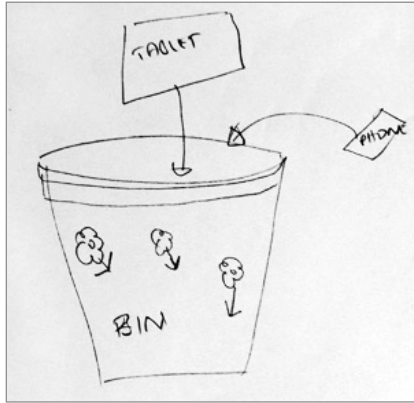


Figure C-30.a. MobiliBin (drawing)

A bin decorated with flowers receives mobile devices to help people eliminate their distractions.



Figure C-30.b. MobiliBin (built)

Game cards drawn:

- Context: N/A
- Perceives: Nothingness
- Feels: Curious
- Feels: Watched
- Experience is: Mystical

Supports: Creating the Context

- Physical/Activity
- Psychological

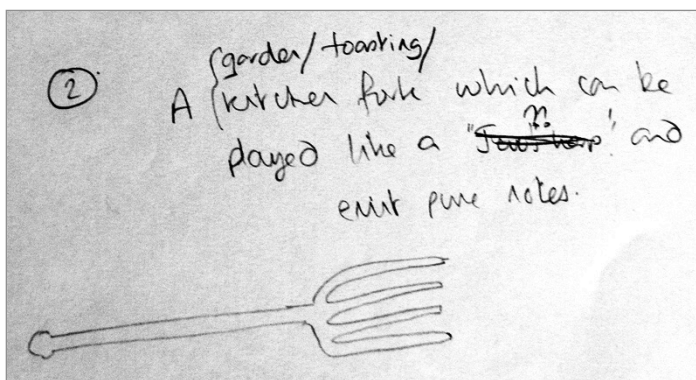


Figure C-31. Musical Fork

A large fork (e.g. for gardening), or a small fork (e.g. for toasting). Person strokes its tines and it emits pure tones.

Game cards drawn:

- Context: N/A
- Perceive: Darkness
- Feel: Speechless, lost for words
- Feel: Detached, distant
- Experience is: Simple

Supports: Creating the Context

- Physical/Activity
- Temporal

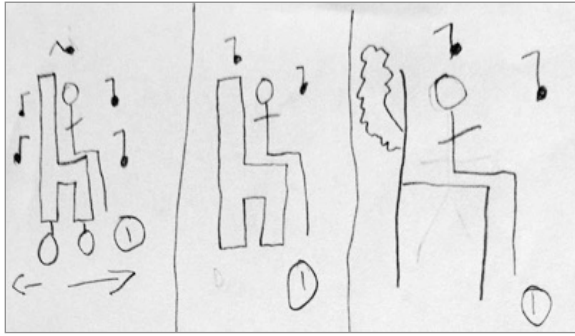


Figure C-32.a. MusicaLift (3 drawings)

Three versions of a chair, two of them mobile, that plays music.



Figure C-32.b. MusicaLift (built)

Game cards drawn:

- Context: Music
- Perceive: Ultimate
- Feel: Supported
- Feel: Transported
- Experience is: Intimate

Supports: Creating the Context

- Physical/Activity

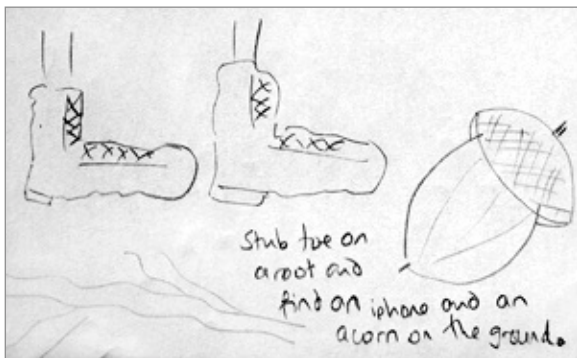


Figure C-33. Forest Boots

Wearing these boots, the person serendipitously finds objects of both technology and nature.

Game cards drawn:

- Context: N/A
- Perceive: Something greater than oneself
- Feel: Released, unburdened
- Feel: Weak, powerless
- Experience is: Important

Supports: Creating the Context

- Physical/Activity
- Temporal

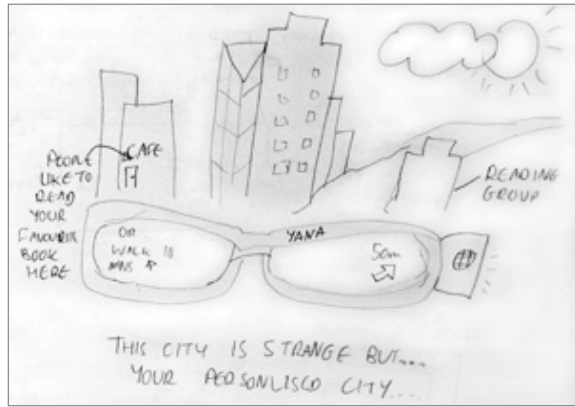


Figure C-34. Personalicity

Glasses give info and directions for spiritually meaningful experiences that the wearer can have in the city, and where she might find people who have similar views.

Game cards drawn:

- Context: Visual/ graphic info, message
- Perceive: Resonance
- Feel: Comforted
- Feel/Have: Insight
- Experience is: Helpful

Supports: Creating the Context

- Physical/Activity
- Spiritual
- Social

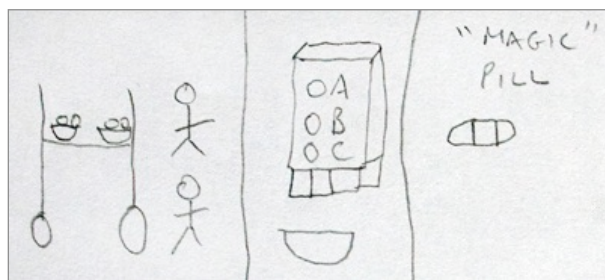


Figure C-35. PowerFlavour

Offers a powerful, surprising flavour when the person chooses a bowl (left), presses a button (centre), or takes a pill (right).

Game cards drawn:

- Context: N/A
- Perceive: New taste
- Feel: Irritated, annoyed, angry
- Feel: Anxious, nervous, worried
- Experience is: Profound, deep

Supports: Creating the Context

- Physical/Activity

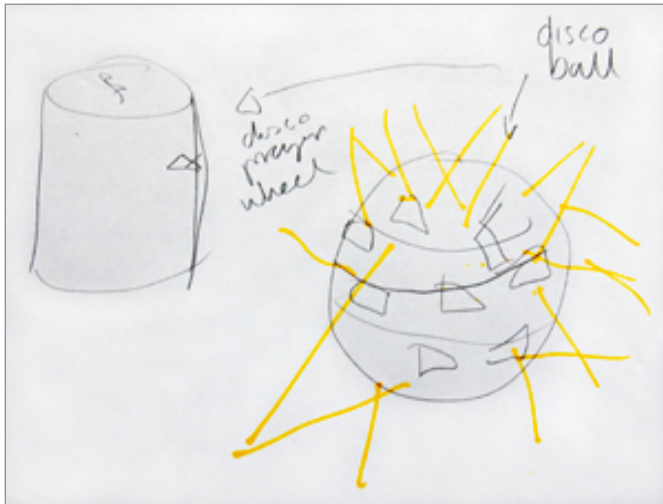


Figure C-36. Prayer Ball

A disco ball adorned with mantras and symbols of a Tibetan Buddhist prayer wheel¹²⁹ reflects light and appears to sparkle when it is spun. The rhythmic sparkle increases the hypnotic effect of the spinning and enhances the mind-stabilising effect of the practice.

Game cards drawn:

- Context: Rhythm
- Perceive: Brightness
- Feel: Joyful
- Feel: Fulfilled
- Experience is: Fun

Supports: Creating the Context

- Spiritual
- Physical/Activity
- Psychological

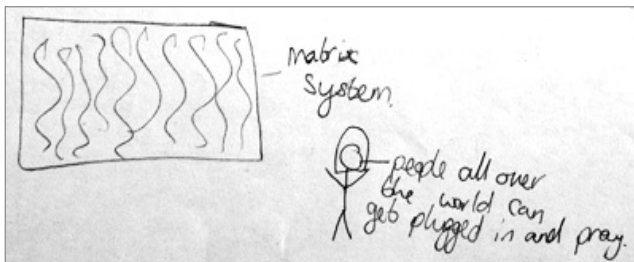


Figure C-37. Prayer Matrix

A “matrix” environment into which people all over the world plug their nervous systems so that they can pray together.

Game cards drawn:

- Context: Art and Design
- Perceive: Oneness, unity
- Feel: Prayerful
- Feel: Emotionless
- Experience is: Eye-opening

Supports: Creating the Context

- Spiritual
- Social

Supports: Lived Experience

- Perception

¹²⁹ http://en.wikipedia.org/wiki/Prayer_wheel

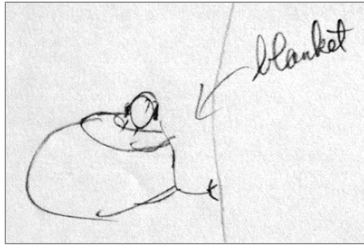


Figure C-38. ProtectoPod

Person nestles in an electrically powered pod that encloses him tightly and warms him. He is wrapped in a blanket and unable to move anything except his head. Headphones play spiritual music.

Game cards drawn:

- Context: Small, closed space
- Perceive: Being elsewhere
- Feel: Quiet of mind
- Feel: Protected
- Experience is: Life changing

Supports: Creating the Context

- Physical/Activity
- Psychological

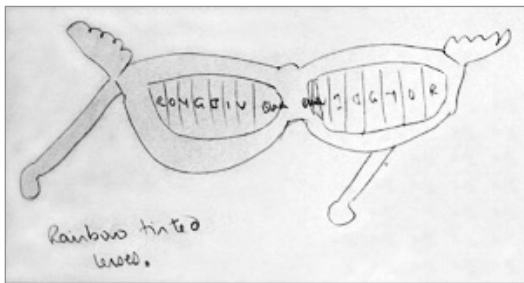


Figure C-39. Rainbow Glasses

The glasses have rainbow-tinted lenses that show the world in a favourable light.

Game cards drawn:

- Context: N/A
- Perceives: Nothingness
- Feels: Curious
- Feels: Watched
- Experience is: Mystical

Supports: Creating the Context

- Physical/Activity
- Psychological

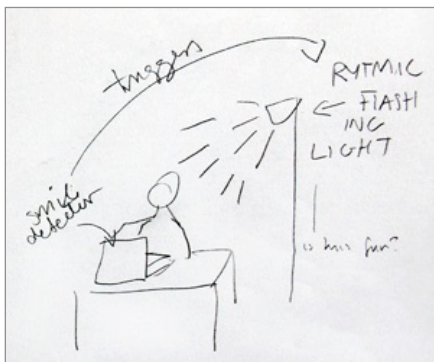


Figure C-40. Reward-A-Smile


A facial expression analyser uses the laptop's camera and triggers a rhythmic flashing light behind the person when it detects a smile. It aims to use reward to get the person to have fun, but it isn't clear that the flashing light is a reward.

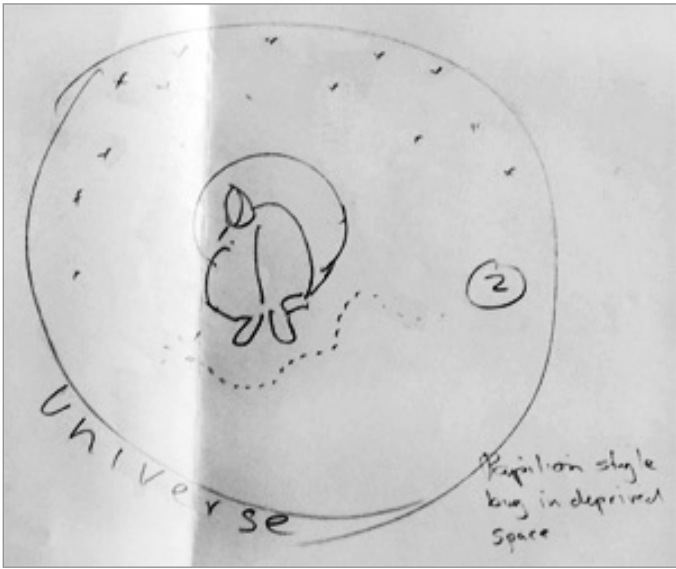
Game cards drawn:

- Context: Rhythm
- Perceive: Brightness
- Feel: Joyful
- Feel: Fulfilled
- Experience is: Fun

Supports: Creating the Context

- Psychological
- Temporal

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Rhythm • Perceive: Brightness • Feel: Joyful • Feel: Fulfilled • Experience is: Fun
<p>Figure C-41. RhythmiCave</p> <p>A person operates a hand cycle in a dark, cave-like room. The cycle powers a blinding light that pulses with the rhythm of the cycling motion.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Sensory deprivation • Perceive: New smell • Feel: Excited, energised, alive • Feel/Have: Meaning, purpose • Experience is: Wonderful
<p>Figure C-42. RoboBug</p> <p>Person sits in a solitary-confinement cell, in the dark. A robot bug crawls in and around, blinking and emitting earthy smells.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity

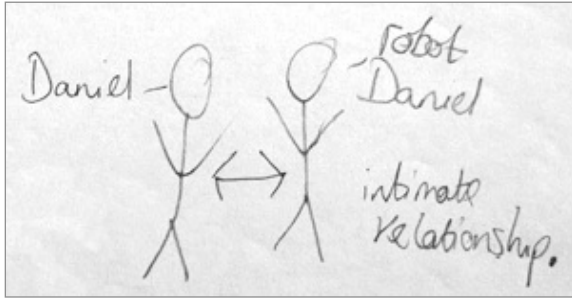


Figure C-43.a. Robot Daniel (drawing)

A robotic clone of himself gives Daniel an intimate partner with whom sexual union creates unity and oneness.



Figure C-43.b. Robot Daniel (built)

Game cards drawn:

- Context: Art and Design
- Perceive: Oneness, unity
- Feel: Prayerful
- Feel: Emotionless
- Experience is: Eye-opening

Supports: Creating the Context

- Social
- Spiritual
- Physical/Activity



Figure C-44. Sacred Space Finder (built¹³⁰)

A tablet app shows a map with indicators only of spiritual places. It provides information about these places and the opportunity to discuss them with other users. It enables people with common interests to find each other and meet.

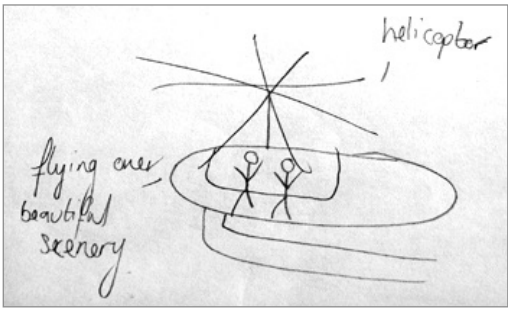
Game cards drawn:

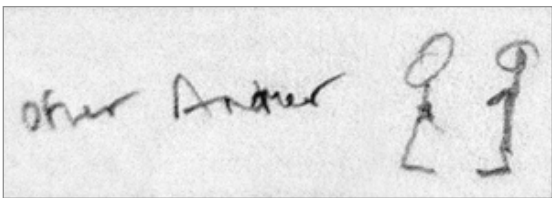
- Context: N/A
- Perceive: N/A
- Feel: N/A
- Feel: N/A
- Experience is: N/A

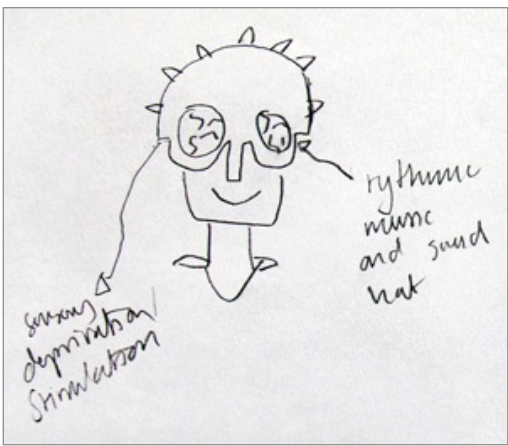
Supports: Creating the Context

- Physical/Activity
- Spiritual
- Social

¹³⁰ The Sacred Space Finder idea did not begin with a drawing but considered only the desire card “discover spiritual centres/places”.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Closed/Small Space • Perceive: Movement, motion • Feel: Loving • Feel: Hopeful • Experience is: Powerful
<p>Figure C-45.SceneriCopter</p> <p>A helicopter takes people flying over beautiful, inspiring scenery of Nature.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Alone • Perceive: Divinity, sacredness • Feel: Sad, unhappy • Feel: Engrossed, engaged, absorbed • Experience is: Religious
<p>Figure C-46.Self Clone</p> <p>Person meets a clone of himself.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Psychological

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Rhythm • Perceive: Brightness • Feel: Joyful • Feel: Fulfilled • Experience is: Fun
<p>Figure C-47.SensoRhythm Hat</p> <p>Helmet controls person's visual and auditory input, alternates sensory deprivation with rhythmic light and sound.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Social

<p>The sketch depicts a person sitting in a pod-like structure. To the left is a foam cube. Below the pod is a hand with a '3)' symbol. In the center, there are clouds, rain falling from a circle labeled 'A' containing 'a. b. c.' and 'd. e. f.', and a sun. To the right, there is a circle labeled 'A' containing 'a. b. c.' and 'd. e. f.', and another circle labeled 'A'. At the bottom, there are wavy lines representing a stream. The text 'Sensory car wash' is written in the bottom left corner.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: New touch • Feel: Creative • Feel: N/A • Experience is: Vivid <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity
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Figure C-48. Sensory Car Wash

The person sits or lies in a comfortable space (top row left to right: foam cube, chair, pod) whilst the elements — wind, sun, rain, flowing stream — wash over her and delight her senses.

<p>The sketch is titled 'SENSORY DEPRIVATION'. It shows a person wearing a 'Silence hood' inside a room with curtains. A dog is sitting next to the person. The text at the bottom reads: '1 WEEK RESORT AT THE SENSORY DEPRIVATION WITH AN ANIMAL OF YOUR CHOICE'.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Sensory deprivation • Perceive: Intimacy • Feel: Welcome • Feel: Surprised, startled • Experience is: Real <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Physical/Activity • Temporal
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Figure C-49. Sensory Deprivation Resort

A resort that envelops the person in sensory deprivation alternating with animal companionship, providing all other needs so that the person can immerse.

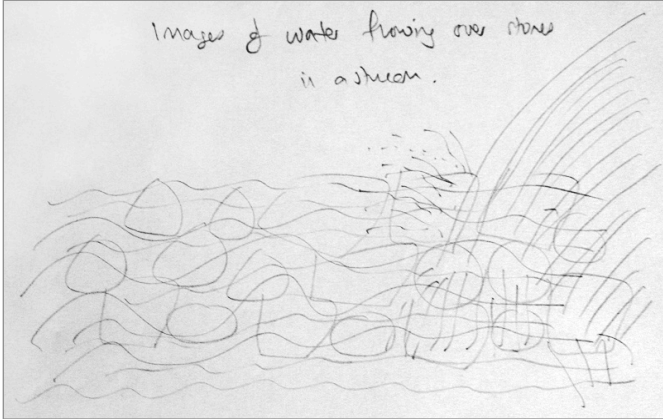
	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: N/A• Perceive: Darkness• Feel: Speechless, lost for words• Feel: Detached, distant• Experience is: Simple <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Physical/Activity• Temporal
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Figure C-50. Showerfall

Images of water falling onto stones are projected onto the bath while the person showers.


	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: N/A• Perceive: Silence• Feel: Distracted• Feel: Ecstatic• Experience is: Hazy, fuzzy <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Physical/Activity• Psychological
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Figure C-51. SketHelper

Reads drawing in person's mind and helps turn it into a sketch. Makes sketching flow more smoothly.

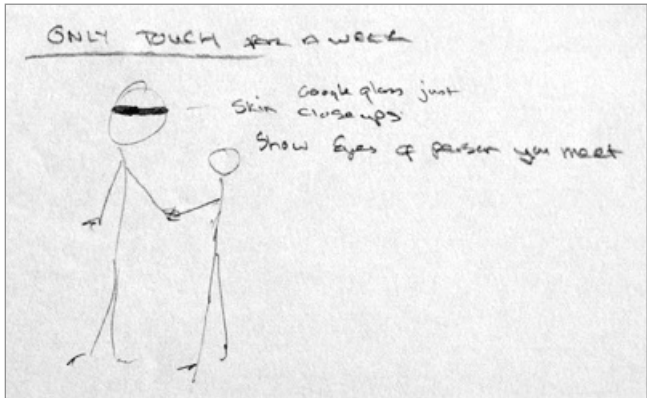


Figure C-52. Skinlarger Glasses

Glasses show only a closeup of another person's skin until the people touch; then they show the other person's eyes.

Game cards drawn:

- Context: Sensory deprivation
- Perceive: Intimacy
- Feel: Welcome
- Feel: Surprised, startled
- Experience is: Real

Supports: Creating the Context

- Social
- Physical/Activity

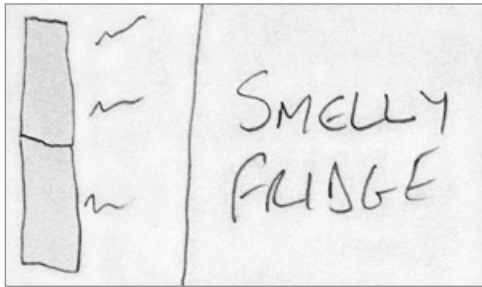


Figure C-53. Smelly Fridge

Fridge emits strong smells and cold air. Person feels overwhelmed and becomes more open to awe.

Game cards drawn:

- Context: Sensing smells
- Perceive: Becoming cool, cold
- Feel: Awe and wonder
- Feel: Reverent, worshipful
- Experience is: Intense

Supports: Creating the Context

- Physical/Activity

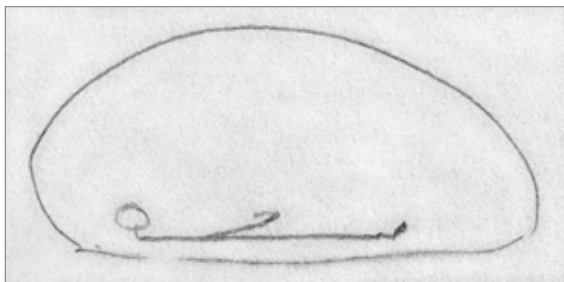


Figure C-54. SolituDome

Person lies inside dome, is alone with thoughts.

Game cards drawn:

- Context: Alone
- Perceive: Divinity, sacredness
- Feel: Sad, unhappy
- Feel: Engrossed, engaged, absorbed
- Experience is: Religious

Supports: Creating the Context

- Social

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Sensory deprivation Perceive: New smell Feel: Excited, energised, alive Feel/Have: Meaning, purpose Experience is: Wonderful <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Physical/Activity
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Figure C-55.Spirit Bomb

A “sensory bomb” arrives from nowhere, bringing a mysterious new smell.

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Spiritual practice Perceive: Closeness Feel: Inspired Feel/Have: Insight Experience is: Indescribable <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Spiritual Physical/Activity
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Figure C-56.Spirit Fan

A fan blows a spirit breeze over a meditating person, who has a sudden insight.

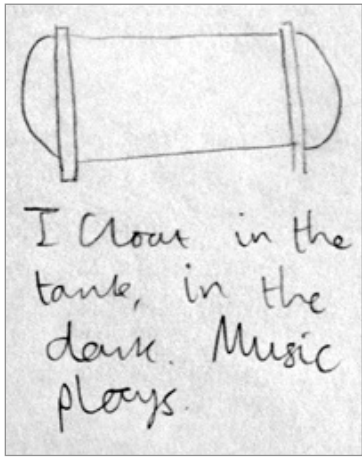
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Darkness, night-time Perceive: Immersion Feel: Afraid, frightened, alarmed Feel: Alert, attentive Experience is: Personal <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Social Physical/Activity
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Figure C-57.Spiritual Immersifier

Person lies in the tank, surrounded by music/darkness.

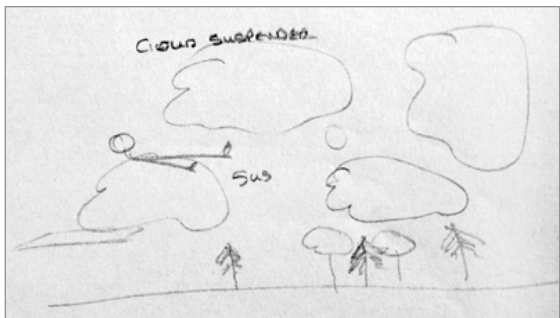
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Alone Perceive: Divinity, sacredness Feel: Sad, unhappy Feel: Engrossed, engaged, absorbed Experience is: Religious <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Social Physical/Activity
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Figure C-58.Surrender Cloud

Person floats above nature, lying atop a cloud and surrendering to wherever it takes her.

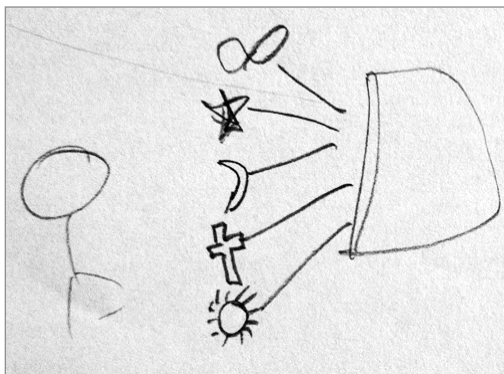
	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Symbols Perceive: Clarity Feel: Pensive, thoughtful Feel: Integrated, whole, healed Experience is: Private <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Spiritual Temporal
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Figure C-59.Symbol Monitor

Symbols randomly appear on the monitor on which the person is working.

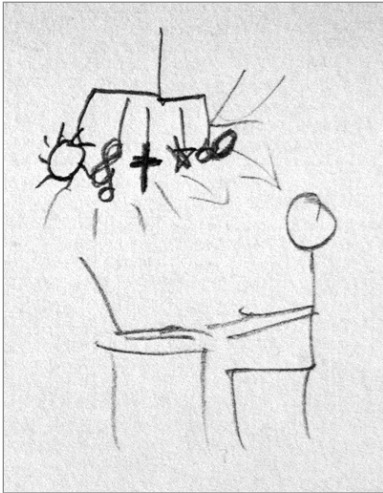


Figure C-60. Symbol Mobile

A mobile of glowing, sparkling symbols hangs from the ceiling, hovering in person's peripheral vision.

Game cards drawn:

- Context: Symbols
- Perceive: Clarity
- Feel: Pensive, thoughtful
- Feel: Integrated, whole, healed
- Experience is: Private

Supports: Creating the Context

- Spiritual
- Temporal

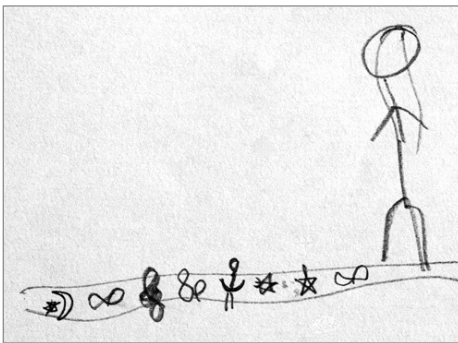


Figure C-61.a. Symbol Path (drawing)

A person walks a path lined with symbols. Each symbol glows more brightly as she approaches, fades as she passes.



Figure C-61.b. Symbol Path (built)

Game cards drawn:

- Context: Symbols
- Perceive: Clarity
- Feel: Pensive, thoughtful
- Feel: Integrated, whole, healed
- Experience is: Private

Supports: Creating the Context

- Spiritual
- Physical/Activity

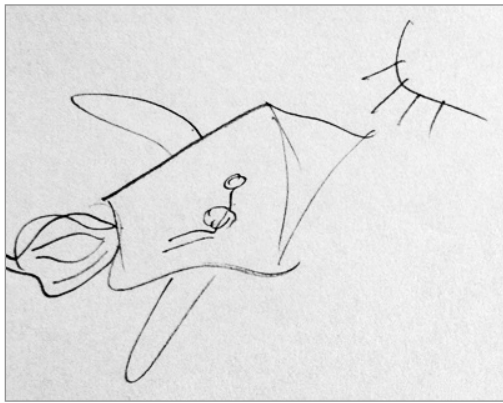


Figure C-62. Transformation Rocket

Person is protected inside a spaceship that takes her on a long journey to another world.

Game cards drawn:

- Context: Small, closed space
- Perceive: Being elsewhere
- Feel: Quiet of mind
- Feel: Protected
- Experience is: Life changing

Supports: Creating the Context

- Social
- Physical/Activity
- Psychological

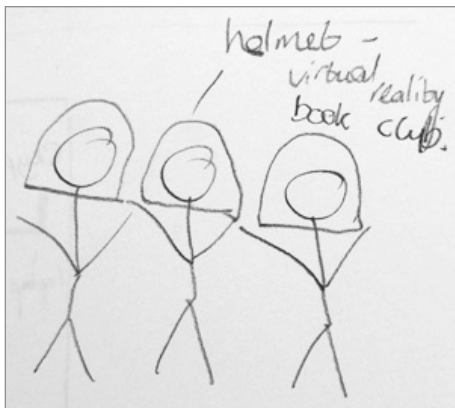


Figure C-63. Virtual Reality Book Club

VR headsets enable shared experience of book and discussion.

Game cards drawn:

- Context: Reading
- Perceive: Heightened/altered senses
- Feel: Compassion, empathy
- Feel: Homecoming, belonging
- Experience is: Shared


Supports: Creating the Context

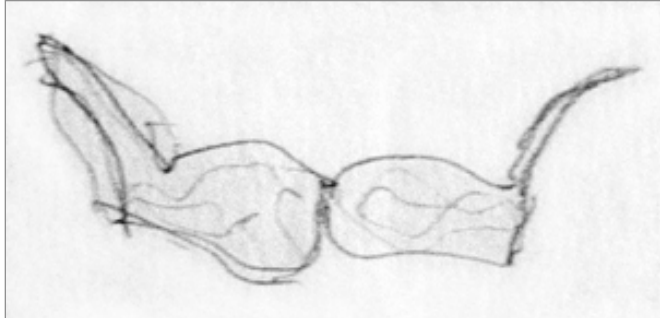
- Social
- Physical/Activity

<p>A hand-drawn sketch of a person in a prison cell. The person is sitting at a desk with a laptop. A Skype icon is next to the person. The text 'prison cell' is written above the person. The text 'Skype' is written above the icon. The text 'laptop' is written below the laptop.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Closed/Small Space Perceive: Movement, motion Feel: Loving Feel: Hopeful Experience is: Powerful
<p>Figure C-64. VisitMe</p> <p>A laptop with Skype travels round a prison, enabling prisoners to connect with loved ones who cannot visit, to speak with a spiritual leader, or to attend a service.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Social Spiritual

<p>A hand-drawn sketch of a person standing next to a wall. The person is attaching multi-colored blocks to the wall. The text 'I attach the multi-coloured blocks to the wall. It may or may not create a beautiful image' is written below the person. The text 'Could this be a computer game?' is written to the right of the person. A question mark is written above the person.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Creating Perceive: Loss of control of body Feel: Moved, stirred Feel: Fascinated Experience is: N/A
<p>Figure C-65. Wall of Colours</p> <p>Person attaches multi-coloured blocks to a wall, in random arrangements that may be meaningful or not, beautiful or not.</p> <p>Alternative: This could be a computer game.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Physical/Activity Psychological

<p>A hand-drawn sketch of a person in a prison cell. The person is looking out through prison bars. The text 'THE WORLD' is written above the person. The text 'A device sends the smells of the world, both good and bad, through the prison bars.' is written below the person.</p>	<p>Game cards drawn:</p> <ul style="list-style-type: none"> Context: Sensory deprivation Perceive: New smell Feel: Excited, energised, alive Feel/Have: Meaning, purpose Experience is: Wonderful
<p>Figure C-66. WorldScents</p> <p>A device sends the smells of the world, both good and bad, through the prison bars.</p>	<p>Supports: Creating the Context</p> <ul style="list-style-type: none"> Physical/Activity Psychological

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: Spiritual practice • Perceive: Divine being, God, Goddess • Feel: Thunderstruck, stupefied • Feel: Expansive, large • Experience is: Sacred <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Physical/Activity • Psychological
<p>Figure C-67. World Surfboard</p> <p>Board carries person wherever and whenever he wants to go, freely. Exhilarated, person marvels at where he goes and what he sees.</p>	

	<p>Game cards drawn:</p> <ul style="list-style-type: none"> • Context: N/A • Perceive: Silence • Feel: Distracted • Feel: Ecstatic • Experience is: Hazy, fuzzy <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none"> • Social • Physical/Activity • Psychological
<p>Figure C-68. X-Raytor</p> <p>Glasses let the person see through other people's clothes, creating a sexually intimate connection.</p>	

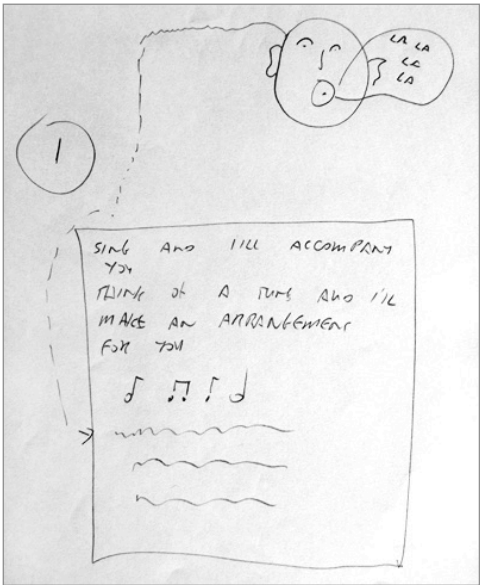
	<p>Game cards drawn:</p> <ul style="list-style-type: none">• Context: Singing, playing music• Perceive: Vision(s), images• Feel: Fantastic, wonderful• Feel: Happy, glad• Experience is: Familiar, frequent <hr/> <p>Supports: Creating the Context</p> <ul style="list-style-type: none">• Physical/Activity• Psychological
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Figure C-69. YourArranger

Reads the person's mind. Plays real-time accompaniment to whatever he sings; arranges any tune he thinks. Creates ambient music from phrases that come into the person's mind. Picks up his mood and plays music to lift it. Person feels peaceful.

Glossary

Abbreviations and Acronyms

Abbreviation	Expansion
ACM	Association for Computing Machinery
ACM-DL	ACM Digital Library
APOD	Astronomy Picture of the Day
GSR	Galvanic skin response
ICT	Information and communications technology
MIDI	Musical Instrument Digital Interface
MP3	MPEG-2 Audio Layer III (MPEG = Moving Picture Experts Group)
NDE	Near-death experience
SIGCHI	ACM Special Interest Group on Computer and Human Interaction
OED	Oxford English Dictionary
TBD	to be determined
UU	Unitarian Universalism
VISOR	“Visual Instrument and Sight Organ Replacement” https://en.wikipedia.org/wiki/Geordi_La_Forge (see definition, below)

Words and Phrases

Term	Explication or Link
Abrahamic religion	a religion that considers Abraham one of its key early figures. The main Abrahamic religions are Judaism, Christianity, and Islam.
a cappella	music sung without instrumental accompaniment
archetype	“a collectively-inherited unconscious idea, pattern of thought, image, etc., that is universally present in individual psyches, as in Jungian psychology” or “a constantly recurring symbol or motif in literature, painting, or mythology” https://en.wikipedia.org/wiki/Archetype

Term	Explication or Link
Astronomy Picture of the Day	A service of the US National Aeronautics and Space Administration, which shows a different astronomical image every day. “Each day a different image or photograph of our fascinating universe is featured, along with a brief explanation written by a professional astronomer.” https://apod.nasa.gov/apod/astropix.html
augmented reality	“a live direct or indirect view of a physical, real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data” https://en.wikipedia.org/wiki/Augmented_reality
baptism	“a Christian sacrament of admission and adoption, almost invariably with the use of water, into the Christian Church generally” https://en.wikipedia.org/wiki/Baptism
baptism by immersion	baptism by immersing the entire body in water, practised in some denominations of Christianity
Bible Week	a week of intensive focus on the Bible. See, for example, https://bibleweek.eveyevents.com/
binaural beats	http://en.wikipedia.org/wiki/Binaural_beats
Christian Union	http://www.uccf.org.uk/
church of origin	the Christian denomination in which a person was brought up. See <i>faith of origin</i> .
doppelgänger	https://en.wikipedia.org/wiki/Doppelg%C3%A4nger
design fictioneering	“The act of crafting a fiction towards a specific designerly outcome. A combination of the words 'design fiction' and 'engineering'.” (Lyckvi, 2016)
Eid al-Fitr	https://en.wikipedia.org/wiki/Eid_al-Fitr
entheogen	“A chemical substance, typically of plant origin, that is ingested to produce a nonordinary state of consciousness for religious or spiritual purposes.” https://en.oxforddictionaries.com/definition/us/entheogen
faith of origin	the faith tradition in which a person was brought up.
faith tradition	a substitute for “religion” that is more general and does not necessarily imply belief in a deity or supreme being, but does include views and practices that have some tradition behind them. May include agnosticism, humanism, or atheism.
family of origin	The family in which the participant grew up.

Term	Explication or Link
Giubileo	Italian for “Jubilee”. Wikipedia says: “In Judaism and Christianity, the concept of the Jubilee is a special year of remission of sins and universal pardon.” The Jubilee has special meaning in Catholicism: Rome is decorated and many Catholics make pilgrimage there. https://en.wikipedia.org/wiki/Jubilee_(Christianity) https://it.wikipedia.org/wiki/Giubileo_universale_della_Chiesa_cattolica (in Italian)
graphic novel	https://en.wikipedia.org/wiki/Graphic_novel
Hajj	the annual period of Muslim pilgrimage to Makkah. https://en.wikipedia.org/wiki/Hajj
hashtag	“A word or phrase preceded by a hash sign (#), used on social media websites and applications, especially Twitter, to identify messages on a specific topic.” https://en.oxforddictionaries.com/definition/hashtag
Healing Touch	http://www.healingtouchprogram.com/
Holy Spirit / Holy Ghost	one of the three “persons” that constitute God in most of Christianity (the other two being God the Father and Jesus the Son). https://en.wikipedia.org/wiki/Holy_Spirit_in_Christianity
Hubble	the Hubble Space Telescope. According to NASA, it is “the first major telescope to be placed in space”. https://www.nasa.gov/mission_pages/hubble/story/index.html
Joys and Concerns	In the Unitarian Universalist tradition, “our Sunday morning sharing of the highs and lows of our lives” (Skinner, 2000)
Manjushri	the “Buddha of Wisdom”, on whom Buddhists often meditate. http://cubuddhism.pbworks.com/w/page/24940384/Manjushri%20-%20Bodhisattva%20of%20Wisdom
mandala	https://en.wikipedia.org/wiki/Mandala
mantra	“a word or sound repeated to aid concentration in meditation” https://en.oxforddictionaries.com/definition/mantra
medium reading	a psychic reading that involves communication with “with the spirits [of the deceased] through descriptions of information and images which often are personal in nature to their clients.” http://www.psychokinesispowers.com/difference-between-psychic-and-medium
mitzvah	in Judaism, a commandment or a good deed. https://www.merriam-webster.com/dictionary/mitzvah
monotheism	the belief in one god (as opposed to multiple gods).

Term	Explication or Link
names and attributes	<p>“Allah has described Himself in the Quran through His Names and Attributes. Muslims believe that studying these Names and Attributes is one of the most effective ways of strengthening one’s relationship with God.”</p> <p>https://www.whyislam.org/allah/god/names-and-attributes-of-allah/</p>
near-death experience (NDE)	<p>a type of transcendent experience, NDEs are “...vivid, life-changing experiences occurring to people who come close to death” (Moore & Greyson, 2017).</p> <p>https://med.virginia.edu/perceptual-studies/wp-content/uploads/sites/360/2017/03/NDE-85-MCQ-ConCog.pdf</p>
neuropathy	<p>pain in the extremities (usually the hands and feet) caused by nerve damage. It is a common side effect of chemotherapy.</p>
neurotheology	<p>Andrew Newberg, a pioneer in the field, describes neurotheology as “the neurological study of religious and spiritual experiences”.</p> <p>http://www.andrewnewberg.com/</p>
noetic quality	<p>“a cognitive advancement in understanding the world” (Z. Chen et al., 2011, p. 329)</p>
numinous	<p>The OED gives three definitions for <i>numinous</i>:</p> <ol style="list-style-type: none"> 1. a. Of or relating to a numen; revealing or indicating the presence of a divinity; divine, spiritual. 1. b. In extended use: giving rise to a sense of the spiritually transcendent; (esp. of things in art or the natural world) evoking a heightened sense of the mystical or sublime; awe-inspiring. 2. Psychol. Relating to the experience of the divine as awesome or terrifying; designating that which governs the subject outside his or her own will. (Numinous, 2013) <p>I use it with all of these meanings.</p>
Passover seder	<p>https://en.wikipedia.org/wiki/Passover_Seder</p>
peripheral vision	<p>“a part of vision that occurs outside the very center of gaze”</p> <p>https://en.wikipedia.org/wiki/Peripheral_vision</p>
Pictionary	<p>http://en.wikipedia.org/wiki/Pictionary</p>
poetry slam	<p>“a competition in which poets read or recite original work”</p> <p>https://en.wikipedia.org/wiki/Poetry_slam</p>
polyphony	<p>“the simultaneous combination of two or more tones or melodic lines... Usually,...polyphony is associated with counterpoint, the combination of distinct melodic lines”</p> <p>https://www.britannica.com/art/polyphony-music</p>
prayer wheel	<p>http://en.wikipedia.org/wiki/Prayer_wheel</p>

Term	Explication or Link
Precepts (Buddhist)	ethical principles that guide how a Buddhist should live: "...in maintaining the Precepts one is training oneself to behave as a buddha would behave. It's not just a matter of following or not following rules." https://www.thoughtco.com/the-buddhist-precepts-450107
prereflexive	"Descriptive of an individual's immediate, uncritical reaction to something prior to any conscious evaluation. For example, when someone knows that they enjoyed a film without knowing why." http://www.oxfordreference.com/view/10.1093/acref/9780199568758.001.0001/acref-9780199568758-e-2118#
psychic services	in contrast to a medium's communication with spirits (presumably of the dead), "psychics do not have any standard set of rituals; they can work with astrological charts, palms or tarot cards etc. ... Psychics use the vibrational energy of a place, person or thing to receive information pertaining to a client." http://www.psychokinesispowers.com/difference-between-psychic-and-medium
Ramadan fast	a dawn-to-dusk fast practised by observant Muslims during the holy month of Ramadan. See http://www.beliefnet.com/love-family/holidays/why-do-muslims-fast-during-the-month-of-ramadan.aspx
representational art	http://www.visual-arts-cork.com/representational-art.htm
rinpoche	"an honorific term applied to lamas in Vajrayana (Tibetan) Buddhism. It literally means 'greatly precious' and is given to masters who are highly valued for their spiritual knowledge." http://www.buddhismdictionary.org/Buddhism-Dictionary/Rinpoche
Seven Principles	the foundational beliefs of Unitarian Universalism — http://www.uua.org/beliefs/what-we-believe/principles
Snakes and Ladders	http://en.wikipedia.org/wiki/Snakes_and_Ladders
social justice	"Justice in terms of the distribution of wealth, opportunities, and privileges within a society." https://en.oxforddictionaries.com/definition/social_justice
Sōtō-Zen	a school of Buddhism in which sitting meditation "is the core of the practice." http://www.zen-buddhism.net/two-schools-of-zen/soto-zen.html
Southern Baptist	a conservative wing of the Baptist denomination in the USA.

Term	Explication or Link
speaking in tongues	“Speaking in tongues... involves speaking in an unknown, yet realistic-sounding language of which the speaker has no previous knowledge. It consists of indecipherable strings of words and phrases which sound more language-like than simple ‘gibberish.’ William Samarin (1972: 2) defines it as ‘a meaningless but phonologically structured human utterance believed by the speaker to be a real language but bearing no systematic resemblance to any natural language’. It is important to emphasize that the language spoken by a tongues speaker is not a known language. Before becoming a tongues speaker, a person has no prior knowledge of this language and will not develop any comprehension of what is being said as they continue to speak in tongues, though they will almost certainly become familiar with the sound of their language and use the same language as they continue the practice...” (Singleton, 2014, p. 383)
spirit guide	“an entity that remains as a disincarnate spirit to act as a guide or protector to a living incarnated human being.” https://en.wikipedia.org/wiki/Spirit_guide
tai chi	“a martial art and fitness regime using the Taoist principles of Yin and Yang to develop a healthy body and tranquil mind” http://www.taichiunion.com/what-is-tai-chi-chuan
Tarot reading	a divination method that uses Tarot cards. See https://en.wikipedia.org/wiki/Tarot
thought distancing	“a mindfulness technique that requires one not to react in response to his/her thoughts but to be aware of them and observe them while they go away” (Chittaro & Vianello, 2014)
trans-rational	“Going beyond or surpassing what is rational” (Transrational, 2014)
Trinity	the belief in most of Christianity that God comprises three “persons”: the Father ¹³¹ (usually what is meant by “God”), the Son (Jesus Christ), and the Holy Spirit (or Holy Ghost).
Unitarian Universalism	a faith tradition that grew out of liberal Christianity. “Our shared covenant... supports ‘the free and responsible search for truth and meaning.’ [which] has led us to embrace diverse teachings from Eastern and Western religions and philosophies.” https://www.uua.org/beliefs/what-we-believe
VISOR	“In the Star Trek fictional universe, a VISOR is a device used by the blind to artificially provide them with a sense of sight. A thin, curved device worn over the face like a pair of sunglasses, the VISOR scans the electromagnetic spectrum, creating visual input, and transmits it into the brain of the wearer via the optic nerves.” https://en.wikipedia.org/wiki/Geordi_La_Forge

¹³¹ Not to be confused with “the Holy Father”, which is an honourific given to the Pope.

Term	Explication or Link
worship,	a feeling or expression of reverence for a deity or something else greater than oneself. Traditionally, worship regarded a deity (see e.g. https://en.oxforddictionaries.com/definition/worship), but in more recent times it has come to have a broader meaning, especially in faith traditions that do not postulate a deity.
worship service	a formal ceremony or event expressing worship

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