

Dance for the dead: Belief, anxiety, and social cohesion in the Japanese Bon Festival

By

Briar Irving

A thesis

Submitted to the Victoria University of Wellington

In fulfillment of the requirements for the degree of

Master of Science

Victoria University of Wellington

2020

Abstract

This thesis aimed to investigate the role of belief in reducing anxiety and increasing social cohesion outcomes of collective ritual. To accomplish this, we developed a belief scale specific to the Japanese Bon Festival, based on ethnographic research and focus groups. We also present a modern ethnographic account of the Bon Festival, one of the most widely celebrated festivals in Japan. Belief in the spiritual background on the Bon Festival did not seem to have an effect on the anxiety and social cohesion outcomes of participation in the ritual. This suggests that the existence of meaning is enough and belief in it is not important for gaining these benefits.

Acknowledgements

I would like to take this time to thank those who have helped me to achieve this research. My supervisor Dr. Ron Fischer graciously agreed to support me throughout his sabbatical and while we both juggled time zones he remained a skype call or email away when I needed to talk out a block. He always supported my ideas and helped me to realise them when logistics got tough.

I could never have made it this far without the support of Dr. Masaki Yuki, Dr. Christopher Kavanagh, and the entire Social Ecology and Psychology Lab at Hokkaido University. Their willingness to help me with translation and communication, along with invaluable advice on doing field work in rural Japan is what allowed me to execute this work without having a complete breakdown.

Finally, thank you to my family and friends, who put up with my constant complaints about having to actually write my research down.

Contents

INTRODUCTION	5
BELIEF	8
THE CURRENT RESEARCH	9
THE BON FESTIVAL	11
STUDY 2	16
METHODS	19
<i>Design</i>	19
<i>Participants</i>	19
<i>Materials</i>	19
<i>Procedure</i>	22
DEVELOPMENT	22
RESULTS	27
DISCUSSION OF STUDY 2	32
STUDY 3	34
RITUALS AND ANXIETY.....	34
RITUALS AND SOCIAL COHESION.....	37
METHODS	40
<i>Design</i>	40
<i>Participants</i>	41
<i>Materials</i>	41
<i>Location</i>	44
<i>Procedure</i>	45
RESULTS	45
DISCUSSION OF STUDY 3	53
OVERALL DISCUSSION	57
REFERENCES	58
APPENDIX 1	66
APPENDIX 2	67
APPENDIX 3	68
APPENDIX 4	69

Introduction

Rituals are common to societies across the globe. Throughout history, they have played an important role in the cultural, personal, and religious lives of multitudes of people. Societies throughout the world regardless of place or culture have rituals big or small which form a part of their routine. The Japanese Bon festival is one such event, which marks the days that ancestral spirits return to their family home to be welcomed by their descendants. English language ethnographic documentation of this festival is limited, and often dated, but it does manage to portray the complexity of the event and convey how different the belief system surrounding this festival is from Abrahamic belief systems, those based on the three major Abrahamic religions Christianity, Islam, and Judaism. As such, the many Abrahamic belief scales in existence are not suitable for measuring belief in this context and therefore it is necessary to create our own. This allows us to gain a more complex understanding of belief in Bon. Specifically, it facilitates an understanding of how belief interacts with ritual processes to affect common outcomes, which in turn helps further our knowledge of why people engage in rituals and why rituals have the features that they do.

As the ubiquity of ritual behaviour is so clear, it is a topic of research that has interested psychologists and researchers from other disciplines for a long time (Hobson, Schroeder, Risen, Xygalatas, and Inzlicht, 2017). Early anthropological research focused on delving into the meaning that each ritual held for the society which performed them, and carefully describing the processes that made up these rituals. As experimental researchers were documenting rituals, they placed priority on the actions involved in rituals and their influence, rather than the meaning systems embedded in them. As ritual research develops among multiple disciplines, there seems to be growing recognition of meaning systems and interest in how they influence the effects of ritual actions. The focus of much of the ritual research in the past two decades has been on the processes involved in bringing about

common ritual outcomes. Synchronous movement has been the topic of many studies in recent years, the idea here being that synchrony in rituals drives increases in social cohesion through a heightened feeling of oneness with the group (Swann, Jetten, Gómez, Whitehouse, and Bastian, 2012; Hove, 2008). This research tends to prioritise actions and movement as the sole or majority influence over ritual outcomes. As such, while the influence of meaning systems on the outcomes of rituals and how belief in those systems may affect these results is emerging as a topic of interest in ritual research circles, it is still in the early stages and there is much that has yet to be touched upon (Hobson et al. 2017). Particularly when rituals have a religious background, as so many do, the way that belief in that religious system may affect outcomes is something that has not yet been thoroughly explored. In western research it is sometimes taken for granted that if someone is taking part in a religious ritual, they must therefore believe in the meaning system behind that ritual. However, when taking a broader look at rituals it is clear that this is not always the case, and that the strength of faith that one person has in a ritual they are taking part in is not always the same as the next person. To take a common western ritual as an example, saying grace is something that many people do before eating because they believe in God and want to give thanks for their meal. However, some do it because their parents do, some do it because they are at someone else's home and it is polite, and some do it because it is expected of them by an authority figure (be that a parent, school, or anything else). It seems reasonable therefore, to question whether each person gets the same benefit from this ritual regardless of belief.

In order to look at how belief in associated meaning systems affects outcomes related to rituals, we first need to establish what outcomes are relevant.

There are two common outcomes of ritual that I am interested in, both in regard to how belief may affect them, and in their own right. These are anxiety, and social cohesion. Hobson, Schroeder, Risen, Xygalatas, and Inzlicht (2017) proposed a process-based

framework for rituals that addresses the major adaptive outcomes for rituals and the processes that influence them. These include regulating emotions, and regulating social connections. Regulating emotions in the context of this framework is essentially about reducing anxiety, through bringing participants into a state of thought focused outside of themselves, and reminders of spiritual solutions to their worries. Regulating social connections is about building social bonds through shared meaning and shared behaviour and norms. People participating in rituals that community members also participate in feel more at one with their community through this sharing process. Hobson et al. (2017) separate the processes that produce these outcomes into top-down, and bottom-up processes. Bottom-up processes include physical movement, and biased attention, and top-down processes include social and self-signalling, and meaning creation and transference. My interest is primarily in top-down processes, specifically meaning creation and transference, and also how this interacts with bottom-up processes such as physical movement. Meaning creation and transference refers to how people build meaning systems around the rituals they create and share those meaning systems with each other. In order to look at meaning creation and transference it is necessary to measure belief specific to the ritual being studied. As such, part of this research will involve the development of a ritual specific belief scale through ethnographic research and focus groups.

Apart from the relevance of belief, I am interested in whether anxiety is reduced in the performance of group rituals. Most research into the effects of rituals on anxiety has used solitary rituals to elicit these outcomes, therefore I am interested in whether the same results occur in group rituals (Karl and Fischer, 2018; Hobson, Bonk, and Inzlicht, 2017; Brooks et al., 2016; Lang, Krátký, Shaver, Jerotijević, & Xygalatas, 2015). In terms of social cohesion, I would like to build on research into the effects of ritual on social cohesion with those outside the immediate ritual group. Often, social cohesion effects are only measured within

the group performing the ritual, i.e. they only look at participants' social cohesion with other participants, but there is some evidence from studies by Reddish, Bulbulia, and Fischer (2013), and Reddish, Tong, Jong, Lanman, and Whitehouse (2016) that the increase in social cohesion may also generalise to the participants' community. I aim to find how far this generalisation extends.

Belief

Much of the psychological research that has been done into ritual has focused on the physical actions involved (Karl and Fischer, 2018; Hobson, Bonk, and Inzlicht, 2017; Reddish, Bulbulia, and Fischer, 2013; Reddish, Tong, Jong, Lanman, and Whitehouse, 2016; Swann, Jetten, Gómez, Whitehouse, and Bastian, 2012; Hove, 2008), and only recently has there been increasing interest in the possible influence of the meaning systems behind these rituals (Brooks et al. 2016). In the Hobson et al. (2017) framework, the process around meaning systems is termed 'meaning creation and transference', where meaning is created around a set of behaviours and passed on or shared with those performing the behaviours with you. They suggest that meaning transference regulates emotions and social connections by creating feeling of self-transcendence which alleviate anxieties, and through reinforcing the perceived value of cultural knowledge and norms. As an example, they described the way in which religious burial rituals may provide solace by promising hope in the afterlife. Through performing funerary rituals, a believer is reminded of their beliefs around the afterlife, shares them with the people around them, and is comforted by the certainty and belonging they bring. Hobson et al. suggest that meaning is a necessary feature of ritual, and without it a ritual would be "arbitrary and trivial". However, previous studies using manufactured rituals or those simply applying physical aspects of ritual such as synchrony, have found that these are enough to produce regulation of emotion and social connections

(Brooks et al., 2016; Reddish, Bulbulia, and Fischer, 2017; Reddish, Tong, Jong, Lanman, and Whitehouse, 2016).

Brooks et al. (2016) did find that there was a significantly smaller reduction in anxiety when the action participants were asked to do was labelled as ‘random movements’ as opposed to being labelled as a ritual. This suggests that there is a greater regulatory effect when a meaning system is involved. However, this does not fully answer the question of how belief influences the regulation effect, as we still do not know how rituals with meaning systems attached affect those who do not believe them compared to those who do.

The Current Research

There is a scarcity in the existing literature on rituals surrounding the role that belief plays in influencing ritual outcomes. The Bon Festival provides a novel setting to help start to close these gaps, while also adding to the ethnographic literature surrounding this event. The current research endeavours to present an ethnography of the Bon Festival combining existing literature with observation of modern-day activities, use the ethnographic literature along with focus groups to develop a non-Abrahamic belief scale appropriate for use in the Bon Festival, and answer questions that remain from previous studies around ritual processes. Specifically, the effects of belief on anxiety and social cohesion outcomes, whether anxiety reduction is apparent in group rituals, and whether the increases in social cohesion towards other ritual participants generalise into broader social groups.

This research will be separated into three distinct studies.

Study 1

The first, will be comprised of ethnographic research into the Bon festival and Japanese ancestor spirit belief for the purpose of building a knowledge base which will contribute to the development of a belief scale for use in the Bon festival.

Study 2

This study will be focused on developing and testing a non-Abrahamic belief scale appropriate for use in measuring belief in the Bon festival. In developing this scale, we will draw on the ethnographic research done in Study 1.

Study 3

Study 3 will be a quasi-experimental field study, building on previous research from both field and lab studies. The context of the Bon festival will allow us to survey people with a wide range of belief levels, in both participants and viewers, who are taking part in a pre-existing ritual in a naturalistic setting. Giving us a greater understanding of the complex ways in which ritual processes take place in an organic context.

Due to prior research suggesting differences in ritual effect based on whether someone is participating or viewing (Lakens, and Stel, 2011; Konvalinka et al., 2011; Fischer, and Roepstorff, 2016; Fischer et al., 2014), we will be differentiating between respondents who have already taken part in the Bon dance that night and those who have not and assessing if our results align with previous research.

Study 1

The Bon Festival

In order to study rituals in a field setting it is necessary to choose a ritual to study. We settled on the Bon Festival, and more specifically, the Bon dance. This festival has the advantage of being a well-attended and commonplace event across Japan, while also providing a novel setting which has not been the subject of this sort of research in the past. Although there is some translated work from Yanagita Kunio (1970), it is difficult to find ethnographic work describing the Bon festival in English, and much that does exist is dated. Even Yanagita noted in his work that at the time of his writing, changes were taking place and much had already changed from how people celebrated Bon in the past. This may be because of its apparent mundanity to many Japanese people. Though to me the Bon festival is a fascinating and novel event, over the course of my research, the most common question I got from locals when I told them I intended to research Bon, was “Why?” followed by an explanation that they are surprised that Bon is interesting enough to anyone to merit research.

The Bon dance is a group dance in which participants dance a set of simple steps along to repeating music in circles around a central platform. In small towns this may be a small structure with flags and a sound system while bigger events might have a three story structure with decorative lights, and live musicians. Regardless, it is a staple of the summer festival season that occurs in almost every town and city in Japan. This dance is set within the larger festival structure of the Bon Festival, which is a week-long festival devoted to

ancestral spirits. It takes place in mid-August with the Bon dance traditionally falling on the 15th of August (Hori, 1959; Yanagita, 1970; Hendry, and Webber, 1998; Berentsen, 1985).



Figure 1. Dancers taking part in Mikasa Bon dance 2019, with musicians in central structure.

The origins of Bon are still debated in Japanese folklore and ethnographic circles. According to respected Japanese folklorist Yanagita Kunio (1970), common interpretation of the word Bon is that it comes from the Buddhist term *ulambana* being altered to *urabon-e* to better suit Japanese tongues. However, he suggests that the word is much older and may instead come from the name of the vessels used to give offerings prior to Buddhist influence. As most historical writing on the subject is sourced from Buddhist monks from after the 6th century influx of Buddhism into Japan, this is difficult to prove one way or the other. Regardless of the origins, Bon today has taken on a central role in Japanese spiritual life. Bon in essence is a festival to welcome the spirits of your ancestors back to the family home, show them that they are still cared for, and then see them off again. Various rituals and events

take place as part of this narrative, many of which differ depending on local history and landscape (Yanagita, 1970; Berentsen, 1985).

The Bon Festival has complex roots based on the two main religions present in modern Japan, Shintoism and Buddhism. This makes it difficult to gauge belief in the Bon Festival with scales developed for one or the other. In Shinto belief, natural forces and specific places are imbued with *kami*, spirits who may be good bad or even completely indifferent to humans. As all of Japan is under their dominion, any major change should first gain their permission through prayer, offerings, and the erection of shrines for them to dwell in and receive offerings (Hardacre, 2017). Shintoism is the indigenous/folk religion of mainland Japan, and it still has a strong place in Japanese life, but Buddhism is now also very influential and a large part of Japanese life and culture (Yamakage 2010). Buddhism in Japan is extremely diverse, with a large number of sects based on different teachings of Buddhism from both within and outside of Japan claiming official status in Japan. Kisala (2006) has said that Japanese are eclectic in their religion, and a common saying is that “Japanese people are born Shinto, marry as Christians, die Buddhist”. This mingling of religions means that many festivals and cultural practices have contested roots. While these days the Bon festival is usually considered Buddhist, this is still debated (Ashikaga, 1950; Yanagita, 1970), and beyond that is celebrated more as a cultural pillar by Japanese people than as something that belongs to any one religion (Yanagita, 1970; Mayer, 1989). In fact, Japanese people tend not to label themselves as religious, regardless of whether they take part in festivals or behaviours that religious scholars or most westerners might consider religious. While festivals are well attended, and religious institutions claim membership well over the population of Japan (91.3 million members of Shinto, 86.9 million members of Buddhist sects. figures submitted by the organizations to the Department of Religious Affairs, Ministry of Education, Culture, Sports, Science and Technology, 2013, in Hardacre, 2017), only 30%

of Japanese people self-identify as a member of a religion (Kisala, 2006). This low identification with religion is often at least partially attributed to the sarin gas attack on the Tokyo subway system by the Aum Shinrikyō religious group in 1995, which led to widespread condemnation of religion in general, along with a revision of laws to introduce much stronger government oversight of religious groups (Hardacre, 2017).

Regardless of whether it is Buddhist, Shinto, or some mingling of the two, the main belief system involved in the Bon Festival is that this is the period of time in which ancestors come down from the mountains/cemeteries/across the sea to visit their family homes. As such it is important during this time to welcome them back and provide for them while they are there. The Bon dance is in some descriptions a send-off for the ancestors as they return to the afterlife (Yanagita, 1970), and in some descriptions a celebration to show joy that they are there (Ashikaga, 1950). Other rituals also take place during this time to welcome and comfort ancestors, these include grave cleaning, praying at the family altar, and lighting small welcome fires outside the front door (or on the beach, or at the cemetery) to guide the spirits home (Ashikaga, 1950; Yanagita, 1970; Ooms, 1967; Berentsen, 1985).

In Mikasa, the Bon dance event went for three days, from the 13th to the 14th of August. In the daytime there were local bands and singers playing pop songs on the main stage, next to the Bon dance area, people watched these while taking a break from wandering through the food stalls, or while they waited for the Bon dance to start. This is followed by the main bon dance once the sun started to go down at 7.30pm. Singers on a central structure rotate singing main and chorus parts of a call and response folk song, accompanied by *taiko* drums and *shinobue* flutes, for the full two hours that the dance lasts for. The dance is a simple one which varies from region to region, where dancers walk around the central platform in time to the music, doing simple hand gestures that often reference local industries such as pulling up fishnets or harvesting rice. In Mikasa the moves are fairly generic, and

consist of a clap to the left, a clap to the right, swing your hands up to the left, swing your hands up to the right, step back and left while spreading your arms back and out, step right while swinging your arms out, repeat. There was also a children's Bon dance earlier in the day between acts on the stage, where a children's version of the Bon song played (a recorded version of a generic Bon song sung by cartoonish voices), and children could dance around the Bon dance square with their parents and be taken home in time for bed. The Bon dance area was surrounded with rows of food stalls, selling a wide range of common Japanese festival food, from hot dogs to okonomiyaki. Mikasa promotes their festival as being the origin of the *hokkai bon uta*, the song that is used for Bon dance in Hokkaido. This version of the Bon song, similarly to other Bon songs around Japan, is in a traditional folk song style, and its current lyrics talk about how wonderful Hokkaido is and how good they are at singing and dancing. The lyrics were rearranged in 1940 during the Meiji reformation from a vulgar coal miner's (Maring, and Maring, 1997). Due to the promotion by the local council, this event brings in more participants than a town of Mikasa's size usually could, with 20,000 people expected for the final night, which boasted a costume contest for dancers and fireworks. Mikasa was a coal mining town, which in the 1950's had a population of over 60,000 people, but after the closing of the mine, the population has dwindled to under 9,000. Now, the region grows rock melons, watermelons, and produces a small amount of wine (Mikasa City, 2019). Compared to historical depictions of the bon dance, there seems to be even less association these days with the religious roots. While the season still retains religious connections, the attitude towards the dance seems to be more of a fun day out to enjoy with your family and re-establish community connections, especially for those who return to their hometowns during this time.

Study 2

In order to study belief in the Bon Festival, it is necessary to find some way to measure it. Many varying belief scales are already in use in psychology. A small selection of these includes Wulff's (1991, 1997) Post Critical Belief Scale; the QUEST Scale developed by Batson and Schoenrade (1991); and the ASPIRES scale (Piedmont, 2012). Of these, none are particularly appropriate for measuring belief in a specific Japanese ritual. They all include items which are inappropriate in a Japanese context, such as "The bible holds a deeper truth which can only be revealed by personal reflection" from Wulff's (1991, 1997) Post Critical Belief Scale, and "Frequently read the Bible/Torah" from Piedmont's (2012) ASPIRES scale which are unadaptable for the Bon Festival as Shintoism has no central religious text and Buddhism has many which vary from sect to sect. Additionally, rather than measuring the strength or depth of a person's belief, most of these scales focus on categorising types of belief, for example, whether a person's belief is transcendent.

There is also the possibility of using a behavioural measure to assess belief. This is a little more difficult for Buddhism and Shintoism than it would be for an Abrahamic religion as there are no regular religious services such as church, or mosque. One previously used measure is how often someone prays at the family altar (Roemer, 2010), however this has its own problems. Ownership of family altars has been in decline in recent years, and only the heads of family groups have them (Hardacre, 2017). Two Bon specific behaviours are returning to the family home, and cleaning the family grave (Mayer, 1989). Both of these come with similar issues around logistics and availability that mean they are not necessarily accurate representations of belief. Additionally, there are a multitude of reasons that people might perform these behaviours without any strong religious motivation, particularly familial devotion and cultural pressure. As an example of this pressure, as we were cleaning up at the end of our first night of data collection, two stallholders came over to sell their excess

chicken skewers, and asked our Japanese research assistants if they had gone to clean the family graves yet, and promptly scolded them all when they said no.

One belief scale that comes close to being appropriate for this study is the Supernatural Belief Scale (SBS) created by Jung and Halberstadt (2016). This scale measures belief in supernatural aspects of religion such as angels, demons, heaven, and souls. However, these concepts are not relevant in many non-Christian religions, and as such the translations have been edited for relevance in their intended countries of use. In the Japanese version these are converted to more appropriate figures such as *kami* (gods from Shinto religion, who inhabit almost everything [Yamakage, 2010]), *akuma* (a malevolent spirit in Japanese mythology, but also the name ascribed to the Christian devil, and the Buddhist Mara [Bane, 2016]), and *shugoshin* (lit. guardian spirit). While this scale is appropriate for use in Japan and has been used for research in Japan in the past, we wanted a scale more specific to the ritual we would be studying.

Similarly, Nishiwaki's belief scale (2004) aims to measure belief in the supernatural in three facets, beliefs in the divine, beliefs in religion in general, and beliefs in mystic forces in life and natural phenomenon. This scale, like Jong and Halberstadt's, is very general and may not adequately capture belief in the specific aspects important to Bon.

As such we will be developing our own scale that is specific to the beliefs surrounding the Bon Festival in Japan. In order to do this, we will be following the example of White, Noranzayan, and Schaller (2017) who created a self-report belief in karma scale. Unfortunately, the scale itself is not appropriate for use in our research as the Bon Festival theology has no relation to karma and thus those who believe in the ancestral spirits of the Bon festival may not believe at all in karma (Ashikaga, 1950; Yanagita, 1970). This scale was developed based on the defining doctrines of karma. As Bon belief does not have doctrines, we will rather be building this scale around the defining spiritual elements of Bon

as specified by both ethnographic literature and views expressed by Japanese people in the current era.

In order to test the validity of our scale it is necessary to look at common convergent factors with religious belief, so that we can assess whether our scale behaves similarly to other belief scales. The relationship between religion and personality is a complicated one with many varying opinions, however a relatively common thread is the positive relationship of religiosity with the Big Five factors agreeableness and/or conscientiousness (Saroglou, Delpierre, and Dernelle, 2003; Saroglou, 2010; Gebauer et al., 2014; Robbins, Francis, McIlroy, Clarke, and Pritchard, 2010). Unfortunately, much of this research is at the country level rather than the individual level and focuses on western countries. Saroglou (2002) provides a meta-analysis of individual level studies of personality, and the Big Five, which found a consistent result of higher agreeableness and conscientiousness in more religious people, which was theorised to be due to the teachings of most religions to be conscientious of and caring for those around you. They also found some support for higher extraversion, and lower negative emotionality dependant on the type of religiosity measured. However, of the 13 studies involved in the analysis, only 1 study surveyed participants from a non-Western country (Taiwan), and 10 were from the US or Canada. As such the results of these may not be a reliable predictor of results in Japan.

Three of the Schwartz values (Schwartz et al. 2012), security, conformity, and tradition, have also been found to be related to religiosity in multiple cultural contexts (Cukur, de Guzman, and Carlo, 2004; Aarnio, and Lindeman, 2007) and in a 15 country meta-analysis by Saraoglou, Delpierre, and Dernelle (2004), though security has a weaker relationship with religiosity than conformity and tradition. Therefore, we will also be measuring these values in order to test the convergent validity of our scale.

Finally, as tests of convergent validity and to see how our scale stands up against alternative measures of belief, we will include both the SBS (Jung and Halberstadt, 2016) and Nishiwaki's belief scale (2004), along with two behavioural measures, frequency of returning home for bon, and frequency of grave cleaning.

Methods

Design

Study 2 aims to develop and validate a belief scale based on the Bon festival. The development of this scale had two main phases. In the first phase, we developed the scale using ethnographic literature (Mayer, 1989; Hori, 1959; Yanagida, 1970; Hendry, and Webber, 1998; Berentsen, 1985) as a starting point and then refined the items in a focus group. This scale was then validated in phase 2 using convergent validity and internal reliability tests after an online survey.

Participants

Participants in the focus group to refine the belief scale were 5 Hokkaido University postgraduate psychology students, 4 male and 1 female. All participants spoke English as well as being native Japanese speakers. The participants were from various parts of Japan but all studying and living in Sapporo at the time.

Participants in the validation were 151 users of Japanese crowdsourcing site Lancers. Participant ages ranged from 18 and 73 with a mean of 42, and there was a relatively even gender split of 43% female and 57% male.

Materials

Alongside the Bon scale that we developed in this study, we also measured responses to the Supernatural Belief Scale (SBS) (Jung, and Halberstadt, 2016), Nishiwaki's belief scale (2004), the Big Five Inventory-2 (Soto and John, 2017), the Portrait Values Questionnaire-RR (PVQ-RR) (Schwartz et al., 2012), and two behavioural measures

(frequency of grave cleaning, and returning to the family home for Bon), which we used to assess convergent validity for our belief scale.

The Supernatural Belief Scale developed by Jung, and Halberstadt (2016), has an existing official Japanese version, as mentioned earlier in the text, that was slightly modified to suit a Japanese context. It was measured on a 5-point Likert scale, from -2 to 2 where -2 means “非常に反対” (Very much the opposite) and 2 means “非常に賛成” (Very much agree). Items included “霊的で全知全能の存在を神と呼ぶことがある。” (There exist all-powerful, all-knowing beings whom we might call *kami*) and “守護神や悪魔のような善悪のある霊的な存在がいる。” (There exist spiritual beings, who might be good or evil, such as *shugoshin* or *akuma*).

Nishiwaki’s belief scale (2004) is a scale developed in Japan by Japanese religion and psychology scholar, Ryo Nishiwaki. It aims to measure belief in the supernatural in three facets, beliefs in the divine, beliefs in religion in general, and beliefs in mystic forces in life and natural phenomenon. The first of these, beliefs in the divine, includes items such as “私は、神や仏の助けを受けていると感じることがある。” (I feel God or Buddha helps me), and “神や仏は、いつも私を見ていると思う。” (I believe or God or Buddha is always watching me). Beliefs in religion in general is made up of items such as “宗教は、人に助け合いの心をもたせ、良い人間関係をむすぶことができるようにしてくれると思う。” (I think religion gives a spirit of mutual aid and helps develop good relationships), and “宗教は苦しみをやわらげ、心をいやしてくれると思う。” (I think religion relieves my mental distress and heals my heart). The final facet, beliefs in mystic forces, includes the items “この宇宙のあらゆるの（星、人、動物、山々、森など）には何か霊的なものが宿っていると思う。” (I believe spiritual things dwell everywhere in the universe—such as the stars, humans, animals, mountains, and forests and so on), and “人間の考えをこえた

力をもつような、何か神秘的な存在があると思う。” (I believe there is some mysterious entity which has power beyond our thoughts). These items are measured on a 5-point Likert scale from 1 “全く当てはまらない” (Completely disagree), to 5 “とても当てはまる” (Completely agree).

The Big Five Inventory-2-S (Soto and John, 2017) is a scale developed to measure the big five personality traits, Extraversion, Agreeableness, Conscientiousness, Negative emotionality/Neuroticism, and Open-mindedness. It was translated into Japanese by the International Situations Project (n.d.). Items in the negative emotionality subscale include “気難しく、簡単に感情的になる” (Is temperamental, gets emotional easily). The conscientiousness subscale includes items such as “粘り強く、作業が終わるまで働く” (Is persistent, works until the task is finished). Items in the open-mindedness subscale include “独自の、新しいアイデアを出せる” (Is original, comes up with new ideas). The agreeableness subscale includes “人々に対して最善をつくす” (Assumes the best about people). Finally, the extraversion subscale includes items such as “活力にあふれている” (Is full of energy). The items in this scale are scored on a 5-point Likert scale from 1 “全く同意できない” (Disagree strongly), to 5 “とても同意する” (Agree strongly).

The Portrait Values Questionnaire-RR (Schwartz et al., 2012) assesses a person's values, and three of these have been found to correlate consistently with religious belief, namely security, tradition, and conformity (Cukur, de Guzman, and Carlo, 2004; Aarnio, and Lindeman, 2007; Saraoglou, Delpierre, and Dernelle, 2004). As the full scale is 54 items, we chose to only include the relevant subscales, bringing it down to 15. Items in these subscales included, “この人にとっては、病気を予防し、健康を守ることが非常に重要である” (It is very important to him to avoid disease and protect his health.) (Security), “この人にとっては、ルールや規則には、決して違反しないことが重要である” (It is important to

him never to violate rules or regulations) (Conformity), and “この人にとっては、伝統的な価値観や考え方をもち続けることが重要である” (It is important to him to maintain traditional values and ways of thinking) (Tradition). These items were measured on a 6-point Likert scale from 1 “まったく似ていない” (Not at all similar to me) to 6 “とても似ている” (Very similar to me). It was translated into Japanese by Manabe (2018).

Procedure

We first developed a list of 6 possible items based on the ethnographic research done in study 1, and then held a focus group session to discuss these items. The focus group was an informal discussion of the relevance of items, how belief in ancestor spirits manifested for the participants, and how the items were phrased. I ran the focus group with assistance from Prof. Masaki Yuki from Hokkaido University, an experienced academic and native Japanese speaker. This focus group session took place over half an hour during a lab meeting where each item was discussed and participants were encouraged to comment on how the items could be changed to be more representative of belief in the Bon festival. Questions included “how could this item better represent your concept of belief in bon?”, and “is this item relevant to most Japanese people?”. In the session and from the feedback given, the original 6 items were refined, one was dropped, and a further 11 were developed.

In the validation, participants took part in an online survey on Qualtrics after being recruited through Lancers, a Japanese freelance and crowdsourcing site. The survey took around 5 minutes. Participants were paid 200JPY (around 2.50NZD) for completing the survey.

Development

In the initial stage of this study I developed six draft items for the belief scale based on ethnographic literature surrounding the Bon Festival and the Bon dance in particular.

1. During bon, my ancestors travel home

お盆の時期には、先祖が家に帰る。

The first item was developed to reflect the very basic essence of what happens during Bon. Essentially what the main aspect of Bon is, consistent to all interpretations. This was that Bon is the time that ancestors travel back to their family home.

“This is the time for family reunions of the spirits of the dead and the living”
– (Mayer, 1989, p145)

“July 13-16 (August 27-30). Bon Festival. Members of branch families clean the ancestors' tombs (usually stone monuments) in the main family's graveyard on July 13. Early in the morning of July 14, members of branch families gather at the main family's house in order to perform the Bon Festival (memorial services for the spirits of ancestors and all souls of the dead); they clean the house and prepare the ornaments and new altars for the coming spirits or souls from “Other Land”.” – (Hori, 1959, p409)

2. It is easier to communicate with ancestors during bon.

お盆の時期には、先祖と話をしやすい。

And

3. Ancestors are closer during bon than the rest of the year.

お盆の時期には、それ以外の時期と比べて、先祖が近くにやってくる。

These items were developed based on accounts in various ethnographic theology texts which described an increase in communication with ancestor spirits during bon. Most of this came in the form of prayer and offerings, but also physical acts such as carrying ancestors from their place of rest.

“The people of former times naturally spoke to ancestors as they did to living persons, calling them *jii-sama*, *baa-sama*. Recently only children say these words... but in the Chubu area with which I am familiar, people in mature years recall that when they went as children in the evening on the 13th day to the grave... they put their hands behind their backs and “*jii-sama*, *baa-sama*, let’s start now”.” – (Yanagita, 1970, p139)

“We asked the question if the ancestors somehow, under one form or another, still lived on somewhere. The 67-year-old head of a first rank stem family, told us that he lived constantly in their presence. This same informant told us also that, every year at o-bon, he held the welcome fire as soon as possible and the sending-off fire as late as possible in order that the ancestors may stay longer. (Four months later at o-bon, when we checked this, it proved indeed to be true: he was at least two hours ahead of his neighbours for the welcome fire.)” – (Ooms, 1967, p298)

“There was once a hardworking couple who did not rest at *Bon*, and as they continued to work in their garden, they heard somebody talking as he passed but could see no sign of him as he said, “I returned for this occasion, but they made no preparation for me. It made me so angry, I knocked him down.” Startled, the couple rushed home excitedly and found their baby had fallen into the open hearth and was hurt.” – (Yanagita, 1970, pp140-141)

4. Ancestors leave again at the end of bon.

お盆が終わると、先祖はまた帰って行く。

This item was developed using the same sources as above, detailing the movements of the ancestors.

5. Ancestors do not return during bon.

お盆の時期に、先祖が家に帰ってくるわけではない。

And

6. You cannot communicate more easily with ancestors during bon.

お盆の時期に、先祖と話がしやすくなるわけではない。

The final two items were simply reverse codes of the first two.

The 6 items developed from the ethnographic literature were first discussed with Prof. Masaki Yuki to get an initial perspective on the appropriateness of the items in modern Japan and ensure they made sense. This brought up a number of questions we could then discuss in the focus group.

Table 1**Bon Belief Scale - Original Items**

Items	Questions	Outcome
A1 During bon, my ancestors travel home お盆の時期には、先祖が家に帰る。		
A2 It is easier to communicate with ancestors during bon. お盆の時期には、先祖と話をしやすい。	Is this feeling more about talking directly to ancestors, or about praying to them/talking in your mind?	Direct but one-sided – like reporting 先祖の魂に話しかける。 Removed easier – some felt this was possible at all times.
A3 Ancestors are closer during bon than the rest of the year. お盆の時期には、それ以外の時期と比べて、先祖が近くにやってくる。	Are ancestors physically closer during bon, or psychologically closer?	No consensus here so item was changed to ancestors being ‘around’ to allow individual interpretation.
A4 Ancestors leave again at the end of bon. お盆が終わると、先祖はまた帰って行く。		
A5 Ancestors do not return during bon. お盆の時期に、先祖が家に帰ってくるわけではない。		
A6 You cannot communicate more easily with ancestors during bon. お盆の時期に、先祖と話がしやすくなるわけではない。		Removed due to not being appropriate or clear

Overall comments

- Ancestor should be added with “-’s spirit” (の魂) in most cases as clarification and to feel more natural

Developed Items

- I feel like ancestors are watching me during bon
- It is important to pray to ancestors during bon.
- Cleaning the family grave shows returning ancestors they are cared for
- Ancestors reside in the butsudan during bon
- My ancestors listen when I pray during bon
- It is important to provide offerings for ancestors during bon
- Ancestors can affect my fortunes during bon
- My ancestors would be bothered if I didn’t pray to them during bon

During focus group discussions group members were asked whether each item was understandable, clear, and appropriate. Item A1 was the first to be addressed. One member of the group suggested that it would sound more natural if “ancestor” was followed by “-‘spirit”, which was met with agreement from the rest of the group. As such, the rest of the items were also changed to reflect this, except where deemed unnecessary by the group. Next, item A2 was discussed. When asked whether the communication was directly talking, or more akin to praying, there was a slowly developed consensus that it was more directly talking. One participant said that it was like reporting what had happened to him during the past year, and that he did not think they could hear him but he did it just in case. Another participant expressed shock at his not thinking they could hear him. This indicates the range of experiences that are covered by belief in Bon. Interpretation of this event is not the same from person to person and thus we must allow some room for interpretation in our scale. From the resulting conversation it was decided that whether the ancestor spirits could hear you was a matter of opinion but they definitely could not respond. Therefore this item was edited to make clear that the conversation was one sided, with the person speaking to the ancestors but them not responding, and another item “My ancestors listen when I pray during Bon” was added. The discussion of item A3 centered on whether ancestors were physically or psychologically close. Some participants thought that they were only psychologically close but some considered it to be a mixture of both, as such the item was edited to be more vague ‘ancestors are around me’ and two more specific items were created to assess thoughts on psychological closeness, and physical closeness. Items A4 and A5 did not need any changes. The participants considered item A6 confusing, and suggested that it would make more sense to include a reverse code of A3. It was therefore replaced with ‘I don’t feel my ancestors are around me during Bon’. New items were developed based on further study of ethnographic material (It is important to pray to ancestors during bon, Cleaning the family grave shows

returning ancestors they are cared for, Ancestors reside in the butsudā during bon, It is important to provide offerings for ancestors during bon), from suggestions by focus group members (My ancestors would be bothered if I didn't pray to them during bon, I feel like ancestors are watching me during bon), and suggestions by Prof. Masaki Yuki, and Dr. Chris Kavanagh (Ancestors can affect my fortunes during bon). The instructions and response scale were also developed during this focus group session. Instructions to participants were “以下のそれぞれの文は、あなた自身の考えにどのくらい当てはまりますか。賛成または反対の度合いでお答えください。（注）文中に登場する「先祖」とは、あなたの両親や祖父・祖母、兄弟姉妹、子ども、あるいはそれ以前の人々を含む、すでに亡くなった親族を指します。” (How well does each of the following statements reflect your own thoughts? Please answer in favour or disagreement. Note: In the following questions “ancestors” refers to your parents, grandparents, siblings, children, and other relatives who have passed away, possibly including even those before these [as in older ancestors]). Participants in the focus group thought it was important that ‘ancestors’ be defined in our scale instructions so that respondents knew exactly what we were asking about. The response scale was a 4-point Likert scale from 1 – “全くそう思わない” (strongly disagree), to 4 – “強くそう思う” (strongly agree).

Results

To validate our scale we surveyed 151 Japanese users of online freelance and crowdsourcing site Lancers. In order to assess the data collected in this study, we first imputed a small amount of missing data using MICE, then averaged the 5 datasets that were produced in order to create our final imputed dataset.

An exploratory factor analysis on our scale to assess the number and structure of any factors within the scale found a clear single factor. A scree test showed one factor explaining

a large amount of variance with following factors explaining very little. The single factor analysis explained 60% of the variance and the two-factor solution adds 5% to explain 65% of the variance. The scree test showed a strong single factor, with all other factors at or below an eigenvalue of 1. As can be seen in Table 2, all items loaded strongly onto a single factor, and when separated out into two actors there was a large amount of cross loading, suggesting a strong likelihood of a single factor. Items all had means hovering around or just above the mid-way point (Min = 1.748, Max = 3.040), and standard deviations were all between 0.76 and 0.94.

Table 2

Item Statistics	Single Factor Analysis		Two Factor Analysis		
	Mean	SD	Factor 1	Factor 1	Factor 2
1 During bon, my ancestors travel home	2.556	0.861	0.86	0.69	0.51
2 I can talk to ancestors during bon	2.106	0.865	0.79	0.63	0.48
3 I feel like ancestors are watching me during bon	2.305	0.856	0.87	0.62	0.60
4 I feel ancestors are around me during bon	2.331	0.892	0.88	0.66	0.59
5 Ancestors leave again at the end of bon	2.457	0.929	0.81	0.65	0.49
6 I feel like ancestors are physically close to me during bon	2.113	0.853	0.85	0.64	0.55
7 I feel like ancestors are psychologically close during bon	2.311	0.939	0.86	0.62	0.59
8 It is important to pray to ancestors during bon.	3.040	0.848	0.67	0.77	
9 Cleaning the family grave shows returning ancestors they are cared for	2.781	0.886	0.71	0.73	
10 Ancestors reside in the butsudān during bon	2.179	0.841	0.76	0.67	0.39
11 My ancestors listen when I pray during bon	2.351	0.850	0.77	0.58	0.51
12 It is important to provide offerings for ancestors during bon	2.695	0.841	0.68	0.63	0.31
13 Ancestors can affect my fortunes during bon	1.748	0.768	0.58	0.46	0.36
14 My ancestors would be bothered if I didn't pray to them during bon	2.205	0.835	0.73	0.54	0.48

Table 2

Item Statistics	Single Factor Analysis		Two Factor Analysis		
	Mean	SD	Factor 1	Factor 1	Factor 2
15 Ancestors do not return during bon (R - recoded)	2.497	0.916	0.83	0.44	0.77
16 I don't feel ancestors are around me during bon (R - recoded)	2.444	0.884	0.77	0.31	0.84
17 When I pray during bon, my ancestors aren't listening (R - recoded)	2.444	0.877	0.67		0.77

Note: Omitted values had loadings under 0.30

We then moved onto measuring the internal reliability, which was good ($\alpha = .963$), and checking our new scale's correlations with the other variables that we included in the study. The new scale had significant moderate positive correlations with both Jong and Halberstadt's (2016) SBS ($r = .556, p < .001$), and Nishiwaki's (2004) belief scale ($r = .655, p < .001$) which suggests that our scale is measuring a similar concept to both of these other belief scales. These scales both measure more general belief in concepts such as the existence of gods, spirits, and supernatural forces so this result was in line with our expectations.

We expected our scale to have a positive relationship with the Big Five factors agreeableness and conscientiousness (Saroglou, 2010; Gebauer et al., 2014; Robbins, Francis, McIlroy, Clarke, and Pritchard, 2010). Our scale did have a significant weak positive correlation with agreeableness ($r = .189, p = .020$) but no significant relationship with conscientiousness. As the literature varies in these results, we were happy with only having one of the two positive correlations. We also found a weak negative relationship with negative emotionality ($r = -.169, p = .038$) which, while not particularly common, has been found in previous literature (Saroglou, 2002; Khoynozad, Rajaei, and Sarvarazemy, 2012).

We also checked our measure against three of the Schwartz values as measured by the Portrait Values Questionnaire (Schwartz et al. 2012), security, conformity, and tradition, which have found to be related to religiosity in multiple cultural contexts (Cukur, de

Guzman, and Carlo, 2004; Aarnio, and Lindeman, 2007) and in a 15 country meta-analysis by Saraoglou, Delpierre, and Dernelle (2004). Our measure had a significant weak positive correlation with conformity ($r = .291, p < .001$), and significant moderate positive correlation with tradition ($r = .414, p < .001$).

Additionally, our measure had significant weak positive correlations with the behavioural measure of grave cleaning ($r = .174, p = .033$), and returning to the family home during Bon ($r = .299, p < .001$). I suspect that the weakness of these correlations is due to the normative aspects of these activities, where even those who do not believe are expected to perform them, along with the access factor, i.e. that some who would like to perform these activities because of their beliefs are not able to because of where they live or work.

In order to make the scale appropriate for use in our field study, we shortened the scale to the five highest loading items from the exploratory factor analysis, items 1, 3, 4, 6 and 7. After assessing the items selected, we decided to switch items 6 and 7 for items 2 and 5 (the next highest loading, bar item 15), as items 6 and 7 were too similar to item 4. Though item 15 was loading higher than item 2, we decided not to include it, as it was only a negative coded version of item 1 and recent research has suggested that negative coding is not helpful and may confuse participants (van Sonderen, Sanderman, and Coyne, 2013). After finalising this shortened scale, we repeated the test of internal reliability ($\alpha = .935$), and convergent validity. The only changes in correlations between our scale and the other measures when using the shortened scale were that the weak correlations between belief and negative emotionality, and belief and grave cleaning became non-significant. As these had been weak correlations even with the original 17 item scale, we considered this change insignificant and decided the shortened scale would be sufficient for use in study 3.

Table 3

Pearson Correlations

		BON	SBS	NWKI	AGR	CONSC	EXT	NEG	OPT	CONF	SEC	TRAD	Return	Grave
BON	Pearson's r	—												
	p-value	—												
SBS	Pearson's r	0.556***	—											
	p-value	< .001	—											
NWKI	Pearson's r	0.655***	0.712***	—										
	p-value	< .001	< .001	—										
AGR	Pearson's r	0.189*	0.189*	0.249**	—									
	p-value	0.020	0.020	0.002	—									
CON	Pearson's r	-0.011	-0.081	-0.151	-0.515***	—								
	p-value	0.898	0.324	0.064	< .001	—								
EXT	Pearson's r	-0.082	0.004	-0.032	-0.089	0.158	—							
	p-value	0.315	0.965	0.692	0.277	0.052	—							
NEG	Pearson's r	-0.169*	-0.038	-0.026	0.386***	-0.273***	-0.183*	—						
	p-value	0.038	0.645	0.750	< .001	< .001	0.025	—						
OP	Pearson's r	-0.101	-0.229**	-0.213**	-0.133	0.098	0.195*	-0.277***	—					
	p-value	0.217	0.005	0.009	0.104	0.230	0.016	< .001	—					
CNF	Pearson's r	0.291***	0.178*	0.340***	0.125	-0.104	0.050	0.130	-0.003	—				
	p-value	< .001	0.029	< .001	0.126	0.204	0.539	0.113	0.969	—				
SEC	Pearson's r	0.149	0.055	0.175*	-0.108	0.197*	0.091	-0.075	0.064	0.514***	—			
	p-value	0.068	0.501	0.032	0.189	0.016	0.269	0.363	0.437	< .001	—			
TRA	Pearson's r	0.414***	0.228**	0.422***	0.213**	-0.108	0.104	0.036	0.057	0.617***	0.347***	—		
	p-value	< .001	0.005	< .001	0.009	0.188	0.203	0.657	0.485	< .001	< .001	—		
Return	Pearson's r	0.299***	0.103	0.168*	0.174*	-0.136	-0.057	-0.071	0.004	0.006	-0.076	0.114	—	
	p-value	< .001	0.207	0.040	0.033	0.097	0.484	0.385	0.960	0.945	0.357	0.162	—	
Grave	Pearson's r	0.174*	-0.049	0.015	0.149	-0.122	0.039	0.043	0.028	-0.013	-0.080	0.153	0.422***	—
	p-value	0.033	0.552	0.851	0.067	0.135	0.636	0.599	0.736	0.872	0.330	0.060	< .001	—

* p < .05, ** p < .01, *** p < .001

Table 4**Bon Belief Scale - Shortened**

English Items	Japanese Items
1 During bon, my ancestors travel home	お盆の時期には、先祖の魂が家に帰る。
2 I can talk to ancestors during bon	お盆の時期には、先祖の魂に話しかけることができる。
3 I feel like ancestors are watching me during bon	お盆の時期には、先祖が自分を見ているような気がする。
4 I feel ancestors are around me during bon	お盆の時期には、先祖の魂が自分の近くににいるような気がする。
5 Ancestors leave again at the end of bon	お盆が終わると、先祖の魂はまた帰って行く。

Discussion of Study 2

The scale that we created to measure belief in the bon festival's theology was effective in measuring a range of belief levels and seemed to capture something more than general belief or spirituality measures, and behavioural measures have been able to capture.

The belief measure that we created to suit the context of the bon festival, and its spiritual background had good reliability in both our initial online trial of the extended measure, and the field study using our shortened version. It also seemed to capture a more specific feeling of belief in the theology of the Bon festival than was possible using generalised spiritual belief measures, or behavioural measures. As such, this measure was valuable in providing a more accurate picture of belief in the Bon festival than could be obtained using existing measures and showed that there is utility in crafting measures specific to your context, particularly when these contexts fall outside of the dominant Abrahamic religions.

This measure not only allows others researching the Bon festival to have a measure that is specific to their situation that captures the nuances of belief in this particular context, it also can be easily modified to measure more general belief in ancestor spirits, or the process

by which it was made can be modelled to create similar measures that are specific to unique contexts. Thereby, using this research we can increase the effectiveness of further research into belief in unique contexts.

Study 3

The aim of our main study is to investigate the role of belief in rituals, and to fill gaps in existing literature surrounding the outcomes of anxiety and social cohesion. To provide some structure, I will first present existing research on the outcome of anxiety in rituals then discuss social cohesion and finish by presenting my hypotheses.

Rituals and Anxiety

Anxiety has been studied for a long time as an outcome of ritual behaviours (Malinowski, 1918; Hobson et al., 2017; Homans, 1941) and as such there is a large pool of data to support the claim that taking part in ritual activities leads to a reduction in anxiety. However, in their commentary on anxiety and ritual research, Lang and Sosis (2017) presented a range of research showing anxiety reduction and increase across different stages of different rituals, and therefore suggested that this relationship is not so simple as a straightforward reduction of anxiety regardless of the type of ritual. Studies across various different settings including field studies and lab-based experiments have often found low or reduced levels of anxiety in participants who have performed ritualised behaviours (Karl and Fischer, 2018; Hobson, Bonk, and Inzlicht, 2017; Brooks et al., 2016). The majority of these studies are lab-based, which tend to use artificial rituals involving repetitive or structured hand movement. Despite the lack of religious or personal meaning to these ritualised movements, some studies have found significant anxiety reduction effects from these behaviours (Hobson, Bonk, and Inzlicht, 2017; Brooks et al., 2016). This reduction of anxiety through meaningless ritualised behaviour supports a bottom-up model of ritual processes effect on anxiety, where the movements involved in rituals are what prompts lowered anxiety.

However, a study by Brooks et al. (2016), in contrast, supports a top-down explanation. They asked participants to perform a series of ritualised movements, for half of

the participants they called this a 'ritual' while in for the other half they called them 'random behaviours'. The results of this study showed that while both groups experienced lower levels of anxiety after performing the behaviours, the group who heard them labelled as a ritual experienced a significantly greater reduction. This suggests that the conceptualisation and expectations of rituals are also playing a role in the reduction in anxiety of people performing ritualised behaviours.

Taken together, these studies support the model proposed by Hobson et al. (2017) in which rituals reduce anxiety through a variety of both top-down and bottom-up processes. Repetitive movement is a common component of rituals and has been found to increase when participants are put under stress (Lang et al., 2015), therefore some theorise that these movements are a response produced in order to reduce stress (Lang et al., 2015; Hobson et al., 2017). This is a very popular proposed mechanism for how rituals reduce anxiety and is the focus of many studies (Karl, and Fischer, 2018), there is therefore a wealth of research backing up this bottom-up model of ritual reduction of anxiety.

In comparison there is relatively little research into top-down processes in ritual reduction of anxiety. Brooks et al. (2016) as mentioned above does of course provide good evidence for these processes, nevertheless outside of this study there is a dearth of research. There is some research going into the idea of cognitive load as a mechanism involved in reducing anxiety during rituals (Boyer, and Liénard, 2006; Karl, and Fischer, 2018), this is the idea that rituals take up cognitive resources leaving less resources that can be involved in producing anxiety. However, the idea evidenced in the Brooks et al. study that it is the label of 'ritual' and the meaning attached to it that makes a difference in anxiety reduction lacks corroborating research. Therefore, to test this theory, one of our hypotheses is that there will be an interaction between belief and participation where high levels of belief will increase the effects of participation on anxiety.

When it comes to anxiety studies which take place in the field, there is some recent evidence of ritual lower anxiety after taking part in a ritual. In a study of participants in a Holi/Navratri festival in India, Snodgrass, Most, and Upadhyay (2017) found that stress levels on the last day of the festival were low compared to a few days before. However, Lang and Sosis (2017), in their comments on the paper suggest that the pre-ritual test was not sufficiently early to get an accurate baseline measure of participants. The pre-ritual baseline came from survey participants being asked on the first day of the festival period how they have felt in the preceding weeks. Lang and Sosis suggest that this data could easily be impacted by stress caused by the upcoming celebrations. Lang and Sosis (2017) therefore suggest that the pre-ritual measurements may have already been above baseline and, in order to give a more accurate representation of the pattern of anxiety and stress, pre-ritual baselines should be collected in advance of the event.

In studies which include anxiety as a main outcome, there is a tendency to turn to rituals which are quiet, solitary, and meditative (Brooks et al., 2016; Karl, and Fischer, 2018; Anastasi, and Newburg, 2008; Hobson, Bonk, and Inzlicht, 2017) to conduct research, and studies based on collective rituals such as the one discussed above by Snodgrass, Most, and Upadhyay (2017) are in the minority. While these studies on solitary rituals are important, it does mean that in studies focusing on anxiety there is a bias which may mean we do not have the full picture of how various rituals affect anxiety. The worlds rituals are extremely diverse with variables such as group size and activity intensity varying widely along with many additional factors such as pain, religiosity, and cost of various types. Some examples that show the diversity of rituals worldwide are the fire-walking festival in Mauritius which involves many people walking on the edges of swords and burning coals (Fischer et al., 2018), the ANZAC Day dawn services in New Zealand and Australia which require waking before the dawn and are very quiet and solemn but with large crowds, and Pentecostal

Church services which have loud singing, praising, and preaching. All of these involve ritualised behaviour, but they are not represented by studies using only solitary, calm rituals to elicit changes in anxiety levels.

In acknowledging this gap in existing ritual research, we bring forth a question of whether the results that have been found in solitary rituals extend to group rituals. The expectation, based on the ritual process framework proposed by Hobson et al. (2017) and in support of the work by Snodgrass, Most and Upadhyay (2017) on the Holi/Navratri festival, is that as these different styles of rituals still contain the same basic physical and cognitive features of the rituals used in prior studies, they will therefore result in reduction of anxiety in the same fashion. As such, we hypothesise that participation in collective ritual will decrease anxiety.

Rituals and Social Cohesion

Social cohesion is another common outcome of rituals that has seen a large amount of research. It has over time been established as a consistent outcome of group rituals and a range of theories on the mechanisms behind this have started to solidify (Fischer, Callander, Reddish, and Bulbulia, 2013; Jackson et al., 2018; Mogan, Fischer, and Bulbulia, 2017; Sakuae, and Reid, 2012). A major area of research around social cohesion in rituals is called synchrony (Reddish, Bulbulia, and Fischer, 2013). This refers to movements during rituals that are synchronised with the movements of other group members, something that seems to take place at the Bon dance, where participants do a repetitive dance together in time with music. The idea is that this movement as a group leads to the participants feeling more unified and cohesive with other participants, which increases measurements of social cohesion and prosocial behaviour (Swann, Jetten, Gómez, Whitehouse, and Bastian, 2012; Hove, 2008). This has been established in a range of synchrony experiments both within

ritual contexts and outside of them (Fischer, Callander, Reddish, and Bulbulia, 2013; Jackson et al., 2018; Mogan, Fischer, and Bulbulia, 2017).

However, there is some evidence that non-participants who are viewing a ritual also feel these social cohesion effects. In a study by Lakens and Stel (2011), participants were found to attribute feelings of rapport to two figures waving in unison to a higher degree than two figures not in unison. This effect was slightly diminished but still present when participants thought that the figures had been instructed to be in unison as opposed to developing the unison independently of an outside source. In their study of participants and observers at a fire-walking event, Konvalinka et al. (2011) found that participants and related spectators experienced synchronised levels of physiological arousal throughout the event. These studies hint that observers may experience some of the effects that the participants themselves do. Therefore, it seems that synchrony is at least not the only process taking place. As they are not directly involved in the ritual, it seems that viewers do not receive exactly the same outcomes as those fully participating, but that they are affected by the ritual. Thus, compared to those who are not involved at all, viewers may be expected to have small effects on outcomes such as anxiety and social cohesion, and dancers would experience greater effects.

Further, the social cohesion increase may not just be towards those who are performing the ritual with you, but to your community in general and even your out-group. Reddish, Tong, Jong, Lanman, and Whitehouse (2016) found that synchronous behaviour lead to increased prosociality towards a PhD student from a rival university who was uninvolved with the synchronous behaviour and therefore modelled as an out-group member. In an earlier study, Reddish, Bulbulia, and Fischer (2013) found similar increases in prosociality towards a PhD student from the same university, and towards an adjacent group involved in the experiment who performed a separate task. These studies establish that

synchronous behaviour, a common component of rituals, increases prosociality towards groups and individuals outside of those who were also involved in synchronicity.

To further test the effects of rituals on social cohesion, we suggest testing the same group of ritual attendants on their cohesion with other participants in the ritual, their general community, and their nation. Though there is prior research assessing social cohesion towards outgroups (Reddish, Bulbulia, and Fischer, 2013; Reddish, Tong, Jong, Lanman, and Whitehouse, 2016), there is little looking at ingroups larger than the local community. As the ritual we plan to study is one specific to a nation and common throughout the country, it seems reasonable to hypothesise that participation in the ritual might increase social cohesion at the national level as well as at the community and participant level. This will enhance our understanding of why people perform rituals, specifically of the argument that they function to increase social attachment to our community. Is this social attachment function only for those who explicitly participate in the ritual, or does it also apply to those peripherally involved? We hypothesise that participation will increase social cohesion in all three categories (participants, community, nation), but that participation interacts with the three categories of social cohesion, specifically that the greatest differences in social cohesion between participant groups will be towards other participants, followed by community, and then nation.

Drawing from the study by Brooks et al. (2016) into ritual and anxiety, as the processes behind reduction in anxiety and increase in social cohesion both involve the creation and transference of meaning (Hobson et al., 2017), we wonder if, similarly to anxiety, social cohesion effects would be less without the meaning inherent to a ritual. We therefore hypothesise that there will be an interaction between belief and participation where high levels of belief will increase the effects of participation on social cohesion.

Some of the cited studies use behavioural measures (Reddish, Bulbulia, and Fischer, 2013; Reddish, Tong, Jong, Lanman, and Whitehouse, 2016; Fischer, Callander, Reddish, and Bulbulia, 2013; Jackson et al.; Mogan, Fischer, and Bulbulia, 2017) and some use self-report measures (Fischer, Callander, Reddish, and Bulbulia, 2013; Mogan, Fischer, and Bulbulia, 2017). It is important to note that there is debate over whether these are equivalent or measuring the same concept (Galen, 2012; Myers, 2012). As such we have decided to use both behavioural and self-report measures to test social cohesion.

In order to answer the questions of anxiety in group rituals, extent of social cohesion, and the role of belief in these outcomes, I have set out five hypotheses based on previous literature. These are:

H1: Participation in collective ritual will decrease anxiety

H2: There will be an interaction between belief and participation where high levels of belief will increase the effects of participation on anxiety.

H3: Participation will increase social cohesion in all three categories (participants, community, nation), but that

H4: Participation interacts with the three categories of social cohesion, specifically that the greatest differences in social cohesion between participant groups will be towards other participants, followed by community, and then nation. And,

H5: There will be an interaction between belief and participation where high levels of belief will increase the effects of participation on social cohesion.

Methods

Design

This was a field experiment that we conducted during the Bon dance at a Bon Festival in Mikasa, Hokkaido, in Japan. It is a mixed design study with two between subject variables

(participation and belief) and one within subject variable (category of social cohesion).

Participation is a quasi-experimental independent variable, belief is a moderator variable, and there are two outcome variables, social cohesion, and anxiety. For category, participation has three levels (participant, observer, control), as does category of social cohesion (other participants, community, nation) where each participant was asked to respond on social cohesion measures for each of the three levels of social cohesion. Belief, our moderator variable, is continuous. Social cohesion and anxiety are also continuous variables.

Participants

Participants were 196 members of the Mikasa community and visitors from the surrounding area to the festival. 12 were excluded due to incomplete surveys, leaving us with 183 participants in the analysis. Ages ranged from 18 to 82, and was relatively evenly split with 57% female and 42% male, 1% answered as other. 50% of participants currently resided in Mikasa, 13% lived in the nearest big town, Iwamizawa, and 37% were from outside of those areas.

Materials

Dependent Variables

We measured anxiety using the State-Trait Anxiety Inventory – Trait Short Form (Spielberger, Gorsuch, and Lushene, 1970). This is a 5-item measure rated on a 4-point Likert scale from 1 - “全くそう思わない” (not at all) to 4 - “強くそう思う” (very much so), with a higher score indicating more anxiety. It has been translated and validated in a Japanese context by Koizumi, Fujita, Ninomiya, and Nakamoto (1998), and contains items such as “心が休まってる” (I feel rested), and “何か気がかりだ” (I feel anxious). The State Anxiety Inventory had low internal reliability ($\alpha = .660$), this was found to be due to low intercorrelations of items 2 and 4. When removed internal reliability increased to an

acceptable level ($\alpha = .850$). As such, analysis using this scale will be done with these items removed, and the result with all items included in footnotes.

Social cohesion was assessed using an identity fusion scale, a social identification scale and a dictator game. The identity fusion scale is a modification of the written scale by Gómez et al. (2011) with 5 items that participants are asked to rate on a 5-point Likert scale from 0 – “全く当てはまらない” (totally disagree) to 4 – “非常に当てはまる” (totally agree). Higher scores indicate more social cohesion. Items include “私は、[group]と深い心の絆で結ばれている” (I feel a deep emotional bond with [group]) and “私は、自分が [group]と一体だと感じる” (I am one with [group]). The social identification scale is a modified version of Leach et al.’s (2008) group identification scale, which includes items such as “私は[group]と熱心に関わっていると思う” (I identify with [group]), and Postmes, Haslam, and Jans’ (2013) single item scale, “私は[group]と私自身を同一視している” (I feel committed to [group]). These items are rated on the same Likert scale as the Gomez et al. (2011) measure. Both of these were translated and validated in a Japanese context by Chris Kavanagh (personal communication, July 30, 2019). The combined identification scales at the national ($\alpha = .954$), community ($\alpha = .956$), and participant level ($\alpha = .937$) all had good internal reliability. We ran a set of confirmatory factor analyses on the combined Social Identification, and Identity Fusion scales, one for each level of social cohesion. Across the three iterations of this combined scale that we used in our study, the 2 factor solution consistently had the same degree of fit as the single factor solution. While the fit was not very good in either iteration, they did not change for the worse when using a one factor solution. As such we chose to treat these as a single variable going forward, rather than two distinct types of identification. Due to the nature of the subject, i.e. how do you feel

about other participants, the social cohesion measures were not relevant to the control group at the other participant level and as such we did not collect this information from them.

Table 5
Fit Statistics

		Single Factor Model	Two Factor Model
Participant	Chi square	70.328, df = 20, $p < .001$	64.960, df = 19, $p < .001$
	CFI	.944	.949
	TLI	.922	.925
	RMSEA	.133 (90% CI = .100-.167)	.130 (90% CI = .096-.165)
	SRMR	.043	.042
Community	Chi square	116.362, df = 20, $p < .001$	107.109, df = 19, $p < .001$
	CFI	.935	.940
	TLI	.909	.912
	RMSEA	.161 (90% CI = .133-.190)	.158 (90% CI = .130-.188)
	SRMR	.037	.037
Nation	Chi square	195.166, df = 20, $p < .001$	180.207, df = 19, $p < .001$
	CFI	.885	.894
	TLI	.839	.844
	RMSEA	.217 (90% CI = .190-.245)	.214 (90% CI = .186-.243)
	SRMR	.049	.050

In the dictator game, participants were told they have 10000JPY (around 140NZD) and are asked to allocate that money between themselves and a given group. In this case the game will be repeated for each participant to include 3 rounds, one for each level of social cohesion being measured. An example of a round might be “Of 1000JPY choose how much you would like to give to the local community association and how much you would like to keep” (community level). Participants were told that 5 participants would be chosen at random to have one of their three answers paid out. Recipients for the donations at the three levels of social cohesion were other participants, the local education board (who organise the festival), and the Japanese Red Cross. The local education board was chosen because of its high presence in the community and particular salience as a community organisation on the days of the Bon dance, as they were running it. The Japanese Red Cross was chosen as the only national charitable organisation that was well known enough that all respondents should

know of it, and because of its recent involvement in earthquake aid in Hokkaido.

Respondents were given the option to enter a draw to have one of either their community, or nation level donation answers paid out to themselves and the recipient group. 40% of participants chose to enter the draw.

Moderator Variable

The belief scale that we developed during Study 1 was used alongside the SBS (Jung, and Halberstadt, 2016) to assess belief in ancestor spirits, and more general spiritual belief. We also used two behavioural measures, asking participants how often they participate in grave cleaning (multiple times a year, every year, ...), and how often they travel to their family home for Bon (every year, every few years, ...). Our belief scale ($\alpha = .894$), and the SBS ($\alpha = .909$) both demonstrated good internal reliability. They had a significant moderate, positive correlation ($r = .345, p < .001$) (Appendix 4).

Location

When choosing the specific location in which we would perform our research, the main concern was practicality. The location needed to be close enough to travel there without too much cost, it needed to be big enough that we could collect sufficient responses, and the organisers needed to be happy with us being there. As we were based in Sapporo, the first event we looked into attending was the Sapporo City Bon Dance, however on consultation with organisational staff at Sapporo City Hall we were informed we would not be able to operate at this event due to bureaucratic concerns. Around the same time, we sent out a request via fax to Mikasa city, a small town around an hour away from Sapporo. A member of the Education Board who were in charge of organising the event emailed back to organise a time we could meet and go over our request in detail. When we met, we described the survey and our goals to him, and answered some questions about some concerns he had. At the end of the meeting we had provisional permission to collect data at the *Mikasa hokkai*

bon odori, with permission to run the economic game pending while he discussed with the rest of the board. After about a week we received full permission to conduct our study at *Mikasa hokkai bon odori*.

Procedure

We surveyed the control group 2 weeks before the festival at a local supermarket that was suggested as a location by the Mikasa Education Board, who organise the Mikasa Bon Festival. 3 local RAs assisted with data collection at the control site. At the control sampling we asked people as they finished their shopping whether they would like to participate in a 5-10 minute survey. If they accepted then they were given a consent form to fill out, and then a paper survey. The RA then took the consent form to be filed and stood to the side to give them privacy as they filled out the form but was available if they had questions. If participants wanted to participate in the lottery to receive a pay-out from the economic game, they were asked to provide a phone number, email, or postal address for us to contact them with. Data was collected for 5 hours, from 12 until 5pm.

Participants at the festival were surveyed similarly. A team of myself and 5 RAs asked people throughout the festival area whether they would like to participate, and upon acceptance gave them either a consent form and paper survey, or a tablet with a digital version of the survey and consent form. The survey generally took 5-10 minutes to complete. Paper surveys were on clipboards fitted with battery powered lights to allow use as the sun went down. We conducted surveys for two nights, from 7.30 to 9.30 each night.

Results

As in study 2, after collection the first step was to impute missing data using MICE, after excluding 5 responses for not completing the majority of the survey, there was only a small amount of missingness.

H1: participation in collective ritual will decrease anxiety

Our first hypothesis was that participation in collective ritual would decrease anxiety. To assess this, we performed an ANOVA to search for group differences in anxiety between different levels of participation. We found no significant difference between the groups ($F(2,180) = 1.418, p = .245$)¹. As the means and standard deviations were low across the groups (Table 6)², we suspect that changes in anxiety for this group would require a much more sensitive instrument to detect.

Table 6
Anxiety

	Mean	SD
Control	2.279	.731
Viewers	2.048	.759
Dancers	2.107	.720

Note: Items were scored on 4-point Likert scale

H2: There will be an interaction between belief and participation where high levels of belief will increase the effects of participation on anxiety.

As there was no effect of participation on anxiety, our second hypothesis of there being an interaction between belief and participation where high levels of belief would increase the effects of participation on anxiety was already unsupported. However, we ran another regression with independent variable participation, moderation variable belief, and outcome variable anxiety just to confirm the null hypothesis, and as expected found no significant interaction effect ($F(5,177) = 2.665, p = .238, R^2 = .044$)³ or main effects of belief

¹ ($F(2,183) = 1.619, p = .201$)

²

Anxiety	Mean	SD
Control	2.070	.567
Viewers	1.902	.573
Dancers	1.916	.510

³ ($F(5,177) = 1.723, p = .132, R^2 = .019$)

($\beta = -0.104, p = .421$)⁴ or participation (Control vs Viewers, $\beta = 0.289, p = .514$; Control vs Dancers, $\beta = 0.074, p = .885$)⁵.

H3: participation will increase social cohesion in all three categories (participants, community, nation)

To test our third hypothesis, participation will increase social cohesion in all three categories (participants, community, nation), we performed a number of ANOVAs using participation as the grouping variable and each level of donation and social identification as outcome variables. At the participant level, we found a significant difference ($F(1,141) = 17.231, p < .001$), where post hoc tests showed that dancers had significantly higher identification with other participants than viewers, but there was no significant difference in donation ($F(1,141) = .747, p = .389$).

Table 7

Social Identification					
Level	Group	Mean	SD	Viewers	Dancers
Participant	Control	NA	NA	NA	NA
	Viewers	2.136	.884		$t = -4.182^{***}$
	Dancers	2.808	.956		
Community	Control	2.985	.866	$t = 2.920^*$	$t = -0.230$
	Viewers	2.453	.940		$t = -3.339^{**}$
	Dancers	3.033	1.144		
Nation	Control	2.907	1.057	$t = 0.079$	$t = 0.250$
	Viewers	2.892	1.042		$t = 0.212$
	Dancers	2.853	1.049		

Note: All items were measured on a 5-point Likert scale. * $p < .05$, ** $p < .01$, *** $p < .001$

At the community level, we found a significant group difference in identification ($F(2,183) = 6.594, p = 0.002$) which post hoc tests revealed was between dancers and viewers, and viewers and control, where viewers had significantly lower identification than either of the other two groups. We found another significant difference in donation ($F(2,183)$)

⁴ ($\beta = -0.069, p = .482$)

⁵ (Control vs Viewers, $\beta = 0.080, p = .811$; Control vs Dancers, $\beta = -0.007, p = .985$)

= 13.273, $p < .001$), where post hoc tests showed that the control group donated significantly more than both viewers and dancers. This difference remained even when controlling for age and residence (Appendix 3).

Finally, at the national level, we found no significant difference in identification ($F(2,183) = .058, p = .944$), but a significant difference in donation ($F(2,183) = 15.067, p < .001$), which post hoc tests revealed was again a case of the control group donating significantly more than the other two groups.

Table 8

Donation					
Level	Group	Mean	SD	Viewers	Dancers
Participant	Control	NA	NA	NA	NA
	Viewers	4.733	3.375		$t = 0.796$
	Dancers	4.208	2.949		
Community	Control	7.093	2.801	$t = 4.119^{***}$	$t = 4.782^{***}$
	Viewers	4.833	3.682		$t = 1.309$
	Dancers	3.320	3.285		
Nation	Control	7.279	2.746	$t = 3.599^*$	$t = 5.356^{***}$
	Viewers	4.700	3.779		$t = 2.536^{**}$
	Dancers	3.920	3.083		

*Note: Donation options ranged from 0 to 10 in thousands of yen. * $p < .05$, ** $p < .01$, *** $p < .001$*

H4: Participation interacts with the three categories of social cohesion, specifically that the greatest differences in social cohesion between participant groups will be towards other participants, followed by community, and then nation.

In order to assess our fourth hypothesis, that participation interacts with the three categories of social cohesion, specifically that the greatest increase in social cohesion compared to control will be towards other participants, followed by community, and then nation, we performed two linear regressions, one assessing the pattern of results for identification/fusion ($F(5,500) = 7.171, p < .001, R^2 = .058$) and one assessing the results for donation ($F(5,500) = 10.81, p < .001, R^2 = .089$). While we found no significant interaction

effect in the economic measure, we did find one in the identity measure ($\beta = 0.627, t = 3.063, p = .002$). The level of identification reported by the viewers and the control group interacts with community and nation levels, where those in the control group reported similar levels of identification with nation and community, but viewers reported lower levels of identification with community compared to nation.

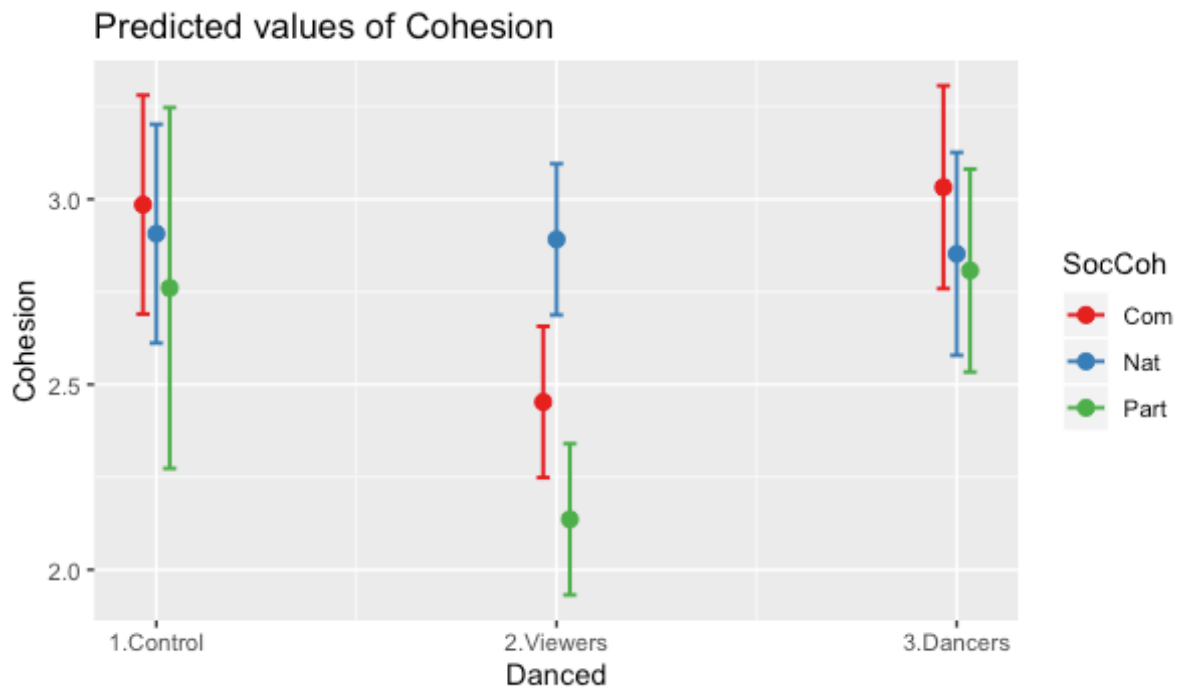


Figure 2. Regression of cohesion type and participation level onto social identification.

Table 9

Social Identification Predicted by Participation

Predictor	β	p
(Intercept)	2.985	<.001
Control/Viewers	-0.533	.004
Control/Dancers	0.047	.820
Community/Nation	-0.078	.713
Community/Participants	-0.225	.255
Control/Viewers x Community/Nation	0.517	.046
Community/Participants x Control/Dancers	-0.102	.727
Control/Viewers x Community/Nation	-0.091	.710

Table 10
Donation Predicted by Participation

Predictor	β	p
(Intercept)	7.279	<.001
Control/Viewers	-2.579	<.001
Control/Dancers	-3.359	<.001
Community/Nation	-0.186	.796
Community/Participants	0.360	.590
Control/Viewers x Community/Nation	0.319	.716
Community/Participants x Control/Dancers	-0.414	.674
Control/Viewers x Community/Nation	-0.327	.695

Due to the high levels of social identification reported by the control group, I was interested to see how our results would look with the control group removed. After running this analysis again with the control group excluded ($F(5,414) = 8.745, p = 0.085, R^2 = .085$), I found an interaction between identification reported by the viewers and dancers with community and nation ($\beta = -0.619, t = -2.500, p = .013$). Whereas dancers had higher levels of identification with community than viewers ($t = 3.312, p = .001$), they both had statistically equivalent levels of identification with nation ($t = -0.224, p = .823$). Dancers also reported higher levels of identification with other participants than viewers did ($t = 3.836, p < .001$).

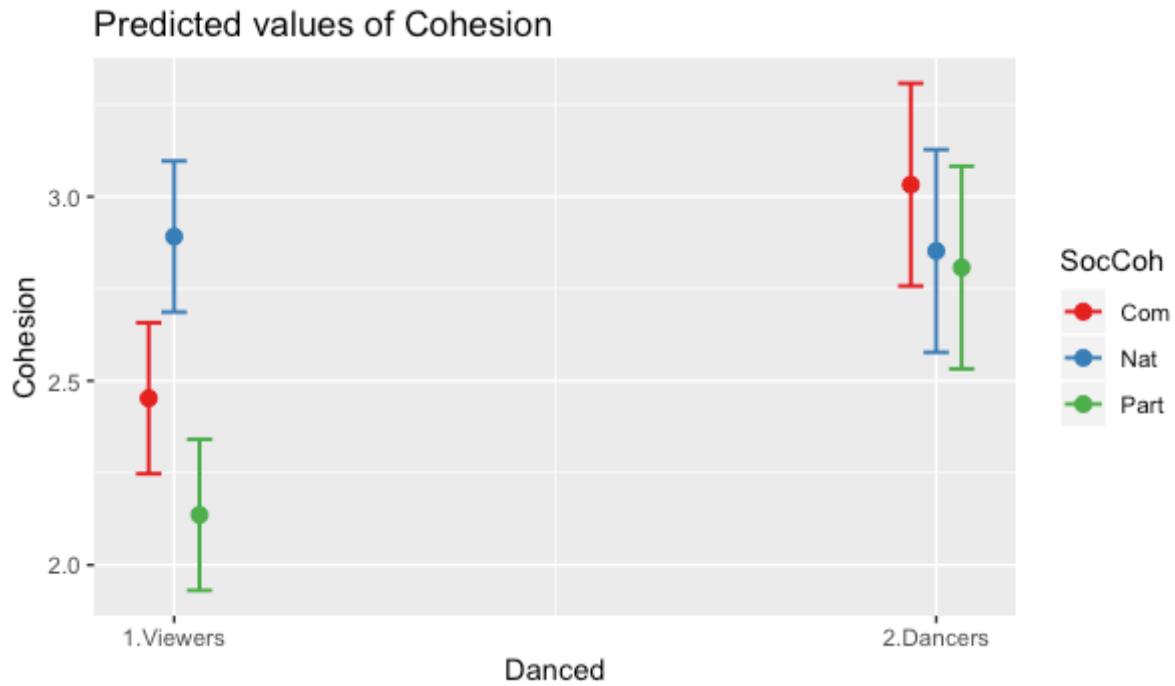


Figure 3. Regression of cohesion type and participation level onto social identification, with control group excluded.

H5: There will be an interaction between belief and participation where high levels of belief will increase the effects of participation on social cohesion

Our final hypothesis was that there would be an interaction between belief and participation where high levels of belief would increase the effect of participation on social cohesion. As we used two different methods to assess social cohesion and measured it on three different levels (other participants, local community, nation), we ran six separate regressions to assess this hypothesis. All had the independent variable of participation, and the moderation variable of belief, but differed on the outcome variables of donation to; other participants, community, and nation; and social identification with other participants, community, and nation. Participation was dummy coded with control as the comparison group, except at the other participants level where viewers was the comparison group.

Table 11**Social Identification Predicted by Participation and Belief**

Level	Predictor	β	p
Other participants	(Intercept)	1.126	.002
	Dancers	1.213	.041
	Belief	0.371	.003
	Belief x Dancers	-0.200	.333
Community	(Intercept)		
	Viewers	-0.825	.160
	Dancers	1.116	.103
	Belief	0.281	.104
	Belief x Viewers	0.079	.717
	Belief x Dancers	-0.420	.094
Nation	(Intercept)		
	Viewers	0.428	.478
	Dancers	1.348	.056
	Belief	0.659	<.001
	Belief x Viewers	-0.230	.307
	Belief x Dancers	-0.583	.024

Table 12**Donation Predicted by Participation and Belief**

Level	Predictor	β	p
Other participants	(Intercept)	1.727	.169
	Dancers	3.141	.139
	Belief	1.104	.014
	Belief x Dancers	-1.318	.078
Community	(Intercept)	6.282	<.001
	Viewers	-4.397	.032
	Dancers	-1.083	.648
	Belief	0.408	.496
	Belief x Viewers	0.627	.409
	Belief x Dancers	-0.873	.315
Nation	(Intercept)	6.455	<.001
	Viewers	-3.244	.115
	Dancers	-0.583	.808
	Belief	0.261	.665
	Belief x Viewers	0.335	.661
	Belief x Dancers	-1.190	.175

Of the six regressions, only the regression onto social identification at the nation level had a significant interaction effect ($F(5,177) = 4.771, p < .001, R^2 = .119$). However, the interaction was not what we were expecting. The national identification reported by the control group and the dancers interacted with belief, where the dancers had the same level of national identification regardless of belief levels ($\beta = 0.181, t(179) = 1.328, p = .186$), but the control group had a positive correlation between national identification and belief ($\beta = 0.582, t(179) = 4.715, p < .001$).

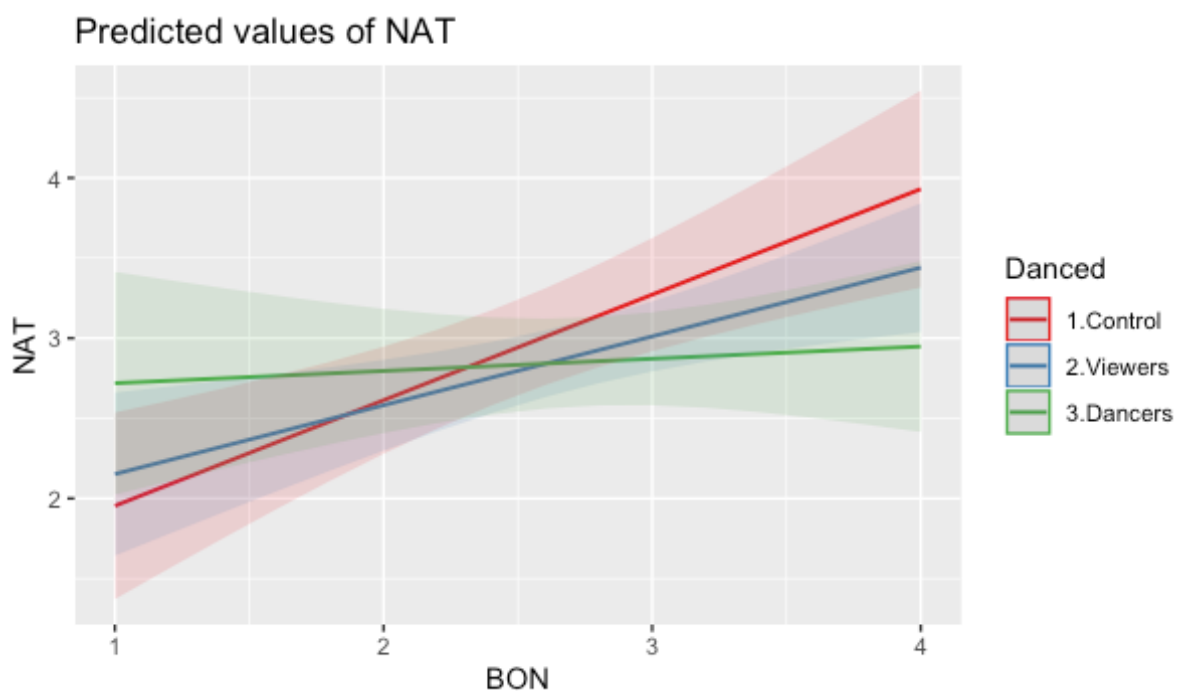


Figure 4. Regression of participation level and belief onto national identification.

Discussion of Study 3

The results of our second study showed more complex patterns than expected.

Our first hypothesis was that participation in collective ritual would decrease anxiety. We did not find any evidence of this in our sample. As there was a generally low level of anxiety in our sample, we suspect that any change in anxiety levels due to participation may have been too slight for our measure to pick up due to a floor effect where, as people already

report low anxiety, there is not much lower they can go. This is supported by research by Karl and Fischer (2018) and Hobson, Bonk, and Inzlicht (2017) who only found small effect sizes in their research on the effects of ritualised behaviour on anxiety, despite both using physiological measures. In order to properly test this hypothesis in a naturalistic context, it may be necessary to use more delicate modes of measuring change in anxiety, such as longitudinal measures, and physiological measures.

We also hypothesised that there would be an interaction between belief and participation where high levels of belief increased the effects of participation on anxiety. As there was no change in anxiety, we also did not find an interaction effect here.

Our third hypothesis was that participation would increase social cohesion in all three categories. This hypothesis was partially supported. One of our measures of social cohesion, social identification, showed increases due to participation at the levels of other participants, and community, but not at national level. However, our behavioural measure did not show this pattern. The regression assessing donation to community showed that despite higher levels of social identification, participants in the ritual were in fact less willing to donate to their community than their peers in the control group. This is in contrast to the work by Reddish, Tong, Jong, Lanman, and Whitehouse (2016) and Reddish, Bulbulia, and Fischer (2013) who found increases in prosociality in participants who performed synchronous behaviour. As our research involved donating money rather than time, it is possible that this was seen as greater cost and therefore the effect was lessened, however this would theoretically result in no difference in donation between groups as opposed to lower levels of donation in those who participated more, as we found. As this remained the case when controlling for residence and age (see Appendix 3) it may be that something about the location made our control group more generous. This could be an avenue for further research, looking at how various social cohesion measures are affected by location.

Hypothesis four was that participation would interact with the three categories of social cohesion, specifically that the greatest differences in social cohesion between participant groups would be towards other participants, followed by community, and then nation. We did not find support for this hypothesis in the identification measure or in the behavioural measure. Only in the identification analysis, when excluding the control group, did we find a pattern similar to what we expected. Identification with other participants and the community showed similar increases due to participation, whereas identification with nation stayed consistent. This difference between viewer and dancer identification is in keeping with the studies by Fischer, Callander, Reddish, and Bulbulia (2013), Jackson et al. (2018), and Mogan, Fischer, and Bulbulia (2017), but in combination with the outcomes from the control group, this suggests that social cohesion outcomes may have similar complications to those described by Lang and Sosis (2017) in relation to anxiety. Namely that the pattern of change from pre- to post-ritual has not been adequately studied to draw a conclusion around net gain. Therefore future research needs to look at long term patterns of social cohesion for individuals leading up to and following after these events.

Our final hypothesis was that there would be an interaction between belief and participation where high levels of belief would increase the effects of participation on social cohesion. We did not find evidence to support this hypothesis. In most cases there was no interaction between belief and social cohesion. In one case, identification with nation, we found an interaction effect, but the interaction did not have the pattern we expected. Taking into account the Brooks et al. (2016) study that showed a difference in anxiety reduction between participants performing a random series of movements, and participants performing those same movements but told it was a ritual, we suggest that these results may indicate that while the concept of ritual might be important in influencing outcomes, conscious belief in that ritual may be unimportant. In order to test this, future research might compare social

cohesion and anxiety reduction outcomes for religious and non-religious participants performing both familiar religious rituals and unfamiliar movements labelled as rituals or random movements.

Overall Discussion

This research aimed to investigate the role of belief in collective ritual in reducing anxiety and increasing social cohesion. As part of this endeavour we developed a belief scale specific to the Japanese Bon Festival from ethnographic literature and focus groups. Our study also presents an ethnographic account of one of the most widely celebrated communal festivals in Japan. It therefore contributes to the documentation of how this particular ritual exists in the modern day, but also of Japanese religious and cultural events in general.

This research has brought together a range of sources on the Bon Festival and combined with observation and description of the Bon dance in Mikasa, Japan, has given a more modern perspective on how the Bon Festival is celebrated. I hope that this information will lead to further research into this event and greater understanding of how the wider festival is celebrated throughout Japan in the modern day.

The scale that we created to measure belief in the Bon Festival gave us a clearer picture of belief in the Bon Festival than we could have achieved using existing methods and therefore demonstrated the advantage of creating and using measures specific to your context, particularly when these contexts fall outside of the dominant Abrahamic religions. The measure also provides others researching the Bon festival with a scale that captures the nuances of belief in this context, hopefully increasing and improving future research into this event. It can also be modified to measure more general belief in ancestor spirits, or to create similar measures that are specific to other under-researched contexts.

This research has also helped us identify avenues for further research, including looking at the longitudinal patterns of social cohesion for individuals leading up to and following ritual events, comparing social cohesion and anxiety reduction outcomes for religious and non-religious participants performing a variety of familiar and unfamiliar rituals

either labelled rituals or not, and researching how various social cohesion measures are affected by location.

The role of belief in ritual outcomes was further illuminated by this research. Belief in the Bon Festival did not increase anxiety reduction or social cohesion outcomes from participation in the ritual. When paired with the work by Brooks et al. (2016), this suggests that the perceived existence of meaning in a ritual is enough to produce these outcomes, and belief is not important for gaining these benefits.

While we did not necessarily get what we expected, our results help expand psychological understanding of rituals and the role that belief plays, along with contributing a measure that will be useful in further study of belief in unique contexts. While lab-based research can show clear cut results of isolated aspects of ritual, field studies such as this remind us of the complexity of actual human experiences and bring us further towards a nuanced understanding of the psychological processes that take place when people participate in these rituals.

References

- Aarnio, K., & Lindeman, M. (2007). Religious people and paranormal believers: Alike or different? *Journal of Individual Differences, 28*(1), 1-9.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1027/1614-0001.28.1.1>
- Anastasi, M. W., & Newberg, A. B. (2008). A preliminary study of the acute effects of religious ritual on anxiety. *The Journal of Alternative and Complementary Medicine, 14*(2), 163-165.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1089/acm.2007.0675>
- Ashikaga, E. (1950). The Festival for the Spirits of the Dead in Japan. *Western Folklore, 9*(3), 217-228. doi:10.2307/1520740

- Bane, Theresa (2016). *Encyclopedia of Spirits and Ghosts in World Mythology*. Jefferson, NC: McFarland & Company, Inc., Publishers.
- Batson, C. D. & Schoenrade, P. A. (1991). Measuring religion as a quest: 2.) Reliability concerns. *Journal of Scientific Study of Religion*, 30, 430-447.
- Berentsen, J. M (1985). *Grave and Gospel*. (Beihefte Der Zeitschrift Für Religions- und Geistesgeschichte; 30). Leiden, Netherlands: Brill.
- Brooks, A. W., Schroeder, J., Risen, J. L., Gino, F., Galinsky, A. D., Norton, M. I., & Schweitzer, M. E. (2016). Don't stop believing: Rituals improve performance by decreasing anxiety. *Organizational Behavior and Human Decision Processes*, 137, 71-85. doi:<http://dx.doi.org/10.1016/j.obhdp.2016.07.004>
- Boyer, P., & Liénard, P. (2006). Why ritualized behavior? precaution systems and action parsing in developmental, pathological and cultural rituals. *Behavioral and Brain Sciences*, 29(6), 595-613; discussion 613-50. Retrieved from <https://search-proquest-com.helicon.vuw.ac.nz/docview/212235817?accountid=14782>
- Cukur, C. S., de Guzman, M. R. T., & Carlo, G. (2004). Religiosity, values, and horizontal and vertical individualism-collectivism: A study of turkey, the united states, and the philippines. *The Journal of Social Psychology*, 144(6), 613-34. doi:<http://dx.doi.org.helicon.vuw.ac.nz/10.3200/SOCP.144.6.613-634>
- Fischer, R., Callander, R., Reddish, P., & Bulbulia, J. (2013). How do rituals affect cooperation?: An experimental field study comparing nine ritual types. *Human Nature*, 24(2), 115-125. doi:<http://dx.doi.org/10.1007/s12110-013-9167-y>
- Fischer, R. & Roepstorff, A. (2016). *The psychological structure of extreme collective ritual*. Technical report, Aarhus University, Denmark.

- Fischer, R., Xygalatas, D., Mitkidis, P., Reddish, P., Tok, P., Konvalinka, I., & Bulbulia, J. (2014). The Fire-Walker's High: Affect and Physiological Responses in an Extreme Collective Ritual. *PLoS ONE*, *9*(2), E88355.
- Galen, L. W. (2012). The complex and elusive nature of religious prosociality: Reply to Myers (2012) and Saroglou (2012). *Psychological Bulletin*, *138*(5), 918-923.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1037/a0029278>
- Gebauer, J. E., Bleidorn, W., Gosling, S. D., Rentfrow, P. J., Lamb, M. E., & Potter, J. (2014). Cross-cultural variations in big five relationships with religiosity: A sociocultural motives perspective. *Journal of Personality and Social Psychology*, *107*(6), 1064-1091.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1037/a0037683>
- Gómez, Á., Brooks, M. L., Buhrmester, M. D., Vázquez, A., Jetten, J., & Swann, W. B., Jr. (2011). On the nature of identity fusion: Insights into the construct and a new measure. *Journal of Personality and Social Psychology*, *100*, 918–933.
doi:10.1037/a0022642
- Hardacre, H. (2017). *Shinto*. <https://doi.org/10.1093/acprof:oso/9780190621711.001.0001>
- Homans, G. C. (1941). Anxiety and ritual: The theories of Malinowski and Radcliffe-Brown. *American Anthropologist*, *43*, 164-172.
doi:<http://dx.doi.org/10.1525/aa.1941.43.2.02a00020>
- Hendry, J., & Webber, J. (Eds.). (1998). *Interpreting Japanese society : anthropological approaches*. Retrieved from <https://ebookcentral.proquest.com>
- Hobson, N. M., Bonk, D., & Inzlicht, M. (2017). Rituals decrease the neural response to performance failure. *PeerJ*, doi:<http://dx.doi.org/10.7717/peerj.3363>

- Hobson, N. M., Schroeder, J., Risen, J. L., Xygalatas, D., Inzlicht, M. (2017). The psychology of rituals: An integrative review and process-based framework. *Personality and Social Psychology Review*, 00(0), 1-25.
- Hori, I. (1959). Japanese folk-beliefs. *American Anthropologist*, 61, 405-424.
- Hove, M. J. (2008). Shared circuits, shared time, and interpersonal synchrony. *Behavioral and Brain Sciences*, 31(1), 29–30.
<http://dx.doi.org/10.1017/S0140525X07003202.arch>
- International Situations Project (n.d.). <https://www.situationslab.com/the-international-situations-project>
- Jackson, J. C., Jong, J., Bilkey, D., Whitehouse, H., Zollmann, S., McNaughton, C., & Halberstadt, J. (2018). Synchrony and physiological arousal increase cohesion and cooperation in large naturalistic groups. *Scientific Reports*, 8(127).
- Jong, J., & Halberstadt, J. (2016). *Death anxiety and religious belief: an existential psychology of religion*. London, UK: Bloomsbury Academic.
- Karl, J. A., & Fischer, R. (2018). Rituals, repetitiveness and cognitive load. *Human Nature : An Interdisciplinary Biosocial Perspective*, Oct 2018, 1-24.
 doi:<http://dx.doi.org/10.1007/s12110-018-9325-3>
- Kavanagh, C. (2019, July 30). Personal email.
- Kisala, R. 2006. "Japanese Religions." In P. and C. Chilson, (Eds). *Nanzan Guide to Japanese Religions* (pp. 3-13), Swanson, Honolulu: University of Hawaii Press
- Koizumi, N., Fujita, D., Ninomiya, R., & Nakamoto, N. (1998). Screening test by statistically reducing the number of the State-Trait Anxiety Inventory (STAI) items. *Sangyo Eiseigaku Zasshi*, 40, 107-112. doi:10.1539/sangyoeisei.KJ00001990548
- Konvalinka, Ivana & Xygalatas, Dimitris & Bulbulia, Joseph & Schjoedt, Uffe & Jegindø, Else-Marie & Wallot, Sebastian & Orden, Guy & Roepstorff, Andreas. (2011).

- Synchronized arousal between performers and related spectators in a fire-walking ritual. *Proceedings of the National Academy of Sciences of the United States of America*. 108. 8514-8519. 10.1073/pnas.1016955108.
- Lakens, D., & Stel, M. (2011). If they move in sync, they must feel in sync: Movement synchrony leads to attributions of rapport and entitativity. *Social Cognition*, 29(1), 1-14. doi:http://dx.doi.org.helicon.vuw.ac.nz/10.1521/soco.2011.29.1.1
- Lang, M., Krátký, J., Shaver, J. H., Jerotijević, D., & Xygalatas, D. (2015). Effects of anxiety on spontaneous ritualized behavior. *Current Biology : CB*, 25(14), 1892-1897. doi:http://dx.doi.org.helicon.vuw.ac.nz/10.1016/j.cub.2015.05.049
- Lang, M., & Sosis, R (2017). Uncertain Malinowski: The Importance of Preritual Stress Data. *Current Anthropology*, 58, 276-278.
- Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., Ouwerkerk, J. W., & Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology*, 95(1), 144–165. <https://doi.org/10.1037/0022-3514.95.1.144>
- Malinowski, B. (1918). Fishing in the trobriand islands. *Man*, 18, 87-92. doi:http://dx.doi.org/10.2307/2788612
- Manabe, K. (2018). <Research Note> Methodological examination of the Schwartz Values Survey. *Kwansei Gakuin University Sociology Department Bulletin* (129), 75-94. https://kwansei.repo.nii.ac.jp/?action=pages_view_main&active_action=repository_view_main_item_detail&item_id=27443&item_no=1&page_id=30&block_id=85
- Maring, J., & Maring, L. (1997). Japanese erotic folksong: From shunka to karaoke. *Asian Music*, 28(2), 27–49. <https://doi.org/10.2307/834473>

- Mayer, F. H. (1989). The Calendar of Village Festivals: Japan. *Asian Folklore Studies*, 48(1), 141-47.
- Mikasa City (2019), <https://www.city.mikasa.hokkaido.jp/>
- Mogan, R., Fischer, R., & Bulbulia, J. A. (2017). To be in synchrony or not? A meta-analysis of synchrony's effects on behavior, perception, cognition and affect. *Journal of Experimental Social Psychology*, 72, 13-20.
doi:<http://dx.doi.org/10.1016/j.jesp.2017.03.009>
- Myers, D. G. (2012). Reflections on religious belief and prosociality: Comment on galen (2012). *Psychological Bulletin*, 138(5), 913-917.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1037/a0029009>
- Nishiwaki, R (2004). *Nihonjin no shukyoteki shizenkan: Ishiki chosa niyoru jisshouteki kentou [A religious view of nature in Japan]*. Kyoto, Japan: Minerva.
- Ooms, H. (1967). The Religion of the Household: A Case Study of Ancestor Worship in Japan. *Contemporary Religions in Japan*, 8(3/4), 201–333.
- Piedmont, R. L. (2012). Overview and development of a trait-based measure of numinous constructs: The assessment of spirituality and religious sentiments (ASPIRES) scale. In L. J. Miller (Ed.), *The oxford handbook of psychology and spirituality; the oxford handbook of psychology and spirituality* (pp. 104-122, Chapter xxi, 634 Pages) Oxford University Press, New York, NY.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1093/oxfordhb/9780199729920.013.0007>
- Postmes, T., Haslam, S. & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *The British journal of social psychology*, 52(4).
DOI:10.1111/bjso.12006.
- Reddish, P., Bulbulia, J., & Fischer, R. (2013). Does synchrony promote generalized prosociality? *Religion, Brain & Behavior*, 4(1), 3-19.

- Reddish, P., Tong, E. M. W., Jong, J., Lanman, J. A., & Whitehouse, H. (2016). Collective synchrony increases prosociality towards non-performers and outgroup members. *British Journal of Social Psychology, 55*(4), 722-738.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1111/bjso.12165>
- Roemer, M. K. (2010). Religion and psychological distress in japan. *Social Forces, 89*(2), 559-583. doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1353/sof.2010.0049>
- Robbins, M., Francis, L., McIlroy, D., Clarke, R., & Pritchard, L. (2010). Three religious orientations and five personality factors: An exploratory study among adults in england. *Mental Health, Religion & Culture, 13*(7-8), 771-775.
doi:<http://dx.doi.org/helicon.vuw.ac.nz/10.1080/13674676.2010.519468>
- Sakuae, M., & Reid, D. (2012). Making tea in place: Experiences of women engaged in a japanese tea ceremony. *Journal of Occupational Science, 19*(3), 283-291.
doi:<http://dx.doi.org/10.1080/14427591.2011.610775>
- Saroglou, V. (2002). Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences, 32*(1), 15-25. Retrieved from <https://search-proquest-com.helicon.vuw.ac.nz/docview/57798787?accountid=14782>
- Saroglou, V. (2010). Religiousness as a Cultural Adaptation of Basic Traits: A Five-Factor Model Perspective. *Personality and Social Psychology Review, 14*(1), 108–125. <https://doi.org/10.1177/1088868309352322>
- Saroglou, V., Delpierre, V., & Dernelle, R. (2003). Values and Religiosity: A Meta-Analysis of Studies Using Schwartz's Model. *Personality and Individual Differences, 37*(4), 721-734. doi:10.1016/j.paid.2003.10.005.
- Schwartz, Shalom H. et al.(2012). Refining the Theory of Basic Individual Values. *Journal of Personality and Social Psychology, 103*(4). 663-688

- Snodgrass, J., Most, D., & Upadhyay, C. (2017). Religious Ritual Is Good Medicine for Indigenous Indian Conservation Refugees: Implications for Global Mental Health. *Current Anthropology*, 58(2). DOI:10.1086/691212.
- Soto, C.J., & John, O.P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113, 117-143.
- Spielberger, C. D., Gorsuch, R. L. & Lushene, R. E. *The State-Trait Anxiety Inventory (Test Manual)*. Palo Alto, California: Consulting Psychologists Press, 1970.
- Swann, W. B., Jr., Jetten, J., Gómez, A., Whitehouse, H., & Bastian, B. (2012). When group membership gets personal: A theory of identity fusion. *Psychological Review*, 119(3), 441–456. <http://dx.doi.org/10.1037/a0028589>.
- van Sonderen, E., Sanderman, R., & Coyne, J. C. (2013). Ineffectiveness of reverse wording of questionnaire items: let's learn from cows in the rain. *PloS one*, 8(7), e68967. doi:10.1371/journal.pone.0068967
- Wulff, D. M. (1991). *Psychology of religion: classic and contemporary views*. New York: Wiley.
- Wulff, D. M. (1997). *Psychology of religion: classic and contemporary*. New York: Wiley.
- Yamakage, M. (2010). *The essence of Shinto: Japan's spiritual heart*. Kodansha USA.
- Yanagita, K. (1970). *About our ancestors: The Japanese family system* (F. H. Mayer, Trans.). Tokyo: Japan Society for the Promotion of Science.

Appendix 1



北海道大学
HOKKAIDO UNIVERSITY



TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Bon Belief Scale - Full

English	Japanese
1 During bon, my ancestors travel home	お盆の時期には、先祖の魂が家に帰る。
2 I can talk to ancestors during bon	お盆の時期には、先祖の魂に話しかけることができる。
3 I feel like ancestors are watching me during bon	お盆の時期には、先祖が自分を見ているような気がする。
4 I feel ancestors are around me during bon	お盆の時期には、先祖の魂が自分の近くにいるような気がする。
5 Ancestors leave again at the end of bon	お盆が終わると、先祖の魂はまた帰って行く。
6 I feel like ancestors are physically close to me during bon	お盆の時期には、先祖の魂が自分の体の近くにいるような気がする。
7 I feel like ancestors are psychologically close during bon	お盆の時期には、先祖の魂が自分の心の近くにいるような気がする。
8 It is important to pray to ancestors during bon.	お盆の時期に先祖に祈ることは大切だ。
9 Cleaning the family grave shows returning ancestors they are cared for	お墓を掃除すれば、先祖たちは自分たちが大切にされていることを感じるができる。
10 Ancestors reside in the butsudan during bon	お盆の時期には、先祖の魂は仏壇の中にいる。
11 My ancestors listen when I pray during bon	お盆の時期に私が祈ると、それは先祖の耳に届く。
12 It is important to provide offerings for ancestors during bon	お盆の時期には、先祖にお供物を捧げることが大切だ。
13 Ancestors can affect my fortunes during bon	お盆の時期には、先祖は私の運命に影響を与えることができる。
14 My ancestors would be bothered if I didn't pray to them during bon	お盆の時期に私がお祈りをしないと、先祖が気にするだろう。
15 Ancestors do not return during bon (R)	お盆の時期に、先祖の魂が家に帰ってくるわけではない。
16 I don't feel ancestors are around me during bon (R)	お盆の時期だからといって、先祖の魂が自分の周りにいる気はしない。
17 When I pray during bon, my ancestors aren't listening (R)	お盆の時期に私が祈ったとしても、先祖がそれを聞くわけではない。

Appendix 2

Looking at our demographic variables, it was clear that the control group was significantly older than the field sample ($t(184) = -8.31, p < .001$). As such we performed a correlation matrix to find which results may be effected by this difference. We found six significant correlations with age. Identification with community ($r = .149, p = .044$), frequency of grave cleaning ($r = .354, p < .001$), returning to the family home for Bon ($r = -.204, p = .017$), donation to community ($r = .245, p < .001$), donation to national charity ($r = .222, p = .003$), and the SBS ($r = -.179, p = .015$) were all significantly related to age. However, when we performed a series of regressions controlling for whether the participant came from the control or the field sample, the effect of age became non-significant for predicting identification with community, returning to the family home for Bon, donation to community, and donation to national charity. The only two outcomes which age remained a significant predictor of were grave cleaning, and the SBS. This suggests that regardless of sample, older people perform grave cleaning more often, and have very slightly lower belief in concepts such as gods and spirits. The first of these is unsurprising as older people are more likely to both have the free time required to regularly perform grave cleaning, and are more likely to have strong connections with now deceased family members. The slightly lower supernatural belief is slightly surprising as the general trend is for younger people to have lower religious adherence (Hardacre, 2017).

Appendix 3

A regression assessing differences in donation to community by different participant groups showed that despite higher levels of social identification, dancers in the ritual were in fact less willing to donate to their community than their peers in the control group ($F(2,183) = 13.273, p < .001$). This difference remained even when controlling for age ($F(2,180) = 13.213, p < .001$) and residence ($F(2,177) = 3.457, p = .034$).

Appendix 4

Pearson Correlations

		Age	Dance_time	BON	PART	COM	NAT	Grave	Return	Econ_Part	Econ_Com	Econ_Nat	ANX	SBS
Age	Pearson's r	—												
	p-value	—												
Dance_time	Pearson's r	0.103	—											
	p-value	0.474	—											
BON	Pearson's r	0.021	0.321 *	—										
	p-value	0.773	0.023	—										
PART	Pearson's r	0.071	0.042	0.242 **	—									
	p-value	0.406	0.773	0.004	—									
COM	Pearson's r	0.149 *	-0.177	0.143	0.703 ***	—								
	p-value	0.044	0.219	0.054	< .001	—								
NAT	Pearson's r	0.103	-0.160	0.298 ***	0.507 ***	0.499 ***	—							
	p-value	0.165	0.266	< .001	< .001	< .001	—							
Grave	Pearson's r	0.354 ***	0.064	0.267 ***	-0.031	-0.085	0.069	—						
	p-value	< .001	0.659	< .001	0.719	0.252	0.351	—						
Return	Pearson's r	-0.204 *	-0.126	0.062	-0.114	-0.033	-0.063	0.136	—					
	p-value	0.017	0.471	0.470	0.270	0.705	0.460	0.113	—					
Econ_Part	Pearson's r	0.045	-0.176	0.149	0.014	0.161	0.255 **	-0.049	-0.035	—				
	p-value	0.595	0.221	0.079	0.872	0.058	0.002	0.568	0.735	—				
Econ_Com	Pearson's r	0.245 ***	-0.276	0.050	0.082	0.254 ***	0.279 ***	-0.048	-0.145	0.747 ***	—			
	p-value	< .001	0.053	0.504	0.335	< .001	< .001	0.522	0.090	< .001	—			
Econ_Nat	Pearson's r	0.222 **	-0.295 *	-0.028	0.084	0.204 **	0.192 **	0.001	-0.122	0.510 ***	0.751 ***	—		
	p-value	0.003	0.038	0.704	0.325	0.006	0.009	0.991	0.155	< .001	< .001	—		
ANX	Pearson's r	-0.096	0.069	-0.185 *	-0.108	-0.101	-0.123	-0.116	-0.050	-0.242 **	-0.132	-0.111	—	
	p-value	0.198	0.633	0.012	0.204	0.172	0.097	0.117	0.557	0.004	0.075	0.136	—	
SBS	Pearson's r	-0.179 *	-0.061	0.345 ***	0.172 *	0.151 *	0.194 **	0.051	0.040	0.120	0.039	-0.040	-0.098	—
	p-value	0.015	0.675	< .001	0.043	0.041	0.008	0.489	0.644	0.157	0.596	0.593	0.185	—

* p < .05, ** p < .01, *** p < .001