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„Spiritual Boredom:
An empirical study on causes and effects of boredom in meditation practice. "

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Abstract

This study researches the validity of the Control-Value Theory of Boredom (Pekrun, 2006; Pekrun et al, 2010) in the spiritual context of meditation, claiming that a lack of valence, as also inappropriate control appraisals are antecedents to boredom. The paper consists of two studies, one on the measure of habitual boredom and one on situative boredom. It was tested, if the control measures of over- and underchallenge and valence appraisal show significant influences on boredom. Moreover, scales were adapted on the meditation context to test for correlations between boredom and motivation, spirituality, and regularity of meditation practice. The sample of the habitual boredom study consisted of 145 valid data sets, ages 13-67 (SD = 11.03) and 71.7% of those were female. 56.2% of the participants did never meditate before. The mean intensity of boredom was 2.05 out of 5 (SD = .58). Overchallenge and underchallenge were rather low with 2.05 (SD = .84) and 2.04 (SD = .89). Valence was shown to be average with 2.79 (SD = .61).

The results in study one confirmed, that inappropriate control and valence appraisal correlated significantly with boredom. The moderation of control and valence appraisal on habitual boredom was not confirmed. A significant correlation was also found between boredom and motivation.

In the second study about situative boredom 16 valid data sets were collected. A requirement for participation in the second study was that meditation was done immediately before completing the survey. 55.6% of participants were female, aged between 19-65 (SD = 12.95). The average of situative boredom was tenuous with 2.05 (SD = .58) out if 5. Over- and underchallenge were rather low with 1.62 (SD = .78) and 1.57 (SD = .67) and valence was rather high with 3.43 (SD = .64) out of 5.

The results in study two were slightly different, even though the main hypotheses were confirmed. Accordingly, underchallenge and overchallenge were shown to correlate positively with situative boredom and valence appraisal showed a significant negative correlation. Motivation was shown to correlate significantly negative with situative boredom. Like study 1, the negative correlation between spirituality and situative boredom was confirmed.

Deriving from the results of both studies, control and valence appraisal should be considered to regulate boredom in meditation practice. Therefore, different focus can be laid in meditation practice to fit one's values and the type of meditation can be adjusted, depending on what a person perceives as overchallenging or underchallenging.

Key words: spiritual boredom, spirituality, control-value theory, meditation, motivation

Diese Studie untersucht die Gültigkeit der Kontroll-Werttheorie der Langeweile (Pekrun, 2006; Pekrun et al., 2010) im spirituellen Kontext der Meditation, welche besagt, dass mangelnde Wert- und Kontrollwahrnehmung der Langeweile vorausgehen. Die Arbeit besteht aus zwei Studien, eine zu habitueller Langeweile und eine zu situativer Langeweile. Es wurde getestet, ob die Kontrollmaße der Über- und Unterforderung und die Valenzwahrnehmung signifikante Korrelationen mit Langeweile zeigen. Darüber hinaus wurden Skalen an den Meditationskontext angepasst, um Korrelationen zwischen Langeweile und Motivation, Spiritualität und Regelmäßigkeit der Meditationspraxis zu testen. 145 Personen im Alter von 13-67 Jahren (SD = 11,03) nahmen an der habituellen Langeweile-Studie teil. 71,7% davon waren weiblich und 56,2 haben noch nie zuvor meditiert. Die mittlere Intensität der Langeweile betrug 2,05 von 5 (SD = 0,58). Über- und Unterforderung waren mit 2,05 (SD = .84) und 2,04 (SD = .89) eher gering ausgeprägt. Die Wertwahrnehmung war mit 2,79 (SD = 0,61) durchschnittlich ausgeprägt.

Die Ergebnisse der ersten Studie bestätigten, dass unangemessene Kontroll- und Wertwahrnehmung signifikant mit Langeweile korrelierte. Die Moderation der Kontroll- und Wertwahrnehmung auf habituelle Langeweile wurde nicht bestätigt. Eine signifikante Korrelation wurde auch zwischen Langeweile und Motivation gefunden.

In der zweiten Studie zur situativen Langeweile wurden 16 valide Datensätze erhoben. Voraussetzung für die Teilnahme an der zweiten Studie war, dass die Meditation unmittelbar vor Abschluss der Umfrage durchgeführt wurde. 55,6% der Teilnehmer waren weiblich im Alter zwischen 19 und 65 Jahren (SD = 12,95). Die Ausprägung der situativen Langeweile war eher gering mit 2,05 (SD = .58) von 5. Über- und Unterforderung waren mit 1,62 (SD = .78) und 1,57 (SD = .67) eher niedrig ausgeprägt und die Wertwahrnehmung mit 3,43 (SD = .64) von 5 eher hoch.

Die Ergebnisse in Studie 2 unterschieden sich geringfügig von Studie 1, wobei die Haupthypothesen bestätigt wurden. Dementsprechend wurde gezeigt, dass Unter- und Überforderung positiv mit situativer Langeweile korrelieren und die Wertwahrnehmung eine signifikant negative Korrelation zeigte. Es wurde gezeigt, dass die Motivation signifikant negativ mit situativer Langeweile korreliert. Wie in Studie 1 wurde der negative Zusammenhang zwischen Spiritualität und situativer Langeweile bestätigt.

Es konnte gezeigt werden, wie wichtig die Berücksichtigung der Kontroll- und Wertwahrnehmung in Zusammenhang mit Langeweile in der Meditationspraxis ist. Es könnten individuelle Werte in den Meditationseinheiten eingebracht werden und die Art der Meditation kann angepasst werden, um Über- und Unterforderung zu vermeiden.

Schlüsselwörter: spirituelle Langeweile, Spiritualität, Kontroll-Wert-Theorie, Meditation, Motivation

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Introduction

Boredom. A topic when talking about it, nearly everybody can imagine this feeling creeping up the sleeves, making the 50 minutes of the class feel like a lifetime of nightmares. Sadly, and truly this feeling does not only emotionally averse, but it also shows severe negative effects on school performance, and further on overall performance in career and on well-being (Pekrun et al., 2014; Pekrun et al., 2018). The devilish twist about boredom is, that the more boredom is experienced, the less attention is granted during class, the less effort is put into the subject, and the more boredom is experienced. It continues into a boredom spiral. (Pekrun et al., 2018; Pekrun, 2006; Pekrun et al., 2010

To be able to focus, attention control is an important variable. Nowadays, a constant stream of information shapes the daily lives of most of the young people living in western societies. As mentioned by Barry et al. (2017), the use of this over-availability of information is positively correlated with depression, anxiety disorders and furthermore to attention deficits and impulsiveness. By applications such as Tiktok the person gets presented with short video "snacks", which do not take longer than some seconds. After the video ends, the next one starts immediately, so that the persons' attention span goes from one video to the next, without leaving time to reflect about the content. This type of entertainment conceals difficulties. Not only as mentioned before by depressing a person due to constant comparison, but also diminishing the attention span. (Barry et al., 2017)

The diminishing attention span due to modern internet use (Barry et al., 2017) can further be associated with an increase in perceived boredom (Eastwood et al., 2012). Eastwood et al. (2012) claim in their paper, that boredom occurs, when people are unable to effectively engage their attention on a satisfying activity.

Engaging in social media can cause feelings of social exclusion, of time distortion and increased attention deficits, which are partly correlated to boredom. (Barry et al., 2017; Turel el at., 2018). Overall, this seems to be just one display of modern society, which can be reflected on other contexts, like the educational field, or social environments of children and adolescents (Ros Velasco & Velasco, 2020; Gary, 2020; Finkielsztein, 2021; Droit-Volet et al., 2020). Bethke (2016) wrote about modern societies and their differing perception of time compared to earlier generations. Concretely, he talks about the beauty of a moment when time seems to stand still and last forever. These moments seem to occur less and less in recent decades, leaving people with the feeling of having no time (Bethke, 2016).

This cognitive framing of “time” was qualitatively researched by Lomas (2017) who found, that to feel stress and to feel boredom an evaluation of the situation needs to take place. This evaluation mostly happens preconsciously, but there exist ways to bring this process back to consciousness. To counterwork this perception of time shortage and other negative effects of psychologically relevant patterns emerging through boredom, a variety of methods find use nowadays. One useful tool, on which the focus of this study lays, was found in meditation. (Luders et al, 2015; Gong et al., 2016; Lomas, 2017; Osin & Turilina, 2022)

The first records of meditation were found from 2500 years ago in India ("Die Geschichte der Vipassana Meditation", 2022). It is said that Buddha found Vipassana Meditation as an art of living. Without identifying with a certain religion, this technique ought to eliminate mental distortions and help people to find their liberations – thereby referring to understanding and valuing live in its whole range of feelings and impressions and by understanding how sorrow and suffering emerge and in how far they are necessary parts of life. This meditation trains mindfulness by self-exploration and self-guided thinking. ("Die Geschichte der Vipassana Meditation", 2022)

Meditation was shown to be able to decrease the subjective experience of boredom. The more mediation was practiced, the more interesting and important, and the less effortful and boring participants evaluated the practice. The effect was dependent on the baseline variables of well-being, reflective processes, self-management, self-control skills and autonomous motivation to engage in the practice. (Osin & Turilina, 2022)

These findings show, that boredom plays a crucial role in meditation and further, that meditation can influence the subjective experience of boredom and the effects of it.

As the Control-Value Theory of boredom after Pekrun (2006) is one of the best-founded theories of boredom and was also confirmed in the spiritual context (Porics, 2022), it is taken for this study to investigate boredom in meditation.

> “*If at any moment Time stays at his hand, it is only when we are delivered over to the miseries of boredom*” (Schopenhauer, 2004)

1 Theoretical Background

To create a base for understanding spiritual boredom in the context of meditation, this chapter introduces boredom as an emotion, before locating the concept of boredom in Pekruns' Control-Value Theory (2006) and applying it on the context of meditation. His theory will then be used to explore the relationship between boredom and meditation.

1.1 Boredom as an emotion

Boredom can be conceptualized through different theoretical models. Most of these theories were formed by the academical context of schools. (Goetz et al., 2019; Kögler & Göllner et al., 2018; Özerk, 2020; Pekrun et al., 2010).
It is claimed that boredom is best explained by its functional components, named affective, cognitive, motivational, expressive, and physiological. The affective component describes the subjective sensation of a person. Regarding boredom it is typically defined as an unpleasant feeling. The cognitive component describes the altered perception of time in boredom. With the motivational component, the desire to leave the current situation is pointed out. The expressive component in boredom, referring to Pekrun et al. (2010) includes changes in expressions of posture, vocals, and the face. The physiological component refers to low arousal, even though there exist different findings concerning the arousal in boredom. (Pekrun et al., 2010; Pekrun, 2018; Fahlman et al., 2013). Therefore, boredom was also claimed to be an umbrella term for different types because single components and dimensions might differ between situations. (Goetz & Frenzel, 2006; Goetz et al., 2019)
Till today researchers are not consent about the definition of boredom as an independent emotion, but more of boredom as a lack of interest or a lack of positive emotions. (Goetz et al., 2019)
Yet Pekrun et al. (2010) see boredom best conceptualized as a specific emotion through the component process model in the sense of contemporary process definitions of emotions (Kleinginna & Kleinginna, 1981; Scherer, 2000).

Considering Russell's circumplex model of emotions, boredom can be assigned on the dimensions of valence and arousal. Valence describes the subjective feeling of a person and arousal the level of activation. Considering boredom as a lack of positive emotions or interest, it should be assigned to neutral valence on the continuum from unpleasant to pleasant. In spite, Goetz et al. (2019) found empirical support, that boredom is linked to a negative

valence and therefore contradicting the theory of boredom being only the lack of positive emotions or interest. Pekrun et al. (2010) also emphasized different motivational consequences, as boredom additionally shows avoidance motivation, not only a lack of approach motivation. Furthermore Vogel-Walcutt et al. (2012) reviewed contemporary literature and found support for the two-dimensional structure of emotional experiences, and thus for the conceptualization of boredom as an emotion.

Situative vs. Habitual Boredom

Differentiating emotions by their durability, they can be classified into state and trait emotions. State emotions are defined as emotion, which emerge in a given situation and can refer to one specific setting. Trait emotions on the other hand, describe a tendency of a person to experience a certain state emotion repeatedly. Trait emotions form a persons' personality and are part of a person's personality traits. Trait emotions, just like other personality traits, are generalizable over different domains and contexts. (Pekrun, 2018)

Boredom as a state emotion is called situative boredom and refers to boredom experienced in a specific situation. Boredom as a trait emotion talks about the usual felt boredom of a person, called habitual boredom. (Fahlman et al., 2013; Westgate & Wilson, 2018; Pekrun et al., 2010). Habitual boredom is strongly researched compared to situative boredom and is strongly correlated to a lack of interest, negative attitude, and negative experiences. (Vogel-Walcutt et al., 2012)
The tendency of habitual boredom is associated with attention deficits and further with problematic behavior such as drug use, resulting from the inability to successfully engage in activities which are meaningful to a person. (Struk et al., 2017)
Situative boredom on the contrary is triggered directly through a specific situation and can change fastly also within one context. Vogel-Walcutt et al. (2012) further found evidence, that situative boredom is more overt to mitigation strategies against boredom and therefore offers a valid approach for interventions in the educational field and further domains.

In the field of habitual and situative boredom a correlation was found to attention. Results from empirical studies showed a higher frequency of cognitive failure due to missing attention when habitual boredom was high. (Malkovsky et al., 2012)
Hunter and Eastwood (2016) on the other hand found evidence for a positive correlation between attention deficits and situative boredom, even though the triggers seem to be more dependent on specific situational cues.

1.2 Control-Value Theory of emotions

The Control-Value Theory is a framework to classify different emotions that occur in achievement settings. This integrative approach is founded on the expectancy-value theory of achievement emotions as well as on attributional theories, models of the effects of performance on emotions and transactional approaches. (Weiner, 1985; Folkman & Lazarus, 1985; Turner & Schallert, 2001; Friedrickson; 2001; cited after Pekrun, 2010, p.532)
By integrating different theories into one approach, this theory enables the research to focus on outcome-related as well as activity-related emotions such as boredom. The effects of control and value are interactive, which means that inadequate control appraisals combined with a lack of valence can amplify the feeling of boredom. (Pekrun, 2006; Pekrun, 2010)

Subjective Value Appraisals

The term of subjective value appraisals or cognitions refers to the subjective valence of an activity or outcome for a person. On a personal level, it can be embedded in the form of interest and preferences, whereby the subjective value can not only influence situative, but also habitual boredom (Kogler & Göllner, 2018). The emergence of boredom differs to the emergence of other emotions in so far, as that it does not get aroused when the value of an activity is high, but when the value of an activity is rather low. Therefore, a negative relationship between the intensity and frequency of boredom and the subjective value is proposed. (Pekrun, 2006)
In Pekrun (2006) it is specifically referred to the intrinsic value of an activity, not to the extrinsic utility of it, whereas Götz et al. (2019) pointed to the special features in the emergence of boredom in achievement actions, that the lack of extrinsic utility seems to be of greater importance than the lack of intrinsic motivation. Still, this question is not completely researched and therefore it is difficult to draw a definite conclusion on the interactions of specific forms of value on boredom.

Subjective Control Appraisals

First described by Skinner (1996) the influence a person has subjectively over a situation, action or outcome is defined as subjective control (Pekrun, 2006).

The subjective control cognition describes the expected influence a person has on the activity or outcome. The appraisal of the subjective control can therefore be classified into two types, the action control expectancy, and the action outcome expectancy. The action control

expectancy refers to the planning of the execution and the action outcome expectancy to the expectation if a certain activity leads to the desired outcome. As boredom is categorized as an activity related outcome, this study focuses on the action control expectancy. (Pekrun, 2006)

To measure subjective control cognitions, the subjective challenge of a situation or activity was measured. This showed that the ideal challenge is neither under- nor overchallenging. When the subjective control appraisal is very high, the situation or activity is underchallenging, when it is low, the situation or activity is referred to as overchallenging. Pekrun et al. (2010) expected both, under- and overchallenge to be predictors of boredom, but only found significant evidence for boredom in the overchallenging situation.

Krannich et al. (2019) researched the influence of over- and underchallenge on academic career aspirations. They found a negative impact of overchallenge on the academic self-concept, which in turn decreased their career-aspirations and increased boredom. Underchallenge increased the academic self-concept but had an overall negative impact on career-aspirations, because of the influence of the increased boredom through inappropriate perceived boredom. Their research shows that the correlation between control appraisal and the experience of boredom are further influenced by interrelationships with other variables that are of importance to the specific context.

1.3 Control-Value Theory of Boredom

To understand the emergence, the emotional and motivational impact as also the behavioral manifestation of boredom, the Control-Value Theory of Pekrun (2006; Pekrun et al., 2010) is used as the basic theoretical framework for boredom. By means of this model the theoretical background of boredom should be explained before applying it to the context of meditation.

The Role of inadequate Control and Valence Appraisal and the Emergence of Boredom

One feature in which boredom differs significantly to other emotions, is that it occurs, when a lack of value is present. That means, if the action or outcome of a situation or action has no subjective importance to a person, the intensity and frequency of boredom increase. (Pekrun et al., 2010)

Findings from the Control-Value Theory of boredom showed a negative relationship with boredom to value appraisals as also to control appraisals in the achievement context. These outcomes were thoroughly consistent over all five studies conducted by Pekrun et al. (2018)

in the achievement setting and therefore imply to be generalizable not only over the constructs of state and trait boredom, but also over methodologies and cultures. (Pekrun et al., 2018)

Krannich et al. (2019) researched the role of over- and underchallenge on the emergence of academic boredom and further on career-aspirations and found, that even though underchallenge can increase the academic self-concept, both measures – overchallenge and underchallenge – had negative effects on career aspirations and increased trait boredom. In underchallenging situations, the aspects of the tasks were hypothesized as more important for the emergence of boredom – like repetitiveness or dullness. In overchallenging situations, the reason for feeling bored were suggested to be caused due to frustration or dissatisfaction with the task, as it turned out to be too difficult.
The negative influence of overchallenge on boredom was also shown by Pekrun and Pekrun et al. (2002; 2010) who suggested that the feeling of overchallenge might occur due to the underestimation of ones' own abilities. They suggested a more linear relationship between boredom and perceived control in academic contexts, but a possibly curvilinear relationship between boredom and perceived control in general.
Acee et al. (2010) researched the reasons for boredom experiences in over- and underchallenging situation in academic contexts too and found differences in the perception of boredom between the situations. Boredom in underchallenging situations was experienced on one dimension, saying that the boredom was measurable by one general boredom factor. In overchallenging situations however, the students differentiated between task- and self-focused boredom. Task-focused boredom refers to the meaninglessness of the task and self-focused boredom refers to the feelings of frustration and dissatisfaction.
Earlier research suggested that boredom is experienced, when feeling underchallenged, but anxiety takes place when feeling overchallenged (Csikszentmihalyi, 1990 in Acee et al., 2010). However, the study of Acee et al. (2010) supports the findings of Pekrun et al. (2002) finding both overchallenge and underchallenge to be predictors of boredom experiences.

Research of Kögler and Göllner (2018) showed an interactive relationship of control and value on boredom, as a higher value can decrease feelings of boredom even in overchallenging situations with low perceived control and vice versa.

Struk et al. (2018) summarized finding from studies discussing antecedents of boredom further. One of these studies found not only the lack of value as a precursor of boredom, but also noted suboptimal stimulation as one. (Pekrun et al., 2010; cited in Struk et al., 2018)
Additionally, Eastwood et al. (2012; cited in Struk et al., 2018) associated the will but

inability to successfully engage in a desired activity with the emergence of boredom. Therefore Struk et al. (2018) asserts state boredom as a hint for the extend of regulative behavior for engaging successfully in satisfying activities and trait boredom to be the result of the comprehension of the own failure of regulation for successful engagement.

Vogel-Walcutt et al. (2012) identified further situational factors that predict state boredom. They also mention the condition of meaninglessness of an action or challenge to be significant in the emergence of boredom, as also abstraction, repetitiveness, lack of excitement and direction and restricting conditions. Consistent with the findings of the control variable in the Control-Value Theory (Pekrun et al., 2010; cited in Struk et al., 2018) Vogel-Walcutt et al. (2012) found a mismatch of the level of difficulty to be a cause of state boredom. Also of importance was the missing feeling of flow. (Vogel-Walcutt et al., 2012)

Effects of Boredom

An in-depth overview over the effects of boredom can be found in the literature of Pekrun (2010). Besides the already discussed negative influence on attention, it is more specifically explained, that what suffers the most under boredom in these processes is the concentration ability, as people who feel bored are easily distracted by non-task relevant stimuli and thinking. The motivational level is affected, as the intrinsic motivation of a person shrinks when feeling bored, what leads to a diminished effort for the task or situation. So, when boredom is felt regularly, the information processing as well as the use of cognitive strategies are restricted. For example, the elaboration of material or information and the rehearsal of it might not take place as often. Following this, the self-regulation ability in the learning context can suffer impairment. The sum of these negative effects consequently subdues the academic performance (Pekrun et al., 2010; Pekrun et al., 2014)

On a broader level Vogel-Walcutt et al. (2012) were able to find correlates, which add to the negative experience and effects of boredom. Giving up on life projects (Bargdill, 2000; cited in Vogel-Walcutt et al., 2012), having an external (goal) orientation, being dissatisfied in ones' needs, or having low levels of skills while having high demands of needs were just some of the mentioned conditions which potentiate the negative consequences of boredom. Wider, missing leisure attitude and ideas, and a lack of self-motivation were mentioned as effects of boredom.
Besides, the further findings again are consenting the findings of the Control-Value Theory (Pekrun, 2006), also mentioning the missing complexity of an activity or task and a lack of

choice as effects of boredom, suggesting more frequent and intense experiences of boredom and its consequences, when subjective control and value of the activity or situation are low. (Vogel-Walcutt et al., 2012)
Vogel-Walcutt et al. (2012) highlight the interactive character of individual characteristics with these stimuli on the effects of boredom.

1.4 Meditation Context

First the operational definition of meditation will be explained, before defining boredom in the context of spirituality and mindfulness. One of the first scientific definition of meditation was made by West (1979), which states that meditation is

> *". . . an exercise, which usually involves training the individual to focus the attention or consciousness in a single object, sound, concept or experience. . ."*
> (West, 1979; cited in Cardoso et al., 2004; p. 59)

This definition includes the attentional component, but still does not posit a definition of what meditation is comprised of and which elements support the meditator to enter a relaxed state of mind. As meditation can be practiced in very different ways, Cardoso et al. (2004) engaged in finding a common operational definition for meditation. The spiritual component of meditation is already established in common research (Benson, 1982; Goleman, 1976; Johnson; 1982; Wallace et al., 1971; West, 1979; Woofolk, 1975; cited in Cardoso et al., 2004; Lomas, 2017). Still, an operational definition of meditation was needed. Cardoso et al. (2004) therefore agreed on five characteristics which an activity needs to include to be called meditation.

> *"To be characterized as meditation, the procedure must contain the following operational parameters: Utilizes a (1) specific technique (clearly defined), involving (2) muscle relaxation somewhere during the process and (3) "logic relaxation": a necessarily (4) self-induced state, using a (5) self-focus skill (coined "anchor")."*
> (Cardoso et al., 2004; p. 59)

The first one consists of the necessity to use specific techniques, which need to be defined distinctly. Here the focus lies on how the technique is declared to the participants of meditation, as they should follow the instructions precisely. The second one refers to temporal muscle relaxation. This can take place at various time points during the process and focuses on the psychophysiological component of meditation. Logic relaxation defines the third characteristic and means a series of restrictions, which should calm the mind. The person therefore should actively try not to analyze and explain the current state or situation, not to judge it and not to expect anything. This characteristic is essential in various meditation techniques. (Cardoso et al., 2004) It is visualized in Figure 1.

Another important feature is, that this state of mind must necessarily be self-induced. Further, the process of meditation needs the use of self-focus skills, which work with an anchor, by which a person can bring herself back to the logic relaxation, when sliding into other thoughts. This anchor can be different for every person. It defines a thought on which the person can bring back her focus to induce the state of logical relaxation. (Cardoso et al., 2004) More precisely, this anchor acts as a valve, which enables a person to intentionally switch the object of the focus. As it is needed for the logical relaxation, the attention span stays aimed on the anchor and away from judging and analyzing. (Cardoso et al., 2004)

This definition also includes limitations. Cardoso et al. (2004) mention, that some meditation exercises, as those executed in Tibetan Buddhism include psychoactive elements, as to focus on virtues while meditating. These techniques not necessarily include the component of logical relaxation.

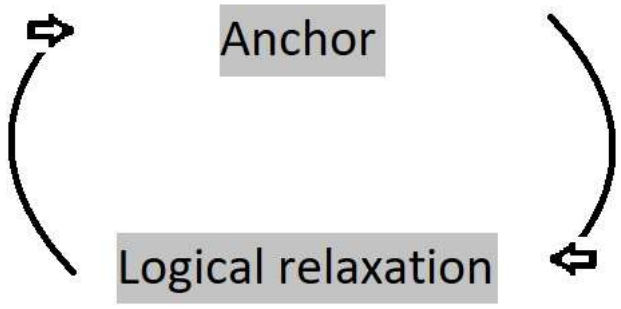

Figure 1: The process of logical relaxation with the help of an anchor in meditation practice. (after Cardoso et al., 2004; Fig. 1)

Conceptualization – Spirituality & Mindfulness

Spirituality

Research conducted in over 1100 studies showed a significant positive impact of spirituality

and spiritual practices on health (George, Larson, Koenig, & McCullough, 2000; Koenig, 1998, 1999; cited in MacDonald & Holland, 2002). Interest in the effects of spirituality on physiological and psychological functions grew in recent years (MacDonald, 2000; Waite, Hawks, & Gast, 1999; cited by MacDonald, 2002) and showed a negative correlation between spirituality and drug abuse, as also to depression, antisocial behavior, and suicide. Gartner (1996; cited by MacDonald, 2002) found a correlation between higher spirituality and higher scores in general well-being and life satisfaction.
Of special interest is the relationship between spirituality and boredom. Theories and empirical research indicate a negative relationship between these constructs, as boredom correlates for example positive with drug abuse, impulsivity, depression, loneliness and feeling of alienation. (Farmer & Sundberg, 1986; Leong & Schneller, 1993; McGiboney & Carter, 1988; Pascale & Sylvester, 1988; Paulson, Coombs, & Richardson, 1990; Rupp & Vodanovich, 1997; Tolor, 1989; Vodanovich, Verner, & Gilbride, 1991; Watt & Vodanovich, 1992; cited in MacDonald & Holland, 2002; Desrosiers & Nolen-Hoeksema, 2013, cited in Lee, 2017)

Moreover, boredom was associated negatively to finding meaning in life and self-realization, both of which are seen as very important for spiritual beliefs. (Bargdill, 2000; Drob & Bernard, 1987; Tolor & Siegel, 1989; Weinstein, Xie, & Cleanthous, 1995; Wink & Donahue, 1997; McLeod & Vodanovich, 1991; cited in MacDonald & Holland, 2002) Even more, sense and meaning in life are the focus of various models and dimensions of spirituality and proposed as the key mechanism of spirituality which causes the positive impacts on health and well-being. (George et al., 2000; cited in MacDonald & Holland, 2002)

Even though meaning in life and self-realization are important aspects of spirituality, they do not incorporate the whole concept of spirituality. MacDonalds (2000; cited in MacDonald & Holland, 2002) found, that spirituality can be categorized into five dimensions. One of these are cognitive orientations, which are not religious and are seen as proximately important for daily life. The second one is the phenomenological dimension, concerning spiritual experiences. The third one addresses existential well-being, meaning a sense of meaning in life and a feeling of inner strength to overcome existential life questions. The fourth dimension names paranormal belief, and the fifth one religiosity, that means intrinsic religious belief and practice. These dimensions were established through a factor analysis of over 17 conceptualizations of spirituality and related constructs.

Considering that spirituality increases meaning and general well-being and that boredom correlates negatively to meaning and purpose, it is proposed, that other aspects of spirituality might as well help decreasing boredom.

The findings of MacDonalds and Holland (2002) confirmed spirituality in its five dimensions to be a significant predictor of boredom proneness in men and women. Existential well-being was shown to be the strongest predictor for boredom proneness. This finding corresponds with research showing an inverse relationship between meaning in life and boredom. (e.g., Bargdill, 2000; Weinstein, Xie, & Cleanthous, 1995; Wink & Donahue, 1997; cited in MacDonalds & Holland, 2002)

While for men only existential well-being showed to be a significant factor of spirituality on boredom, the measurements for women showed different results. In women the spiritual cognitive orientation was an important predictor in the intensity and frequency of experiencing boredom. (MacDonalds & Holland, 2002)

In conclusion, linking spirituality to increased health and functioning in daily life can reduce boredom proneness. It is assumed that identifying life goals and adapting habitualized cognitive mindsets about the self-concept through spirituality therefore reduces the intensity and frequency of boredom experiences. (Drob & Bernard, 1987; Seib & Vodanovich, 1998; cited in MacDonalds & Holland, 2002)

Mindfulness

Mindfulness as a related concept to spirituality is a new research field in psychology, which was approached through spiritual practices like meditation and yoga emerging from the east. It gained empirical attention since 1970 and since then, many interventions concerning health and well-being were implemented in western countries. (Harrington & Dunne, 2015; Ergas, 2013; Osin & Turilina, 2022) It is mostly referred to as a mental state or process, or as a disposition, skill, or practice. (Keng et al., 2011; cited in Osin & Turilina, 2022) It describes an openness to stimuli, through which a person can accept the current experience without fleeing from it, even when it might feel unpleasant. This acceptance of every kind of valence is accomplished through three main factors, which were identified by Siegel et al. (2009, cited in Osin & Turilina, 2022). These characteristics are awareness, noncritical and accepting attitude and focus on the present moment.

Mindfulness was described with different focal points on motivation and volition, establishing concepts from the viewpoint of self-regulating, goal-oriented attention or concepts about the

features of the state of mind, like attention and awareness. (Kabat-Zinn, 1990; Brown & Ryan, 2003; cited in Osin & Turilina, 2022) Osin & Turilina (2022) assume these differences to depend on the focus given on voluntary attention control of the traditional practices used for the studies.

Osin and Turilina (2022) found a definition of mindfulness from 1990, claiming mindfulness to be a long process of growth and learning. Looking at mindfulness from a functional perspective, it could be said, that it is a reflecting mode of self-regulation, in which a person is open for the current experience as also for an integral self-representation, which enables this person to process options regarding the compatibility with the self. (Brown & Ryan, 2003; cited in Osin & Turilina, 2022).

Conscious reflection is an important element of mindfulness and denotes a flexible self-management which includes autonomous self-regulation and deliberation. This definition of self-management is in line with renown personality theories, like the Self-Determinant Theory and the Personality Systems Interaction Theory following Kazén and Quirin (2018; Ryan & Deci, 2017; cited in Osin & Turilina, 2022). As this way of self-management needs more resources compared to a more controlling way of self-management, this type commences late in ontogenesis, that means during adult life. (Loevinger, 1976; cited in Osin & Turilina, 2022) Applying this theory on mindfulness, people with high self-management skills at baseline might find it easier to engage in mindfulness in the beginning, show higher learning curves and require less support or structure to keep their engagement. Vygotsky introduced the zone of proximal learning, which implies that successful self-regulation and mindfulness ease each other mutually. (Gredler, 2009; Masicampo & Baumeister, 2007; cited in Osin & Turilina, 2022)

Spirituality and Mindfulness

To sum up, the conceptualizations of spirituality and mindfulness are familiar and can both be used in the context of meditation. (Osin & Turilina, 2022; Lomas, 2017; Cardoso et al., 2004) The context of meditation was shown to enhance spirituality and mindfulness compared to other situations and can therefore be characterized as a spiritual context. (Petchsawang & McLean, 2017) Spirituality treats the topics of finding meaning and self-realization, mindfulness concerns self-regulation and motivation between others. In this study the Control-Value Theory of Achievement Emotions (Pekrun, 2006) will be implemented on the spiritual context of meditation. As self-regulation skills and meaning in life influence the subjective experience of a person, proposedly also the perceived control and the perceived

value of a situation or action, it will be interesting to discuss the results of this research in the light of the Control-Value Theory.

Conceptualization – Spiritual Boredom

In meditation people should focus their attention completely on themselves. (McCall, 2013; cited in Porics, 2022) To stay focused and not get distracted, a certain amount of introspection and awareness of the self are necessary. Otherwise, the train of thought might slip into other directions. Monotony was mentioned positively for introspection by Fenichel (1934; cited in Porics, 2022), other than the findings of Goetz et al. (2019) who found monotony to increase boredom in the educational context. Monotonous stimulation can enhance the ability to direct the attention focus from external to internal events and processes. This type of stimulation is not equal to stimulus deprivation, as it can help to focus on introspection and awareness of the senses like the sense of balance. (Fenichel, 1934; cited in Porics, 2022)

Spiritual contexts like the mediation context can benefit from this monotonous and marginal stimulus environment, as it is seen as a frame for a deeper connection to the self. (Crittin, 2020; cited in Porics, 2022) This frame is implied in the philosophy of spiritual practices, as it proposes to focus on awareness, instead of external stimuli. Further, Kort (2011) proposes to learn slowness and not to obviate to judge boredom as negative. In slow and low stimulating contexts the focus should be on the occurring thoughts and awareness in the handling of them. (Critting, 2020; cited in Poris, 2022)

Referring to McCall (2013; cited in Porics, 2022) the negative judgement of a low stimulating environment is a cause of the modern society, where distraction can be found everywhere. Constant information streams leave less room for the before mentioned introspection skills, decreases the attention span, and consequently increase boredom proneness. (Hunter & Eastwood, 2016; cited in Porics, 2022) The unwillingness to engage in self-awareness is perceived as unpleasant and provokes a feeling of boredom. (Kort, 2011; Strawn & Gioelli, 2020; cited in Porics, 2022) The operational definition of spiritual boredom concerns the experience of boredom during a spiritual activity or in a spiritual context. (Porics, 2022) Therefore in this study, spiritual boredom is referred to the feeling of boredom in settings or activities, which are defined as spiritual. With the before mentioned unwillingness of self-awareness, as also a decreased attention span, just some possible indicators for spiritual boredom are named in the situative context, as also on the broader level of habitual boredom.

The study of Osin and Turilina (2022) concerns boredom in the context of meditation but focus their research more on the influential effects of meditation on boredom and on behavioral consequences, than on the causes of boredom. In their explanation of boredom experiences in meditation they focus on personality traits, as also partly on contextual cues, but not specifically on the expression of control and value appraisals. They mention that the steady exercise of meditation can enhance the ability to engage in spirituality. Besides that, Porics (2022) found little previous research on that topic. She mentions that most of the literature in this field refers to the relationship between meaning in life and boredom and that spirituality relates negatively to experiencing boredom. As previously conducted by Porics (2022) this study targets aspects of situative and habitual boredom, as spiritual boredom can occur situation specific, but also on a more general level. The findings of this study will then be implemented theoretically based on the Control-Value Theory (Pekrun, 2006) and other relevant theoretical models mentioned in this work.

1.5 Boredom in the Context of Meditation

The paper of Osin and Turilina (2022) directly addresses the topic of boredom and meditation. They talk about the influential effects of meditation on boredom and about individual characteristics, which influence the intensity and severity of boredom during meditation practice. Besides their research very little studies directly address the experience of boredom in spiritual settings like meditation. Most papers engage with the influence of meditation practice on boredom proneness. (Lee, 2017; MacDonalds & Holland, 2001)

Osin & Turilina (2022) conducted research on novice meditation practitioners, where they not only researched about the influence of individual differences, but also about the correlation to perceived effort, boredom, and meaningfulness during the meditation practice. Their results showed that the more meditation is performed, the less effortful and boring and the more interesting and important the task was perceived over a span of three weeks. Individual traits that were shown to be influential on these positive changes were subjective well-being, reflection skills, self-management and self-control, and intrinsic motivation for engagement. People with higher scores in boredom proneness and rumination at the beginning displayed more perceived effort and boredom during the time of meditation practice and were more inclined to quit. (Osin & Turilina, 2022)

Meditation was shown to be especially useful for individuals that scored high in autonomous motivation, showing higher scores in experienced pleasure, and meaning during the activity, higher engagement, as well as less perceived void. (Osin & Turilina, 2022)

However, Osin and Turilina (2022, p.114) note:

> *"The meaning of meditation emerged as by far the most important predictor of engagement with the meditation task. Meaning was also positively associated with adherence."*

Controversially, void was found to predict engagement positively too and that boredom can help in the development of self-regulation skills. (Elpidorou, 2014; cited in Osin & Turilina, 2022) They suggested, that this might appear, because participants who could control their attention on meditation felt bored at first but were then able to comprehend and snap into the mindset of mindfulness. Still, boredom was found to emerge, when the sense of engagement lacked subjective control and subjective value, the same variables tested in the Control-Value Theory of Boredom. (Osin & Turilina, 2022; Pekrun et al., 2010)
These findings show that boredom is a complex construct with many influencing factors. In the following section the causes of boredom in meditation will be discussed, to then emanate the effects of it on meditation.

Causes of Boredom in Meditation

Osin & Turilia (2022) engaged in the research of challenges which appear during meditation. In their research they found that the most stated challenge is attention control, with over 32.8% of participants having trouble concentrating on their breath, being distracted or being impatient during meditation. The second most reported struggle was found in bodily discomfort by 24.2% of participants. The third most common challenge was found to be sleepiness with 11.5% of participant reporting to nearly fall asleep or wanting to sleep. 21.4% of Osins' and Turilias' (2022) participants were distracted mostly by their own thoughts, reporting mind wandering and thinking about past or future events. Some felt distracted by guided meditation, as they primarily observed the guidance instead of following it. Finding the right context for meditation was shown to be another difficulty, as the surroundings were found to be distracting through the voice or actions of others.

Talking about the concept of optimal experience, Csikszentmihalyi (1990; cited in Osin & Turilina; 2022) proposed the concept of flow. He described it as constant enjoyment caused by an activity itself and the awareness of it, in which a person concentrates successfully and without effort. Also, a loss of self-consciousness and an altered perception of time were mentioned. The effortlessness and the loss of self-awareness are not necessarily applicable on the concept of mindfulness and the subjective value or

purpose of an action also play a role in mindfulness. (Sheldon et al., 2015; cited in Osin & Turilina, 2022) Therefore, Leontiev et al. (2016; cited in Osin & Turilina, 2022) implemented a more accurate model of optimal experience, which includes the active use of resources for achieving a goal, a positive emotional state and subjective meaning of the situation or activity for a person. In short, these criteria were summarized as engagement, or also as

> *"effort, pleasure and meaning"*
> (Leontiev, 2016; cited in Osin & Turilina, 2022, p. 105)

This finding is interesting in so far, as that the acquisition of mindfulness skills is postulated to be individually different depending on subjective experiences during the practice of mindfulness. (Osin & Turilina, 2022) When a person sees herself as passive and unable to control a situation, the process of disengagement entangles and leads to boredom. (Kubey & Csikszentmihalyi, 1990; cited in Osin & Turilina, 2022)
Findings of studies engaging with the model of activity-related experiences showed a positive relationship between well-being and performance and the three constructs mentioned before. (Leontiev et al., 2018; Osin & Leontiev, 2017; cited in Osin & Turilina, 2022) Further regression analysis indicated, that for some people the process of engagement and optimal experience can take place effortlessly, but mostly effort is needed in combination with the other variables. (Osin & Turilina, 2022)

With the application of the Control-Value Theory (Pekrun, 2006) on the context of meditation it is possible to research causes and effects of boredom in meditation. To consolidate this research theoretically, the Control-Value Theory of Pekrun (2006; Pekrun et al., 2010) is chosen as the theoretical construct to measure boredom and its antecedents in the context of meditation. Following this theory (Pekrun, 2006; Pekrun et al., 2010; Kögler & Göllner, 2018) boredom emerges through cognitive evaluations of situations or actions. They explicitly note that this cognitive evaluation is dynamic, that means, that the evaluation can change with the circumstances and by itself. Referring to the Control-Value Theory (Pekrun, 2006; pekrun et al., 2010) meditation context, two main characteristics might cause boredom in meditation. One of these is the subjective control a person experiences during the meditation practice. Referring to Pekrun (2006) the control evaluation in this process can be inadequate, when it happens to be too high and causes feelings of underchallenge, or too low provoking the feeling of overchallenge. Underchallenge is said to occur mostly in passive and monotonous

settings (Daschmann et al., 2011; Goetz et al., 2019), both of which occur often in meditation. A feeling of underchallenge might therefore happen, when a person cannot engage successfully in the spiritual or mindful state and starts to judge the situation as not stimulating enough. A feeling of overchallenge might occur, when the person is not able to focus or not to judge her surroundings. Here, the person can also not enter the state of mindfulness or spirituality. Overchallenge, or the perception of a lack of control can also occur, when the instruction for a practice is unprecise or too vague for a person to follow it, or if the course format does not fit the personal preferences and skills. (Krannich et al., 2019; Osin & Turilina, 2022)

Inadequate perception of control is correlated with situative boredom in so far, as that it concerns meditation practice directly. Still, Struk et al. (2017) showed, that negative beliefs and experiences with boredom in different settings (i.e.meditation) can also increase the habitual boredom which in turn adds to an inefficient self-regulative behavior (Struk et al., 2017). To sum up, situative boredom is crucial in the evaluation of a situation, but so is habitual boredom, as it can prime negative evaluations over various situations.

As situational and individual preferences are of importance in the emergence of boredom, situative and habitual boredom are relevant. (Struk et al., 2017; Pekrun et al., 2010) These findings are strengthened by the research of Osin & Turilina (2022) who found individual characteristics like autonomy, reflection, self-control, and self-regulation to be decisive in the perception of meditation as challenging and boring. People with decreased manifestations of these characteristics would therefore tend to perceive meditation as overchallenging and boring. Interestingly though, a decrease in boredom and overchallenge was found the more time the participants practiced meditation steadily.

Referring to the Control-Value Theory of Boredom (Pekrun et al., 2010; Pekrun, 2006) valence presents the second key variable in experiencing boredom. When an activity or situation does not imply value on a person, the frequency and intensity of experienced boredom increases. Pekrun et al. (2010) were able to identify an interaction of valence and control on boredom, Osin & Turilina (2022) were able to find these patterns in the meditation context too. For a better understanding, the evaluative process is depicted below in figure 2, using the example of Porics (2022).

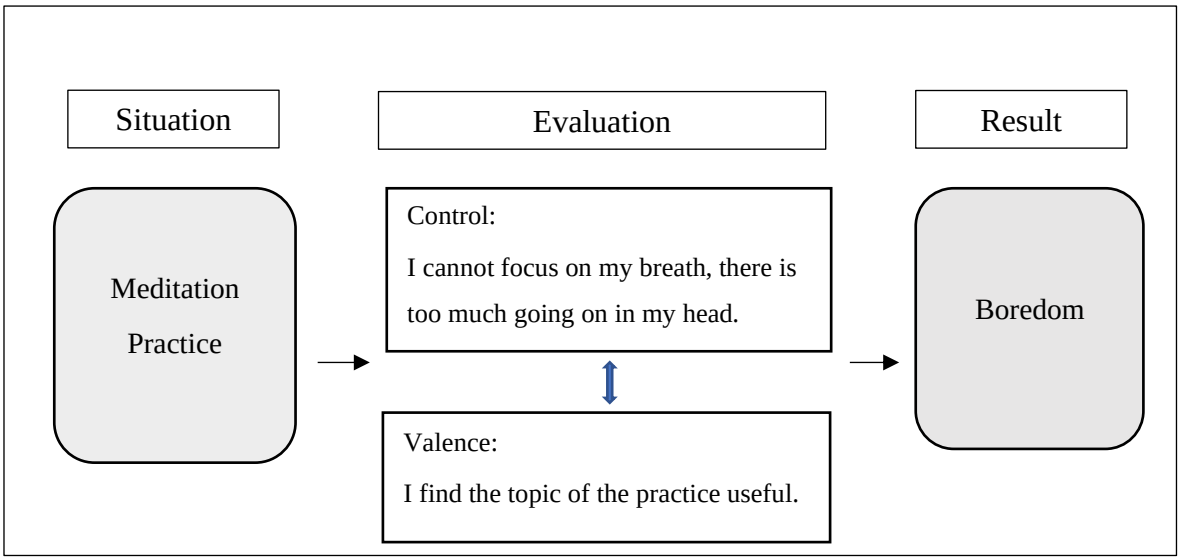

Figure 2: The Interaction between Negative Control and Valence Appraisals and the Emergence of Boredom in Meditation Practice

The graphic shows, that control appraisal and valence appraisal are specified influences on the experience of boredom. But further, those two variables can interact with each other and moderate each other's influence on the intensity of boredom.

To give an example, Anna has difficulties focusing on her breath at it was specified in the meditation class. Her perceived control of the situation is very low, she feels frustrated and is drawn to feel bored. But meditation is very important to Anna, she identifies herself with the practice and integrated meditation as her balance for work and family life. Therefore, even when she is feeling overchallenged by the situation, the great value that the practice has to her can modulate the influence of the inappropriate control appraisal on the intensity of the experienced boredom. Anna does not feel as bored in the overchallenged situation, because it has a high value for her. As this interaction is seen as mutual, this also works the other way around.

If the practice itself has no great value to a person, but the demands of it perfectly fit a person's preference, even though the value is low, the adequate perceived control can reduce the experienced boredom that occurred due to the lack of value.

In sum, underchallenge and overchallenge, as also a lack of valence and differences in personal characteristics could be identified theoretically as possible antecedents of boredom in the meditation context.

Effects of Boredom in Meditation

Osin and Turilina (2022) described engagement as the key variable to understand the relationship between boredom in meditation and mindfulness. As engagement itself already is

a complex construct, they further defined, that boredom occurs, when a person is engaged, but feels a lack of value and control.

Lee (2017; p. ii) defined habitual boredom (boredom proneness) as followed:

> *"Boredom proneness, a chronic tendency to enter states of boredom, is associated with deficiencies in attentional control and emotional regulation as well as cognitive and emotional problems, including attention deficit disorder, depression anxiety and substance abuse (LePera, 2011)"*

and dispositional mindfulness as

> *"... the tendency towards present-moment awareness"*

Dispositional mindfulness and boredom proneness correlated negatively and are correspondingly related to negative affective states. (Baer et al., 2008; cited in Lee, 2017) In her study, Lee (2017) examined, that awareness, mindful describing, mindful observing, the conscious perception of internal and external sense, as also the ability of non-judgmental experience are all negatively correlated to habitual boredom.

Habitual boredom was further shown to favor attention lapse, impair cognitive attentive abilities and the skill to be accurately sensitive to errors (Malkovsky et al., 2012; cited in Lee, 2017). Lee (2017) showed, that habitual boredom and mindfulness are inversely related constructs, referring further to the measurements of mindfulness, where functions to adequately self-regulate attention and emotions are enhancing, in contrast to boredom. (Jha et al., 2007, Brown & Ryan, 2003, Brown, Ryan & Creswell, 2007; cited in Lee, 2017)
Another cognitive difference between boredom and mindfulness is the negative evaluation of a situation or outcome, which is found in boredom experiences and affects the motivational state. (Eastwood et al., 2007; cited in Lee, 2017) The state of mindfulness on the other hand is characterized by a non-judging and non-reacting attitude towards external stimuli and internal emotions and cognitions, which thereby mediate the negative effects of rumination and stress in life (Ciesla et al., 2012; Chamberlain et al., 2016; cited in Lee, 2017).
As these two constructs are proven to be inversely correlated and cognitively different states, logically mindfulness and boredom should not be able to coexist in one person at the same time. And as spirituality and mindfulness are related constructs, it is claimed, that spirituality and situative and further habitual boredom are correlated negatively. (Osin & Turilina, 2022; Lomas, 2017; Cardoso et al., 2004; Petchsawang & McLean, 2017; Porics, 2022)

Furthermore, people who feel strong habitual boredom might be constraint in their ability to recognize and understand emotions, as habitual boredom impacts this ability. (Eastwood et al., 2007; Harris, 2000; cited in Lee, 2017) Participants scoring high on the measure of boredom proneness (habitual boredom) were shown to feel under-stimulated and restricted, which added to a negative evaluation of the situation.

It has to be mentioned, that boredom was not only shown to have negative effects. Elipidorou (2014; cited in Osin & Turilina, 2022) found evidence, that boredom might act adaptive on self-regulation skills. Their paper therefore suggests that people who have higher abilities in controlling their attention might feel bored at first but are further able to engage more in meditation. Still, higher boredom at the beginning of the meditation course was a positive predictor for dropouts. (Osin & Turilina, 2022)

Pekrun et al. (2010) found similar patterns in the achievement context. They also found boredom to influence attention regulation and intrinsic motivation negatively and increased distractibility and irrelevant thinking to the task, leading to general negative effects on performance outcomes. Boredom was shown to have negative effects on self-regulation, which is interesting, because Elipidorou (2014; cited in Osin & Turilina; 2022) suggested that self-regulation processes adapt during boredom. This again shows that boredom is a very complex construct with many influential internal and external factors.

2 Research hypotheses

On the base of the before explained theoretical constructs and conducted research this study aims to investigate the causes and effects of spiritual boredom in meditation as also how intense boredom is experienced during meditation.

For answering these two points, the Control-Value Theory of Pekrun (2006; Pekrun et al., 2010) will be used, orienting on the subjective cognitive appraisals and evaluations of meditation, as also on the components and effects of boredom. These factors will be tested on the level of situative and habitual boredom.
In the research of the Control-Value Theory (Pekrun, 2006; Pekrun et al., 2010) inappropriate control appraisal is associated with the emergence of boredom. The theory claimed, that overchallenge and underchallenge can provoke boredom, even though the results showed only a significant correlation between boredom and overchallenge. (Krannich et al, 2019) This pattern is then addressed and discussed further in the Control-Value Theory of Pekrun et al. (2010). Concerning the value appraisal, a lack of value was associated with the arise of

boredom. (Pekrun, 2006; Pekrun et al., 2010) Kögler and Göllner (2018) further found control and value appraisals to influence each other mutually.

Following the current research of the Control-Value theory (Pekrun, 2006; Pekrun et al., 2010) these research hypotheses were formulated on the example of Porics (2022) in the context of meditation:

Hypothesis 1: A positive correlation between over- and underchallenge and intensity of boredom in meditation exists.

Hypothesis 2: There exists a negative correlation between value appraisal and intensity of boredom in meditation.

Hypothesis 3: There exists an interaction between control appraisal and value appraisal on the intensity of boredom in meditation.

As Pekrun (2006) claimed in his work, that boredom reduces the motivation to repeat a situation, which was experienced as boring before. The urge to leave a boring situation or activity was called avoidance motivation and is further proposed to be deducible from a negative correlation between the intensity of boredom and regularity of meditation practice. (Vogel-Walcutt et al., 2010; MacDonalds & Holland, 2002) Furthermore, mindfulness and spirituality both showed to increase with practice and decrease the experience of boredom, which would also be in line with the expectation of a negative correlation between the intensity of boredom experienced and the regularity of practice and the motivation to do so. (Vogel-Walcutt et al.;2012; Osin & Turilina, 2022; Pekrun, 2006; Pekrun et al., 2010; MacDonalds & Holland, 2002)

Hypothesis 4: A negative correlation exists between intensity of boredom and the motivation to practice meditation.

Hypothesis 5: There exists a negative correlation between the intensity of boredom and the regularity of meditation practice.

Hypothesis 6: A negative correlation can be found between intensity of boredom and spirituality in the meditation context.

Additionally, it is tested, if the regularity of meditation practice correlates with the spirituality that people attribute to themselves, to get a deeper insight into the underlying compounds of the meditation context that might interact with boredom.

Hypothesis 7: A positive correlation exists between spirituality and the regularity of meditation practice.

3 Methods

The current study measured situative and habitual boredom in meditation on the hand of two questionnaires. All measures taken are elaborated in both, situative and habitual boredom studies. The participation was voluntary, and no remuneration was offered. Over the whole study anonymity of the participants was assured by holding onto the regulation of the DSGVO. The following paragraphs include the used methods, followed by the results and a discussion for each study to reflect the results on the theoretical background.

4 Study 1: Habitual Boredom in Meditation

The first study measures all above mentioned hypothesis in the context of habitual boredom. The study design, the description of the tested sample, the materials, as also the statistical methods and results are listed below.

4.1 Study Design and Implementation

With the use of SoSci-Survey (Leiner, 2019) it was possible to create an online questionnaire, which was then presented publicly on social media platforms like Instagram and Facebook without restriction of age or meditation experience. My personal social networks were also contacted to participate. People who clicked on the provided link were given a small introduction to the study before starting the questionnaire. In average, participants needed seven minutes for it. The data collection period took from the 1st of June 2022 until the 1st of October 2022.

4.2 Material

As Porics (2022) adapted the scales of boredom, motivation, and spirituality (Csala et al., 2021; Donati et al., 2021; Krannich et al., 2019; Uwland-Sikkema et al., 2018) for the spiritual context of Yoga practice, these scales were taken and further adjusted on the meditation context. The

measurements of Porics (2022) showed a good internal consistency, ranging from the lowest Cronbach alpha of 0.67 in the adjusted 4-ISWBI scale, to 0.91 of the valence appraisal scale.

Applying these scales on the meditation context is necessary to investigate the causes and effects of boredom in the meditation context on the base of the Control-Value-Theory (Pekrun, 2006). The 4-Item Spiritual Well-Being Index (4-ISWBI; Fisher & Ng, 2017) was further adapted to the 3-ISWBI due to the findings of Porics (2022) who showed, that by leaving out the item "How important is the connection with god or something divine for you personally?" ("Wie wichtig ist Ihnen persönlich die Verbundenheit mit Gott bzw. etwas Göttlichem?"), the internal consistency of the scale increased from a Cronbach's alpha of .60 to .67. For a lower dropout rate, as also to safe resources Gogol et al. (2014) found, that for some constructs one measuring item can be enough. The reliability of the item might be lower than of a batterie of items though. (Gogol et al., 2014)

Furthermore, 43 statements were shown in study 1 and should be answered as it fits to the person most. To do so a 5-point Likert-Scale was used, whereas 1 scaled „totally disagree" and 5 „totally agree". Besides that, four questions were multiple choice questions. No possibility was given not to answer, so that participants were hold in a forced-choice condition.

For a descriptive overview of the data about the meditation practice itself, the duration, type and regularity of meditation practice were measured and sociodemographic measures such as age and gender. Depending on the answers about the meditation practice, the questionnaire adapted in length, as it did not make sense to ask a person who said she/he never meditated about their meditation practice duration or type.

For an overview of the measured constructs and the measurement methods, see the paragraphs below. The full questionnaires are attached in **Appendix A**.

Habitual Boredom

Habitual boredom was measured in the meditation context and was the focus in the first study. To measure this construct seven statements were offered, and participants were able to rate those statements to how fitting they see them for themselves from 1 = „totally disagree" to 5 = „totally agree". These statements were taken from Porics (2022) study, who adjusted the items from Daschmann et al. (2011) from the learn and achievement context on Yoga. Daschmann et al. (2011) confirmed the method for validity. These items were further adjusted in this study to fit in the meditation context and to further explore the correlation of habitual boredom with

different aspects of meditation (i.e., “The concentration exercises in meditation bore me usually.” – “Die Konzentrationsübungen in der Meditation langweilen mich üblicherweise.”). The internal consistency of the Trait-Boredom-Scale was good with a Cronbach’s Alpha of .85.

Additionally, boredom proneness was measured with one statement used in Porics (2022), which could be rated on a Likert-Scale from 1 = „totally disagree” to 5 = „totally agree”. The statement was: „I usually tend to get bored quickly.“ („Ich neige dazu, mich üblicherweise schnell zu langweilen.“).

Perceived Valence

Valence was measured based on the theoretical background of boredom in learning and achievement contexts, like in Goetz et al. (2020), who confirmed the validity of the method. It was measured using 11 items, considering spiritual aspects, social aspects, and personal importance of different aspects meditation. Those aspects were adjusted from Porics (2022; „The breathing exercises in meditation are important to me.” – “Die Atemübungen bei der Meditation sind mir wichtig.”). Extrinsic value beliefs were asked concerning competition and performance, like “It is important to me to be better in meditation than other.” (“Es ist mir wichtig besser als andere in der Meditation zu sein.”). The internal consistency of the Valence-Scale was satisfying with a Cronbach Alpha of .75.

Perceived Control

Perceived control was measured by an adjusted scale from Porics (2022) who adapted the scale of perceived control from studies conducted in the learning and achievement context. Those studies confirmed the validity of the scales (Acee et al., 2010; Daschmann et al., 2011; Krannich et al., 2019). Perceived control was operationalized by 20 items measuring overchallenge and underchallenge in the yoga context and were adjusted on the meditation context, considering the theoretical basis of measuring boredom by Pekrun (2006). Perceived control was measured in each aspect of meditation, i.e., “The concentration exercises overchallenge me usually.” (“Die Konzentrationsübungen überfordern mich üblicherweise.”.).

The reliability of the overchallenge scale showed a satisfying reliability with a Cronbach’s Alpha of .84. The reliability of the underchallenge scale was also satisfying with a Cronbach’s Alpha of .87.

Motivation

The intensity of motivation in meditation practice was measured by a single item (“I am usually motivated to meditate.” – “Ich bin üblicherweise motiviert zu meditieren.”). Besides the

intensity of motivation, the motivation to start meditation, the current motivation of meditation practice (i.e., "for spiritual reasons" – "aus spirituellen Gründen"), as also the reasons of demotivation for not practicing right now were asked, depending on the current and past status of meditation practice of the participants. Doing so, three items about start motivation, actual motivation and intensity of motivation were asked, when participants were practicing meditation at the moment of the study, and two items about demotivation when meditation was not practiced at the time of the study. The summary of the motivation scales showed a Cronbach's Alpha of .66, which is close to being satisfying (Porics, 2022; GfK, 2018).

Demotivation

The scale of demotivation was given only to those who did not practice meditation at the time of the study. In this scale participants were asked about the reasons why they did not practice meditation currently. Different statements were offered, one of them being "I find meditation too boring." („Ich finde Meditation zu langweilig.").

The scales for demotivation were summed up and tested for internal consistency. The Cronbach's Alpha of .81 was satisfying.

When the statement "I find meditation too boring." was rated positively (4 = "rather agree", 5 = „totally agree") another scale was offered, differentiating between the feeling of overchallenge and underchallenge and lack of value. These three statements could be rated on a five-point Likert-Scale rating from „totally agree" to "totally disagree" (1 = „stimme überhaupt nicht zu"; 5 = „stimme voll und ganz zu"). Using this scale, the results could be analyzed in the frame of the control and value theorem which this study is working with. (Pekrun, 2006; Pekrun et al., 2010)

Spirituality

Porics (2022) used in her study of spiritual boredom the 4-Item Spiritual Well-Being Index from Fisher and Ng (2017). In her results the 4th item concerning the connection to God or something divine was shown to decrease the internal consistency of the scale significantly. Therefore, it was not considered in the current study. The scale was used in Porics (2022) and is also used in this study, because the theoretical definition of spirituality in Fisher and Ng (2017) is very close to the one used in this study and in Porics (2022). Besides the omitted Item concerning the importance of a connection with God or something divine, the questions about importance of a connection with nature, connection with others and connection with oneself were asked and rated on a five-point Likert-Scale, whereas 1 stood for not important at all and 5 stood for totally important. The 3-Item Spiritual Well-Being Index showed a

reliability of .43 and is therefore not satisfactory. Therefore, it is suggested for future research to work with the 4-Item Spiritual Well-Being Scale as in Fisher and Ng (2017). The calculated values are illustrated in **Appendix A**.
Furthermore, spirituality was also measured by a self-assessment item ("I consider myself to be a spiritual person." – "Ich schätze mich selbst als spirituellen Menschen ein."), which was validated by Uwland-Sikkema (2018) and was further introduced by Porics (2022).

4.3 Sample

145 valid data sets were collected. The youngest participant aged 13, the oldest 67 years. As there is no possibility to deduct the collected information to the participants and no service is provided, article 4 number 1 of the Austrian DSGVO does not apply. Therefore, the anonymization makes it legal to include underaged participants in this study (DatenschutzFrankfurt, 2020). The mean age was 28.48 (SD = 11.034). 71.7% of the participants were female, 26.9% male and 1.4% stated to be diverse. One participant did not answer the question. For a tabular overview see **Appendix A**.
The mean intensity of habitual boredom in participants was 2.4 of 5 (SD = .83), of boredom proneness 3.06 of 5 (SD = 1.3). The average of overchallenge was at 2.05 (SD = .84), of underchallenge 2.04 (SD = .89) and of valence 2.79 (SD = .61).

Only 6.3% of all participants fully evaluated themselves as spiritual. 25.3% claimed to be partly spiritual, 24% to be rather not spiritual, 19.9% to not be spiritual at all, and 17.8% to be rather spiritual. Two participants did not answer the question.

A percentage of 56.2% of participants never meditated before, 24% did not meditate anymore, 16.4% meditate, but not regularly, and 3.4% meditate regularly. Of those who did meditate, the highest percentage of participants, rating 16.4% meditated for the first time more than 3 years ago, followed by 15.8% who meditated the first time between 1-3 years ago, 10.3% who meditated first between 1-6 months ago, and 4.1% of all participants who meditated first 1-6 months ago. 4 participants that meditated before did not fill out this question.

The location mostly preferred by the participants who meditated was at home (75%), followed by meditating in nature (16.7%), meditation studios (6.9%) and least at private meetings (1.4%). An open answer was possible if none of the above-mentioned fit. The answers were "in my head", "at church", "at Montessori-school", "after yoga class or yoga", and "school course".

Of those who meditated before most participants practiced relaxing flow meditation with 36.8%. The next most chosen alternatives were spiritual meditation with 35.6% and combined meditation with 18.4%. Fitness-accentuated/body-accentuated meditation was chosen least with 9.2%.

16.4% of those who meditated before said, that spiritual reasons were not at all the motivation for them to start. 10.3% said, they were rather not. 6.2% claimed that spiritual reasons were rather their motivation to start and only 5.5% totally agreed.

35.7% of those who are currently meditating said, that spiritual reasons were rather not the reason to meditate and 28.6% agreed fully that it is their reason to meditate. 17.9% said, that they are not at all their reason to meditate and 10.7% chose the neutral answer.

Fitness was rather the reason to meditate for 38.5% of those who are currently meditating. 30.8% do not agree at all, followed by 15.4% who rather not agree.

The answers concerning the improvement of their flexibility showed, that 22.2% of participant totally agreed, rather agreed, and did not agree at all, followed by 18.5% that did rather not agree.

Social reasons to meditate did not at all fit for 40.7%, rather not for 18.5% and partly for 22.2%. Only 11.1% rather agreed and 7.4% totally agreed.

The opened answers to the question of the current motivation for meditation were “aggression”, “possibility for consciousness”, “increased satisfaction”, “letting go of anxieties”, and “relaxation”.

117 participants were not practicing meditation at the moment. Those who did not practice meditation at the moment of the study were asked about the reasons why not. Multiple choice answers were offered to the participants. 47% of those who did not practice meditation at that moment said, that they could not motivate themselves, followed by 46.2% which claimed not to know much about meditation. 25.6% found meditation to be too boring, followed by 15.4% not knowing where to practice meditation. 6.8% did not want to practice meditation alone and 14.5% had other reasons. These reasons included for 6 participants “having no personal value/ no interest”, for 4 participant “no time”. The other single answers included “it got lost in everyday routines”, “not thinking of it”, “huge distraction through phones”, “don’t see advantages of it”, “not knowing enough”, and “not enough learning options”.

When asked why participants did not practice meditation, 23.3% rather agreed that meditation was too boring for them and 20% did not agree at all, rather not or partially. Only 16.7% agreed fully to find meditation too boring.
The breathing exercised were experienced as too boring by 27.1% who rather agreed and 8.5% who fully agreed. 22% were neutral to the answer. Another 22% did rather not agree and 20.3% did not agree at all.
The monotonous procedure of the meditation was experienced as rather boring by 44.8%. 19% chose a neutral answer to the claim and 12.1% fully agreed. 13.8% did not agree at all and 10.3% rather not agreed.
To the statement of finding the instruction boring 30.4% of participants that do not practice meditation currently, because they find it too boring, chose the neutral answer. 19.6% did rather agree and did rather not agree, followed by 17.9% that fully agreed and 12.5% that did not agree at all.
The relaxation phase of the meditation was rather not experienced as boring by 34.5% of the tested participants. 20.7% did not experience the relaxation phase as boring at all and another 20.7% were neutral to the statement. 15.5% rather agreed and 8.6% agreed fully.
The concentration exercises were seen as neutral by 29.8% of the questioned participants, followed by 22.8% that experienced them as rather boring, 21.1% that did not find them boring at all, 19.3% that did rather not agree to the statement and only 7% of participants that fully agreed.

Participants who said that they had never practiced meditation before where asked if they would think that meditation would overchallenge them, 49.1% did rather not agree and 26.4% did not agree at all. 12.3% were neutral to the statement, 9.4% rather agreed and 2.8% fully agreed.
When asked if participants who never meditated before think meditation would underchallenge them, 31.8% did rather not agree, 22.4% did not agree at all, 22.4% were neutral, 19.6% did rather agree and 3.7% did fully agree.

39.4% of the asked participants rather agreed when asked if they think that meditation is not important enough for them and another 31.2% did fully agree. 21.1% were neutral to the statement, followed by 6.4% who did rather not agree and another 1.8% that did not agree at all.

4.4 Statistical methods

To conduct the analysis the program SPSS 27 (IBM Corp., 2021) was used. The Hypothesis H1, H2, H4 and H6 are directed hypotheses and were tested with a Pearson-Product-Moment-Correlation as in Porics (2022). The other two directed hypotheses H5 and H7 were analyzed with the ETA-coefficient, as it was calculated with metric and nominal variables. For the 3rd hypothesis a moderation analysis was conducted to explore the correlation between control appraisal and intensity of boredom and the effect of value appraisal on this correlation.
For the analysis of scales, habitual boredom, valence, under- and overchallenge, as also the 3-item Spiritual Well-Being Scale were each summed up to one score. Furthermore, a hierarchical multiple linear regression was conducted on the model for exploratory reasons.
To measure the reliability of the different scales, the internal consistency was measured, using Cronbach's Alpha.
For a standardized measure of the correlations and effects, the interpretation of Cohen (1988) was used, noting, that a value of r+- .10 stands for a small correlation, r +- .30 stands for a moderate correlation and r +- .50 stands for a strong correlation.

4.5 Results

The results originating from the before mentioned statistical analysis are presented in the following paragraphs. For a full overview of the data analysis tables, see **Appendix B**.

Descriptive Statistic

In the table attached below the intercorrelations of the variables of spirituality, valence, motivation, habitual boredom, and the control measures of overchallenge and underchallenge are visible. The number of participants varies across questions, because some were given to everybody, and some only to those, who stated a certain strength in a feature or who approved a certain statement to be true for themselves (see path description in **Appendix A**).
The highest negative correlation was seen in the measure of valence and habitual boredom. These measures correlated significantly negative with a $r = -.56$ and a $p < .001$ with a strong effect, followed by a significantly positive correlation of $r = .48$ and a $p < .001$ in underchallenge and habitual boredom. The spiritual self-assessment scale, as also the 3-item Spiritual Well-Being Scale both showed a significant negative correlation with habitual boredom ($r = -.39$, $p = .001$; $r = -.317$, $p = 0.11$). Overchallenge was also shown to correlate significantly positive with habitual boredom ($r = .36$, $p = .004$) with a moderate effect. The negative correlation between the intensity of boredom and motivation to practice meditation was not significant ($r = -.24$, $p = 0.54$).

Table 1: Pearson-Product-Moment-Correlation of the interesting variables.

Variables		Spiritual Self-Assessment	Spiritual Well-Being	Overchallenge	Underchallenge	Valence	Motivation	Habitual Boredom
Spiritual Self-Assessment	Pearson Correlation	1						
	Sig (2-tailed)							
	N	137						
Spiritual Well-Being	Pearson Correlation	**.404****	1					
	Sig (2-tailed)	<.001						
	N	137	144					
Overchallenge	Pearson Correlation	-0.229	-0.173	1				
	Sig (2-tailed)	0.076	0.182					
	N	61	61	61				
Underchallenge	Pearson Correlation	0.032	-0.112	**.547****	1			
	Sig (2-tailed)	0.809	0.39	<.001				
	N	61	61	61	61			
Valence	Pearson Correlation	**.617****	**.521****	-0.074	-0.102	1		
	Sig (2-tailed)	<.001	<.001	0.573	0.432			
	N	63	63	61	61	63		
Motivation	Pearson Correlation	**.515****	**.426****	-0.073	0.047	**.638****	1	
	Sig (2-tailed)	<.001	<.001	0.574	0.722	<.001		
	N	63	63	61	61	63	63	
Habitual Boredom	Pearson Correlation	-0.391	**-.317***	**.464****	**.481****	**-.562****	-0.244	1
	Sig (2-tailed)	0.001	0.011	0.004	<.001	<.001	0.054	
	N	64	64	61	61	63	63	64

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant on the 0.05 level (2-tailed).

Looking at the correlation of control and valence measures on habitual boredom in the specific aspects of meditation, only one significant correlation was found between the measures of valence and habitual boredom in breathing exercises.

Table 2: Correlations between control appraisals, valence, and habitual boredom per meditation aspect

Habitual Boredom →	Concentration exercises (CE)	Breathing exercises (BE)	Relaxation exercises (RE)
Valence	-.014	-.515**	-.088
Overchallenge	.199	-.075	.002
Underchallenge	.304	-.165	-183

Note. **. Correlations at the niveau of 0,01 (2-sided) significant. *. Correlations at the niveau of 0,05 (2-sided) significant.

1. Hypothesis: Correlation between over- and underchallenge and habitual boredom

The first hypothesis was tested with a Pearson-Product-Moment-Correlation and claimed, that a positive correlation exists between inadequate control appraisal and habitual boredom. As visible in Table 1 the results favored this assumption. With an $r = .36$ and a $p = .004$ for overchallenge and boredom, and an $r = .48$ in underchallenge, showing a strong correlation according to Cohen (1988) and a $p < .001$ the hypothesis was confirmed. The results showed that higher values in overchallenge and underchallenge were correlated with a higher intensity in habitual boredom.

Table 2 did not reproduce those results in the specific aspects of meditation. Furthermore, it is to mention that in the hierarchical multiple linear regression model (**Appendix B**), where the influences of all the before mentioned variables are considered, only underchallenge was shown to have a significant partial correlation with habitual boredom (beta = .307, $p = .001$). Overchallenge did not have a significant partial correlation with habitual boredom in the analysis (beta = .095, $p = .358$).

2. Hypothesis: Correlation between valence appraisal and habitual boredom

The second hypothesis was, that there exists a correlation between valence appraisal and habitual boredom. As measured with the Pearson-Product-Moment-Correlation in Table 1, the value appraisal and intensity of habitual boredom in meditation correlate significantly negative with each other, showing a $r = -.56$ with a $p < .001$. Therefore, the second hypothesis was verified, showing that the more value the meditation had for the participants, the less habitual boredom they experienced. This result is also visible in Table 2, showing that the strongest correlation between habitual boredom and value was found in the meditation aspect of breathing exercises ($r = -.51$; $p < .001$).

3. Hypothesis: Moderation of valence appraisal on the effect of control appraisal on the intensity of habitual boredom

The third hypothesis claimed that valence appraisal moderates the effect of control appraisal on the intensity of habitual boredom. For a better interpretability of the results the independent variables were mean centered before the analysis. The independent variables included both control measures – overchallenge and underchallenge, and valence appraisal.

Through this the main effects were still interpretable, even if the interactions were not significant. For the results a regression analysis was conducted.

The results of the moderation analysis showed that the models were significant with an adjusted $R^2 = .368$, an $F = 12.621$, and a $p < .001$, in the overchallenge – valence model, showing a moderate correlation after Cohen (1988), and an adjusted $R^2 = .478$, an $F = 17.384$, and a $p < .001$ in the underchallenge – valence model, showing a strong correlation. But the interactions were not significant in both models, meaning that valence was not shown to moderate the effects of control appraisal on the intensity of habitual boredom. The main effects were significant with a beta-coefficient of .325 and $p = .003$ for overchallenge, beta = -.518 and $p < .001$ for valence, and beta = .436 and $p < .001$ for underchallenge, meaning that valence appraisal and both measures of control appraisal had significant effects on habitual boredom.

In Table 3 and 4 the results are shown for the moderation analysis.

Table 3: Moderation analysis of valence and overchallenge on habitual boredom

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.632[a]	.399	.368	.65602

a. Predictors: (Constant), Moderator_Val_Over, Overchallenge_mc, Valence_mc

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.405	.084		28.504	<.001
	Overchallenge_mc	.320	.103	.325	3.116	.003
	Valence_mc	-.769	.167	-.518	-4.616	<.001
	Moderator_Val_Over	.002	.204	.001	.011	.991

a. Dependent Variable: HabBoredom

Table 4: Moderation analysis of valence and underchallenge on habitual boredom

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691[a]	.478	.450	.61157

a. Predictors: (Constant), Moderator_Val_Under, Underchallenge_mc, Valence_mc

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.402	.079		30.453	<.001
	Valence_mc	-.760	.158	-.512	-4.809	<.001
	Underchallenge_mc	.406	.091	.436	4.443	<.001
	Moderator_Val_Under	-.060	.198	-.033	-.303	.763

a. Dependent Variable: HabBoredom

4. Hypothesis: Correlation between habitual boredom and motivation

In the fourth hypothesis it was suggested that motivation has a negative correlation with habitual boredom in meditation. This correlation was tested with a Pearson-Product-Moment-Correlation and is shown in Table 1. The results were close to significance with r = -.24 and an p = .054, which would have been a moderate correlation. Therefore, the hypothesis is falsified. But it is to mention that the p value was very close to being significant. The significance of the effect might have shown with a bigger sample size.

5. Hypothesis: Correlation between regularity and habitual boredom

Hypothesis five concerned the correlation between regularity and habitual boredom and suggested a negative correlation between these two measures. As regularity is a nominal measure, the analysis was conducted with an ETA coefficient.
The model explained 20.5% of variance (η = .453) in the independent variable of habitual boredom through regularity and therefore showed a strong correlation. The hypothesis was shown to be valid with p < .001. As the measures were inverted (1 = meditated regularity, 4 = has never meditated) a look at the cross table indicates that the negative correlation in the directional hypothesis was confirmed by the results. The analysis is shown in Table 5.

Table 5: ETA coefficient analysis for the correlation between regularity and habitual boredom

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.428	.079	3.725	<.001[c]
Ordinal by Ordinal	Spearman Correlation	.442	.095	3.879	<.001[c]
N of Valid Cases		64			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Directional Measures

			Value
Nominal by Interval	Eta	HabitualBoredom Dependent	.453
		MP_reg: Praktizieren Sie aktuell Meditation? Dependent	.627

Tests of Between-Subjects Effects

Dependent Variable: HabitualBoredom

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8.881[a]	3	2.960	5.159	.003
Intercept	72.753	1	72.753	126.799	<.001
MP01	8.881	3	2.960	5.159	.003
Error	34.426	60	.574		
Total	413.148	64			
Corrected Total	43.307	63			

a. R Squared = .205 (Adjusted R Squared = .165)

6. Hypothesis: Correlation between spirituality and habitual boredom

The sixth hypothesis claimed that spirituality and the intensity of habitual boredom are correlated negatively, saying that the more spiritual a person is, the less habitual boredom is experienced in meditation practice. Table 1 contains the results and shows, that a moderate negative correlation exists between habitual boredom and the 3-ISWBI (r = -.32, p = .011), as also between habitual boredom and the spiritual self-assessment measure, also with a moderate correlation (r = -.39, p = .001). Hence, the results of this analysis confirm the hypothesis.

7. Hypothesis: Correlation between spirituality and regularity

The last hypothesis concerns a positive correlation between the measures of spirituality and regularity. The scales of 3-ISWBI and the spirituality self-assessment were summed up and showed a Cronbach's Alpha of .56. As regularity is a nominal measure and spirituality is metric, the ETA coefficient was calculated and is shown in Table 6.
As the hypothesis is compiled non-directional, the accuracy of the ETA coefficient is sufficient. It is to note though, that the measure regularity is inverted with 1 = meditated regularly and 4 = has never meditated. With an η of .425 and a *p* of <.001 the hypothesis is validated.

Table 6: ETA coefficient analysis for the correlation between spirituality and regularity

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.424	.067	-5.580	<.001[c]
Ordinal by Ordinal	Spearman Correlation	-.403	.073	-5.248	<.001[c]
N of Valid Cases		144			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Directional Measures

			Value
Nominal by Interval	Eta	SpiritualitySUM Dependent	.425
		MP_reg: Praktizieren Sie aktuell Meditation? Dependent	.621

Tests of Between-Subjects Effects

Dependent Variable: SpiritualitySUM

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	16.805[a]	3	5.602	10.278	<.001
Intercept	784.299	1	784.299	1439.018	<.001
MP01	16.805	3	5.602	10.278	<.001
Error	76.303	140	.545		
Total	1747.451	144			
Corrected Total	93.109	143			

a. R Squared = .180 (Adjusted R Squared = .163)

4.6 Discussion

By verifying the hypotheses 1, 5, 6 and 7, as also the main effects of hypothesis 2 and 3 it can be deducted, that the theoretical assumptions of the Control-Value Theory of boredom (Pekrun, 2006; Pekrun et al., 2010) can be applied on the spiritual context of meditation.

The first hypothesis was verified by conducting a Pearson-Product-Moment-Correlation, showing that overchallenge, as also underchallenge were significant predictors of the intensity of habitual boredom in meditation. The effect sizes between overchallenge and underchallenge differed by showing a stronger correlation between underchallenge and habitual boredom than between overchallenge and habitual boredom. These results match the research of Pekrun et al. (2010), Lomas (2022) and Osin & Turilina (2022) showing a positive relationship between the intensity boredom and control appraisal.
The results could not be reproduced in the different aspects of meditation. This could be due to an unvalidated division of the meditation aspects. Therefore, the model is not rejected in the different aspects of meditation, but future research is recommended.
Furthermore, the hierarchical multiple linear regression on habitual boredom excluded the variable overchallenge, as its partial correlations were too small in the model. Pekrun et al. (2010) already implied, that a linear model is unfit to display the complex contiguity of control appraisal and suggested a curvilinear influence of control appraisal, wherefore future research with non-linear models is recommended.
Interestingly, the measures of overchallenge and underchallenge correlated highly positive with each other, which is interesting, as a negative correlation would be expected. The results indicate that those who showed high values in overchallenge also were those, who showed higher values in underchallenge, suggesting that those individuals might have difficulties in monitoring and regulating their emotions concerning control appraisal.

The second hypothesis showed that valence had a strong negative correlation with habitual boredom and was with an $r = -.54$ the strongest predictor of habitual boredom in the study. In the specific parts of meditation only the item that it is important for the participants to be good in meditation, independent of others showed a positive correlation. Even though this correlation was not significant, it could be explained by the spirit of meditation to let go of judgement not only towards outer things, but also towards oneself (Cardoso et al., 2004). The other aspects were all rated insignificantly negative concerning valence appraisal, which could be due to an unsuccessful fit of the categories for meditation practice. The only

significant correlation was shown in breathing exercises, which was shown to be of significantly little value for the participants.

As the interactions of valence on the influence of control appraisal on habitual boredom were closely not significant, the third hypothesis was not confirmed. As in Porics (2022) it might be due to an underestimation of the interactions, as it was not controlled for measurement errors. Future research is suggested with controlling for measurement errors in the analysis of the interactions.

The correlation between motivation and habitual boredom was very closely not significant with an alpha of 0.054. Though the correlation showed a negative tendency, which was also suspected by the theoretical background of the Control-Value Theory (Pekrun, 2006).

The sixth hypothesis confirmed a negative correlation between the intensity of boredom and spirituality measures. These findings correspond with the results found in Vogel-Walcutt et al. (2010) and MacDonalds and Holland (2002) and with the theoretical anchor proposed by Cardoso et al. (2004; Lomas, 2022), that logical relaxation is a very important spiritual state of mind, which cannot coexist with boredom. Logical relaxation refers to a non-judgmental attitude towards outer and inner stimuli and therefore holds a lack of negative judgement as it is necessary for the feeling of boredom.

As the methodology was adjusted on the example of Porics (2022) it is to mention, that the scale of regularity is limiting the informational gain of the study insofar, as due to its nominal nature it is not possible to deduct neither directionality nor causality from the results of the ETA coefficient. Still, nearly all theoretical assumptions of the Control-Value Theory of boredom (Pekrun, 2006), which emerged from the learning and achievement context, were reproduceable in the spiritual context of meditation.
An integrated discussion of the results of both, study 1 and study 2 is presented in the Conclusio, which is located after the discussion of study 2.

5 Study 2: Situative Boredom in Meditation

In the following paragraphs the study design, as also the results of the second study are explained. This second part should complete the study of boredom in the spiritual context, by adding the situational measure to the habitual measure of boredom.

5.1 Study Design and Implementation

As the first part of the study concerned habitual boredom in the spiritual context, the second part will research control and value measures on situative boredom. Therefore, participants had to take the survey shortly after meditating. This logically implies that one could only take part in this survey if they were currently practicing meditation. There were no limitations in age or type of meditation. Recruiting took place over social media platforms like Facebook, WhatsApp and Instagram, as also through personal contact. The Austrian Buddhist Association was also contacted to take part in the survey, unfortunately it did not increase the number of participants. For single participants and for institutional participants a guideline was offered per E-Mail or over the social media platform which included the access link for the survey. This guideline is visible in **Appendix C**. By recruiting different people than in sample 1 it was possible to get an independent sample to the first study. The survey was conducted in the time of the 14th of July 2022 till the 17th of October 2022. Most participants took around five minutes to finish the questionnaire.

5.2 Material

Like in study 1 sociodemographic measures of age and gender were taken. Besides that, 53 statements were offered to be rated on a 5-point Likert Scale (1= do not agree at all, 5 = agree fully). The questionnaire did not change in length for participants as every question was offered to all participants independent of their previous answers. It was asked about the first time they meditated, about their preferred type of meditation and regularity of meditation practice. Besides the measures of boredom and spirituality, the questions were the same as in study 1 (see Porics, 2022). The following paragraphs explain more specifically about the items and adaptations for this study. In **Appendix C** the full formulated items are available.

Situative Boredom

All measures were taken directly after finishing a meditation session. For the measure of situative boredom the MSBS-SF was used. This is a shortform of the multidimensional state boredom scale and consists of 8 items. The Cronbach's Alpha for this scale showed a satisfying internal consistency of .72. The scale was previously tested by Hunter et al. (2016) and translated to German by Porics (2022).

An adapted form of the in study 1 used habitual boredom statements were used in this study. The six statements were adjusted on situative measures and on the meditation context (i.e., "During the meditation session I just completed, I was bored with the relaxation phase" – "Bei der gerade absolvierten Meditationseinheit langweilte mich die Entspannungsphase."). The scale showed a satisfying Cronbach's Alpha of .88.

As control variables boredom proneness and habitual boredom were measured. Boredom proneness was measured using one item adjusted from Porics (2022) which was then rated on a 5-point Likert Scale ("I usually tend to get bored quickly." – "Ich neige dazu mich üblicherweise schnell zu langweilen."). Habitual boredom also consisted of one statement adjusted from Porics (2022) on the meditation context which was rated on a 5-point Likert Scale ("When practicing meditation, I usually get bored." – "Bei der Ausübung von Meditation langweile ich mich üblicherweise."). Both scales scored from 1 = totally disagree to 5 = totally agree.

Control Appraisal

Orientating on the Control-Value Theory of Boredom (Pekrun, 2006) and the questionnaire of Krannich et al. (2019) overchallenge and underchallenge were measured with 10 items. The measurement has the same structure as in study 1 but was adjusted on the situative context of the just practiced meditation (i.e., "In the meditation session I just completed, I felt underchallenged." – "In der gerade absolvierten Meditationseinheit fühlte ich mich unterfordert."). The Cronbach's Alpha for overchallenge was excellent with .91 and for underchallenge too with .88.

Valence Appraisal

Valence appraisal was measured the same way as in study 1. 11 items orienting on Kögler & Göllner (2018) were adjusted on the meditation context and measured situative valence appraisal (i.e., "Meditation has a high value in my life." – "Meditation hat einen hohen

Stellenwert in meinem Leben."). Like in study 1 it was also asked specifically for extrinsic value beliefs. This methodological approach was also used in Porics (2022) and therefore fits for a good comparability of results. The internal consistency was good with a Cronbach's Alpha of .83.

Motivation

Because of the suggested influence of motivation on boredom by Pekrun (2006) in the Control-Value-Theory, motivation was measured also for the situative condition. As in Porics (2022) it was asked about the motivation to start meditation, current motivation, and intensity of motivation (i.e., "I am usually motivated to meditate." – "Ich bin üblicherweise motiviert zu meditieren.")

Spirituality

As Porics (2022) showed, one item to measure spirituality was a sufficient measurement technique for the construct. Therefore, spirituality was measured by self-assessment, using the rating of the statement "I consider myself to be a spiritual person." ("Ich schätze mich selbst als spirituellen Menschen ein.").

5.3 Sample

24 participants took part in the survey, even though 8 had to be dismissed due to missing values. 55.6% were female, 33.3% were male and 11.1% were divers. The mean age was around 42 years (SD = 12.95). The youngest participant was 19 and the older 65. For a tabular overview, see **Appendix C**.

75% of participants said that they did not meditate regularity and only 25% did. 50% of participants meditated for the first time over 3 years ago, 27.8% between 1-3 years ago and 5.6% in each case 7-12 months and 1-6 months ago.
Around 55% of the participants preferred spiritual meditative meditation, 25% were doing relaxing flow-meditation and 20% preferred doing fitness-accentuated/body-accentuated meditation.
Spiritual reasons were totally the reason to start meditation for 16.7% of participants. No one totally agreed on the statement of fitness being their reason to start meditation, but 44.4% rather agreed. No one disagreed on the statement, that they started meditation to come to rest and 27.8% totally agreed on it. The statement of social reasons to start meditation was not

answered positively. 33.3% partially agreed and 16.7% totally disagreed on it.
The actual motivation showed slightly different results. Spiritual reasons were totally the case for 22.2% of participants, but also not at all for 33.3%. To increase fitness 50% partially agreed and social reasons again showed more responses on the negative side. 33.3% rather disagreed with the statement, 22.2% disagreed totally, 16.7% agreed partially and 11.1% rather agreed. No one totally agreed on social reasons to be their motivation to meditate.

5.4 Statistical Analysis

The analyses are the same as in study 1 and SPSS 27 (IBM Corp., 2021) was used. For hypotheses 1,2,4 and 6 a Pearson-Product-Moment-Correlation was conducted. Hypothesis 3 was tested by a moderation analysis and hypotheses 5 and 7 were tested with the ETA coefficient. For further information a hierarchical multiple linear regression was performed (**Appendix B).** For the interpretation of the strengths of correlations it was referred to Cohen (1988). For the measure of reliability of the used scales the internal consistency was assessed using Cronbach's Alpha.

5.5 Results

In the following paragraphs the results of the analysis are narrated per hypothesis.

Descriptive Statistics

For the analysis a Pearson-Product-Moment-Correlation was conducted. For those correlations the measures of the self-construed situative boredom scale, the MSBS-SF, valence appraisal, and the control measures of over- and underchallenge were each summed up. The items of habitual boredom and boredom proneness were also added in the analysis. High values in the scales stood for high pronunciation in the measures.
Table 7 shows, that a high correlation of $r = .90$ could be found between situative boredom and habitual boredom with a $p < .001$. The spiritual self-assessment measure correlated highly negative with habitual boredom with a $r = -.61$ and a $p = .015$. Boredom proneness and habitual boredom also correlated significantly with each other, showing a $r = .61$ and a $p = .012$.

Table 7: Pearson-Product-Moment Correlation between situative boredom, boredom proneness, spirituality self-assessment and habitual boredom

Variables		Situative Boredom	Boredom Proneness	Spiritual Self-Assessment	Trait Boredom
Situative Boredom	Pearson Correlation	1			
	Sig (2-tailed)				
	N	16			
Boredom Proneness	Pearson Correlation	**.640****	1		
	Sig (2-tailed)	0.008			
	N	16	16		
Spiritual Self-Assessment	Pearson Correlation	**-.598***	**-.566***	1	
	Sig (2-tailed)	0.018	0.028		
	N	15	15	15	
Trait Boredom	Pearson Correlation	**.898****	**.611***	**-.614***	1
	Sig (2-tailed)	<.001	0.012	0.015	
	N	16	16	15	16

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant on the 0.05 level (2-tailed).

Table 8: Pearson-Product-Moment Correlation between situative boredom, overchallenge, underchallenge, motivation and valence measures

Variables		Situative Boredom	Overchallenge	Underchallenge	Motivation	Valence
Situative Boredom	Pearson Correlation	1				
	Sig (2-tailed)					
	N	16				
Overchallenge	Pearson Correlation	**.788****	1			
	Sig (2-tailed)	<.001				
	N	15	15			
Underchallenge	Pearson Correlation	**.534***	**.830****	1		
	Sig (2-tailed)	.040	<.001			
	N	15	15	15		
Motivation	Pearson Correlation	**.568***	-.332	-.077	1	
	Sig (2-tailed)	.022	.227	.786		
	N	16	15	15	16	
Valence	Pearson Correlation	**-.738****	**-.526***	-.367	**.635****	1
	Sig (2-tailed)	.001	.044	0.178	.008	
	N	16	15	15	16	16

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant on the 0.05 level (2-tailed).

The average intensity found in spiritual boredom was at 2.05 (SD = .58), which was rather low on a scale from 1 – 5 (1 = not at all, 5 = totally). Low means were also found in overchallenge and underchallenge with values of 1.62 (SD = .78) for overchallenge and 1.56 (SD = .66) for underchallenge. Motivation had a rather positive mean of 3.28 (SD = .44) on a similar scale, as did valence appraisal with 3.43 (SD = .64). The average intensity of boredom proneness was also rather low with 1.94 (SD = 1.06). Also see **Appendix C**.

In the Pearson-Product-Moment-Correlation, visible in table 8 high significant correlations were also found between overchallenge and situative boredom with a $r = .79$ and $p < .001$, underchallenge and situative boredom with a $r = .53$ and $p = .040$, motivation and situative boredom with $r = -.57$ and $p = .022$, and valence appraisal and situative boredom with $r = -.74$ and $p = .001$. Furthermore, the correlation of valence and overchallenge was shown to be significantly negative with a $r = -.53$ and $p = .044$. Motivation and valence appraisal were shown to correlate significantly positive with a $r = .64$ and $p = .008$.

1. Hypothesis: Correlation between over- and underchallenge and situative boredom

The first hypothesis claimed that an inappropriate control appraisal correlates positively with the intensity of situative boredom. Table 8 shows the Pearson-Product-Moment-Correlation with which this hypothesis was tested. It was shown, that situative boredom correlates strongly and significantly with overchallenge with a $r = .79$ and $p < .001$. The same results were found between situative boredom and underchallenge, where the correlation was strong with a $r = .53$ and $p = 0.040$. Therefore, the findings confirmed hypothesis 1.

2. Hypothesis: Correlation between valence appraisal and situative boredom

The second hypothesis concerned a negative correlation between valence appraisal and situative boredom, meaning that the more value meditation has for a person, the less situative boredom is experienced. The hypothesis was tested in the Pearson-Product-Moment-Correlation and showed a $r = -.74$ with a $p = .001$. As the strongly negative correlation was shown to be significant, the hypothesis was confirmed.

3. Hypothesis: Moderation of valence appraisal on the effect of control appraisal on the intensity of situative boredom

The third hypothesis concerns a moderating effect of valence appraisal on the influence of control appraisal on the intensity of habitual boredom. The mean centering of the used independent variables in this analysis enables the main effects in the results to stay interpretable, even if the interaction terms should not be significant. As independent variables the control measures of overchallenge and underchallenge, as also valence appraisal were used. The moderation effects were tested in a regression analysis.

The model of overchallenge – valence was shown to be significant with an adjusted R^2 of .778, a $F = 12.827$ and a $p < .001$, saying that with this model 77.8% of the variance in situative boredom was explainable through the model, showing a strong correlation referring

to Cohen (1988). The underchallenge – valence model was also shown to be significant with an adjusted R^2 of .581, a F of 7.458 and a p = .005, explaining 58.1% of variance on the dependent variable of situative boredom, showing a strong correlation after Cohen (1988).

Still, the interactions in both models were not significant. Valence was therefore not shown to moderate the effect of overchallenge and underchallenge on the intensity of situative boredom.
In the main effects only overchallenge was found to be significant (beta = .528, p = .010). Valence was closely not found significant with a beta = -.400 and a p = .058 in the overchallenge – valence model.

In Table 9 and 10 the results are shown for the moderation analysis.

Table 9: Moderation analysis of valence and overchallenge on situative boredom

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.882[a]	.778	.717	.31939

a. Predictors: (Constant), Moderator_Val_Over, Overchallenge_mc, Valence_mc

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.030	.094		21.676	<.001
	Overchallenge_mc	.407	.132	.528	3.082	.010
	Valence_mc	-.367	.173	-.400	-2.119	.058
	Moderator_Val_Over	-.102	.167	-.110	-.607	.556

a. Dependent Variable: SituativeBoredom

Table 10: Moderation analysis of valence and underchallenge on situative boredom

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819[a]	.670	.581	.38890

a. Predictors: (Constant), Moderator_Val_Under, Underchallenge_mc, Valence_mc

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.012	.109		18.440	<.001
	Valence_mc	-.409	.225	-.446	-1.822	.096
	Underchallenge_mc	.295	.169	.327	1.744	.109
	Moderator_Val_Under	-.298	.256	-.268	-1.163	.269

a. Dependent Variable: SituativeBoredom

4. Hypothesis: Correlation between situative boredom and motivation

In the fourth hypothesis a negative correlation between situative boredom and motivation was concerned. As visible in Table 8 motivation correlated strongly and significantly negative with situative boredom, showing a r = -.57 and a p = .022. Therefore, the hypothesis was found valid.

5. Hypothesis: Correlation between situative boredom and regularity

The fifth hypothesis claimed a negative correlation between situative boredom and regularity. As the measure of regularity is a non-parametrical one, the correlation was tested with Kendall's tau, showing a moderate positive correlation of r = .27, which was not found to be significant. With this result, the hypothesis was not confirmed.

6. Hypothesis: Correlation between spirituality and situative boredom

The sixth hypothesis expected a negative relationship between spirituality and situative boredom. Looking at Table 8 a strong and significant negative correlation was found between the self-assessment spirituality measure and situative boredom, showing a r = -.60 with a p = .018. The results confirmed the hypothesis.

7. Hypothesis: Correlation between spirituality and regularity

The seventh hypothesis claimed a positive correlation between spirituality and regularity. By calculating Kendall's tau, a negative correlation between the two variables was found (r = -.34), but without significance. Therefore, the seventh hypothesis was not confirmed in this study.

5.6 Discussion

Study 2 was able to confirm hypotheses 1, 2, 4 and 6 and therefore validated the Control-Value Theory (Pekrun, 2006) in those aspects in the spiritual context.
It was shown, that overchallenge, as also underchallenge, were shown to have a significant influence on the experience of situative boredom. A stronger correlation between situative boredom and overchallenge was found, matching the findings of Pekrun et al. (2010), measuring in their article, that boredom was found more in students with low IQ points as they find themselves overchallenged in the classroom.

Valence was shown to correlate significantly negative with situative boredom, confirming the assumptions of the Control-Value Theory (Pekrun, 2006), saying that the more value a person derives from something, the less boredom is experienced in the situation.

The influence of valence on the effect of the control measures was not shown to be significant, possibly because the sample size was too small to display a small or moderate effect on two moderately to strongly influencing variables.

In study 2 it was not possible to split the measures on the different aspects of meditation as in study 1, because the sample was too small to display those specific measures.

Motivation was found to correlate significantly negative with situative boredom, saying that the more motivation was experiences the less situative boredom was found. Interestingly the measures do not claim to be causal, therefore saying, that it could also be that the less situative boredom is experienced, the more motivation was found.

What was not expected in the results, was that there exists no negative correlation between regularity and situative boredom. The results indicated no significant correlation between regularity of meditation practice and situative boredom.
Hypothesis 7 tested the correlation between regularity of meditation practice and spirituality and was also not able to show a significant correlation between the two measures. Spirituality therefore does not necessarily increase with more regular meditation practice, neither does situative boredom decrease.
Interestingly, spirituality was shown to correlate with situative boredom significantly and negatively, stating that the more spiritual a person defines herself, the less boredom she experiences during meditation practice. Those findings correspond with previous research in this area (Lomas, 2017; Osin & Turilina, 2022).

Most of the predictors in study 2 were found valid, with some models explaining up to 77.8% of variance in situative boredom. It is to mention though, that the small sample size limits the interpretability of the results and therefore only shows exploratory measures of situative boredom in spiritual settings. Therefore, research is suggested to further explore this field.

Besides that, instructions were given for the implementation of the survey, but it was the responsibility of each participant to fill out the questionnaire right after a meditation session. It was not possible to control for in the study, if participants actually followed the instructions.

The next chapter sums up the findings of study 1 and study 2 and reflects the results on a common background.

6 Conclusio

The study confirmed hypotheses 1, 2, 4, 5, 6 and 7 in study one, which confirms the implications of the Control-Value Theory (Pekrun, 2006; Pekrun et al., 2010; Götz et al. 2018) in the spiritual context. Further validation through study 2 was added on the situative context of meditation by confirming hypotheses 1, 2, 4 and 6. The results differed slightly, as hypotheses 5 and 7, concerning the correlation between boredom and regularity on the one side and spirituality and regularity on the other side, were confirmed in the habitual boredom study, but not in the situative study. It might also implicate, that regularity has positive effects on habitual boredom, but not directly on the situational feeling of boredom. The finding, that spirituality and regularity were not significantly correlated in the situative boredom study might be explained by a difficulty in in the measurement, resulting in a small sample size in study 2.

To increase the informational gain of the Control-Value Theory of boredom from the learning and achievement context (Pekrun, 2006; Pekrun et al., 2010), this study should add to research the spiritual context with this theoretical background.
The findings could show that the theory was over all useful and appropriate on the spiritual context of meditation. Positive correlations between underchallenge and situative boredom were found, also consenting Cardoso et al. (2014), Lomas (2017), and Osin and Turilina (2022), claiming, that the inability of evaluating a stimulus deprived situation as positive causes boredom. Overchallenge was also found to correlate significantly positive with situative boredom in the control-value mediator tests. Even though the interactions were not found to be significant, in study one both predictors – over- and underchallenge as also valence, and in study two overchallenge and valence were found to be significant predictors

for boredom, showing high variance clarifications of up to 77.8%.
The missing significance of underchallenge on situative boredom in the valence-control mediator testing could be explained by Krannich et al. (2019), who found underchallenge to enhance the self-concept in the academic context, which might also be of importance on the boredom measures of the meditation context. An overall negative impact of inappropriate perceived control was found, but it showed that there exist more variables that might influence the correlation between perceived control and boredom measures.
Acee et al. (2010), also found, that in overchallenging situations both task- and self-focused boredom were reported, but in underchallenging situations a general boredom factor was found, showing that the concept of boredom might differ between overchallenging and underchallenging situations
Further research is suggested to clarify the underlying interrelationships.
To sum up this chapter, both inadequate control appraisals were found to be significant predictors for boredom over both studies with small differences.

Valence was shown to have a significant influence on boredom in the habitual measures as also in the situative measures – not only by direct correlation, but also in the mediator models of control and valence appraisals on boredom. Over both studies and all statistical measures, a significantly negative correlation between valence appraisal and boredom measures was found, confirming the claim of the Control-Value Theory of Boredom (Pekrun, 2006; Pekrun et al., 2010). Therefore, drawing on previous findings, the results of the studies in this work indicate that a lack of value of a task or situation is a predictor of boredom.

Predictors, different to effects, claim directionality, but still, they can influence each other reciprocally. To talk about motivation, a significant negative correlation was found between motivation and boredom in both studies, but cross-sectional study designs do not permit causal inference per se.. Previous studies found that motivation and boredom are linked (Pekrun, 2006; Pekrun et al., 2014; Pekrun et al., 2010). Motivation was found to be a predictor for boredom, but to also be affected by boredom. This shows that sometimes it is not that simple to put variables into categories, but a more complex theoretical model is required for explanation.

Interestingly regularity did not necessarily decrease boredom, as well as it did not necessarily increase spirituality. This might underly the fact, that not everybody links their meditation practice to enhancing spirituality. For those, who reported higher spirituality, boredom was

significantly lower. This shows the importance of not only practicing meditation, but to include the spiritual aspects in it.

Boredom and missing motivation were both mentioned as reasons to stop certain tasks or avoid situations in previous studies (Götz et al., 2018; Pekrun et al., 2006; Nett et al., 2010). In our results demotivation itself was not a significant factor for quitters, but boredom was. The means of boredom over the meditating participants were not too high. As reported boredom during meditation was reported significantly higher in quitters, that might have been due to the fact, that those who are too bored during meditation simply quit. Those results are consistent with the study of Porics (2022).

Practical Implications

It was shown in both studies that motivation and boredom are positively correlated to each other. We did not test for causality and therefore this correlation might go both ways. Nonetheless, if the focus in the work with people – In schools, in meditation courses, in sports, - shifts from rating the performance to rating its precursors, like individual motivation, a better performance might naturally follow.
Furthermore, mismatching control appraisal was found to be a predictor of boredom and this correlation was replicated in this study too. So, if in meditation classes, as also in schools and other person-centered institutions the demands of the situation are fitted to the person, a better well-being as also performance might result.
As mentioned by Lomas (2017) and Osin and Turilina (2022) what might help individually to a better well-being is to incorporate a non-judging position as it is done in active spirituality. We could show that spirituality and boredom correlate negatively with each other and therefore infer, that the negative effects of boredom might decrease through spirituality (Lomas, 2017; Osin & Turilina, 2022). Further research is suggested.

Deducting from the results, control and value appraisals show a great importance in the emergence of boredom in meditation. Therefore, different focus can be laid in meditation units matching the meditators values to increase the value appraisal of the meditation practice individually (i.e., Mantras). Correspondingly the type of meditation and the used sequences can be varied to fit the individual ability and preference, so that over- and underchallenge can be avoided.

Limitations and strengths

The small sample size, especially in study 2 is to mention as a limitation of the study. Besides that, it was only possible to get measurements from German speaking countries, therefore further studies in different cultural contexts are necessary to test for generalizability.

An advantage of the study is, that the results were elevated in a way, that a good comparability of the results is assured with another recent study about spiritual boredom. (Porics, 2022)
One difference is, that in this paper, motivation was tested differently in study 2, to elevate more exact results.

Another advantage is the solid theoretical foundation of the study on the Control-Value Theory of Boredom. (Pekrun, 2006; Pekrun et al., 2010; Götz et al., 2018)

Future Research

A more exact analysis of the field of spiritual boredom is recommended. As the appropriateness of the Control-Value Theory of boredom (Pekrun, 2006) for this context was shown by this study, it is suggested to brace future research on this theory to further examine its validity in the spiritual field, like in the church service of different religions. Furthermore, a cooperation is suggested between researchers focusing on qualitative data, like Lomas (2017) and those who focus on quantitative findings (Götz et al., 2018; Pekrun et al., 2010), as both approaches might supplement each other. By an interdisciplinary cooperation an interprofessional way might be found to exchange information and implement strategies adjusted for each context.

Bottom Line

The Control-Value Theory (Pekrun, 2006; Pekrun et al., 2010) is a strong theory to explain boredom, not only in learning and achievement contexts or spiritual contexts, but possibly as a display of a generalizable model of boredom, as of its causes and effects.
Even though the spiritual context is a very specific field with its specialties in the process of cognitive framing of situations and their values, the Control-Value Theory of Boredom (Pekrun, 2006) was found valid and therefore holds the claim to be generalizable. This claim is to be further researched.

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Appendix A

Codebook for the Master study

Spiritual Boredom:

An empirical study about the conception and implication of boredom in the meditation context

Trait survey: July 2022 – August 2022

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Study 1: habitual boredom in meditation

As conducted in the study of Porics (2022) the following instruction will be given to the participants. Adapted to the context of meditation, the instruction of Porics (2022) is used for optimal measurement conditions and comparability of the results.

Instruction

LiebeR TeilnehmerIn,

im Rahmen meiner Masterarbeit untersuche ich Langeweile in spirituellen Kontexten. Diese Studie fokussiert sich dabei auf das Erleben von Langeweile bei der Meditation. Dabei ist es auch unerheblich, ob Sie Meditation praktizieren oder nicht.

Dieser Fragebogen umfasst Angaben zur eigenen Person und Aussagen, die Sie auf ihr Zutreffen bewerten sollen. Dabei gibt es keine richtigen oder falschen Antworten, sofern es um Ihre persönliche Einschätzung und Ihr Erleben geht.

Bitte kreuzen Sie jeweils diejenige Antwortalternative an, die auf Sie persönlich am besten zutrifft. Für den Erfolg dieser Studie ist es wichtig, dass Sie den Fragebogen vollständig ausfüllen, jedoch ist ein Abbruch des Fragebogens ohne Angabe von Gründen jederzeit möglich.

Alle Daten werden anonym erhoben, sie können also Ihrer Person nicht zugeordnet werden und werden streng vertraulich nach den Bestimmungen der Datenschutz-Grundverordnung (DSGVO) behandelt.

Vielen Dank für Ihre Unterstützung!

Wenn Sie einverstanden sind an dieser Studie teilzunehmen, klicken Sie bitte auf weiter.

Final

Vielen Dank für Ihre Teilnahme!

Ich möchte mich ganz herzlich für Ihre Mithilfe bedanken. Bei Fragen oder Interesse an den Ergebnissen melden Sie sich gerne unter: lena.baumgartner@univie.ac.at

Sociodemopraphic measures

Sample size: 144 participants

Age

Shortcut: SD02

Scale: 18, 19, 20,....99

Item	Item wording	M	SD	Min	Max
SD02.1	Geben Sie bitte Ihr Alter an (in Jahren)	28.5	11	13	67

Sex

Shortcut: SD01

Item	Item wording	N	%
Question	Zu welchem Geschlecht fühlen Sie sich zugehörig?		
SD01.1	1 = weiblich	104	71.2%
SD01.2	2 = männlich	39	26.7%
SD01.3	3 = divers	2	1.4%

PATH DESCRIPTIONS			
Item	**PATH 1: Meditators***	**PATH 2: Former meditators***	**PATH 3: No meditators***
Instruction	X	X	X
Age (SD02)	X	X	X
Gender (SD01)	X	X	X
Regularity (MP01)	Answers: 1; 2	Answer: 3	Answer: 4
Duration (MP02)	X	X	
Place (MP03)	X	X	
Type of Meditation (MP04)	X	X	
Spirituality 1 (SP01)	X	X	X
3-ISWB (SP02)	X	X	X
Boredom Proneness (BP)	X	X	X
Spiritual-habitual Boredom in Meditation (TB)	X	X	
Start Motivation (M1)	X	X	
Actual motivation (M2)	X		
Intensity of Motivation (M3)	X		
Demotivation (M4)		X	X
Valence Appraisal (VL)	X	X	
Control Appraisal (CO)	X	X	
Final	X	X	X

**A meditator describes a person, which practices meditation at the current moment. The regularity of the meditation is not rated.*

Meditation practice

Regularity

Shortcut: MP_Reg

Literature: adapted on the work of GfK (2018)

Item	Item wording	N	%
Question	Praktizieren Sie aktuell Meditation?		
MP01.1	1 = ja, regelmäßig	5	3.4%

MP01.2	2 = ja, aber nicht regelmäßig	24	16.4%
MP01.3	3 = nein, aktuell nicht mehr	35	24%
MP01.4	4 = nein, ich habe noch nie Meditation praktiziert	82	56.2%

Duration

Shortcut: MP_Dur

Literature: adapted on the work of GfK (2018)

Item	Item wording	N	%
Question:	Wie lange ist es her, dass Sie zum ersten Mal Meditation praktiziert haben?		
MP02.1	1= 1 - 6 Monate	15	22.1%
MP02.2	2 = 7 - 12 Monate	6	8.8%
MP02.3	3 = 1- 3 Jahre	23	33.8%
MP02.4	4 = > 3 Jahre	24	35.3%

Location

Shortcut: MP_Loc

Literature: Adapted on the work of GfK (2018) and Porics (2022)

Note: Multiple Choice

Item	Item wording	N	%
Question	Wo praktizier(t)en Sie üblicherweise Meditation?		
MP03.0	Meditations-Studio	5	6.9%
MP03.1	zuhause	54	75%
MP03.2	in der Natur	12	16.7%
MP03.3	bei privaten Treffen	1	1.4%
MP03.5	Bitte wählen Sie diese Option nur aus, wenn der Ort, an dem Sie üblicherweise Meditation praktizier(t)en noch nicht genannt wurde. open format		

Type of meditation

Shortcut: MP_Way

Literature: Adjusted on the work of Porics (2022)

Note: Multiple Choice

Item	Item wording	N	%
Question:	Welche Art von Meditation praktizier(t)en Sie üblicherweise?		
MP04.1	körperbetonte/fitnessbetonte Meditation	8	9.2%
MP04.2	entspannendes Flow - Meditation	32	36.8%
MP04.3	spirituell meditative Meditation	31	35.6%
MP04.4	kombinierte Meditation (Fitness, Entspannung, Spiritualität)	16	18.4%

Spirituality

Sample size: 137 participants

Self-assessment

Shortcut: SPI_Self

Literature: Uwland-Sikkema et al. (2018), adjusted on the work of Porics (2022)

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3= teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
SP01.1	Ich schätze mich selbst als spirituellen Menschen ein.	2.66	1.2

3-Item Spiritual Well-Being Index (3-ISWBI)

As the study of Porics (2022) showed, the ISWBI1 decreased the internal consistency of the scale significantly. Therefore, the item “connectedness with God or something divine” (Verbundenheit mit Gott bzw. etwas Göttlichem) is omitted from this study.

Sample size: 142 participants
Shortcut: 3-ISWBI
Literature: Original version of Fisher and Ng (2017), adapted from Porics (2022)

Scale:
1 = nicht wichtig
2 = weniger wichtig
3 = teils - teils
4 = eher wichtig
5 = sehr wichtig

	Cronbach’s alpha for standardized items: .43		
Item	**Item wording**	**M**	**SD**
Question:	Wie wichtig ist Ihnen persönlich Ihre Verbundenheit…		
SP02.1	mit Mitmenschen	4.08	1.01
SP02.2	mit der Umwelt (bzw. der Natur)	3.98	1.09
SP02.3	mit sich selbst	4.16	.94

Boredom Proneness

Sample size: 144 participants
Shortcut: BorePron
Literature: Adjusted on the work of Porics (2022)

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3= teils - teils
4 = stimme eher zu
5= stimme voll und ganz zu

Item	Item wording	M	SD
BP01	Ich neige dazu, mich üblicherweise schnell zu langweilen.	3.06	1.3

Spiritual – habitual boredom

Sample size: 40 participants

Shortcut: TraitBore

Literature: Adjusted on the work of Porics (2022)

Scale: 1 = stimme überhaupt nicht zu

2 = stimme eher nicht zu

3= teils-teils

4 = stimme eher zu

5 = stimme voll und ganz zu

	Cronbach's alpha for standardized items: .85		
Item	**Item wording**	**M**	**SD**
Question:	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen		
TB01.1	Bei der Ausübung von Meditation langweile ich mich üblicherweise.	2.57	1.04
TB01.2	Die Konzentrationsübungen in der Meditation langweilen mich üblicherweise.	2.43	1.10
TB01.3	Die Atemübungen in der Meditation langweilen mich üblicherweise.	2.10	1.05
TB01.5	Die Entspannungsphase in der Meditation langweilt mich üblicherweise.	2.08	1.07
TB01.6	Der/Die Meditationlehrer*in langweilt mich üblicherweise.	2.38	1.01
TB01.7	Der gleichbleibende Ablauf der Meditation langweilt mich üblicherweise.	2.81	1.24

<u>Addition: Boredom in meditation</u>

Shortcut: TB_1

Literature: Adjusted on the work of Porics (2022)

Scale: open format

Question: Bitte beantworten Sie folgende Frage nur, wenn keine der oben genannten Angaben auf Sie zutrifft oder Sie etwas ergänzen wollen. Sonst klicken Sie bitte auf weiter.

Andere Aspekte bei der Meditation langweilen mich üblicherweise, nämlich

Motivation

Start motivation

Sample size: 61 participants

Shortcut: Start_Mot

Literature: Adjusted on the work of Porics (2022) oriented on GfK (2018)

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question:	Bitte beantworten Sie jede Frage, indem Sie einschätzen, warum Sie mit Ihrer Meditationspraxis begonnen haben.		
M101.1	aus spirituellen Gründen	2.38	1.50
M101.2	um die eigene Fitness zu steigern	2.32	1.34
M101.3	um zur Ruhe zu kommen	4.37	.95
M101.4	aus sozialen Gründen	2.07	1.06

<u>Addition: Start motivation</u>

Literature: Adjusted on the work of Porics (2022)

Shortcut: Start_Mot_Zusatz

Scale: Open format

Question: Beantworten Sie diese Frage nur, wenn Ihr Grund Meditation zu beginnen, noch nicht genannt wurde. Sonst klicken Sie bitte auf weiter.

Ich habe aus einem anderen Grund Meditation begonnen, nämlich:

Actual Motivation

Sample size: 27 participants

Literature: adjusted on the work of Porics (2022) and GfK (2018)

Shortcut: Act_Mot

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question:	Bitte beantworten Sie jede Frage, indem Sie einschätzen, warum Sie AKTUELL Meditation praktizieren.		
M201.1	aus spirituellen Gründen	2.93	1.54
M201.2	um die eigene Fitness zu steigern	2.77	1.45
M201.3	um die eigene Flexibilität/Dehnbarkeit zu steigern	3.04	1.51
M201.4	aus sozialen Gründen	2.26	1.32

Addition: Actual Motivation

Literature: Adjusted on the work of Porics (2022)

Shortcut: Act_Mot_Zusatz

Scale: Open format

Question: **Ich praktiziere Meditation aktuell aus einem anderen Grund, nämlich:**

Intensity

Sample size: 29 participants

Literature: Adjusted on the work of Porics (2022)

Shortcut: Inten_Mot

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
M301	Ich bin üblicherweise motiviert Meditation zu praktizieren.	3.52	.829

Demotivation

Literature: Adjusted on the work of Porics (2022)

Shortcut: Demot

Sample size: 117 participants

Note: Multiple Choice

Item	Item wording	N	%
M401	Diese Frage wird Ihnen gestellt, weil sie angegeben haben keine Meditation (mehr) zu praktizieren. Warum praktizieren Sie aktuell keine Meditation?		
M401.0	0 = Ich habe keine Zeit dafür.	1	.9%
M401.1	1 = Ich kann mich nicht dazu motivieren.	58	49.6%
M401.2	2 = Ich finde Meditation zu langweilig.	33	28.2%
M401.3	3 = Ich weiß nicht genau, wo ich Meditation praktizieren kann.	14	12%

M401.4	4 = Ich möchte Meditation nicht allein ausüben.	9	7.7%
M401.5	5 = Ich weiß nicht viel über Meditation.	2	1.7%
M401.6	6 = Aus einem anderen Grund, nämlich		

Addition: If M04.3

1. Addition: Demotivation (if PATH 2 or 3 and answer: M401.3)

Literature: Adjusted on the work of Porics (2022)

Shortcut: M403

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Sample size: 60 participants

	Cronbach's alpha for standardized items Demot. 1 + 2: .81		
Item	**Item wording**	**M**	**SD**
Question	Sie haben angegeben, dass Langeweile ein Grund dafür ist, weswegen Sie aktuell keine Meditation praktizieren. Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen.		
M403.1	Ich finde Meditation allgemein langweilig.	2.97	1.39
M403.2	Die Atemübungen in der Meditation langweilen mich.	2.81	1.27
M403.3	Der gleichbleibende Ablauf bei der Meditation langweilt mich.	3.31	1.23
M403.4	Die Instruktion langweilt mich.	3.11	1.28
M403.5	Die Entspannungsphase in der Meditation langweilt mich.	2.57	1.23
M403.6	Die Konzentrationsübungen in der Meditation langweilen mich.	2.75	1.23

2. Addition: Demotivation (if PATH 3 and answer: M401.3)

Sample size: 107 participants

Literature: Adjusted on the work of Porics (2022)

Shortcut: M404

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen.		
M404.1	Ich denke, Meditation würde mich überfordern.	2.13	1.01
M404.2	Ich denke, Meditation würde mich unterfordern.	2.50	1.152
M404.3	Ich denke, Meditation ist mir nicht wichtig genug.	3.92	.97

Valence appraisal

Sample size: 54 participants

Literature: Adjusted on the work of Porics (2022)

Shortcut: VL

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

	Cronbach's alpha for standardized items: .75		
Item	**Item wording**	**M**	**SD**

Question	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen.		
VL01.1	Die Atemübungen bei der Meditation sind mir wichtig.	3.92	1.15
VL01.2	Die Entspannung bei der Meditation ist mir wichtig.	4.44	.78
VL01.3	Die Gruppentreffen und der soziale Austausch bei der Meditation sind mir wichtig.	1.66	.94
VL01.4	Die spirituellen Aspekte an Meditation sind mir wichtig.	2.62	1.44
VL01.5	Meditation ist mir wichtig.	3.23	1.07
VL01.6	Meditation hat einen hohen Stellenwert in meinem Leben.	2.42	1.08
VL01.7	Ganz unabhängig davon, wie gut andere im Meditieren sind, ist es mir wichtig, gut im Meditieren zu sein.	2.13	1.16
VL01.8	Es ist mir wichtig besser als die anderen in Meditation zu sein.	1.27	.653
VL01.9	Die Konzentrationsübungen bei der Meditation sind mir wichtig.	3.38	1.16

Control appraisal

Sample size: 54 participants

Literature: Adjusted on the work of Porics (2022) and Krannich et al. (2019)

Shortcut: CO

Scale: 1 = stimme überhaupt nicht zu

2 = stimme eher nicht zu

3 = teils-teils

4 = stimme eher zu

5 = stimme voll und ganz zu

Overchallenge

	Cronbach's alpha for standardized items: .87		
Item	**Item wording**	**M**	**SD**
Question	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen		

CO01.1	Die Meditation überfordert mich üblicherweise.	2.05	1.06
CO01.2	Die Konzentrationsübungen überfordern mich üblicherweise.	2.19	.97
CO01.3	Die Atemübungen überfordern mich üblicherweise.	2.02	1.05
CO01.4	Die Entspannungsphase überfordert mich üblicherweise.	1.92	.988

Underchallenge

	Cronbach's alpha for standardized items: .66		
Item	**Item wording**	**M**	**SD**
CO02.1	Die Meditation unterfordert mich üblicherweise.	2.22	1.10
CO02.2	Die Konzentrationsübungen unterfordert mich üblicherweise.	2.00	.96
CO02.3	Die Atemübungen unterfordern mich üblicherweise.	1.87	.911
CO02.4	Die Entspannungsphase unterfordert mich üblicherweise.	1.90	1.02

Appendix B

Results of the Hierarchical Multiple Linear Regression – Study 1

The fit of the data was tested with collinearity statistics. The values of tolerance showed no indication of collinearity of the data. With the used model, a 56% of the variance in habitual boredom was explainable (adjusted $R^2 = .562$). The predictors valence, boredom proneness and underchallenge showed significant correlations with habitual boredom ($F = 26.707$, $p < .001$). The variables of motivation, overchallenge and the sum score of spirituality did not show significant correlations on the dependent variable. The following Table 11 shows the hierarchical multiple linear regression of Study 1.

Table 11: Hierarchical Multiple Linear Regression – Study 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change
1	.542[a]	.294	.282	.69890	.294	24.580	1	59	<.001
2	.709[b]	.503	.485	.59170	.209	24.315	1	58	<.001
3	.764[c]	.584	.562	.54565	.082	11.203	1	57	.001

a. Predictors: (Constant), Valence

b. Predictors: (Constant), Valence, BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen.

c. Predictors: (Constant), Valence, BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen., Underchallenge

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	23.854	3	7.951	26.707	<.001[d]
	Residual	16.971	57	.298		
	Total	40.825	60			

a. Dependent Variable: HabitualBoredom

b. Predictors: (Constant), Valence

c. Predictors: (Constant), Valence, BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen.

d. Predictors: (Constant), Valence, BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen., Underchallenge

Coefficients[a]

Model		Unstandardized Coefficients: B	Unstandardized Coefficients: Std. Error	Standardized Coefficients: Beta	t	Sig.	95.0% Confidence Interval for B: Lower Bound	95.0% Confidence Interval for B: Upper Bound
3	(Constant)	3.029	.448		6.764	<.001	2.132	3.926
	Valence	-.671	.129	-.452	-5.217	<.001	-.929	-.414
	BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen.	.211	.055	.355	3.837	<.001	.101	.322
	Underchallenge	.386	.085	.307	3.347	.001	.115	.457

a. Dependent Variable: HabitualBoredom

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics: Tolerance
3	Overchallenge	.095[d]	.928	.358	.123	.695
	SpiritualitySUM	-.027[d]	-.215	.830	-.029	.485
	Motivation	.182[d]	1.640	.107	.214	.575

a. Dependent Variable: HabitualBoredom

d. Predictors in the Model: (Constant), Valence, BorePron: Ich neige dazu, mich üblicherweise schnell zu langweilen., Underchallenge

Results of the Hierarchical Multiple Linear Regression – Study 2

Via collinearity statistics, the fit of the data was tested and the tolerances showed a good fit for the model. 72% of the variance in the dependent variable were explainable through the model. (adjusted $R^2 = .722$). Situative boredom showed significant correlations with the predictors of valence and overchallenge ($F = 17.91$, $p < .001$). The variables of underchallenge, motivation, boredom proneness and the spiritual self-assessment scale were excluded, because no significant correlations were found. The following Table 12 shows the hierarchical multiple linear regression of Study 2.

Table 12: Hierarchical Multiple Linear Regression – Study 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.796[a]	.634	.604	.36463	.634	20.789	1	12	<.001
2	.875[b]	.765	.722	.30512	.131	6.137	1	11	.031

a. Predictors: (Constant), Valence

b. Predictors: (Constant), Valence, Overchallenge

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	3.335	2	1.668	17.913	<.001[c]
	Residual	1.024	11	.093		
	Total	4.359	13			

a. Dependent Variable: SituativeBoredomSUM

b. Predictors: (Constant), Valence

c. Predictors: (Constant), Valence, Overchallenge

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
2	(Constant)	3.062	.676		4.530	<.001			
	Valence	-.464	.152	-.544	-3.056	.011	-.796	-.678	-.447
	Overchallenge	.345	.139	.441	2.477	.031	.752	.598	.362

a. Dependent Variable: SituativeBoredomSUM

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
2	Underchallenge	-.226[c]	-.798	.443	-.245	.276
	Motivation	-.123[c]	-.625	.546	-.194	.581
	BorePro	-.240[c]	-.891	.394	-.271	.299
	SPI_Self: Ich schätze mich selbst als spirituellen Menschen ein.	.043[c]	.180	.860	.057	.416

a. Dependent Variable: SituativeBoredomSUM

b. Predictors in the Model: (Constant), Valence

c. Predictors in the Model: (Constant), Valence, Overchallenge

Appendix C

Codebook for the Master study

Spiritual Boredom:

An empirical study about the conception and implication of boredom in the meditation context

State survey: July 2022 – October 2022

Lena Baumgartner, BSc.

University of Vienna - Psychology

Institute for the Psychology of Development and Education

Table of Content

Study 2: situativ boredom in meditation

As in study 1, the instruction is adapted on the context of meditation from Porics (2022) for optimal comparability of the results.

The following directive was given to meditation schools, so that the teachers knew how to pass on the information of the study to the participants of the meditation classes.

Ablauf Studie 2: Situative - Langeweile bei der Meditation

Link: https://www.soscisurvey.de/situativespiritualboredom/

1. Weisen Sie schon am Beginn der Stunde auf die Teilnahme zur anonymen und kurzen Befragung am Ende der Einheit hin. Erwähne an dieser Stelle noch nicht ‚Langweile' sondern lediglich Emotionen.
2. Halten Sie Ihre Stunde wie gewohnt bzw. geplant ab.
3. Geben Sie den Teilnehmer:innen nun den Link
4. Sie können jetzt gerne den Teilnehmer:innen die Information weitergeben, dass es sich dabei um eine Studie handelt, die sich mit Langweile beim Yoga befasst. Dabei ist es irrelevant, ob Langeweile tatsächlich vorhanden war.

   → Auch wichtig ist hier die Information, dass die Ergebnisse nicht auf sie und Ihren Kurs zurückzuführen sind, daher ist eine ehrliche und vollständige Beantwortung sehr wichtig.

5. **Nun sollten die Befragungen starten. Die Beantwortung des Fragebogens sollte möglichst rasch nach der Einheit erfolgen (aus psychologischen Gründen).**
6. Sie können dies in so vielen Einheiten wie Sie wollen wiederholen -> je mehr Teilnehmer:innen desto besser und aussagekräftiger können Ergebnisse werden (niemand sollte doppelt beantworten). Die Studie läuft bis Ende August 2022.
7. **Danke, Ihre Arbeit ist wichtig, viel wert und ist an dieser Stelle für diese Studie erledigt.**

PS: Natürlich soll niemand zu dieser Teilnahme gezwungen werden. Jedoch ist es sicherlich schön und das Commitment steigt, wenn ihr:e Meditationslehrende:r sie dazu anregt. Wir hoffen somit auf viele Teilnehmer:innen.

Danke für Ihre Unterstützung.

The following instruction was shown when clicking on the link of the survey. It should be filled out right after finishing a meditation session. The link for the survey was also shared over social media platforms (WhatsApp, Facebook, Instagram).

Instruction

Liebe/ Teilnehmer/in,

im Rahmen meiner Masterarbeit untersuche ich Langeweile in der Meditation.

Die ersten Fragen beziehen sich auf Ihr Erleben bei der gerade absolvierte Meditationseinheit. Dabei gibt es keine richtigen oder falschen Antworten, sofern es um Ihre persönliche Einschätzung und Ihr Erleben geht.

Bitte kreuzen Sie jeweils diejenige Antwortalternative an, die auf Sie persönlich am besten zutrifft. Für den Erfolg dieser Studie ist es wichtig, dass Sie den Fragebogen vollständig ausfüllen, jedoch ist ein Abbruch des Fragebogens ohne Angabe von Gründen jederzeit möglich.

Alle Daten werden anonym erhoben, sie können also Ihrer Person nicht zugeordnet werden und werden streng vertraulich nach den Bestimmungen der Datenschutz-Grundverordnung (DSGVO) behandelt.

Vielen Dank für Ihre Unterstützung!

Abschluss

Vielen Dank für Ihre Teilnahme!

Ich möchte mich ganz herzlich für Ihre Mithilfe bedanken.
Bei Fragen oder Interesse an den Ergebnissen melden Sie sich gerne unter:
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Short form of the multidimensional state boredom scale (MSBS – SF)

Sample size: 14 participants

Shortcut: MSBS-SF

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Literature: Fahlman et al. (2013); Donati et al. (2021); Hunter et al. (2016); translated by Porics (2022)

Cronbachs Alpha for standardized items: .73

Item	Item wording	M	SD
Question	Denken Sie an die gerade absolvierte Meditationseinheit…		
MS01.1	Ich habe das Gefühl, Dinge, die ich gemacht habe, hatten keinen Wert für mich.	1.93	.961
MS01.2	Ich fühlte mich gelangweilt.	1.88	1.088
MS01.3	Ich verschwendete Zeit, die woanders besser verwendet werden konnte.	1.50	.894
MS01.4	Ich wollte, dass etwas passiert, aber ich wusste nicht was.	2.50	.966
MS01.5	Ich hatte das Gefühl herumzusitzen und auf etwas zu warten.	1.94	.929
MS01.6	Ich war leicht abgelenkt.	2.69	.946
MS01.7	Meine Gedanken wanderten herum.	3.13	.806
MS01.8	Die Zeit verging langsamer als gewöhnlich.	2.87	1.125

Spiritual-situative boredom

Sample size: 16 participants

Shortcut: StateBore

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Literature: Adjusted on the work of Porics (2022)

Cronbachs Alpha for standardized items: .90			
Item	**Item wording**	**M**	**SD**
Question	Um Ihr Erleben genau nachvollziehen zu können, wird nun nach ihrem Empfinden von bestimmten Aspekten der Meditation gefragt. Bei der gerade absolvierten Meditationseinheit…		
SB01.1	langeweilte ich mich.	1.75	.775
SB01.2	langweilten mich die Konzentrationsübungen.	1.88	.619
SB01.3	langweilten mich die Atemübungen.	1.81	1.167
SB01.4	langweilte mich die Entspannungsphase.	1.38	.50
SB01.5	langweilte mich der/die Meditationslehrer*in.	1.57	.756
SB01.6	langweilte mich der gleichbleibende Ablauf.	1.88	.957

Spiritual-habitual boredom

Sample size: 16 participants

Shortcut: TraitBore

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Literature: Adjusted on the work of Porics (2022)

Item	**Item wording**	**M**	**SD**
TB01	Bei der Ausübung von Meditation langweile ich mich üblicherweise.	1.62	.885

Boredom Proneness

Sample size: 16 participants

Shortcut: BorePron

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils

4 = stimme eher zu
5 = stimme voll und ganz zu

Literature: Adjusted on the work of Porics (2022)

Item	Item wording	M	SD
BP01	Ich neige dazu, mich üblicherweise schnell zu langweilen.	1.94	1.063

Meditation practice

Regularity

Shortcut: MP_Reg

Literature: Adjusted on the work of GfK (2018) and Porics (2022)

Item	Item wording	N	%
Question	Praktizieren Sie aktuell Yoga?		
MP01.1	1 = ja, regelmäßig	4	22.2%
MP01.2	2 = ja, aber nicht regelmäßig	12	66.7%

Duration

Shortcut: MP_Dur

Literature: adapted from the work of GfK (2018) and Porics (2022)

Item	Item wording	N	%
Question	Wie lange ist es her, dass Sie zum ersten Mal meditiert haben?		
MP02.1	1 = 1 – 6 Monate	1	6.3%
MP02.2	2 = 7 – 12 Monate	1	6.3%
MP02.3	3 = 1-3 Jahre	5	31.3%
MP02.4	4 = > 3 Jahre	9	56.3%

Type of meditation

Shortcut: MP_Way

Literature: Adjusted on the work of Porics (2022)

Note: Multiple choice

Item	Item wording	M	%
MP03	Welche Art von Meditation praktizier(t)en Sie üblicherweise?		
MP03.1	1 = körperbetonte/fitnessbetonte Meditation	1.0	20%
MP03.2	2 = entspannende Flow - Meditation	1.28	25%
MP03.3	3 = spirituell meditative Meditation	1.56	55%

Motivation

Start motivation

Sample size: 15 participants

Shortcut: Start_Mot

Literature: Adapted on Porics (2022) and GfK (2018)

Scale:
1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question	Bitte beantworten Sie jede Frage, indem Sie einschätzen, warum Sie mit Ihrer Meditationspraxis begonnen haben.		
M101.1	aus spirituellen Gründen	3.13	1.246
M101.2	um die eigene Fitness zu steigern	3.27	.961
M101.3	um zur Ruhe zu kommen	4.20	.676
M101.4	aus sozialen Gründen	2.20	.775

Actual motivation

Sample size: 16 participants

Shortcut: Act_Mot

Literature: Adjusted on the work of Porics (2022) and GfK (2018)

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question	Bitte beantworten Sie jede Frage, indem Sie einschätzen, warum Sie AKTUELL meditieren.		
M201.1	aus spirituellen Gründen	3.37	1.258
M201.2	um die eigene Fitness zu steigern	3.69	.873
M201.3	um die eigene Flexibilität/Dehnbarkeit zu steigern	3.87	.957
M201.4	aus sozialen Gründen	2.20	1.014

Intensity

Sample size: 16 participants

Shortcut: Inten_Mot

Literature: Adjusted on the work of Porics (2022)

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question	Bitte bewerten Sie folgende Aussage auf ihr Zutreffen.		
M301.1	Ich bin üblicherweise motiviert zu meditieren.	3.56	.964

Valence appraisal

Sample size: 18 participants

Kurzbezeichnung: VL

Literature: Adjusted on the work of Porics (2022)

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Cronbachs Alpha for standardized items: .83

Item	Item wording	M	SD
Question	Bitte bewerten Sie folgende Aussagen auf ihr Zutreffen.		
VL01.1	Die Atemübungen bei der Meditation sind mir wichtig.	4.44	.892
VL01.2	Die Entspannung bei der Meditation ist mir wichtig.	4.56	.727
VL01.3	Die Gruppentreffen und der soziale Austausch bei der Meditation sind mir wichtig.	2.44	1.031
VL01.4	Die spirituellen Aspekte an Meditation sind mir wichtig.	3.69	1.25
VL01.5	Meditation ist mir wichtig.	4.13	.957
VL01.6	Meditation hat einen hohen Stellenwert in meinem Leben.	3.46	1.147
VL01.7	Ganz unabhängig davon, wie gut andere im Meditieren sind, ist es mir wichtig, gut im Meditieren zu sein.	3.27	1.223
VL01.8	Es ist mir wichtig besser als die anderen in Meditation zu sein.	1.25	.447
VL01.9	Die Konzentrationsübungen bei der Meditation sind mir wichtig.	3.44	.892

Control appraisal

Sample size: 18 participants

Shortcut: CO

Literature: Adjusted on the work of Porics (2022) and Krannich et al. (2019)

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu

3 = teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Overchallenge

Cronbachs Alpha for standardized items: .91			
Item	**Item wording**	**M**	**SD**
Question	Bitte bewerten Sie folgende Aussagen auf ihr persönlich Zutreffen		
CO01.1	In der gerade absolvierten Meditationseinheit fühlte ich mich überfordert.	1.80	1.01
CO01.2	Die Konzentrationsübungen überforderten mich.	1.73	.961
CO01.3	Die Atemübungen überforderten mich.	1.53	.915
CO01.4	Die Entspannungsphase überforderte mich.	1.40	.507

Underchallenge

Cronbachs Alpha for standardized items: .89			
Item	**Item wording**	**M**	**SD**
Question	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen		
CO02.1	In der gerade absolvierten Meditationseinheit fühlte ich mich unterfordert.	1.60	.737
CO02.2	Die Konzentrationsübungen unterforderten mich	1.40	.632
CO02.3	Die Atemübungen unterforderten mich.	1.73	1.03
CO02.4	Die Entspannungsphase unterforderte mich.	1.53	.640

Spirituality self-assessment

Sample size: 18 participants

Kurzbezeichnung: SPI_Self

Literature: Uwland-Sikkema et al. (2018), adjusted on the work of Porics (2022)

Scale: 1 = stimme überhaupt nicht zu
2 = stimme eher nicht zu
3= teils-teils
4 = stimme eher zu
5 = stimme voll und ganz zu

Item	Item wording	M	SD
Question	Bitte bewerten Sie folgende Aussagen auf ihr persönliches Zutreffen		
SP01.1	Ich schätze mich selbst als spirituellen Menschen ein.	3.87	1.125

Sociodemographics

Sample size: 16 participants

Sex

Shortcut: SD_Sex

Item	Item wording	N	%
Question	Zu welchem Geschlecht fühlen Sie sich zugehörig?		
SD01.1	1 = weiblich	10	62.5%
SD01.2	2 = männlich	6	37.5%
SD01.3	3 = divers	0	0%

Age

Shortcut: SD_Age

Scale: 18, 19, 20,....99

Item	Item wording	M	SD	Min	Max
SD02.1	Geben Sie bitte Ihr Alter an (in Jahren)	42	12.95	19	65