AN ABSTRACT OF THE THESIS OF

Jacob Lindsley for the degree of Master of Science in Psychology presented on November 29, 2022.

Title: Analytical Meditation on Motivation to Meditate

Abstract approved: _____

John A. Edwards

Meditation research in recent decades has disproportionately focused on the Buddhist derived practice of "mindfulness" meditation while leaving most other Buddhist meditation practices unstudied. The current study seeks to remedy this homogeneity through the adaptation of a novel meditation practice used in Tibetan Buddhism to affect motivation. We explored traditional Buddhist models of meditation and connected psychological theories of motivation with our target meditation, particularly in terms of self-efficacy, value, cost, intrinsic, and extrinsic motives. Based on these hypothesized relationships, we constructed a meditation practice and an RCT to understand whether the novel motivation meditation influenced these motivational constructs or changed at-home meditation behaviors. Participants (n = 48) were randomized to either a mindfulness-only or a mindfulness plus motivation meditation condition. Both groups received 90-minute Zoom courses for 8-weeks. Data was collected at baseline, throughout the weekly courses, and at endpoint. While results showed unforeseen sampling issues, analyses indicated that self-efficacy and attainment value with respect to meditation practice were both strengthened by participation in the study.

Analytical Meditation on Motivation to Meditate

by

Jacob Lindsley

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Presented November 29, 2022
Commencement June 2023

Master of Science thesis of Jacob Lindsley presented on November 29, 2022

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Jacob Lindsley, Author

ACKNOWLEDGEMENTS

The author would like to thank his advisor Dr. John Edwards, for his kind, patient, thoughtful and steady mentorship, wisdom, and the significant time he shared in putting together this massive project. Additionally, his sincerest thanks go to Kate Gallagher and Joe Slade for their incredible assistance creating and conducting the meditation courses for the project. Thanks also to the research assistants of the Edwards Social Cognition Lab: Jennifer Martin, Anjulena Bagga, and Angelina Padua for helping to send hundreds of emails and for their helpful and caring treatment of our research volunteers.

This work would not exist if not for my family, and especially Holly Hisamoto for her endless encouragement, comfort, and patience, as well as her open ear to endless babble, problem solving, and brainstorming. Likewise, to the graduate students at the School of Psychological Science who have repeatedly helped me think through my ideas, analyses, and motivations: thank you.

Finally, special gratitude goes to Yangsi Rinpoche and Geshe Gendun Tharchin for helping with difficult points of Tibetan Buddhist theory and practice related to analytical meditation. This text is an offering to the lineage of seekers interested in evidence-based ways to improve human life.

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Chapter 1: Meditation, Mindfulness, and Novel Meditation Research

Meditation is an act of contemplation. In English, the word "contemplation" means thoughtfully examining something for a period of time. It is usually associated with intellectual processes, such as analysis—though one can certainly contemplate in other, less intellectual domains as well. For example, we can contemplate a piece of art. Therefore, colloquially speaking, the definition of contemplation is somewhat vague, but most people would recognize it as an inwardly directed, curious, intuitive process. At this level, we can appreciate that contemplation is a universal human activity and encompasses a wide range of activities designed to facilitate a meaningful encounter with an object to be contemplated.

Van Gordon et al. (2022) propose a model to define a contemplative behavior. Contemplation involves volition, objectification, attention, awareness, a process, and an objective. In other words, contemplation: a) is deliberate, b) has a focus, c) engages attention on that focus, d) engages meta-awareness on the contemplation itself, and e) has a goal and a prescribed method for accomplishing that goal. As these authors point out, these criteria, and especially the *intentional methodology* of a contemplation, differentiate the act of contemplation from more ordinary everyday types of thinking, rumination, reminiscing, remembering, task absorption, etc. in that our default modes of mental engagement are usually less deliberate, less self-aware, and crucially, less methodical.

Most of what constitutes the field of "contemplative science" today is research on Buddhist techniques (Garland & Gaylord, 2009). Indeed, the intentional methodology of meditation practices adapted from Buddhist sources is more accessible to science than it has ever been. A growing field of contemplative researchers have made these once obscure religious exercises a trending topic of psychological inquiry. Interest in meditation practices for science,

healthcare, education, business, and even the military is a booming industry (Baminiwatta & Solangaarachchi, 2021; Vieten et al., 2018). Most of these programs have been based around a single adaptation and packaging of Buddhist meditation practices called "mindfulness meditation" which is backed by a broad research base demonstrating beneficial outcomes, such as a reduction of anxiety and depression, increased focus, and psychological flexibility (Grossman et al., 2004; McGee, 2008; Ospina et al., 2007; Sedlmeier et al., 2012).

Modern Mindfulness Meditation

Modern mindfulness meditation's intentional methodology is designed to facilitate a particular mental state called "mindfulness," characterized by Kabat-Zinn's (1994) founding definition: "paying attention on purpose, in the present moment, and nonjudgmentally." However, one's tendency to be "mindful" in this way is also considered a psychological trait which varies in intensity (Baer, 2003). For example, one widely used self-report scale, the Five Factor Mindfulness Inventory derived "mindfulness" in five variable factors: observing, describing, acting with awareness, non-judging, and non-reactivity. Observing is about attending to experiences; describing is being able to notice and distinguish different experiences and states; acting with awareness means bringing this mode of awareness into daily activities; non-judging refers to merely experiencing thoughts and feelings without evaluating them as good or bad; and non-reactivity means letting thoughts and feelings come and go without needing to engage with them (Baer et al., 2008).

Therapeutically, mindfulness-based interventions (MBIs) propose that these skills in nonjudgmental, non-reactive observation, and acceptance of all experience are what result in positive psychological outcomes. When we experience a distressing thought, one aspect which mediates the level of distress is whether the thought has a kind of "subjective realism." Within

such realism people often experience vivid sensory details, emotions, feelings, and sensations, as if they were entering into a kind of vivid daydream. They become immersed in mental creations, such that they have a real impact (Lebois et al., 2015).

To counter this, MBIs focus on teaching people to experience these mental events in "mindfulness," so that they are no longer as subjectively real and immersive. Instead, such thoughts are given a new context as mere mental events, whose existence does not necessarily need to be meaningful. For example, disturbing thoughts cease to become a problem when the mind in which they occur merely accepts them with awareness while remaining centered in the present—rather than obsessively problematizing them or becoming concerned. This function of "mindfulness" has been referred to as "decentering" or "cognitive de-fusion" in clinical literature (Hayes et al., 2011). Such awareness has been shown to break the cycle of maladaptive rumination, especially in cases of clinical depression and anxiety (Gecht et al., 2014).

While mindfulness meditation has certainly proven successful in many respects, it has also led to a simplistic view of Buddhist meditation, especially in popular media. Mindfulness mediation has become representative of how many people think of meditation (Hyland, 2017). However, in reality "meditation" is a category of behaviors at a similar level of specificity to a term such as "sports". Clearly "sports" is not unidimensional but refers to a set of activities which share some features in common but involve different rules, goals, and contexts. Similarly, meditations derived from Buddhist sources have some features in common, yet also have aims and methods unique to each style. Scientifically speaking, this hyper focus on "mindfulness" has served to obscure this multiplicity of meditation techniques.

Homogeneity in Meditation Research

Mindfulness meditation reflects only a fraction of what is available to study from Buddhist sources. Buddhism has existed for over 2,500 years and has touched almost every part of the world at one point or another, suffusing itself in the cultures, countries, languages, and communities of much of history—particularly in Asia. As such, it speaks with no single voice, but many: from dead languages of pre-history to people who continue its traditions today. This rich history is rife with examples of unique meditation practices. In fact, innovations in meditation techniques are often central to the movements, evolutions, and inventions of Buddhist theory and practice over the centuries (Skilton, 2004).

One major response to this homogeneity problem within the psychology of meditation literature has been theoretical papers which propose broad categorical and cognitive models to introduce different types of meditative practices. For example, Vago (2014) suggested a three-fold division to cover the majority of contemplative practices: 1) Focused Attention in which the mind attends to a single object of awareness, such as the breath; 2) Open-Monitoring in which the mind is let to roam from sensation to sensation or without an intentional object; and 3) Ethical Enhancement in which a particular quality of mind is cultivated, such as compassion or loving-kindness. In parallel, Dahl et al. (2015) also proposed that Buddhist meditations can be understood by dividing them into three families: 1) Attentional meditations, which focus on skill building in the regulation of attention; 2) Constructive meditations which strengthen and foster adaptive psychological states; and 3) Deconstructive meditations which aim to undo and undermine maladaptive cognitive patterns.

Another notable example is the unique approach of Lutz et al. (2015) who suggested that meditation can be understood as a dynamic multi-dimensional process of neurocognitive

engagement. These processes include variable levels of meta-awareness, object orientation, and de-reification, as well as varying in styles of engagement, such as attentional aperture, clarity, stability, and effort. Using these components as axes, these authors developed a multi-dimensional matrix space to help visualize and map various styles of meditation (and individual moments within a meditation session) onto these neurocognitive processes. All three models are valuable, well-researched, enthusiastic, and successful in introducing a reader to the multiplicity of historical meditative techniques. However, they have not yet resulted in many research programs investigating the various styles of meditation outlined.

Certainly, the potential of varied meditation techniques is clear. Research programs which have taken up Buddhist meditation techniques beyond "mindfulness" have found promising results. For example, compassion and loving-kindness-based meditations have emerged as a prominent subfield of meditation research. Early meta-analyses show positive effects among clinical and non-clinical samples in empathy, positive emotions, etc. (Shonin et al., 2015; Zeng et al., 2015). Furthermore, recent landmark studies such as the ReSource Project (Singer & Engert, 2019) offer compelling empirical evidence that even subtle differences in the emphases of meditation styles can lead to different outcomes over the long term in controlled research settings.

In fact, these differences in outcome are the reason there are various practices. For example, compassion meditation and the rhetoric surrounding it shows that it is aimed at the generation of compassionate feelings and increases in compassionate behaviors (Shonin et al., 2015). "Mindfulness" meditation is targeted at a specific state as well, its namesake. These programs are centered around specific meditation practices (ex. open monitoring of experiences, mindful actions such as eating, walking, etc.) which are explicitly designed to produce present-

centered attention to and comprehension of inner and outer experiences and a reduction in purposeless, automatic mental activity (Santorelli et al., 2017). Buddhist theory also supports the idea that these techniques are designed to address specific deficits and build specific skills through the repeated and prolonged inducement of various therapeutic and/or soteriological mental states—something I'll explore more in the following chapters. If each meditation is designed with specific effects in mind, and there are so many to explore, why is the field so homogenous?

I suggest in part, mindfulness and compassion meditation have received most of the significant scientific attention because their function was accessible to experimentation and their utility was clear—or made to be so. In the case of compassion meditation, it was relatively straightforward to see its psychological value and to construct research programs to investigate its effects. Researchers could tap the long history of work on altruism, empathy, and compassion, with its established debates (Cialdini, 1991), theory (Feigin et al., 2014), and measurement paradigms (Strauss et al., 2016). In the case of mindfulness meditation, its application was not clear and its purpose unknown to science, until its utility for pain management was demonstrated (Kabat-Zinn, 1982). Over time it was then applied to clinical psychology (Alsubaie et al., 2017) and education (Kucinskas, 2014). Of course, the major difference between these two examples was that "mindfulness" was new (at least to psychology) and significant work needed to be done to operationalize and develop validated measurements for the concept (Hill & Labbé, 2014) so that it could be empirically evaluated.

Correspondingly, I also suggest that those meditation styles which have not been explored and remain unknown to science, remain so because their function and utility are *not* clear. At first glance, they do not neatly map themselves onto psychological theory nor reveal

themselves to be particularly useful outside the religious lifestyle and worldview of Buddhists. This could be true in some cases. However, we've seen that in the case of mindfulness, it is quite possible to describe novel Buddhist concepts which weren't understood or articulated by prior psychological theory. Furthermore, we've seen above that core Buddhist practices can be successfully applied to humanistic and clinical needs through evidence-based advocacy and psychological framing making them accessible and useful to non-Buddhists. Therefore, exploring the function and utility of other meditations is certainly worthwhile.

To make unstudied meditations accessible to psychological study, I propose that they would need to be framed in three ways. First, they would need to be understood within the theory and practice of their own cultural context. This ensures we understand the technique with which we propose to work. Second, we need a related hypothesis concerning how the meditation may function as an application of psychological theories. These hypotheses guide the experimental design and narrow the scope of potential outcomes. Third, the meditation may require a reimagination of its major features to make it accessible and useful to a specific or general non-Buddhist population. Facilitating expanded applications can give the practice a wider reach as well as address more varied societal needs. These requirements call for interdisciplinary, exploratory, and translational work. This project is just such an effort.

The Present Research

The present study represents the first known attempt to understand or experiment with the meditation called "A Human Life of Leisure and Opportunity" from the Lam Rim or "stages of the path" manuals of Tibetan Buddhism in the context of psychological science. In its own context, it is prescribed for an aspiring Buddhist practitioner who wishes to create and maintain a strong aspiration to devote time and energy to contemplative practice (Sopa, 2004, p. 245). I

used contemporary psychological theories of motivation to analyze instructions given by the 14th century Tibetan teacher Tsongkhapa and used them to hypothesize about its potential effects, and to adapt the meditation for a general audience. I then ran a randomized controlled experiment to determine how our novel meditation intervention affected core motivational constructs from our chosen theories, and our participants at-home meditation behavior.

Chapter 2: Foundational Buddhist Conceptions of Meditation

Buddhist meditation is a broad and complex topic. Meditation practices and Buddhist theories of how they operate have varied throughout history. Nevertheless, there are core elements which define what meditation has meant to Buddhist practitioners. From a psychological perspective, these foundational conceptions can help us to understand why meditation is important to Buddhism, how it is conceived to work, and some of the most salient features of its contemplative methodology. These features have remained remarkably stable throughout history, and still somewhat define modern practices. Psychological research has at times overlooked these connections, and this is one of the main reasons calls for more interdisciplinary scholarship have been a sizeable portion of critiques of the field (Cabezón, 2003; Gethin, 2015; Harrington & Dunne, 2015).

For instance, the validity of the constructs under study can be thorny in such an interdisciplinary context. A recent and salient example are what I'll call the "authenticity" critiques which surrounded the study of modern mindfulness meditation for much of the last decade (Chiesa, 2013; Greenberg & Mitra, 2015; Grossman, 2019; Grossman & Van Dam, 2011; Harrington & Dunne, 2015). At the heart of the issue were implications of the use of the term "mindfulness" to describe both the meditations which made up the now ubiquitous curriculum of Mindfulness-based Stress Reduction (MBSR) (Santorelli et al., 2017) as well as the state of mind it attempted to produce. Though popularizers of these modern "mindfulness" practices which I introduced in the previous chapter were careful in their articulation of the practice's features (Kabat-Zinn, 2011), their terminology conflicted in important ways with key usages of the term which had been commonplace in religious scholarship for some time (Anālayo, 2019; Bodhi, 2011; Dreyfus, 2011).

Of course, it isn't uncommon for terms to have different meanings between disciplines, but the scientific study of Buddhist meditation practice is an inherently interdisciplinary and multicultural endeavor. Since "mindfulness" had different meanings in different academic communities working in the same area, research which merely purported to study "mindfulness" without clearly articulating the concept, or what sorts of meditation instructions were given, may not have been equivalent or comparable. These kinds of issues could even call into question the validity of early meta-analyses and other aggregated datasets. Prominent researchers have even suggested that the term "mindfulness" has become so fraught, we ought to cease using it altogether to describe modern MBI practices (Desbordes et al., 2015; Van Dam et al., 2018).

To be clear, building psychological models of meditations or adapting them to be better suited for wider implementation was not the issue. It also wasn't a matter of finding "correct" definitions of terms in the sense of an ultimate authoritative definition from the Buddhist world. This would be an impossible task because Buddhists place authority in different texts and teachers for various reasons, and translators use inconsistent terminology (Harrington & Dunne, 2015). The issue was in whether the work was properly contextualized within psychological science *and* the existing scholarship on Buddhist practices. Unfortunately, we can see similar issues emerging again. For example, there is already some confusion between the terms "loving-kindness meditation" and "compassion meditation" which have been inappropriately used as equivalents (Zeng et al., 2015) and confusing use of the term "analytical meditation" to describe verbal debates (van Vugt et al., 2019).

In language translation, a skilled translator must be functionally fluent in both the source and target languages. Similarly, a critical understanding of Buddhist thought and practice as well as proficiency in modern psychological science is required to build thoughtful conceptual and

experimental bridges between these two bodies of scholarship and praxis. Not only will such understanding help researchers understand, adapt, and operationalize new meditations, it will also help us communicate within this interdisciplinary field more clearly. Meditation is in some ways a novel behavior to psychology and care needs to be given to understand what we are studying on its own terms before we attempt to understand it through the lens of psychological science. Therefore, before I explain our approach to our target meditation, our hypotheses, or our experiment, I will attempt to sketch how I understand Buddhist meditation in general, and the specific tradition from which our target practice was drawn.

Meditation in Early Buddhism

The Buddhist tradition was founded by Siddhartha Gautama, a 5th century BCE noble in the region now known as Nepal, who would become known as the "Buddha", a title which means "Awakened." After spending many years exploring the many contemplative techniques of his time, Gautama was said to have discovered a way to transform the human mind such that it was no longer bound by the forces of lust, aversion, or delusion, did not suffer, and fully understood the nature of conscious experience. This is now known as "Enlightenment". He formed a community of students and instructed them in how to bring about similar experiences in themselves.

Gautama's instructions were cataloged, adapted, refined, and re-invented over the 2,500-year history which we call "Buddhism", or in Buddhism the "Dharma". Much of the source material for Buddhist study and practice come from two main bodies of literature, "sutras" which contain talks or discussions thought to be held by Gautama during his lifetime, and later additions which contain commentaries, stories, etc. from highly regarded Buddhist thinkers of

various eras. These texts appear in numerous modern languages, but much of what is considered cannon are classical texts preserved from the ancient Indic languages of Pali and Sanskrit.

The most basic framework common to all forms of Buddhism is something known as the Four Noble Truths. These "truths" constitute the overall rationale and purpose for Buddhism. First, it is explained that life as we live it is essentially unsatisfactory (*dukkha)*. "*Dukkha*" has been translated in many ways, but key idea is that the physical, psychological, emotional, and social discomfort, stress, and suffering, are bound up in our basic psychology. Second, it explains that this situation has an identifiable origin, or cause (*samudaya)* which is our craving (*taṇhā)*. Craving here means our exaggerated need for having pleasant experiences and avoiding unpleasant experiences. Third, because the cause of the craving can be removed, the dissatisfaction can be ceased (*nirodha)*. Fourth, there is a method with which to do so—the path (*magga)*. This path forms the basis of the Buddhist religion in three inter-related systems of training consisting of eight subcomponents called the Noble Eightfold Path (*atthangika-magga)*: ethics (*śīla)*, wisdom (*prajñā)*, and meditation (*samadhi)*.

In general, the path was understood as a lifestyle discipline of cultivation (*bhāvanā*) to produce certain qualities of mind. A pervasive pillar of ancient Indic culture was that the configuration of one's life was directly determined by one's own past actions through imprints on one's personal essence or soul (*Ātman*)—called karma. Buddhism's theory of karma was somewhat unique in this context, in that it rejected any notion of a soul, emphasized the specific importance of intentional action (*cetanā*) for one's future experiences, and the way in which results are conditioned by many interdependent factors (*paṭiccasamuppāda*). Karma as a theory in Buddhism is an extremely complex topic. Generally speaking, it is used descriptively to illustrate cause and effect (especially within the mental domain), as well as normatively to

emphasize ethical behavior (Allen et al., 2015; Barborich, 2018). Meditation in this context was seen as an efficient means to condition many of the operant mental factors which were thought to mediate human experience. The training of meditation in the Eightfold Path structure contains three of the eight total components: right effort (*samma vayamo*), right mindfulness (*samma sati*), and right concentration (*samma samadhi*). These components work together to guide the meditative practices of a devotee (Tsering, 2005, p. 125).

Right Concentration

Right concentration is one of Buddhism's most foundational methodologies. It involves the systematic training of attention and meta-awareness with exercises designed to cultivate skills to place, maintain, and engage the mind with a chosen object of cognition. Without training, default human attentional and perceptual capacities are considered chaotic, unstable, and unsuited to progress along the path in any but the most superficial way. This may seem an unreasonable claim at first, but it begins to make sense as one attempts to implement Buddhist meditation instructions. We notice soon enough that our mind cannot stay put for more than a few seconds. Thoughts will come unbidden, and/or perceptions of our environment will reflexively draw our attention. Thoughts tend to cascade off each other, one prompting the next. Buddhists identify this tendency for the mind to engage in compulsive activity (*papancca)* as a component in our discontent and an impediment to implementing important soteriological processes. In Buddhist karmic theory, each moment of mental activity has causal influence on the future, therefore it is important to cultivate and maintain positive, helpful, and adaptive mental states.

Thus, considerable effort must be invested in improving our abilities. Exactly what this training involves or exactly how these states are defined differ from tradition to tradition, but it is

often presented as a series of stages or levels differentiated by experience, ability, and technique. Generally speaking, this initially involves repeatedly replacing attention and cognition on a focal object of meditation, and then gradually becomes focused on absorption in mental states for prolonged spans of time. For example, early Buddhist texts on right concentration frame the stages in terms of eight levels of absorption (*jhānas)* (Harvey, 2018), while some later traditions describe nine levels of serenity (*śamatha*) (Wallace, 2006). Traditions often recommend specific focal objects for concentration practices. These can include sensations, perceptions, mental images, or sounds, etc. Such refined attentional skills and advanced stages of development are said to take intensive daily training to master over years of discipline in isolated settings. This effort is ideal, as command over one's attention is considered a hallmark of mastery and is often cited as a prerequisite for the effectiveness of advanced Buddhist contemplative techniques associated with the achievement of Enlightenment (Buddhaghosa, 2003; Lama & Kamalashila, 2019).

Right Mindfulness

As I have pointed out, "mindfulness" does not mean the same thing in modern psychological discourse as it does in classical Buddhist thought. The most basic form of the term comes from Buddhist commentarial works on mental functions which describe it as component within a cognitive model of mental functioning (Bodhi, 2003, p. 86). The role of mindfulness in this system is to hold and/or return the mind to an object so that it can be engaged with in accordance with an intention. An example of this faculty might be when we are reading and we begin to indulge a tangential thought, losing the thread of the passage. Mindfulness spurs us to reorient our attention, through storing/retrieving our intention to understand the passage. In meditation, mindfulness in this sense supports keeping our mental faculties coordinated around

the focal object, state, or technique through the maintenance of our intentions. In this way, mindfulness is a part of any sustained intentional act, including meditation.

As a basic mental factor, mindfulness can be used in many ways, but for it to be "right" mindfulness it must serve Buddhist goals—in or out of formal meditation practice. Right mindfulness simply refers to a discipline of keeping up those states, objects, and practices which have been identified as helpful to return to again and again on the path, including but not limited to formal meditation. Bhikkhu (2000) gives a helpful analogy: "*Awakening is like a mountain on the horizon, the destination to which you are driving a car. Mindfulness is what remembers to keep attention focused on the road to the mountain, rather than letting it stay focused on glimpses of the mountain or get distracted by other paths leading away from the road*". Monastic lifestyles can be quite rigorous in the Buddhist world. A well-trained practitioner is constantly monitoring thoughts, feelings, and actions for the purposes of ethical restraint, wisdom, and meditation. In fact, the English term "mindfulness" was first used to describe this lifestyle conception of "right" mindfulnesss. Davids' (1890) text tells the story of a conversation between a senior Buddhist monk and a Greek king. In an exchange, the king asks the monk what the characteristic of mindfulness (*sati*) is. The monk replies that it is "repetition and keeping up". When asked what is to be repeated and kept up, the monk summarizes the entire path.

In terms of meditation specifically, right mindfulness refers to meditation topics and techniques which are recommended as part of the Buddhist path system. This includes the concentration practices mentioned above, but emphasizes the application of these skills in more affective or cognitive meditations aimed at the development of mental states (ex. compassion, appreciation, joy, insights, etc.) through different mental exercises. The particulars of individual

methods used to induce each state are somewhat relative to each Buddhist practice lineage, so I describe some in more detail in the next chapter on meditation methods in Tibetan Buddhism.

Right Effort

Finally, "right effort" describes a guiding heuristic for selecting which practice(s) should be done to optimize the day-to-day effort of a given person. One core description of "right" effort are the four right efforts, which explain that practices should be taken up for four reasons: 1) to prevent maladaptive states of mind which have not happened, 2) to undermine maladaptive states of mind which have happened, 3) to cultivate adaptive states of mind which have not happened, and 4) to maintain adaptive states of mind which have happened (Bhikkhu, 1996).

Right effort is where Buddhism recognizes that meditations are intended to serve purposes and people have different psychological needs. Therefore, the "path" may look somewhat differently for different persons. If one has too little or too much of a particular characteristic, then one should adjust it—often using meditation as a primary tool. For example, meditations on loving-kindness were intended to address chronic anger and hatred, meditations on the foulness of the body to counteract lust and desire, and meditations on the perceptions of light to help reduce sleepiness, just to name a few. Early sources even identify a kind of personality typology for guiding the selection of meditation practices (Shaw, 2006, p. 8). This personalized approach to the path is often exemplified in a commonly cited metaphor, where the Buddha uses the example of a stringed musical instrument to describe how one should consider "right" effort. Just as a musician tunes an instrument, so a meditator should fine tune their practice to fit the needs of the individual.

Summary

Early characterizations of Buddhist meditation describe three inter-related aspects (See Figure 1). Right concentration emphasizes the improvement of attentional stability, and the ability to become absorbed in different mental states. Improved attentional stability facilitates longer and more intense formal meditation sessions and less uncontrolled mental activity. "Right" mindfulness emphasizes the disciplined recollection on individual parts of the path in order to cultivate Enlightenment—both in and out of meditation. Finally, right effort helps guide the selection of which techniques should be implemented based upon what would be productive in addressing a particular presenting situation. Together, these three components outline the Buddhist meditation tradition as it was understood by early Buddhist practitioners. They form the basic framework from which later Buddhist meditation systems evolved.

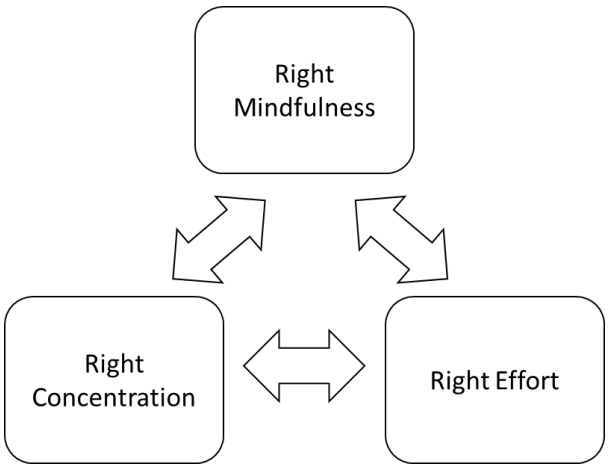

Figure 1: Three inter-related components of meditation training within early Buddhist thought

Chapter 3: Analytical Meditation and Tibetan "Motivation" Meditation

More than a thousand years after the time of the Buddha, Tibetans imported systems and established Buddhist institutions from the monastic universities of India. Over its history, four major branches of Buddhism would develop in Tibet, each grounded in its own emphases and systems of training. The "Gelugpa" tradition was founded by Je Tsongkhapa Losang Drakpa in the early 15th century. From around the late 16th century until the Chinese invasion of Tibet in the middle of the 20th century, the Gelugpa tradition held great secular and religious power in Tibet.

Tibetan teachings preserve many different meditation methods for different types of persons in systems called "vehicles" (*yāna*) through which to accomplish the path. Though the much more esoteric tantric system of meditation practices is often the emphasis of Tibetans, I will focus on the sutric system that forms the context for our target meditation. The way the sutric Tibetan tradition characterizes meditation training bears some similarities and differences from the early Buddhist models I've presented thus far. While some aspects of the following description apply to Tibetan Buddhism in general, I will focus specifically on the Gelugpa presentation since it where we find the meditation at the center of the present research.

Familiarization, Concentration, and Analysis

Tibetan meditation is presented as a process of "familiarization" (Sopa, 2004, p. 234). To this way of thinking, humans are not familiar with how to sustain wellbeing, and our minds are habitually full of unhelpful and maladaptive delusion, desire, and hate. We are not accustomed to mental habits which are conducive to, or characteristic of, Enlightenment such as wisdom and compassion. Meditation is employed to remedy this situation by repeatedly exposing the mind of a practitioner to meditation objects which serve as remedies for these deficits.

Familiarization is often discussed within a stage model of progressive deepening of understanding and integration, known as the three "wisdoms". The three wisdoms are different subtleties of knowledge which comes from: hearing (*śrutamayīprajñā*), reflection (*cintāmayīprajñā*), and meditation (*bhāvanāmayīprajñā*). Hearing refers to a clear conceptual understanding of a topic or theme. For example, one might read instructions in a text, or hear an explanation from a teacher, committing the concept to memory. Once an accurate conceptual structure has been established, the next type of wisdom comes from reflecting on the topic. A person explores the idea with logic and personal experience to produce deeper understanding: how it fits in with prior knowledge, how it could function in the world, and what else it implies. In the monastic education of Tibet, this is often accomplished with lengthy and frequent debate sessions in which a topic is critically analyzed and probed for coherence, accuracy, and relevance with a partner. Once this process is mature and the person has a broad and deep understanding, meditation techniques are applied to whatever was understood in the prior two stages as a culmination of the process (Perdue, 1992, p. 7).

The reasons that meditation and the wisdom which arises from it are considered ideal in Buddhist thought is another lengthy and complex topic. In short, it has to do with special abilities minds which have mastered concentration practices are thought to possess. The more advanced one's skills are in concentration, the more direct and powerful one's encounter with insight experiences can be (Rabten et al., 1992, p. 40). This power is essential for completing the path. Thus, attaining some mastery with concentration is considered extremely important.

In general, the meditation techniques to accomplish the third stage of wisdom are discussed in two categories: concentration meditation (*sthāpyabhāvanā*) and analytical meditation (*vicārabhāvanā*). Concentration meditation in Tibetan Buddhism is similar to what

I've outlined in discussing "right concentration" above. It is centered on techniques to systematically refine attentional absorption (Wallace, 2005). Analytical meditation refers to meditations aimed at the generation of states using sustained reflection. These practices tend to use some level of prompted conceptual strategy to establish a target state, then concentration techniques are deployed to maintain it. Although fully developed concentration is the ideal, one can still do analytical meditation without it. To make any attempt at analytical meditation is viewed as extremely helpful (Tsong-kha-pa, 2014, p. 113).

It is common to use the term "analytical" to translate "*vicāra*" in the context of "*vicārabhāvanā*" but I feel this can be somewhat misleading. Analysis tends to have an intellectual connotation in English, evoking logic, reasoning, and critique. However, Sopa (2004) explains that so-called "analytical" meditations can target both affective and cognitive states. Meditations which focus on affective states include topics like loving-kindness, compassion, equanimity, etc. He says that in these cases analysis "…doesn't mean merely looking at compassion as an external object and analyzing, 'What is compassion and how does it arise?' When you meditate on compassion, one part of your mind actually becomes the nature of compassion" (p. 234). In other words, one key purpose of "analysis" here is to induce feelings, attitudes, or emotional states. The emphasis is on sustaining an affective experience. Alternatively, practices which emphasize cognitive states are targeted at developing insights, such as the contemplation of the nature of the self, the truth of impermanence, or the second noble truth of craving etc. Here, the purpose is less to develop an affective state and more to come to understand something clearly. One reviews logical proofs or a series of propositions and attempts to comprehend their truth. Interestingly, "*vicāra*" on its own is often translated in other works as "sustained thought" which has somewhat broader connotations than simply, "analysis"

(Buswell & Lopez, 2013). In any case, it is important to understand that when I use the term "analytical meditation" I am referring to both affective and cognitively focused meditations.

With either affective or cognitive topics, the meditation procedure for developing these meditations is similar. One begins with an analysis on a set of prompts or reasonings which target an explicit mental state. The meditator intentionally reflects in accordance with the instructions, until they become aware that the targeted state has been induced. Once this has happened, they pause explicit reflection and apply concentration on the state, absorbing and sustaining the mind as much as possible in an experience of that state. The clarity and coherence of this state is monitored, such that if the induced state begins to fade or become displaced, the themes are taken up again, creating a cycle of active reflection and absorption as needed (Loden, 1996, p. 51) (See Figure 2).

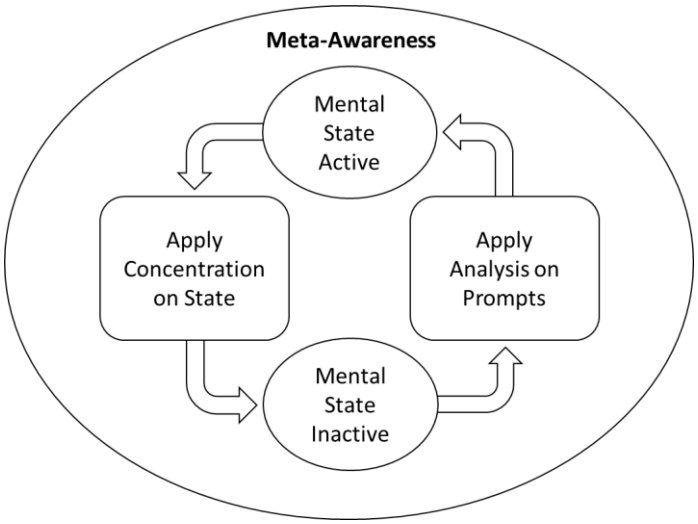

Figure 2: Process Model of Analytical Meditation. Analysis and Concentration are taken up cyclically depending on the congruence of the current mental state with the intended mental state.

Modern Examples of Analytical Meditation

Recent psychological studies have confused "analytical meditation" with the practice of debate in Tibetan monastic education. For example, van Vugt et al.'s (2019) study on "analytical meditation" examined the EEG signatures of debating Tibetan monks and collected cross-sectional cognitive and wellness outcomes with novice and experienced debaters. These authors rightly point out that in some ways Tibetans see debate and analytical meditation as part of the same process (the "three wisdoms"). However, given what I've already presented, I would argue that analytical meditation clearly refers to a wide variety of private, inwardly focused contemplations which serve to develop mental states, not the social intellectual exercise of debate. These authors' use of the term "meditation" is needlessly confounding.

Prosocial meditations like loving-kindness or compassion practice are the most studied forms of analytical meditation today (Zeng et al., 2015) but there are other examples as well. For instance, positive psychology researchers have also used quasi-analytical meditation as a novel intervention for inducing and increasing gratitude (Duthely et al., 2017; Rash et al., 2011), although not in such terms. Emory University's secular Cognitively-Based Compassion Training (CBCT) employs analytical meditation for the development of self-compassion, equanimity, gratitude, and compassion (Ash et al., 2021). Since this meditation program was directly adapted from Tibetan meditation manuals in partnership with Tibetan monastics, it provides an excellent case study in how these principles are implemented in a modern intervention. Consider this short passage from a meditation script used in CBCT:

> "…focus…on the person dearest to you. Think specifically of the many difficulties and suffering this person experiences – such as illness, fears, anxieties, disappointment – and his or her lack of genuine happiness. Let your heart resonate

> with the wish for this person to be free of suffering and to have happiness. Sit with this feeling and reflect, 'How wonderful it would be for this person to be happy and free from suffering'
>
> When you feel the impact of this experience, further reinforce it with a sense of greater urgency to see your dear one happy and free from suffering. Cultivate this urgency by thinking, 'May this person be happy and be free from suffering.' Focus whole-heartedly on wanting him or her to be happy and free from suffering. Infuse your mind with these feelings, and integrate them completely with your experience." (Negi, 2012, p. 48)

In this case the target state is affective, therefore the analysis is more about evocative imagery to prompt compassionate feelings. We can see that it involves imagining different types of suffering that a very close and important person in our lives has or could experience. The section starting with "Let your heart resonate…" directs the practitioner to acknowledge, accept, and encourage the target altruistic feelings which should be arising from this imaginary exercise. The section beginning with "Focus whole-heartedly…" is instructing the practitioner to drop the explicit imagination exercises and attempt to concentrate on the state of compassion, articulated as a phrase for easy recollection ("May this person…"). The instructor would then pause and allow this process to proceed for about a minute. In this script, the instructor moves on to another prompt; however one could stay with this theme and cycle back and forth between quiet concentration and analysis as needed to maintain a state of compassionate feeling.

It's worth noting that before exposing trainees to the compassion meditations, CBCT has participants learn meditation on the breath, where one attempts to concentrate attention, and open-monitoring practice, where one keeps a broad meta-awareness of all sensations, thoughts,

feelings, and/or perceptions. CBCT does this to develop foundational attentional control and meta-awareness skills so they can be applied to the analytical practice (Ash et al., 2021) This reflects the methodology of the Buddhist sources. Most modern secularized meditation interventions do not emphasize the extraordinary attentional skills which have usually been associated with concentration practice in classical conceptions of meditation. Instead, they focus on more elementary skills and a sense of self-acceptance with attentional shortcomings. This is extremely practical, as most modern practitioners are not professional monastic contemplatives. However, these interventions have still resulted in increased attentional abilities, especially in those which focus exclusively on concentration practices (Lutz et al., 2009; Sumantry & Stewart, 2021).

In summary, we can see that analytical meditation is to be understood as a category of contemplation characterized by the induction of specific affective or cognitive states and the maintenance of these states through the application focused-attention and meta-awareness. Analytical meditations are distinguished from one another through the explicit state targeted, and the set of instructions which are implemented to induce it. Further, this practice is understood to facilitate “familiarity” with a topic, both in terms of depth of understanding, as well as habituation.

At this point, we can see that this presentation of Buddhist meditation has some unique features, norms, and practices which make it an interesting and novel source of original research. However, I argue that aspects of it are not entirely unfamiliar to psychological science. For example, social cognition and self-regulation research on mental simulation (the capacity to imitate or represent events in one’s mind) has shown that imagination is a powerful way to manage affect, deploy cognitive resources, and generate insights (Taylor et al., 1998).

Therapeutically, mental simulation has been used to increase adaptive coping by engaging appropriate problem-solving activities and regulating emotional responses in the face of stress (Rivkin & Taylor, 1999). Perhaps one way to think of analytical meditations is as a kind of affect and cognition regulation through mental simulation.

Similarly, priming research has shown that even brief exposures to a stimulus can have effects on subsequent responses, including knowledge recall, attitudes, preferences, and behavior (Molden, 2014), especially in people for whom the primed construct is important (Weingarten et al., 2016). Priming is when one stimulus affects the processing of another through the activation of concepts. Priming operates through accessibility, or increases in the probability that available information in memory will be brought to bear on a given situation (Higgins, 2007). Paralells in theory between later conceptions of karma in Buddhist thought (and its implications for meditation) and psychological accessibility theory have been noted in the literature (Allen et al., 2015) and priming has been used in other contexts as an explanation for the effect of religious thinking on relevant outcomes, for example in religious prosocial effects (Shariff et al., 2016). In this sense, one could certainly expand on these themes to imagine analytical meditation as a kind of repeated, intentional self-priming technique aimed at chronic changes in accessibility.

Although these interpretations may have some merit, I would like to return to my suggestion that a novel meditation is best understood, at least initially, at the more specific level of its own particular purpose, and thereby within psychological theories which best fit that purpose. To do this, I need to explore the specific meditation instructions and look for clues which may reveal to us the intended effects.

Tsongkhapa's Motivation Meditation

Tibetan Buddhist literature features "Stages of the Path" texts, which present a number of meditations in a coherent curriculum of practice. For example, Tsongkhapa's Great Treatise on the Stages of the Path (*Lam rim Chen mo*), written in 1402, organizes a meditation training into three stages, based on the goals of the practitioner (Tsong-kha-pa, 2014, p. 18). These texts contain instructions interwoven with technical advice and Buddhist theory.

Within the Great Treatise, the first meditation is called "A Human Life of Leisure and Opportunity". This practice is described as an encouragement "to take full advantage" of our lives, which means to follow the Buddhist path of contemplation (Tsong-kha-pa, 2014, p. 118). Similar meditation sequences are prescribed for beginning students in other Tibetan systems as well. For example, the Four Thoughts of the Kagyupa tradition has a similar structure and aim (Khandro, 2005). This is no accident as these practices are all drawn from the same 11th century text "Lamp for the Path to Enlightenment" written by the famous Indian teacher Atisha to help establish Buddhism in Tibet (Atisha, 1997). I used Tsongkhapa's formulation because I am more familiar with it, as well as because it offers commentary which is useful for identifying the cognitive and affective targets of the meditation.

The meditation prompts which Tsongkhapa provides are a collection of quotes from famous Buddhist authors. They are arranged and explained to highlight the importance of spiritual practice and different aspects of our lives which make us ideal candidates. These prompts are characterized within traditional Buddhist views of the universe. This includes the idea of reincarnation, where beings move from life to life driven by their karma. Human life was thought to exist only as one possibility in a universe filled with other kinds of realities, most of which entail much greater hardship and minds with far fewer capacities (ex. animals). Therefore,

"leisure and opportunity" describes what it means to be human under these comparatively ideal conditions. "Leisure" refers to how one is free from eight less fortunate rebirth conditions, and "opportunity" refers to ten conditions relating to one's interest to begin the "path" and how one's excellent human life uniquely affords the ability to succeed at it. A student is to contemplate these points and come to understand the great value of their lives for spiritual progress and fulfillment (Tsong-kha-pa, 2014, p. 126).

This is where our analysis meets the challenging translational issues I have mentioned prior. Contemplating one's prospects in a metaphysical cycle of rebirth or holding up Buddhist practice as an opportunity as such, seems like it would only be relevant to a person who sees the world at least somewhat similarly to a medieval Buddhist. Nevertheless, we can still attempt to understand what this meditation is *doing* within this meaning system and how it functions psychologically. Tsongkhapa (2014) offers us additional clues about the purpose of these contemplations, by summarizing that the states of mind that I'm attempting to establish are threefold. First, a person is to see "the need to practice the teachings, because all living beings only want happiness and do not want suffering, and because achieving happiness and alleviating suffering depend only on practicing the teaching…" (p. 126). Recall that to a Buddhist, following the path is the only way to guarantee an end to an ingrained cycle of dissatisfaction. He wants a person to feel the enormous importance of practicing Buddhist contemplation for helping themselves and others achieve lasting wellbeing. Second, he explains that a person should understand their own *"*ability to practice, because we are endowed with the external condition, a teacher, and the internal condition, leisure and opportunity" (p. 127). Here a practitioner is to take stock of all the supportive factors which they possess. They are to feel confident that they have everything required to succeed, including inner factors such intelligence

and aspiration, as well as optimal conditions like access to instruction and the relative comforts of human civilization. Finally, Tsongkhapa explains that a person should understand "the need to practice in this lifetime, because if you do not practice, it will be very difficult to obtain leisure and opportunity again for many lifetimes; and the need to practice right now, because there is no certainty when you will die" (p. 127). These final two points relate to developing some sense of urgency through reviewing the consequences of letting such potential sit unused. Since life is so uncertain and having such an opportunity is rare within the possible realms of rebirth, a practitioner need to take up the path as soon as possible because of the impermanence of our lives.

This description is much broader and pertains to specific cognitive and affective experiences. When viewed from an instrumental perspective, we can see that the prompts are intended to elicit psychological themes such as importance, confidence, and urgency. I suggest that these themes define the purpose of Tsongkhapa's practice. Just as compassion meditation is intended to induce compassionate thoughts and feelings, this meditation is designed to induce these three states in their cognitive and affective particulars. With this clarity of purpose for our target practice and an understanding of how analytical meditation functions in general, I can now turn to psychological theory to help us envision how I might frame such a process for a program of research.

Chapter 4: Framing the Meditation within the Psychology of Motivation

It isn't just medieval Tibetans who need motivation to meditate. In the lives of many people, finding the motivation to keep up with a wellness activity such as meditation can be a struggle. Popular media is rife with advice on how to keep motivated. Psychology Today proclaims: "No More Excuses! How to Meditate Everyday" (Puff, 2012), while Huffpost offers advice from a doctor: "How I Stay Motivated to Meditate" (Zimmerman, 2014). Even the wellness guru Deepak Chopra's website weighs in with "Your Motivation to Start Meditating" (Lechner, 2014). Clearly, there is an audience for these types of articles and many people struggle with motivation to meditate. Furthermore, since meditation has been adapted into various clinical settings, non-compliance can be a significant barrier to successful implementation (Zhang et al., 2021). While the relationship between at-home practice and outcomes in clinical meditation interventions is still under investigation (Strohmaier, 2020), interventions are at least based on the premise that exposure to meditation is important. Thus, improving motivation to meditate could have a meaningful impact for many meditation populations. Furthermore, something akin to Tsongkhapa's method could prove ideal because his motivational intervention is designed to be integrated into meditation practice itself.

Prior empirical work on improving motivation to practice meditation has not been done and potential motivational mechanisms operating in meditators haven't been systematically explored. A few qualitative studies have been done in which different meditation populations were interviewed to find out why they choose to meditate. For example, Shapiro (1992) surveyed a small sample (n = 27) of meditators on their goals for engaging in meditation. Coded qualitative analysis was done along three a priori themes: self-regulation, self-exploration, and self-liberation. Shapiro found a positive association between years of practice and more

explorative/liberative goals. Carmody et al. (2009) used this same goal paradigm to survey a larger sample of MBSR practitioners (n = 309) and assess the relative importance of these types of goals. They found that self-regulation was most important, with self-exploration and self-liberation second and third, respectively. Pepping et al. (2016) also asked (n = 190) adults who had done some modern mindfulness meditation why they began and why they continued. Qualitative coding revealed that the most popular reasons for both starting and continuing meditation were to reduce negative experiences and increase wellbeing. These studies show that many people tend to focus on the emotional and psychological benefits they feel meditation offers when they are asked why they meditate. However, as informative as these studies are about self-reported reasons for engaging in meditation practice, psychology posits that motivation is a complex phenomenon which involves many interacting factors, most of which were not examined in this prior research.

Motivation Theories

Psychology has long recognized that human behavior is organized by many implicit and explicit pressures, including biological drives, social forces, and cognitive factors. Many different paradigms have been developed to explain various aspects of these sources of motivation. A full treatment of all the major motivation theories is beyond the scope of this project, so I will focus on three important theories which I feel are most useful to understand and analyze Tsongkhapa's motivational meditation: Social Learning Theory (Bandura & Walters, 1977), Expectancy-Value Theory (Wigfield, 1994), and Self-Determination Theory (Deci & Ryan, 1985b).

Motivation in the broadest sense is what moves us to initiate behaviors, choose between different behaviors, and persist through difficulties in the pursuit of outcomes. However, the way

motivation has been understood in psychology has changed over time. Some of the earliest psychological explanations of motivations are rooted in the idea of biological instincts. Darwin (1872), for example, argued that human emotion was an evolved reaction which served an adaptive purpose. He proposed that sexual arousal, fear, anger, etc. all serve to preserve and protect the species, locating many human motivational forces in biological, instinctual responses to evolutionary pressures. This line of thinking helped inspire the related concept of "drives" which are compelling organismic forces which serve to maintain homeostatic needs (Ryan et al., 2019). For example, an organism experiences the sensation of "hunger" when the nutrients they need for survival become depleted. This "drive" for nutrition organizes the behavior of that organism, causing it to seek food. While these homeostatic functions remain important in explaining some human motives, the concept of "drives" would be replaced with the broader concept of "needs" which can include psychological as well as physical needs. For example, Maslow's hierarchy of needs depicted human motivations as a combination of various biological, social, cognitive, and existential needs (Maslow, 1943).

Indeed, as cognitivism began to define psychology in the mid-20th century, cognitive, emotional, and social factors would move to the forefront of motivation research. For example, Rotter (1966) famously demonstrated that a key factor which determined the value of a reward was whether the reinforcement was perceived to be under the control of the recipient. In other words, if an organism does not expect that a reward is contingent on their behavior, then that reward is less likely to elicit the same behavior as compared to a reinforcer that is believed to be contingent. This helped to show that while external rewards have an important impact on behavior, there are significant cognitive mediators which help determine responses, making the value of a reward differ between individuals. All of these themes, including expectancies, task

and reward values, as well as perceived control, would become central to the modern theories of motivation I'll explore below.

Social Learning Theory & Self-Efficacy

Few modern motivation theories have been as influential as Bandura's Social Learning Theory (SLT) (Bandura & Walters, 1977). Bandura synthesized much of the contemporary research of his time to argue that behavior can be better understood if we consider it in its interactions within the social and personal domains. This process, which he called "triadic reciprocality", showed how personal characteristics, behaviors, and feedback from the environment all interact. One key implication of this view was that learning occurred both through direct personal experience, as well as via social observation and comparison. Within this framework, he argued that people were motivated by many factors to perform different behaviors, including goals, outcome expectations, values, social comparisons, and self-efficacy beliefs. Goals are the object a person commits to attain through some effort. Goals can have different effects depending on their specificity, proximity, and difficulty (Bandura & Cervone, 1986). Outcome expectations refers to our assumptions about the nature of the results we will get by completing an action. The better the outcome the more likely someone is to persist at an action. Values refer to people's beliefs about the importance and utility of an action or a result, which help determine the significance of both. Social comparison refers to the way people measure themselves against the performances of others. Finally, self-efficacy beliefs are the ways people think about their own ability to succeed, a kind of self-directed expectancy belief.

Though all these factors are part of how SLT explains motivation, self-efficacy was one of the most critical (Bandura, 1997). Self-efficacy is hypothesized to influence key behaviors through cognitive, affective, motivational, and selection processes. Bandura says that self-

efficacy beliefs are shaped by four different sources. First, self-efficacy is a result of our own experiences of success. For instance, if we've previously succeeded at a task, we are more likely to believe that we can succeed again. While the impact of performance can depend on many factors, such as difficulty, effort expended, and aide received, what is important is how one interprets the result (Bandura, 1997). Thus, the final consequence of performance experiences on one's self-efficacy is a combination of the experiences themselves and how we interpret them. The second major player in shaping our efficacy is social comparison. For example, if we were to witness someone who shares many relevant qualities with us easily succeed at a task, we may use that information to update our beliefs about ourselves: '…if they can do it, so can I'. Third, our social connections can directly influence our self-efficacy beliefs through persuasion. A trusted mentor or peer explaining why they believe we will succeed can impart confidence on its own. Indeed, both social comparison and social persuasion have been shown to predict self-efficacy beliefs across cultures (Ahn et al., 2016). Finally, one's own physiological state can influence one's beliefs. For example, one may interpret severe anxiety or stress as a signal that one is not prepared to proceed with a task. Thus, one's self-efficacy beliefs about a given task in a given moment come from a combination of personal experience, social feedback, and one's current mood and/or homeostatic state.

Self-efficacy has been shown to be a strong predictor of motivation, achievement, self-regulation, and decision making (Schunk & Usher, 2012), as well as an effective way to encourage health behaviors (Strecher et al., 1986). However, it is important to note that, in Bandura's view, self-efficacy must by definition be task specific, since it pertains to particular actions (Bandura, 2006). Efficacy expectations about an activity refer to one's confidence in successfully performing the specific tasks and skills which are required. This is not to say that

efficacy beliefs cannot pertain to more than one activity. They can do so to the extent that the different activities share common performances or needed skills. A person who felt quite confident in a skill that they have practiced and studied would not have the same confidence to attempt something complex and foreign. Thus, any sense of self-efficacy which was not grounded in a particular skillset or performance would have limited predictive power.

Expectancy-Value Theory

Another influential contemporary motivation theory is Wigfield's (1994) expectancy-value theory (EVT). Drawing on prior expectancy theories such as Atkinson (1957) and Vroom (1964). EVT focuses its analysis of motivation on expectancy beliefs and value attributions. While EVT's expectancy constructs are quite similar to Bandura's, it distinguishes its theoretical approach by emphasizing ability beliefs and expectancies for success separately. Ability beliefs pertain to evaluations of one's abilities in relationship to a task domain, while expectations for success refer to beliefs about whether one will succeed. For example, a person may have a positive self-assessment of their own ability, while still considering their chances of success relatively low—perhaps due to circumstances out of their control. Additionally, EVT proposes that all these expectations and beliefs are affected by numerous individual cognitive and social factors, which is also somewhat similar to Bandura's view.

EVT proposes that subjective attributions of value are important to help guide and prioritize choices (Eccles & Wigfield, 2002). In general, values can be either broad or task specific (Higgins, 2007). Broad values have to do with individuals' sense of what is appropriate in general, while task specific values pertain to aspects of the task and how the qualities of the task influence one's motivation. EVT focuses on the latter and identifies four main components which contribute to one's sense of task value: attainment value, intrinsic value, utility values, and

cost. Attainment value relates to the importance of a task in relationship to self-concepts. Tasks are more important when the task itself carries meaning in terms of core identities. For example, a strongly self-identified religious person would be more motivated to participate in a religious practice in part because of this congruent identity link. Intrinsic value is the enjoyment and satisfaction one receives from doing a task that one simply likes. The more enjoyable the task, the more likely one is to initiate and persist at the task. Utility value refers to the relative instrumentality of a task in creating a certain outcome. One may complete a task less for its own sake, and more for the sake of some higher order or future longer-term goal. For example, a student who wants a college degree will take undesirable courses in order to fulfill degree requirements. Finally, cost refers to direct emotional, energetic, and opportunity costs related to the effort required to complete a task. Recently, cost factors have been gaining attention (Battle & Wigfield, 2003; Gaspard et al., 2015) with some researchers proposing that cost deserves to be elevated to a main component of the theory, alongside expectancies and values (Barron & Hulleman, 2014).

Expectancies and values have both been shown to influence task choice, persistence, and performance (Wigfield & Cambria, 2010). Typically, expectancies more strongly predict achievement and performance (Bong et al., 2012; Wigfield et al., 2017) and task values more strongly predict intentions and choices (Durik et al., 2006). Interestingly, expectancies and values also influence each other. For example, there is some research which indicates that people come to value activities at which they feel competent (Jacobs et al., 2002). Further, these expectancies and values seem to become more positively correlated with age (Wigfield & Cambria, 2010).

Self-Determination Theory

Self-Determination Theory (SDT) explores motivation through the idea of core psychological needs, or "intrinsic" motivations (Deci & Ryan, 1985a; Ryan & Deci, 2017). SDT was also inspired by quite a bit of prior work. For example, White (1959) argued that while physical needs were important, the added dimension of *psychological* needs was required to explain behavior. Specifically, White argued for the idea of "effectance motivation", which is a core drive for competence, manifesting in the pleasure we feel in play, curiosity, and exploration. Another key influence on SDT was the work of deCharms (1968) who pointed out that people's sense of casual efficacy, or "locus of causality" was important to maintaining such intrinsic motivations.

SDT focuses on the subjective need for competence, relatedness, and autonomy. Competence means to feel capable of successfully navigating external and internal environments—to feel some level of mastery and effectiveness. Relatedness refers to social connections and the feeling of belonging. We need affinity groups and social validation. Finally, autonomy means that we feel a certain sense of freedom to make our own choices. We are not coerced by external pressures and are able to willingly endorse behaviors (Deci & Ryan, 2012). These three core needs explain many different motivational phenomena and have shown good cross-cultural validity (Chirkov et al., 2003)

The idea that humans are inherently active and engaged is central to SDT. We are innately motivated to seek out experiences which fulfill our needs. However, this human motivation also exists in social environments which put motivational pressures on the individual to behave in certain ways. Thus, SDT places motivation on a spectrum from autonomous or "intrinsic" motivation, to coerced or "extrinsic" motivation. With intrinsic motivation, rewards

are innate to the activity, stemming from enjoyable experiences of competence, relatedness, and autonomy. In contrast, extrinsic motivations operate through rewards or consequences external to the activity—proverbial "carrots and sticks". Behavior can be initiated because we desire a reward that the activity will help facilitate, or because it helps us to avoid some punishment (Deci & Ryan, 2012).

However, extrinsic motivations may also differ to the extent that one internalizes some types of external pressures. On one hand, a person being extrinsically motivated may feel that they are being coerced against their will. For example, a person may take up a new responsibility because their employment is threatened. Fully extrinsic motivations like these are called "external regulation" and consist of extrinsic motivations in which a person feels controlled—they do not feel a sense of autonomy. On the other hand, we may feel that we are in control of our extrinsically motivated behavior. For example, a sick person may take up an unpleasant healing regimen after being convinced of its efficacy. Even though an activity does not directly meet any of our core needs, we may do it willingly because we believe it will benefit us in other ways. Motivations where we choose to do activities for extrinsic reasons are called "identified regulation" in SDT, because there is some level of internalized identification with extrinsic pressures (Deci & Ryan, 2012).

Research has shown that more intrinsic/autonomous forms of motivation are positively associated with performance (Guay et al., 2017; Howard et al., 2017). Similarly, environments which support core SDT needs have better performance outcomes (Deci et al., 1981; Hardre & Reeve, 2003; Vallerand et al., 1997). Further, internalization and identification are positively associated. The more internalized the motivation the more one identifies with the activity

(Skinner et al., 2017). Activities that satisfy our core needs are more likely to be domains we include in our core identity.

Developing an Analytical Meditation on Motivation to Meditate

While there are many other motivational theories which I could mention, I see SLT, EVT, and SDT as particularly appropriate frames to explain and adapt our target meditation. First, since the general premise of analytical meditation is that it functions at the level of changed feelings and cognitions, these theories' similar emphasis makes them a relatively good fit. Second, I feel that the particulars of these three approaches stand out in an analysis of the potential psychological function of the target states of Tsongkhapa's practice. Utilizing these theories, our goals were to: 1) build a working hypothesis of how this meditation may function, and 2) adapt the meditation for a wider range of potential audiences.

Most meditation interventions used in psychology, including modern mindfulness and associated intervention programs, have been inspired and adapted from traditional sources (Ash et al., 2021; Drage, 2018; Kabat-Zinn, 2011; Robins, 2002). Moreover, many of these adaptations have general themes in common. For example, McMahan (2008) observed that, in general, modernist transformations of Buddhist practices tend to involve three key processes: detraditionalization, demythologization, and psychologization. Detraditionalization refers to a shift of authority from institutions and external authorities to the individual. Personal reason, experience, and intuition are centered as historical and hierarchical power structures are moved to periphery. Demythologization involves a reinterpretation of metaphysical themes in terms of visible, experiential reality. For instance, one may interpret descriptions of paranormal entities as metaphors for problematic aspects of oneself or of society at large. Psychologization is the reinterpretation of ideas in terms of psychological theories and mechanisms.

Our first task in creating our novel intervention was to start with this third theme. I wanted to reinterpret each section of the meditation in terms of the psychological theories of motivation I had selected. The original prompts can serve as a *demonstration* of how meditators in Tsongkhapa's time used the technique of analytical meditation to motivate and inspire themselves through psychological principles. Thus, when Tsongkhapa (2014) says that we are to use the prompts to see "the need to practice the teachings, because all living beings only want happiness and do not want suffering, and because achieving happiness and alleviating suffering depend only on practicing the teaching…" (p. 126) I suggest that from the point of view of psychological theories of motivation, this is a state which appreciates the value of meditation, and specifically its attainment and utility value. Tsongkhapa is directing the reader to connect with the importance of the outcomes of meditation practice. In his view, the ultimate wellness of everyone, including ourselves, depends on meditation and the Buddhist path. This is partly an attainment value statement, as it is about the meaning of meditation to oneself. Further, he is reminding the meditator to reflect that the path of meditation leads to those outcomes, so it is also highlighting meditation's utility value.

Next, he directs the practitioner to use the prompts to appreciate one's "ability to practice, because you are endowed with the external condition, a teacher, and the internal condition, leisure and opportunity" (p. 127). This is referring to a state where we believe that have the inner capabilities and outer resources required to succeed. I propose that this is a state of self-efficacy and positive expectancy belief. In terms of Bandura's theory this could be functioning along several sources of self-efficacy beliefs, depending on how one approached the prompt. For example, if we are merely receptive to Tsongkhapa's prompts it might be acting through social

persuasion. Alternatively, if we used the prompt to bring up memories which demonstrated our competence, it could function through recollection of mastery experiences, etc.

Lastly, Tsongkhapa suggests that we try and feel "the need to practice in this lifetime, because if you do not practice, it will be very difficult to obtain leisure and opportunity again for many lifetimes; and the need to practice right now, because there is no certainty when you will die" (p. 127). I contend that this final section pertains to cost attributions in the event that one does not pursue the Buddhist "path" of meditation. In EVT costs are generally discussed as obstacles to motivation, but in this case, costs are contemplated in respect to the choice to *not* engage in meditation. For example, we may not receive the benefits which our meditation practice can provide.

Moreover, I submit that analytical meditation can be characterized within the SDT framework as a process whereby extrinsic motivators become accepted and internalized. In our example, a person reviews the prompts in order to remind themselves of future benefits and costs (extrinsic) with the goal to develop genuine and authentic feelings related to these themes (identified). The ideal result of such meditation is a state where a person has internalized the prompted attitudes to such an extent that they are now implicit to their identity.

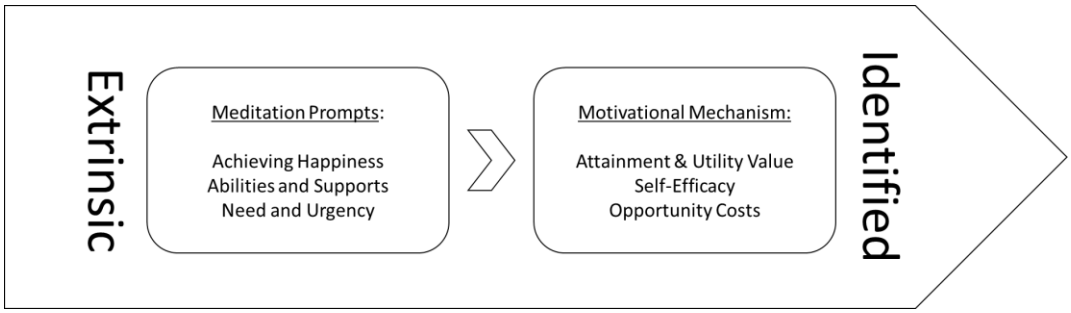

Figure 3: Proposed Model of Motivational Mechanisms.

Our psychological analysis of Tsongkapa's prompts showed that the meditation was designed to induce: 1) a sense of attainment and utility value for meditation in its larger therapeutic purpose, 2) self-efficacy in terms of one's ability to accomplish a meditative lifestyle based on inner and outer resources, and 3) some sense of potential opportunity costs from delay. Further, we can see that the prompts and practice as a whole are seeking to move a person along the spectrum from extrinsic motives to more identified motives (see Figure 3).

Our second goal was to produce a contemplation which would remain as close to the basic format of Tsongkhapa's original while still being relevant and accessible to any population who wanted to develop motivation to meditate. Since the analytical prompts are steeped in traditional mythologies, our next task in adapting this meditation was to re-imagine the prompts to be compatible with any worldview—demythologizing and detraditionalizing the original.

Our lab went through an iterative process in designing new prompts. Yet, it quickly became clear that any prompts which contained pre-prepared reasoning are built on assumptions about what would be valuable, build efficacy, and constitute costs. The modern motivational theories I've described are clear that our experience of expectancies, values, and autonomy are in large part determined by the circumstances of one's individual life. For example, what one person considers valuable is shaped by one's culture and life experience. Therefore, constructing a universally motivating set of prompts would be impossible.

I arrived at a two-part process in which an individual creates their own prompts guided by the above motivational themes. First, a person writes out their own purposes for meditation, why it is has value, and what outcomes they envision, as well as the utility of meditation in relationship to achieving these purposes. Next, they write about what outer factors support their meditation practice in their current lifestyle, as well as the helpful abilities they possess to

successfully complete meditation practices. Finally, we have them write about the cost of not meditating, important results which could be lost, as well as possible reasons that the supports they currently enjoy could be unstable and temporary. Thus, at the end of this process each person would have their own set of prompts designed around similar themes as the original, while still being applicable to their individual situation (see appendix B for our questions). These personal prompts would then form the content of our adapted meditation.

Chapter 5: Experimental Methodology and Results

To put my novel meditation to the test, I implemented a mixed experimental design. Meditation type was a between-subjects variable and baseline and endpoint assessments were a within-subjects variables. I also did weekly data collection for certain assessments. I hoped to detect changes in the motivational constructs from SLT, EVT, and SDT as well as concrete changes in at-home meditation behavior. Specific hypotheses will be addressed after I've introduced our measures and methods.

A sizable majority of meditation research has been done with weak control groups, such as waitlists. Critiques of the field have often cited this lack of strong control groups as a methodological flaw (Davidson, 2010; Davidson & Kaszniak, 2015; Dimidjian & Segal, 2015; Van Dam et al., 2018). Meditation is a complex activity with various cognitive, social, and behavioral dynamics. Dissimilar comparison groups may be appropriate if we are seeking to merely compare the effect of a meditative intervention against a standard intervention for a specific population. However, if we are hypothesizing an effect from specific meditative behaviors, an ideal control group is one which mirrors the meditation under scrutiny in all ways except the hypothesized active factor(s). For example, Zeidan et al. (2010) developed a clever placebo meditation paradigm as a control group for a short modern mindfulness intervention. Their "sham" meditation involves sitting in a group, closing one's eyes, breathing deeply, using meditation terminology, etc. but does not include defusing or decentering from thoughts and feelings. Another way to accomplish this is to compare effects between meditations which share these factors but differ in primary technique and hypothesized effects.

I attempted to do the latter and match our groups by integrating our experimental motivation meditation into a simplified modern mindfulness course. The addition of the

experimental motivation practice was our independent variable. In other words, both groups took a mindfulness meditation course, but only one group was also exposed to our experimental practice. This made matching the group activities much easier and should logically limit any unique effects between groups to the experimental intervention. Additionally, since our motivation meditation was designed to spur motivation to engage in other meditations, using a modern mindfulness class as a backdrop for our experimental groups supplied a meditation style in cases where a participant may not have had a clear meditation framework to reference. Finally, I hoped that such an arrangement would also reduce demand characteristics in the experimental group by downplaying the focus on motivation. Our hypotheses and the below procedures were pre-registered on the Open Science Framework (https://osf.io/ru3w8).

Demographics

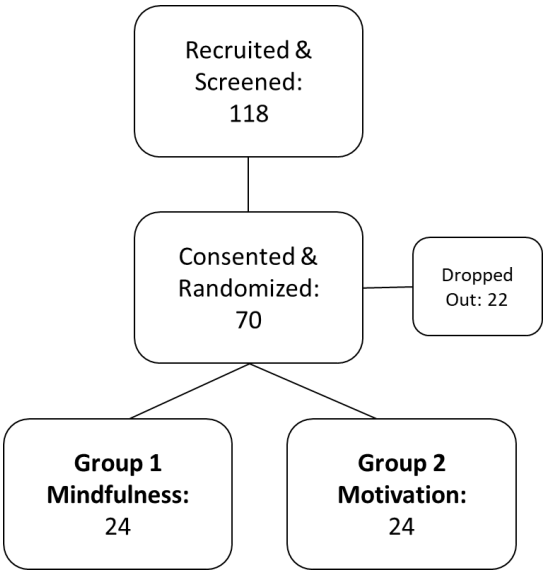

Figure 4: Recruitment, Consenting, and Randomization Summary

I recruited 118 volunteers using online outreach on Oregon State University (OSU) email lists including the psychology department newsletter and OSU university newsletters. I also sent emails to meditation centers in California, Oregon, Washington, Nevada, and Arizona. Volunteers needed to be: (a) over the age of 18; (b) comfortable experiencing their own thoughts and feelings without significant personal distress; (c) have more than 3 months of experience with mindfulness meditation; and (d) endorse a wish to improve their meditation practice. After screening, 70 volunteers consented to participate in the study and were

randomized into two groups: a mindfulness only condition and a mindfulness and motivation condition (see Figure 4). One person was assigned to Group 1 to ensure that they and their spouse, who was also in the study, were in the same group. 11 dropped out prior the start of the study due to scheduling and/or time commitment concerns, and 11 volunteers were lost to follow-up during data collection, leaving a final group of $n = 48$, with $n = 24$ in each of the two groups. Our volunteer sample was 92% White, 4% Asian, 2% Hispanic, Latino/a/x or Spanish origin, and 2% Native American or Alaskan Native. Gender in the sample was 65% female, 29% male, 4% non-binary / third gender, 2% other gender. While ages ranged from 21 years to 79 years old, the average age was 55.5. Prior meditation experience varied from 3 months to 50 years, with an average of 11 years of prior meditation experience.

A priori power analyses with G-Power (Faul et al., 2007) using the conservative assumption of a small effect size ($f^2 = 0.15$) yielded an approximate recruitment target of $n = 150$. Despite the awareness that the study was underpowered ($n = 59$ at the start of the course), the team decided to move forward with the project. While this limitation affects the results and our ability to confidently interpret them, I believed that the project itself represents an interesting and significant contribution to the scientific understanding of meditation.

Procedures

Our lab constructed an online meditation course to teach volunteers the two targeted types of meditation: Mindfulness Meditation or Motivational Analytical Meditation. 90 minute Zoom sessions were facilitated weekly over an 8-week period. The sessions were led by Dr. John Edwards, Katelin Gallagher, Jacob Lindsley, and Joe Slade who were all experienced meditation leaders and members of the lab. Each instructor rotated between the groups such that each group had approximately equal exposure to each instructor. Attendance was tracked and volunteers

were told that no additional meditation practice outside of the guided sessions was required. However, volunteers were encouraged to include the meditations taught in the course if they did practice at-home.

The mindfulness condition focused on three typical mindfulness meditations: breath awareness, body scan, and open monitoring (Santorelli et al., 2017). Participants were taught to calm mental distractions, relax, and view their experience with a non-judgmental, equanimous, and open attention style characteristic of mindfulness-based programs. The motivation condition also learned the three modern mindfulness meditations; however, they were additionally taught the motivation meditation. This meditation included prompted reflections on the motivational questions outlined above. Participants in this intervention group were taught to use the prompts to bring up relevant memories, ideas, or meanings to encourage themselves in congruent attitudes and emotions whilst in contemplative state. Further, I explained and modeled how to use the motivation practice to begin a meditation session which includes other types of practice so that it was easy to integrate into pre-existing at-home routines (see Appendix B for full meditation instructions).

The first four courses in both groups were structured with roughly equal parts lecture, reflection, discussion, and meditation practice. While exact lecture content differed between groups, it was used in both cases to introduce key contemplative concepts and terminology, including relevant traditional Buddhist ideas as well as psychological theory. Slides, content, etc. were matched as closely as possible while still meeting the unique needs of each group. Discussions were focused on clarifying and comprehending the presented material. Reflection periods were used differently in each group to complement the aims of each condition. In the mindfulness group, reflection was used to reinforce the content of the lecture and to relate the

information back to whatever meditation experience the participants already possessed. In the motivation condition, I introduced the key questions which each stage of the analytical meditation would rely on, and had volunteers construct their motivational prompts. The last four courses in the 8-week series used all 90 minutes for guided meditation practice, at roughly 25 minutes per practice period. Due to the fact that the mindfulness condition had one less meditation to practice, this group's sessions were slightly longer. On the final day I conducted a short Q&A to conclude the meditation course (see Appendix B for course schedule).

Qualtrics links directing volunteers to the primary outcome and covariate measures were sent via email at intervention baseline (Week 0) and post-intervention endpoint (Week 8). The battery of measures was displayed in a random order for each participant at each timepoint. A baseline of the volunteers' meditation practice behavior was also obtained. Once the meditation course began, Qualtrics links were out sent weekly starting at Week 1 to record the number and length of at-home formal or in-formal practice sessions.

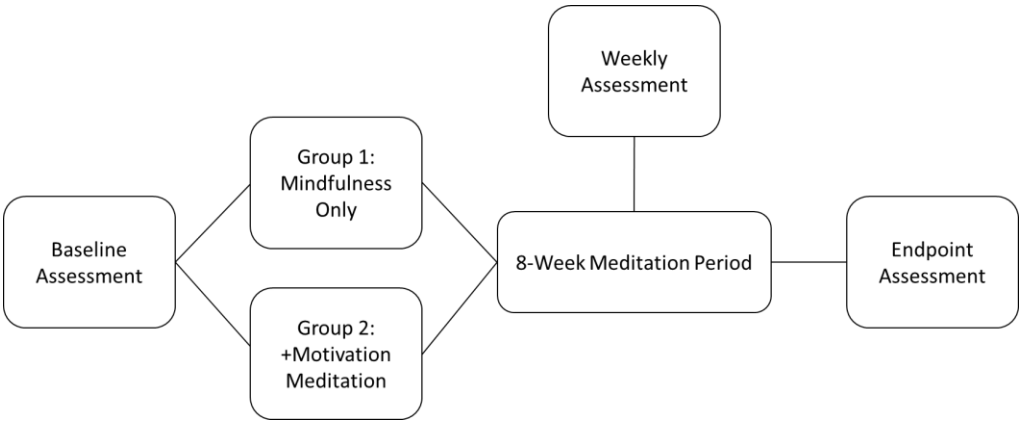

Figure 5: Experimental Design (Within x Between with Repeated Measures)

After the study was complete, each participant was put in a lottery to receive one $200 Amazon Gift Card. They also received a full debriefing, including their meditation condition and study aims. Volunteers in the mindfulness-only control group were offered additional

motivational meditation training outside of the study at no cost if they wished to receive it. The study procedures herein were approved by the Oregon State University Institutional Review Board on 12/26/2021, IRB# 2021-1223.

Selection of Dependent Variables

I wanted to assess the extent to which our experimental analytical meditation affected our volunteers' motivation and meditation behavior. Since I had already identified theories to help explain the functions of the target meditation, I also used them to help define our experimental outcomes. I will summarize the measures selected below, as well as the reasons for selecting them. Please see Appendix A for the full text of each measure.

First, I hoped I'd see changes in self-efficacy related to participants' meditation practice. While Chang et al. (2004) created a self-efficacy scale related to modern mindfulness practice, to our knowledge, no self-efficacy scales related to meditation as a general behavior existed. I needed a scale which would apply equally well to modern mindfulness, our analytical meditation, and any other meditations our volunteers did at home. Therefore, I constructed one that I called the "Meditation Self-Efficacy Scale" (MSES).

Bandura (2006) explains that to construct a task specific self-efficacy scale, one needs to create questions which pertain to the requisite skills and tasks related to the activity itself. This poses a challenge to a general scale of meditation, as requisite skills and tasks may look differently depending on what meditation style is being practiced. Rather than attempt to imagine what a set of requisites for meditation might be, I borrowed a general model from the Tibetan Buddhist tradition, called the Five Faults and Eight Antidotes (Lama & Hopkins, 1975, p. 38).

The five faults describe common challenges one may encounter in Buddhist meditation and the eight antidotes suggests how to address them. This model, though geared towards concentration practices, provides a very general sense of meditation as I understood it, especially in relationship to challenges I assumed would be common to the meditations I would be examining. The five faults identify that to succeed in meditation one must first overcome motivational hurdles around initiating meditation sessions, such as tiredness, being too busy, feeling unmotivated, or feeling discouraged. Then, once one has begun a meditation session, one needs to be able to remember and apply the instructions, ignore distractions, and manage levels of arousal between hyperactivity and sleepiness to maintain an optimum state.

This model is general enough to apply to many practices while also capturing key challenges in the day-to-day operation of at-home practice. Based on this model, I built a two-part instrument covering self-efficacy in relation to meditation session initiation and in relation to meditation performance. These subscales included four items. Initiation items pertain to being able to start a meditation session when one is feeling too busy, tired, etc. Performance items refer to being able to recall and apply the instructions, navigate distractions, etc. Participants are asked to rate their certainty that they would be able to accomplish these tasks on a scale of 1 to 100. I collected MSES data at baseline and endpoint.

EVT's unique contribution to motivation in terms of the theories I've described is its focus on task value attributions. Thus, it was important to measure how our participants' perceptions of the value of meditation changed over the course of the study. EVT proposes that task value attributions have four facets: intrinsic value, attainment value, utility value, and cost (Eccles & Wigfield, 2002), with cost further subdivided into emotional, effort, and opportunity costs. To our knowledge, no value scale tailored to meditation exists. However, commonly used

scales such as the MSLQ (Pintrich & De Groot, 1990) include value components which are tied directly to a specific task—such as scholastic achievement. Therefore, I constructed a meditation specific value/cost scale. I modeled the items on Dietrich et al.'s (2017) task value measure because it clearly organized all six facets of EVT's value/cost model. I modified the items to pertain to meditation to construct a new scale I called the "Value of Meditation Scale" (VMS). This instrument consists of 24 items with four items keyed to each of the six value/cost facets. The experimental items consist of first-person statements such as "My meditation practice is personally quite important" or "I find meditation draining". Participants rate how much they feel the statements apply to them on a 5-point Likert style scale. I collected VMS data at baseline and endpoint.

Measuring changes in SDT's notion of autonomy in relation to our participants' meditation practice was also important. The role of autonomous forms of motivation in meditation has only recently been investigated. Ryan et al. (2021) explored modern mindfulness meditation in light of SDT and found evidence for its role in facilitating more autonomous forms of motivation. While no scale particular to SDT and meditation exists, one wasn't needed in this case. Guay et al. (2001) developed the Situational Intrinsic Motivation Scale to measure key SDT constructs including intrinsic motivation, identified regulation, external regulation, and amotivation in a general way, across any task. The SIMS consists of 16 items in four subscales for each of these facets. Items are written as general reasons for why one might engage in an activity. For example, one may engage in an activity "Because it is something I have to do" or "Because this activity is fun". Participants rate the reasons they engage in an activity on a 7-point scale from "not at all this reason" to "exactly this reason". Validity for the SIMS subscales were good to adequate across multiple studies (Guay et al., 2001).

Even though I had measures in place to detect changes in our hypothesized motivational components, I also wanted to measure self-reported motivation at a unidimensional level. Breines and Chen (2012) developed a short questionnaire to measure improvement motivation in relation to a personal weakness in the context of several studies of self-compassion. The scale was internally consistent. I lightly modified the items so that they pertained directly to meditation practice and called it the Meditation Self-Improvement Motivation scale (M-SIM). For example, I changed "I want to learn and improve myself" to "I want to learn and improve my meditation". This enabled us to measure the extent to which each participant desired to improve their current meditation practice. Ratings were made using a seven point scale (1 = strongly disagree, 7 = strongly agree). This instrument was given at baseline and at endpoint.

While cognitive changes in motivational facets are important to measure, it would be ideal if a motivational intervention also changed behavior. Therefore, I put together a short self-report measure to collect information about each person's weekly meditation behavior in terms of session frequency and length. Meditation practice is commonly understood to have two types of sessions: formal and informal (Birtwell et al., 2019). While the difference between these two types of sessions has no widely agreed upon definitions, in general, formal means something like when we set aside intentional time in our schedule to meditate (ex. sitting down at designated time and place), and informal means when we spontaneously weave meditative behavior into other daily activities (ex. using a few moments waiting in line to focus attention on the breath). I anticipated that our volunteers would also experience uncertainty about these definitions, so I instructed them to use their own senses of the terms consistently across the repeated measures. The measure itself consisted of four questions. I asked for counts of sessions completed each

week and the average length of those sessions for both formal and informal types. This questionnaire was administered at baseline and then at the end of each week of the intervention.

As I indicated earlier, among the most reliable outcomes of meditation interventions are increases in quality-of-life indices and reductions in anxiety and depression symptoms. Therefore, these sorts of changes would be convergent evidence that our meditation manipulation is functional. Further, since I introduced a novel meditation style, I would hope to see that it also delivers such practical benefits.

In terms of global wellbeing, satisfaction with life is the cognitive or judgmental assessment of subjective well-being in terms of one's overall life. I used the Satisfaction with Life Scale **(**SWLS) which measures a global judgment of satisfaction with life in comparison to one's own individual standards (Diener et al., 1985). The SWLS is five items on a 7-point Likert style scale and has demonstrated good psychometric properties (Pavot & Diener, 2008). Sample items include, "In most ways my life is close to my ideal" and "The conditions of my life are excellent." I used the SWLS at baseline and endpoint.

While the SWLS measures a cognitive appraisal of one's life circumstances as whole, I also wanted to get a sense of how our meditations might affect one's judgements about oneself. The Rosenberg Self-Esteem scale (RSE) is a 10-item measure assessing global self-worth in terms of positive and negative appraisals about the self. The items are rated on a 4-point scale. (Rosenberg, 1965). The RSE consists of five positively worded and five negatively worded (reverse scored) items. Sample items include, "I feel that I have a number of good qualities" and "I wish I could have more respect for myself". Though originally developed with adolescents in mind, the scale has wide use among many adult populations. Validation studies have shown the

RSE has very good validity (Tinakon & Nahathai, 2012). I used the RSE at baseline and endpoint.

Alongside potential increases in wellness, I wanted to assess any effects on anxiety and depression symptoms. The Beck Anxiety Inventory (BAI) is a ubiquitous, clinically oriented measure used to tally the emotional, physical, cognitive, and behavioral symptoms of anxiety. The measure consists of 21 items on a 3-point scale. Participants rate how often they have experienced the listed symptoms over the past week (Beck et al., 1988). The BAI is internally consistent and reliable (Fydrich et al., 1992). For depression symptoms I chose another widely used clinical measure, the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). The CES-D was designed to measure depressive symptoms in the general population. Similar to the BAI, participants are asked to rate themselves on 20 items with a 4-point scale as to how often they have had the symptoms listed. The CES-D has also been shown to have good validity (Coyle & Roberge, 1992). I used the BAI and CES-D at baseline and endpoint.

Our last check on the basic efficacy of our intervention was to measure changes in trait mindfulness. Since both groups would be exposed to modern mindfulness meditations, I would expect that their mindfulness would change over the course of the project. The Five Factor Mindfulness Questionnaire (FFMQ) was developed to optimize the shared factors between five different mindfulness scales (Baer et al., 2008). Mindfulness is assessed as the trait tendency to be fully aware of one's experience without judgement in the present moment and is understood to function with five distinct factors. The five factors are: observation, description, aware actions, non-judgement of inner experience, and non-reactivity. Items are scored on a Likert-style 1 to 5 scale. The FFMQ has been demonstrated to be one of the most valid measures of

modern mindfulness available (Baer et al., 2008). I administered the FFMQ at baseline and endpoint.

Finally, as our motivational intervention was highly experimental, I wanted to explore a few covariates which theoretically might affect our intervention outcomes parallel to our manipulation. First, I looked at personality traits as they may influence individual engagement. Relationships between personality factors, motivation, and achievement have been well documented. For example, Komarraju et al. (2009) found that the Big Five personality factors predicted several different aspects of motivation and achievement. Thus, I chose to administer the Big Five Personality Inventory (BFI) (John et al., 1991). The BFI is a 44-item instrument designed to measure trait openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. Participants rate each item on its applicability to their personality on a 5-point Likert style scale. I administered the BFI at baseline only.

Second, I decided to assess self-compassion. Self-compassion is defined as a sense of caring and concern for oneself, and consists of three factors: self-kindness, common humanity, and mindfulness (Neff & Dahm, 2015). Importantly, self-compassion has been shown to influence motivation. Specifically, Breines and Chen (2012) found that people with higher self-compassion were more motivated to try and improve themselves. Other research has shown strong positive correlations between self-compassion and our key motivational variables, such as self-efficacy and intrinsic motivation (Neff et al., 2005, 2007). I used the Self-Compassion Scale-Short Form (SCS-SF) to assess this variable (Raes et al., 2011). The scale consists of 12 items which were shown to have excellent psychometric properties and extremely high correlation with the original scale (Raes et al., 2011). I administered the SCS-SF at baseline only.

Though locus of control as a construct has several overlapping features with the SDT concept of autonomy, I wished to measure locus of control as a third covariate. Locus of control refers to the effectiveness we perceive in relationship to our actions bringing about consequences. In general, high locus of control denotes a strong sense of power in being able to bring about outcomes, and low locus of control the opposite. Rotter (1966) posited that, over time, generalized expectancies can develop that function much like traits. Indeed, research has shown that such generalized senses of control may influence motivation and achievement (Landine & Stewart, 1998). The Rotter Internal-External Locus of Control Scale (I-E) is a 23-item instrument designed to assess whether a person has the trait tendency to think of situations and events as under their own internal control or under the control of external influences. The scale is a forced-choice paradigm in which a person chooses between an internal or external interpretation. Although over the years there have been criticisms of Rotter's single factor structure (Ferguson, 1993), the scale has been widely used and shown to have good internal consistency (Zerega et al., 1976). I administered the I-E at baseline only.

Lastly, I wanted to control for the possibility that our outcomes would be a result of volunteers' personal expectations about the course. Though recent research has demonstrated that such effects are likely not a factor in modern mindfulness interventions (Haddad et al., 2020), I thought it was prudent due to the novel nature of our intervention. Devilly and Borkovec (2000) demonstrated that expectations and credibility ratings fall into two related "think" and "feel" factors. They developed an instrument based on their analysis of several extant scales which assess expectations. Their measure was intended for a clinical setting, so I slightly modified items to pertain to a meditation course and omitted portions which did not apply. The scale has shown good validity (Devily and Borkovec, 2000). I administered this scale after the

first course meeting.

Hypotheses

I hypothesized that volunteers who are exposed to the experimental analytical meditation would show meaningful motivational changes because of the unique focus of our novel intervention. Specifically, I predicted that the motivation practice should increase meditation related self-efficacy, attainment value, utility value, and identified regulation more than mindfulness alone. Further, I predicted that those in the motivational intervention should show more reductions in extrinsic motivations. I selected volunteers partly for their endorsement of the statement "I want to improve my meditation practice", so I theorized that the motivational intervention should additionally increase meditation self-improvement motivation more than mindfulness alone. While changes in cognitive attributions relative to one's motivation to meditate are important, I hoped that our intervention would also translate into behavioral change for the intervention group. I predicted that those exposed to our motivational practice would show larger increases in meditation behavior over the course of the study, either through progressively longer at-home sessions on average and/or more sessions per week. Since one of the most reliable results from meditation studies are reductions in anxiety and depression symptoms and increases in quality of life (Gu et al., 2015), I also hypothesize that both groups should show these changes, with our intervention group showing greater reductions in anxiety and depression symptoms, as well as greater increases to self-esteem and quality of life indices due to more at-home practice. Finally, I predicted that both groups should show similar increases in trait mindfulness as both groups will have a similar exposure to these meditations in class.

Experimental Results

Main effects for self-report measures were assessed with repeated measures mixed between/within ANOVAs (analysis of variance) to explore interactions between group differences and the effects of time on our dependent variables—i.e. whether or not group scores were significantly different between timepoints, and if those differences were significantly different from each other. Additionally, simple linear models were used to confirm the results of the ANOVAs, predicting scores at the end of the study as a function of group assignment plus baseline scores. I also used these simple linear models to conduct exploratory analyses including our covariates (big five traits, self-compassion, locus of control, credibility and expectancy in relation to the efficacy of the intervention, and a few potentially relevant demographic variables such as age and prior years meditation experience). These models helped us to detect whether the effect of group assignment would be significant when controlling for any variance in our dependent variables attributable to a particular covariate. For the weekly meditation behaviors, I employed a latent growth model (LGM) to detect changes in group meditation behavior across the eight weeks. LGMs are a special class of structural equation used to model growth over time across repeated measures. Finally, I analyzed the internal consistency of our measures. All of our analyses were done in R Studio version 2022.02.3.

Before performing any of the above analyses, I analyzed our data for normality, outliers, and missing data. In the following results, each variable can be assumed to have normally distributed residuals unless otherwise mentioned. Some outliers were removed, and missing data were imputed before analysis. I will detail these operations below. Post-hoc sensitivity analysis (Cohen, 1988) given our *n* and design indicated that our analysis should be properly powered to detect large effect sizes (f = ~0.5; η_p^2 = ~0.2). However, the effect sizes reported below were

under this threshold. Therefore, our statistical findings should be viewed as provisional. Future research is needed to confirm these results in a properly powered sample.

Self-efficacy

I measured self-efficacy in two ways with the MSES, self-efficacy in relation to initiating a meditation session, and self-efficacy in relation to performing basic meditative behaviors within a session. The experimental scale showed good internal consistency, with Cronbach's α = 0.90 and α = 0.82 at baseline and endpoint respectively. No significant interaction between group and time was detected for session initiation self-efficacy in either our repeated measures ANOVA or linear modeling. However, a significant main effect for time was found for self-efficacy in relation to performing meditation behaviors within a session ($F(1,46) = 7.65$, $p = 0.008$; $\eta_p^2 = 0.14$). Both group means showed a significant increase from baseline to endpoint (See Table 1). Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores. None of the measured covariates significantly impacted the analysis of time or group effects on self-efficacy outcomes.

Values and Costs

Value and cost attributions were each captured along three dimensions using the VMS. The experimental scale showed good internal consistency, with Cronbach's α = 0.82 and α = 0.90 for the value scale, and α = 0.74 and α = 0.87 for the cost scale at baseline and endpoint respectively. I first examined totaled value and cost items. No significant interaction between group and time was detected in our value or cost total ANOVAs. However, individual ANOVAs did reveal a significant effect for time in total value attributions ($F(1,46) = 3.735$, $p = 0.05$; $\eta_p^2 = 0.07$). Individual ANOVA analyses of each value facet showed a significant time effect for

attainment value specifically ($F(1,46) = 4.48$, $p = 0.039$; $\eta_p^2 = 0.08$). Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores in total or individual cost/value dimensions.

Additionally, linear models for our covariates revealed several interesting relationships. First, higher locus of control scores negatively predicted total value outcome scores across groups ($F(3,44) = 10.61$, $p = 0.02$; R^2 of 0.38). Specific value facet analysis showed that higher locus of control negatively predicted attainment value ($F(3,44) = 14.8$, $p = 0.05$; R^2 of 0.46) and utility value ($F(3,44) = 4.96$, $p = 0.002$; R^2 of 0.20) outcomes across groups. Additionally, higher agreeableness ($F(3,44) = 16.76$, $p = 0.01$; R^2 of 0.50) also negatively predicted attainment value outcomes. Interestingly, when controlling for the variance in outcome scores attributable to conscientiousness, I found that group assignment became a significant predictor. The linear regression showed that the Motivation group scored 0.03 points lower on average than the Mindfulness group in utility value outcomes, per average unit increase in baseline conscientiousness ($F(3,44) = 4.99$, $p = 0.002$; R^2 of 0.20).

Regarding costs, trait conscientiousness negatively predicted total cost outcomes across groups ($F(3,44) = 5.99$, $p < 0.02$; R^2 of 0.24) and the "think" aspect of the CEQ positively predicted total costs ($F(3,44) = 5.81$, $p < 0.02$; R^2 of 0.23). Specific facet analysis showed that trait conscientiousness negatively predicted opportunity costs ($F(3,44) = 4.17$, $p = 0.04$; R^2 of 0.16) and emotional cost outcomes ($F(3,44) = 7.52$, $p = 0.004$; R^2 of 0.29), while trait locus of control positively predicted opportunity cost outcomes ($F(3,44) = 11.56$, $p = 0.005$; R^2 of 0.40). The "think" aspect from the CEQ positively predicted effort cost outcomes ($F(3,44) = 4.04$, $p < 0.05$; R^2 of 0.16) Additionally, trait neuroticism positively predicted emotional cost outcomes ($F(3,44) = 5.98$, $p = 0.02$; R^2 of 0.24).

Autonomy Motives

Autonomy motives were measured with the SIMS, which has four facets: intrinsic, identified, extrinsic, and amotivation. The scale showed inconsistent validity with Cronbach's α = 0.83 and α = 0.85 for the intrinsic scale, α = 0.45 and α = 0.73 for the identified scale, α = 0.76 and α = 0.77 for the identified scale, and α = 0.81 and α = 0.64 for the amotivation scale at baseline and endpoint respectively. ANOVA and linear modeling showed no significant interaction between group or time in any autonomy dimension captured. Neither group showed significant change between timepoints. Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores. Additionally, none of our covariates significantly impacted the analyses of any SIMS outcomes.

Self-Improvement Motivation

Self-improvement motivation was measured with the MSIM. The scale showed good validity with Cronbach's α = 0.91 and α = 0.73 at baseline and endpoint, respectively. ANOVA and linear modeling showed no significant interaction between group or time main effects. Neither group showed significant change between timepoints, and linear modeling confirmed that group assignment was not a significant predictor of endpoint scores. However, covariate analysis revealed that prior general meditation experience negatively predicted meditation self-improvement motivation outcomes in both groups ($F(3,44) = 3.49$, $p = 0.01$; $R^2 = 0.14$). Additionally, meditation self-improvement outcomes were positively predicted by both the "think" ($F(3,44) = 4.57$, $p = 0.004$; $R^2 = 0.18$) and "feel" ($F(3,44) = 3.79$, $p = 0.01$; $R^2 = 0.15$) aspects of the CEQ.

Mindfulness

Trait mindfulness was measured using the FFMQ. The scale showed excellent validity with Cronbach's $\alpha = 0.95$ and $\alpha = 0.94$ at baseline and endpoint, respectively. While no significant interaction between group and time main effects were detected, ANOVA showed a significant effect for time ($F(1,46) = 10.06$, $p = 0.002$; $\eta_p^2 = 0.17$). Both groups showed increased trait mindfulness from baseline to endpoint. Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores.

Satisfaction with Life

Satisfaction with life was measured with the SWLS. The scale showed excellent validity with Cronbach's $\alpha = 0.88$ and $\alpha = 0.90$ at baseline and endpoint, respectively. ANOVA and linear modeling showed no significant interaction between group or time main effects. Neither group showed significant change between timepoints.

Self-Esteem

Self-esteem was measured using the RSE. The scale showed excellent validity with Cronbach's $\alpha = 0.90$ and $\alpha = 0.88$ at baseline and endpoint, respectively. While no significant interaction between group or time main effects were detected, ANOVA showed a significant effect for time ($F(1,46) = 12.78$, $p = < 0.001$; $\eta_p^2 = 0.21$). Both groups showed increased self-esteem from baseline to endpoint. Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores.

Anxiety

Anxiety symptoms were measured using the BAI. The scale showed excellent validity with Cronbach's $\alpha = 0.84$ and $\alpha = 0.91$ at baseline and endpoint respectively. Initial analyses yielded an unexpected interaction between group and time main effects (ANOVA: $F(1,46) = 12.78$, $p = < 0.001$; $\eta_p^2 = 0.1$). The mindfulness group showed the expected decrease in anxiety symptoms, but the motivation group showed a marked increase. Linear modeling confirmed this interaction, showing that group assignment was a significant predictor of endpoint scores ($F(2,45) = 9.95$, $p < 0.001$; $R^2 = 0.276$).

Upon further scrutiny, I discovered that our sample had several extreme outliers in our motivation group. One common heuristic for identifying potential outliers is to flag any points that are below the 25th percentile or above the 75th percentile, +/- 1.5 times the interquartile range (IQR) respectively. Three participants in the motivation group had scores above the 75th percentile plus *3 times* the IQR of their group—double the usual cutoff for extreme values. Further, Cook's distance analysis showed that at least two of these points fell outside of the recommended cutoff of $4/n$ ($4 / 48 = 0.08$) for influential data points in a linear model (Cook, 1977), suggesting that these points were significantly affecting the results.

For context, the score range of the BAI is 0 – 63. A total score of 0 –7 is considered minimal, 8–15 is mild, 16–25 is moderate, and 26–63 indicates severe anxiety (Maust et al., 2012). These extreme data points in the motivation group ranged from 37 to 60, suggesting very severe levels of anxiety. As noted previously, reductions in anxiety are a very common finding in meditation research. These scores are therefore somewhat paradoxical. There is some anecdotal evidence that these high scores may be unrelated to the study. One of these three participants

communicated to the research team that a significant life event had occurred during the eight-week course which they believed had severely affected their outcomes.

I did a secondary analysis with these three extreme cases removed and the expected relationship emerged. No significant interaction between group and time main effects were detected on the reduced sample. ANOVA showed only a significant effect for time ($F(1,43) = 7.08$, $p = 0.01$; $\eta_p^2 = 0.14$).The reduced sample showed that both groups decreased in anxiety from baseline to endpoint. Linear modeling on the reduced sample confirmed the lack of a significant group main effect. Given the reasoning above, I decided to use the results from this reduced sample in our final results. Though I feel this is warranted, I am nevertheless cautious in completely dismissing the original result as it could be a sign of a potential issue with our novel intervention.

Depression

Depressive symptoms were measured with the CES-D. The scale showed excellent validity with Cronbach's $\alpha = 0.88$ and $\alpha = 0.89$ at baseline and endpoint respectively. While no unique significant interaction between group and time main effects were detected, ANOVA showed significant effect for time (ANOVA: $F(1,46) = 4.7$, $p = 0.03$; $\eta_p^2 = 0.09$). Both groups showed decreased depressive symptoms from baseline to endpoint. Linear modeling confirmed that group assignment was not a significant predictor of endpoint scores.

At-Home Meditation Behavior

At-home meditation behavior was collected in terms of individual meditation sessions per week and average session length in minutes for both "formal" and "informal" sessions over eight weeks. Before analyzing our results, I found that about 5% of our weekly data was missing.

Therefore, I ran a multiple imputation process using 15 iterations with the MICE R package (Buuren & Groothuis-Oudshoorn, 2011) to predict and fill in missing values prior to analysis. Next, a conditional latent growth model was employed using the imputed data set with the R

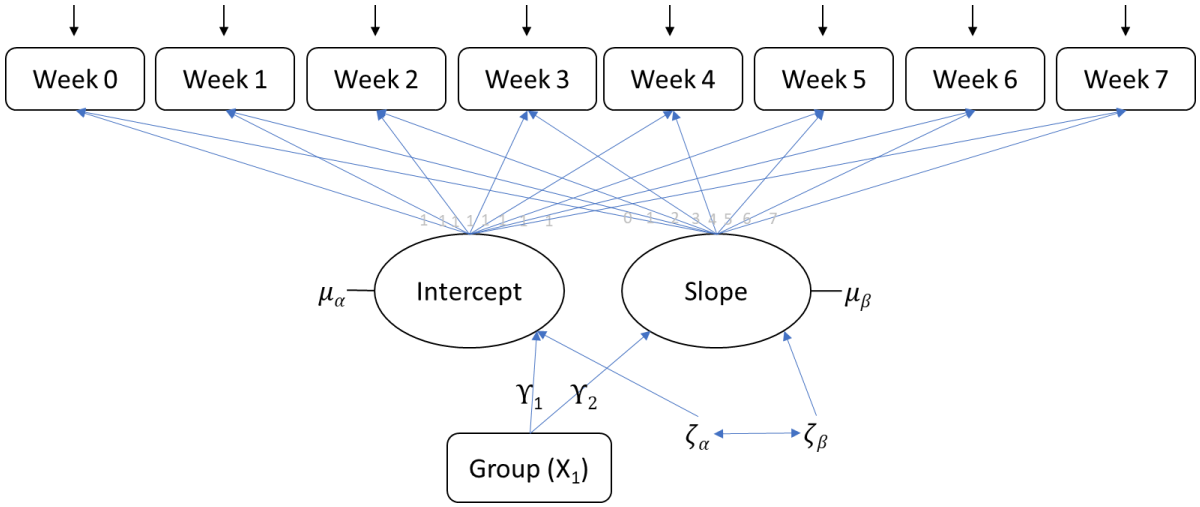

Figure 6: Latent Growth Model for at-home meditation behavior

lavaan package (Rosseel, 2012). Group assignment ($X_{1)}$ was used as a time-invariant predictor of the freely estimated latent intercept (μ_α) and slope (μ_β) of linear latent meditation behavior growth across our 8 repeated measures (see Figure 6). Allowing the model to freely estimate the intercept and slope based on the data is recommended for hypotheses utilizing simple linear growth (as opposed to quadratic, etc.) (Welch, 2007).

Results for number of formal sessions per week indicated that the slope estimate across groups was not significantly different at the $p = 0.05$ level, although they were somewhat suggestive of an average growth across the eight weeks of about 0.4 sessions per week (μ_β = 0.38, $t = 1.7$, $p = 0.07$). However, as group slope (Y_2) was not significant nor suggestive, if there was any growth across the eight weeks, it was not significantly different between groups. Additionally, weekly average number of minutes per formal session, informal sessions per week, and weekly average minutes per informal session did not have significant slopes across weeks, and group assignments were also nonsignificant.

As with our other analyses, statistical power was likely an issue. Latent growth modeling requires larger sample sizes. For example, Diallo et al. (2014) recommends at least n =100 - 150 for studies utilizing between 6 and 10 repeated measures. Since our analysis fell far short of these specifications, I caution any strong conclusions from these results. One congruent piece of evidence for this is that our models for informal sessions per week and average minutes of informal sessions showed Heywood cases (negative variances) which can be a sign of severely poor model fit and/or too small of a sample size (Preacher, 2018).

Chapter 6: Discussion & Conclusion

The present study aimed to assess the effects of a novel motivational meditation within motivational theories, at-home meditation behavior, and quality-of-life outcomes common to meditation research. Not only was this the first study to attempt a secular reimagination of a Tibetan Buddhist motivational meditation, but it was also the first to experimentally examine the motivations of meditators within self-efficacy, expectancy-value, and self-determination paradigms together. I did not find a unique effect from our experimental intervention and in general our results did not confirm many of our hypotheses. However, they do suggest several interesting things about the motivational experience of meditators within a meditation intervention.

At-Home Meditation Behavior

Contrary to our predictions, there were no significant changes in average at-home meditation behavior across the 8-weeks in either group, in sessions per week or avg. session length for formal or informal practice. It is entirely possible that our intervention was not able to increase motivation significantly enough to translate to changed behavior. In retrospect, our intervention could have been too conservative in terms of the relative "dose" of motivational meditation. Our motivation group received about 1/3 of the time devoted to the motivational practice, and then spent the remainder of class focused on mindfulness styles of meditation. Further, I facilitated our experimental group in constructing their own motivational prompts, but did not assess the prompts themselves. I therefore do not know if our prompts elicited the planned motivational themes. I also assumed that our meditators were practicing our meditations at-home; however I did not gather any data on the type of meditations that were done, only their quantity. Thus, I may have inadvertently setup too small of an exposure and I do not have

enough data to confirm or refute this concern. These issues are certainly something that future projects should consider correcting.

Nevertheless, I suggest that the more likely reason for the observed lack of change is simply that I am seeing a strong ceiling effect. Our participants already had stronger than average meditation habits. Our volunteers were more experienced than I expected, with an average age of 55 and 11 years of meditation experience. I did wish to recruit people with some experience rather than absolute beginners; however, I expected a far less experienced sample. 11 years is a significant amount of time to have been practicing a skill. However, the most compelling evidence is in our at-home meditation behavior data. Across the study, the mindfulness group averaged about 6 formal sessions a week for 30 minutes, while the motivation group averaged about 4 formal sessions a week for 20 minutes. For context, the 2014 Religious Landscape Study done by the Pew Center used "at least once a week" as their highest answer choice for meditation frequency (only about 66% of American Buddhists answered affirmatively) (Masci & Hackett, 2018). It would seem difficult for any intervention to improve on such robust and well-established habits. Future research on this topic should restrict itself to volunteers without such strong weekly routines to avoid these issues. Additionally, our study added a lengthy meditation session to our volunteers' weekly routines. This time-commitment from the intervention may have come at some cost to our volunteers' weekly habits. Subsequent projects may want to consider using follow-up measurements after the intervention period to avoid this effect.

Motivation

I found that self-efficacy in relationship to the performance of meditation behaviors increased, but that, contrary to our hypotheses, this effect was not significantly different between groups. Additionally, I did not find our hoped-for changes or improvements to self-efficacy in

relationship to *initiating* meditation sessions. The former result is not surprising as our courses were designed to provide excellent instruction and practice of in-session meditation skills. I likely provided both mastery experiences and ample positive social comparison to our volunteers in class, which are two key factors in developing self-efficacy (Bandura, 1997). However, it is interesting that neither meditation condition meaningfully impacted self-efficacy in relation to our volunteers' ability to initiate meditation practice. I suggest that this is likely another manifestation of the ceiling effect I identified above. Our volunteers were already practicing quite regularly and therefore had little room to improve.

Additionally, our results indicate that both of our meditation groups, rather than just the motivation group, increased in their perception of the value of meditation, and specifically its attainment value, or the importance of meditation in relationship to their identity and ideals. Prior qualitative work on motivation in meditation has found that meditators report the results of their practice when they are asked why they engage in the behavior, such as reductions in negative affect and increases in positive feelings (Carmody et al., 2009; Pepping et al., 2016; Shapiro, 1992). According to EVT, these types of statements should be related to the utility value of meditation, or its ability to facilitate desired results or achieve ends. Our finding shows that meditation courses may function to build connections between meditation and identity rather than reinforce it as a means to ends—at least in a sample of relatively experienced practitioners. Shapiro (1992) did find an association between experience and more "exploratory/liberative" motives. A generous reading could interpret this finding in a similar vein—although it is difficult to compare across methods. Future research could explore this more systematically. Additionally, I did not find any changes to utility value as I expected to, any changes in intrinsic value, or any cost items for either group. However, value scores also showed mild evidence of

our ceiling effect, with both groups' average hovering quite close to the maximum scores at baseline and endpoint.

In our exploratory covariate analyses, I found several significant relationships between personality factors and value attributions at the end of the study. Agreeableness across groups was found to be negatively correlated with attainment value, in that as baseline agreeableness, increased, endpoint attainment value scores decreased. Locus of control was also negatively correlated with attainment value, as well as utility value, such that as baseline locus of control increased, endpoint attainment and utility value scores decreased. Conscientiousness was positively correlated with utility value, such that higher baseline conscientiousness predicted higher endpoint utility value. This finding was also unusual in that when accounting for the significant variance in utility value score outcomes attributable to baseline conscientiousness, the motivation group's scores became statistically *lower* for utility value outcomes than the mindfulness group. This was our only finding which highlighted potential group differences.

Prior research has explored the links between personality factors like agreeableness and locus of control on motivation, and achievement (Mirhashemi & Goodarzi, 2014; Rotter et al., 1972). These links are interesting and could be examined in future work; however, most of the above covariate findings were not consequential to our hypotheses. The change in the significance of group assignment on utility value outcomes when controlling for conscientiousness warranted special consideration. Past research has demonstrated that these two constructs are highly related. For example, Song et al. (2019) found that conscientiousness and utility value are complementary predictors of achievement and can even compensate for each other in motivational contexts. Additionally, the effect of conscientiousness and utility value on achievement have both been found to be mediated by task expectancies (Durik et al., 2015;

Gellatly, 1996). Finally, Cummings et al. (2019) found that conscientiousness was strongly related to the affective processing of the relevance/significance of tasks, which includes utility value. Given this high inter-relatedness, I suspect that our poor sample size may be driving this difference. While utility value scores were quite stable across the study, random assignment did not adequately balance groups along conscientiousness at baseline (Mindfulness Group: M = 32.6, SD = 5.4; Motivation Group: M = 36.2, SD = 7.1). An exploratory t-test showed that conscientiousness between the groups was statistically different (t = -1.9, p = 0.05), and the correlation between baseline conscientiousness and endpoint utility value was moderate ($r(46)$ = .32, p = .02). Therefore, I suspect that higher baseline conscientiousness may explain why when accounting for its covariation with utility value, utility value becomes lower for our motivation group.

Interestingly, total cost, and effort cost specifically, was predicted by how much a person thought the course would improve their meditation practice (CEQ). This effect was not different between groups. This may indicate that people with higher expectations put in more effort. However, as with many of our findings, a future study would need to investigate this result.

Contrary to our predictions, neither group showed any significant changes in any of the aspects of self-determination I measured, and none of the covariates I used significantly accounted for any variance in these outcomes. The few prior studies connecting SDT and meditation found some preliminary evidence that increased trait mindfulness facilitated greater intrinsic motivations (Brown et al., 2016; Ryan et al., 2021). Our study found increases in trait mindfulness, but no concurrent increase in SDT intrinsic motivations. However, I measured self-determination motives directly in relation to meditation itself, whereas these prior studies connected increased trait mindfulness with intrinsic motivations in *other* domains of life. This

could suggest that autonomy motives for meditation itself are not directly affected by group meditation interventions. However, our volunteers began the study with relatively high levels of intrinsic and especially high levels of identified regulation motives. A follow-up study should be done to confirm these results in a larger, less experienced, and less diligent sample.

Finally, although I detected no changes in meditation related self-improvement motivations, the covariate of general meditation experience did significantly predict meditation self-improvement outcomes across groups such that more experience predicted slightly lower self-improvement motives. This relationship could indicate that those with higher experience showed less overall meditation improvement motivation from our courses. Further, volunteers who scored higher in “thinking” and “feeling” that our meditation course would improve their meditation practice at baseline (CEQ) had higher meditation self-improvement score outcomes. This result seems logical, in that people with more positive expectations would also have higher meditation improvement motives. Of course, a follow up study would be needed to investigate these effects.

Quality of Life

As predicted, both groups increased in their trait mindfulness, or the tendency to observe, understand, and act with awareness, non-judgement, and non-reactivity. Our results also showed that, as predicted, both groups showed significant reductions in anxiety and depression symptoms, as well as a significant increase in self-esteem. Interestingly, satisfaction with life did not improve in either group as I had hypothesized. This is a paradoxical finding given the reductions in negative affect and increases in self-regard. One thing that may be relevant is that our study took place over Zoom in early 2022. While the COVID-19 pandemic was beginning to wane, many people were still self-isolating, and communities had not yet recovered life as usual.

While Sturman (2020) found that quality of life scores during the pandemic were not significantly affected, they did not control for age. Older adults' quality of life has been shown to be negatively affected internationally by COVID-19 restrictions (Kasar & Karaman, 2021). Given our older subject pool and such a cohort effect, it may not be surprising that neither of our meditation conditions had a significant impact on our volunteers' global satisfaction with their lives.

Experimental Instruments

I utilized two original experimental instruments to measure self-efficacy and value/cost in relationship to our volunteers' personal meditation practice (MSES & VMS). While both scales performed as expected and showed good initial validity, they need to be evaluated further before they can be deployed on a wider scale. A future study should focus on these scales specifically, with larger sample sizes to facilitate item factor analysis along the proposed factor structures, as well as convergent and divergent measures to test the specificity of the constructs and their relationship to related variables. Many of the questions raised by the above results may require targeted research on motivational factors in meditation practice, and validated instruments for these purposes would play a vital role in such work.

Limits & Future Directions

Clearly our most important limitation was that our volunteer population was both too small for our expected effect sizes and too experienced and dedicated to meditation practice for a motivational intervention. Across most of my important hypothesized main effects, I saw issues related to one or both problems. A future research study should seek to recruit larger sample

sizes in a more novice population with actual practice deficits, increase exposure to the experimental practice and include better manipulation checks as well as follow-up measures.

However, I have also identified some interesting questions which could be addressed in other projects. For example, our study found that identity motives (attainment value and identified regulation) were more salient to our meditators than intrinsic or utility motives. Is this something specific to experienced meditators or does it reveal something about meditation practitioners in general? Another fruitful area of follow-up research concerns psychometric validation studies for the experimental measures I developed.

Future research on motivation to meditate could also attempt to improve on the methods used. Our adaptation of Tsongkhapa's meditation practice was kept as close as I felt I could to the original structure. This led us to choose motivational theories which mirrored components I observed in the instructions. However, there are other motivational paradigms which I ignored that might be able to explain shortcomings in our results and/or improve future outcomes. For example, Goal-setting theory (GST) focuses on the types of goals we aim for (Locke et al., 1981). GST research shows that, given adequate skills, resources, and interest in a goal, people perform best when given specific and difficult goals (as opposed to vague encouragement to 'do your best'), as well as regular achievement feedback. GST recognizes that the value of a goal, and our expectancies in pursuing it are important factors, but asserts that they do not increase achievement as dramatically without functional goals (Locke & Latham, 2006). Our intervention did not focus on goal setting, and it is possible that including this element would have increased the chances of improvement. Exploring non-contemplative methods for increasing meditation behavior is certainly something future research could address.

Nevertheless, the framework of analytical meditation as it is presented in Tibetan Buddhism should be explored further, as it presents a clear and understandable model for how Buddhist meditation practices are thought to function. I have already suggested its parallel themes with mental simulation and priming research, but the potential of meditation as a self-guided behavior for focusing and leveraging psychological effects continues to tantalize us. Future work should continue to attempt to understand novel Buddhist meditation practices which have yet to be explored. At the same time, the analytical meditation framework is general enough that psychologists could attempt to integrate effects that are amenable to self-prompting and are known to be strengthened with repetition. I suggest that developing a general model based on analytical meditation and the analyses I employed to study our target meditation could over time help standardize the theory and techniques used in new meditation interventions, as well as improve the results obtained.

Conclusion

Our project attempted to pioneer a novel meditation intervention. While I did not confirm any specific effects from our intervention, the present research does suggest that meditation interventions in general may increase self-efficacy and identity-related motivations. Furthermore, I have shown that novel meditation practices can be understood through careful articulation of Buddhist technique, identification of its psychological goals, and application of psychological theory—even in cases where the meditation content seems esoteric.

I am still interested in the potential motivational effects of the meditation I designed. There is no theoretical reason practices which have shown an ability to activate other affective, self-regulatory, and cognitive processes could not also influence motivation. Therefore, in the

end I consider this project more akin to a pilot study and will attempt a similar study again once I feel our lab can address the above limitations.

Ekman et al. (2005) suggest that Buddhism has three contributions to make to psychology. Conceptually, Buddhism proposes interesting and unique questions about the human mind. Methodologically, it offers systems of mental training that, amongst other things, could improve the ability of people to understand and report subjective experiences. Practically, Buddhism offers proactive models for the improvement of our lives. I have demonstrated the promise of the latter. Tsongkhapa's practice, when properly contextualized, offers a glimpse into a highly personal and moving exercise designed to help a person connect with their values, take stock of their abilities, appreciate the supportive conditions of their lives, and weigh the costs of waiting to take advantage of these assets. These are worthy subjects of contemplation.

However, I also agree with Garfield (2014) when he argues for the unique and valuable contributions of psychological science, especially in making such Buddhist contributions available to the non-Buddhist world. The methods of psychological science are excellent at discovering and confirming the components and mechanics of cognitive, affective, and behavioral processes. This project shows the value of psychological science for conceptualizing, predicting, and testing the precises ways Buddhist meditations may work. This area of research needs to be made more accessible, and I hope our efforts have furthered this aim. There are countless examples of novel meditations which are yet unknown to science. Exploring the abundant variety and application of meditation has only just begun.

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Table 1: Main Outcome Analyses Results

Measure	Mindfulness Group (n =24)				Motivation Group (n =24)				Results								
	Baseline		Endpoint		Baseline		Endpoint		Time ANOVA			Time X Group ANOVA			Group LM		
	M	SD	M	SD	M	SD	M	SD	F (1,46)	p	η_p^2	F (1,46)	p	η_p^2	Estimate	SE	p
MSES																	
Initiation	53.53	24.62	50.52	23.15	57.84	23.76	55.39	23.77	0.76	0.38	0.01	0.008	0.93	< 0.001	2.41	5.57	0.66
Performance	64.15	18.07	69	16.23	63.12	19.39	70.38	15.36	7.65	**0.008**	0.14	0.3	0.58	0.006	1.91	3.59	0.59
VMS																	
Value Total	12.86	1.66	13.36	1.44	12.66	1.6	13.21	1.96	3.75	**0.05**	0.07	0.12	0.72	0.002	-0.15	0.4	0.7
Attainment	3.99	0.83	4.18	0.79	4.03	0.71	4.25	0.94	4.48	**0.03**	0.08	0.02	0.87	< 0.001	0.04	0.18	0.82
Intrinsic	4.33	0.68	4.42	0.52	4.25	0.76	4.4	0.61	1.58	0.21	0.33	0.11	0.73	0.002	0.01	0.14	0.91
Utility	4.54	0.5	4.77	0.36	4.58	0.46	4.56	0.62	1.35	0.25	0.28	1.94	0.17	0.04	-0.21	0.14	0.13
Cost Total	5.73	1.32	5.58	1.64	5.95	1.65	6.06	2.23	0.003	0.95	< 0.001	0.23	0.63	0.005	0.35	0.51	0.49
Opportunity	2.15	0.68	2.09	0.78	2.31	0.93	2.36	1.12	< 0.001	1	< 0.001	0.18	0.67	< 0.001	0.15	0.23	0.49
Effort	1.71	0.5	1.75	0.75	1.91	0.71	1.91	0.82	0.03	0.85	< 0.001	0.03	0.85	< 0.001	0.06	0.21	0.77
Emotion	1.88	0.71	1.74	0.59	1.73	0.57	1.79	0.68	0.14	0.78	0.003	1.04	0.31	0.02	0.11	0.13	0.48
SIMS																	
Intrinsic	4.93	1.32	5.06	1.36	5.1	1.13	5.21	1.08	0.8	0.34	0.01	0.01	0.9	< 0.001	0.01	0.25	0.93
Identified	6.35	0.59	6.62	0.5	6.42	0.65	6.47	0.54	2.58	0.11	0.05	1.18	0.28	0.025	-0.17	0.14	0.25
Extrinsic	1.8	0.92	2.03	1.21	1.96	1.38	1.93	1.33	0.572	0.45	0.01	0.99	0.32	0.02	-0.17	0.14	0.25
Amotivation	1.32	0.69	1.29	0.5	1.33	0.65	1.45	0.79	0.14	0.71	0.003	0.42	0.51	0.009	0.15	0.18	0.4
MSIM	6.37	1.25	6.4	0.7	6.31	0.72	6.24	0.71	0.01	0.9	< 0.001	0.08	0.7	0.001	-0.14	0.19	0.47
FFMQ	124.88	15.18	131.88	15.29	135.04	26.51	139.96	23.01	10.06	**0.002**	0.17	0.3	0.58	0.006	0.68	3.48	0.84
SWLS	23.58	6.95	24.46	6.27	25.29	6.45	25.71	6.94	0.96	0.33	0.02	0.12	0.72	0.002	-0.04	1.25	0.97
RSE	30.29	5.05	32.42	4.39	32.25	6.39	33.71	5.63	12.78	**< 0.001**	0.21	0.44	0.5	0.009	-0.08	0.89	0.92
BAI*	11.79	8.5	7	5.44	8.04	6.23	9.29	7.48	7.08	**0.01**	0.14	2.98	0.09	0.064	2.24	2.13	0.29
CESD	14.58	8.96	11.92	7.06	14.67	9.7	12.67	10.4	4.7	**0.03**	0.09	0.09	0.75	0.002	0.69	1.93	0.72

*Table 1: Main Outcome Analyses. Columns to the left indicate raw baseline and endpoint means for both the Mindfulness and Motivation groups. Columns to the right show results from our Analysis of Variance (ANOVA) and Linear Modeling (LM) tests. The ANOVA for time indicates whether outcome scores increased without factoring in group assignments, while the Time x Group ANOVA shows whether any change which occurred is different between Groups. The final LM calculation shows the effect of being assigned to Group 2 on the outcome measures in the first column. A p value of 0.05 or less indicates a statistically significant difference. *: Note that the results reported for the BAI are from the reduced sample.*

Table 2: Covariate Analyses Results

Main Outcomes	Age	Prior Experience	Conscientiousness	Agreeableness	Openness	Neuroticism	Extraversion	Self-Compassion	Locus of Control	Expectation Think	Expectation Feel
MSES											
Initiation	0.19 4.14	0.18 5.53	0.25 1.59	-0.13 2.76	0.52 2.24	-0.07 2.11	-0.55 2.64	0.24 2.37	-1.56 4.45	2.33 -2.66	-2.12 2.44
Performance	0.09 2.7	0.24 1.7	0.14 1.36	0.48 0.45	0.16 1.63	-0.14 1.28	-0.16 1.97	0.11 1.85	0.05 1.85	-2.05 1.74	-1.59 1.99
VMS											
Value Total	0 -0.09	0.01 0.06	0.06 -0.37	-0.05 0	0 -0.15	0 -0.18	0 -0.15	0.02 -0.16	**-0.14*** 0.01	-0.02 -0.15	0.09 -0.16
Attainment	0 0.1	0 0.14	0.02 -0.03	**-0.05*** 0.18	0 0.03	0 0.07	0 0.04	0 0.03	**-0.05*** 0.11	0 0.06	0.03 0.04
Intrinsic	-0.01 -0.1	-0.01 0.16	0 0	-0.02 0.1	-0.01 0.02	0 -0.01	-0.01 0.02	0.02 0.01	-0.04 0.07	0.03 0.01	0.04 0.01
Utility	0 -0.19	0 -0.16	**0.03*** **-0.33****	0 -0.22	0 -0.22	-0.01 -0.26	0 -0.21	0.02 -0.23	**-0.06**** -0.13	-0.02 -0.22	0.04 -0.21
Cost Total	-0.01 0.22	-0.02 0.15	**-0.09*** 0.72	0 0.34	0.02 0.33	0.03 0.5	0.04 0.32	-0.04 0.37	0.13 0.2	**0.41*** 0.35	0.11 0.33
Opportunity	0 0.11	0 0.04	-0.02 0.24	0 0.13	0 0.15	0 0.15	0.01 0.15	0 0.16	**0.1**** 0.04	0.13 0.16	0.03 0.15
Effort	0 0.01	0 -0.01	**-0.03*** 0.21	0 0.07	0.01 0.05	0.01 0.11	0.02 0.03	-0.01 0.06	0.03 0.03	**0.15*** 0.05	0.05 0.05
Emotion	0 0.07	0 0.1	**-0.03**** 0.23	0 0.13	0.01 0.1	**0.02*** 0.23	0 0.11	-0.02 0.12	0 0.11	0.09 0.13	0.01 0.11
SIMS											
Intrinsic	-0.01 -0.1	-0.01 0.16	0 0	-0.02 0.1	-0.01 0.02	0 -0.01	-0.01 0.02	0.02 0.01	-0.04 0.07	-0.01 0.01	0.04 0.02
Identified	0 -0.2	0 -0.12	0.01 -0.2	-0.01 -0.12	0 -0.16	0 -0.14	0 -0.16	0 -0.16	0.01 -0.18	-0.07 -0.18	0 -0.17
Extrinsic	0 -0.12	0 -0.2	0.01 -0.2	-0.01 -0.12	0 -0.16	0 -0.14	0 -0.16	0 -0.16	0.01 -0.18	-0.07 -0.18	0 -0.17
Amotivation	0 0.08	-0.01 0.07	-0.01 0.21	0.01 0.1	0 0.15	0 0.15	0 0.15	0 0.15	0.03 0.1	0.07 0.15	-0.03 0.15
MSIMS											
	0 -0.15	**-0.01**** -0.13	0 -0.12	0 -0.14	-0.01 -0.13	0.01 -0.08	0 -0.14	0 -0.14	-0.03 -0.09	**0.19**** -0.12	**0.13**** -14

Table 2: Covariate Analyses Results. This table displays the results of a linear model where covariates (topmost row) were run as predictors of outcome scores for our main motivational variables (left most column) along with group assignment and baseline scores. Each cell shows two regression estimates. The top number is the regression estimate for the covariate, which indicates the average amount endpoint scores of the motivational variable changed for every one unit increase in the covariate predictor. The bottom number is the regression estimate for the effect of being assigned to the motivation group on the motivational variable after accounting for the variance in the motivational variable attributable to the covariate.

** = significance at the $p < 0.05$ level, ** = significance at the $p < 0.01$ level.*

Table 3: Pearson's Correlations Between Measures at Baseline

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. MSES-Init	—																														
2. MSES-Perf	0.59	—																													
3. VMS-Val Total	0.28	0.35	—																												
4. VMS-Att	0.47	0.34	0.86	—																											
5. VMS-Intr	0.15	0.39	0.89	0.63	—																										
6. VMS-Util	-0.05	0.05	0.71	0.39	0.55	—																									
7. VMS-Cost Total	-0.03	-0.31	-0.59	-0.38	-0.66	-0.42	—																								
8. VMS-Opp	-0.09	-0.32	-0.19	-0.12	-0.23	-0.12	0.69	—																							
9. VMS-Eff	0.01	-0.22	-0.61	-0.37	-0.69	-0.48	0.81	0.31	—																						
10.VMS-Emo	0.03	-0.10	-0.53	-0.36	-0.57	-0.37	0.66	0.02	0.54	—																					
11. SIMS-Intr	0.31	0.27	0.46	0.41	0.52	0.15	-0.43	-0.17	-0.48	-0.33	—																				
12. SIMS-Iden	0.26	0.17	0.25	0.15	0.23	0.25	-0.25	-0.03	-0.37	-0.20	0.42	—																			
13. SIMS-Ext	-0.23	-0.34	-0.30	-0.28	-0.36	-0.03	0.25	0.19	0.20	0.16	-0.23	0.15	—																		
14. SIMS-Amo	-0.05	-0.13	-0.35	-0.20	-0.34	-0.39	0.11	0.03	0.05	0.17	-0.11	-0.19	0.26	—																	
15. MSIM	-0.22	-0.05	0.37	0.19	0.32	0.50	-0.40	-0.04	-0.47	-0.44	0.01	-0.03	-0.19	0.00	—																
16. FFMQ	0.31	0.36	0.25	0.31	0.22	0.02	-0.25	-0.18	-0.12	-0.23	0.14	-0.06	-0.39	-0.28	-0.03	—															
17. SWLS	0.17	0.26	0.20	0.03	0.26	0.23	-0.24	-0.03	-0.27	-0.26	0.23	0.27	0.14	-0.08	0.07	0.13	—														
18. RSE	0.29	0.35	0.28	0.16	0.38	0.15	-0.24	0.00	-0.30	-0.29	0.29	0.34	-0.20	-0.18	0.04	0.44	0.58	—													
19. BAI	0.06	-0.09	-0.28	-0.04	-0.37	-0.34	0.34	0.04	0.28	0.47	-0.01	-0.28	-0.11	0.03	-0.26	-0.09	-0.42	-0.53	—												
20. CESD	-0.09	-0.45	-0.32	-0.13	-0.48	-0.18	0.40	0.19	0.36	0.35	-0.17	-0.26	0.07	0.11	-0.06	-0.28	-0.58	-0.72	0.68	—											
21. Age	0.29	0.32	0.05	0.09	0.07	-0.07	-0.16	-0.11	-0.28	0.03	0.02	0.00	-0.21	0.33	0.03	0.18	0.22	0.26	0.07	-0.16	—										
22. Experience	0.30	0.09	-0.01	0.16	-0.09	-0.15	0.07	0.04	0.08	0.03	0.00	-0.14	0.01	-0.03	-0.09	0.33	-0.07	-0.08	0.36	0.21	0.31	—									
23. BFI-Cons	0.32	0.42	0.24	0.24	0.29	0.00	-0.28	-0.16	-0.24	-0.21	0.34	0.20	-0.32	-0.02	0.09	0.48	0.13	0.41	-0.30	-0.37	0.13	-0.04	—								
24. BFI-Agree	0.36	0.26	0.15	0.24	0.06	0.03	0.05	0.09	0.15	-0.16	0.10	0.09	-0.10	-0.21	-0.06	0.37	0.14	0.35	-0.14	-0.31	0.06	0.13	0.22	—							
25. BFI-Open	0.12	-0.10	0.14	0.13	0.05	0.21	0.00	0.04	-0.14	0.09	0.13	-0.01	-0.18	-0.19	0.09	0.38	-0.01	0.15	0.25	0.21	0.17	0.36	0.21	0.04	—						
26. BFI-Neuro	-0.37	-0.42	-0.21	-0.22	-0.23	-0.03	0.10	-0.05	0.03	0.27	-0.16	-0.15	0.22	0.08	0.06	-0.55	-0.24	-0.65	0.45	0.59	-0.26	-0.17	-0.40	-0.48	0.03	—					
27. BFI-Extra	0.00	0.00	0.00	-0.07	0.05	0.04	-0.17	-0.12	-0.24	-0.01	0.06	0.07	-0.16	-0.09	0.15	0.06	0.20	0.35	-0.23	-0.33	0.04	-0.16	0.24	-0.15	0.17	-0.12	—				
28. SCS	0.34	0.41	0.24	0.23	0.26	0.08	-0.09	-0.01	-0.05	-0.16	0.13	0.09	-0.33	-0.16	-0.09	0.64	0.08	0.52	-0.16	-0.36	0.27	0.24	0.31	0.33	0.21	-0.72	-0.09	—			
29. I-E	-0.08	-0.28	-0.29	-0.33	-0.27	-0.05	0.28	0.15	0.40	0.08	-0.40	0.06	0.38	-0.07	-0.04	-0.29	0.25	-0.09	-0.30	-0.04	-0.25	-0.04	-0.28	-0.02	-0.33	0.14	0.02	-0.36	—		
30. CEQ-Think	-0.22	-0.01	0.17	-0.02	0.26	0.22	-0.37	-0.23	-0.34	-0.24	0.41	0.38	-0.02	-0.14	0.01	-0.23	0.22	0.16	-0.13	-0.22	-0.24	-0.47	-0.06	-0.09	-0.20	0.18	0.09	-0.09	-0.07	—	
31. CEQ-Feel	0.09	0.11	0.33	0.24	0.32	0.26	-0.35	-0.34	-0.25	-0.14	0.37	0.21	-0.16	-0.21	0.04	-0.03	0.19	0.11	-0.07	-0.14	-0.23	-0.35	-0.02	-0.23	-0.03	0.22	0.22	-0.08	-0.03	0.64	—

Table 3: Pearson's Correlations Between Measures at Baseline. Grid shows Pearson's r between each measure at baseline. Values range from negative one to positive one with higher numbers on either side of zero meaning more correlation between the variables. Numbers along the top row indicate the numbered variables in the first column.

Table 4: Pearson's Correlations for Main Outcomes Across Timepoints

MSES		VMS							
Initiation	**Performance**	**Value Total**	Attainment	Intrinsic	Utility	**Cost Total**	Opportunity	Effort	Emotion
0.59	0.62	0.59	0.67	0.54	0.19	0.44	0.56	0.37	0.44
SIMS				**MSIM**	**FFMQ**	**SWLS**	**RSE**	**BAI**	**CESD**
Intrinsic	Identified	Extrinsic	Amotivation						
0.71	0.25	0.25	0.32	0.25	0.81	0.76	0.8	0.49	0.66

Table 4: Pearson's Correlations for Main Outcomes Across Timepoints. Grid shows Pearson's r correlation for each main outcome measure at baseline compared with its scores at endpoint. Values range from negative one to positive one with higher numbers on either side of zero meaning more correlation between the same measures at baseline and endpoint.

Appendix A: Experimental Instruments

Meditation Self-Efficacy Scale

Please rate how certain you are that you can meditate in the situations described below. *Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:*

[0 10 20 30 40 50 60 70 80 90 100]

Cannot do at all Moderately can do Highly certain can do

	Confidence (0-100)
When I am feeling unmotivated.	_____
When I am feeling tired.	_____
When I am too busy.	_____
When I am feeling discouraged.	_____

Maintaining our focus in a meditation can be challenging. Please rate how certain you are that you can accomplish the following actions while you are meditating. *Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:*

[0 10 20 30 40 50 60 70 80 90 100]

Cannot do at all Moderately can do Highly certain can do

	Confidence (0-100)
Remember the instructions and guide myself through meditation practice.	_____
Bring my mind back from a distraction quickly and consistently.	_____
Relax my body and mind when I feel distractible or hyperactive.	_____
Energize my body and mind when I feel sleepy or spaced out.	_____

Value of Meditation Scale

The following questions pertain to your meditation practice. To what extent do the following statements apply to you? Answers on a 5-point Likert-Style scale (1 = Strongly Disagree, to 5 = Strongly Agree)

1. My meditation practice is personally quite important.
2. I think meditation is enjoyable.
3. I would regret losing the benefits if I stopped meditating.
4. Meditation takes a lot of energy out of me.
5. Meditation can be irritating.
6. I must give up other important priorities in order to meditate.
7. Engaging in meditation practice isn't really part of who I am.
8. I mostly like how it feels to practice meditation.
9. I don't think meditation will have any valuable long-term effects.
10. I find meditation draining.
11. Meditation leaves me feeling agitated.
12. Keeping up my meditation practice costs me free time.
13. Having an active meditation practice is very meaningful to me.
14. I don't take much joy in meditation at all.
15. I can see the importance of my meditation for the future.
16. Meditation leaves me feeling refreshed.
17. Meditation makes me feel peaceful and tranquil.
18. My meditations do not conflict with my other priorities.
19. I've chosen the life of a meditator.
20. I find the experience of meditation to be positive overall.
21. Meditating is worthwhile because it improves my life.
22. I get tired from all the effort it takes to meditate.
23. Meditation makes me anxious.
24. When I meditate, I wish I was doing something else.

Reverse Scored Items are marked below with an "R". To score, sum the value items, then sum the cost items. High scores in each represent higher meditation value and higher costs respectively.

Value Subscales: • Attainment Value: 1, 7R, 13, 19 • Intrinsic Value: 2, 8, 14R, 20 • Utility Value: 3, 9R, 15, 21	Cost Subscales: • Effort Costs: 4, 10, 16R, 22 • Emotional Costs: 5, 11, 17R, 23 • Opportunity Costs: 6, 12, 18R, 24

The Situational Motivation Scale (SIMS)

Directions: Read each item carefully. Using the scale below, please circle the number that best describes the reason why you are currently engaged in this activity. Answer each item according to the following scale: 1: *corresponds not all*; 2: *corresponds a very little*; 3: *corresponds a little*; 4:*corresponds moderately*; 5: *corresponds enough*; 6: *corresponds a lot*; 7: *corresponds exactly*.

Why are you currently engaged in this activity?							
1. Because I think that this activity is interesting	1	2	3	4	5	6	7
2. Because I am doing it for my own good	1	2	3	4	5	6	7
3. Because I am supposed to do it	1	2	3	4	5	6	7
4. There may be good reasons to do this activity, but personally I don't see any	1	2	3	4	5	6	7
5. Because I think that this activity is pleasant	1	2	3	4	5	6	7
6. Because I think that this activity is good for me	1	2	3	4	5	6	7
7. Because it is something that I have to do	1	2	3	4	5	6	7
8. I do this activity but I am not sure if it is worth it	1	2	3	4	5	6	7
9. Because this activity is fun	1	2	3	4	5	6	7
10. By personal decision	1	2	3	4	5	6	7
11. Because I don't have any choice	1	2	3	4	5	6	7
12. I don't know; I don't see what this activity brings me	1	2	3	4	5	6	7
13. Because I feel good when doing this activity	1	2	3	4	5	6	7
14. Because I believe that this activity is important for me	1	2	3	4	5	6	7
15. Because I feel that I have to do it	1	2	3	4	5	6	7
16. I do this activity, but I am not sure it is a good thing to pursue it	1	2	3	4	5	6	7

Codification key: Intrinsic motivation: Items 1, 5, 9, 13; Identified regulation: Items 2, 6, 10, 14; External regulation: Items 3,7, 11, 15; Amotivation: Items 4, 8, 12, 16.

Meditation Self-Improvement Motivation

(Adapted from Breines & Chen, 2012)

Please answer the following on a 7-point scale (1 = strongly disagree, 7 = strongly agree)

I want to learn and improve my meditation practice _____

I want to find opportunities that will challenge me and help me grow my meditation practice _____

I feel capable of making positive changes in my meditation practice _____

I would like to discover new strategies for improving my meditation practice _____

I feel confident that I can make positive changes to my meditation practice _____

It's up to me whether or not my meditation practice improves _____

I don't think there is much I can do to change the quality of my meditation practice _____

Weekly Meditation Behavior Questionnaire

Please answer the following questions to the best of your estimation, trying to be as accurate as you can. Formal vs. informal practice means something different to everyone. Please define the difference between the two in whatever way makes the most sense to you. Count each session once as either "formal" or "informal".

Study ID Number (example: "M123"): _____

Formal Meditation Sessions

During the last week, approximately how many formal meditation sessions did you do?

During the last week, approximately how many minutes (on average) were your formal meditation sessions?

Informal Meditation Sessions

During the last week, approximately how many informal meditation sessions did you do?

During the last week, approximately how many minutes (on average) were your informal meditation sessions?

Satisfaction With Life Scale

Below are five statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neither agree nor disagree
5 = slightly agree
6 = agree
7 = strongly agree

__ 1. In most ways my life is close to my ideal.

__ 2. The conditions of my life are excellent.

__ 3. I am satisfied with my life.

__ 4. So far I have gotten the important things I want in life.

__ 5. If I could live my life over, I would change almost nothing.

Use of the SWLS

The Satisfaction With Life Scale is in the public domain. Permission is not needed to use it.

ROSENBERG SELF-ESTEEM SCALE

Instructions

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself.

Strongly Agree Agree Disagree Strongly Disagree

2. At times I think I am no good at all.

Strongly Agree Agree Disagree Strongly Disagree

3. I feel that I have a number of good qualities.

Strongly Agree Agree Disagree Strongly Disagree

4. I am able to do things as well as most other people.

Strongly Agree Agree Disagree Strongly Disagree

5. I feel I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

6. I certainly feel useless at times.

Strongly Agree Agree Disagree Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

Strongly Agree Agree Disagree Strongly Disagree

8. I wish I could have more respect for myself.

Strongly Agree Agree Disagree Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.

Strongly Agree Agree Disagree Strongly Disagree

10. I take a positive attitude toward myself.

Strongly Agree Agree Disagree Strongly Disagree

Scoring:

Items 2, 5, 6, 8, 9 are reverse scored. Give "Strongly Disagree" 1 point, "Disagree" 2 points, "Agree" 3 points, and "Strongly Agree" 4 points. Sum scores for all ten items. Keep scores on a continuous scale. Higher scores indicate higher self-esteem.

Beck Anxiety Inventory

Please rate how much you have experienced each of the following have occurred to you over the past week. Please be as honest as possible. Your responses are anonymous and confidential.

Put either a **0**, **1**, **2**, or **3** by each item to indicate the extent to which you have been bothered by the event or feeling described, with a 0 indicating "Not at all" and a 3 indicating "Severely - I could barely stand it".

____ Numbness or tingling

____ Feeling hot

____ Wobbliness in legs

____ Unable to relax

____ Fear of the worst happening

____ Dizzy or lightheaded

____ Heart pounding or racing

____ Unsteady

____ Terrified

____ Nervous

____ Feelings of Choking

____ Hands trembling

____ Shaky

____ Fear of losing control

____ Difficulty breathing

____ Fear of dying

____ Scared

____ Indigestion or discomfort in abdomen

____ Faint

____ Face flushed

____ Sweating (not due to heat)

Center for Epidemiologic Studies Depression (CES-D)

Scale Description:
The following scale was developed by the Center for Epidemiologic Studies (Radlof, 1977). The scale has been found reliable (Alpha>.85) in previous research (Hann et. al., 1999). A Spanish version of this scale is also available.

Scale items:
Below is a list of some ways you may have felt or behaved. Please indicate how often you have felt this way during the last week by checking the appropriate space. Please only provide one answer to each question.

	During the past week:	***Rarely*** or none of the time (less than 1 day)	***Some*** or a *little* of the time (1-2 days)	***Occasionally*** or a moderate amount of time (3-4 days)	***Most*** or all of the time (5-7 days)
1.	I was bothered by things that usually don't bother me.				
2.	I did not feel like eating; my appetite was poor.				
3.	I felt that I could not shake off the blues even with help from my family or friends.				
4.	I felt I was just as good as other people.				
5.	I had trouble keeping my mind on what I was doing.				
6.	I felt depressed.				
7.	I felt that everything I did was an effort.				
8.	I felt hopeful about the future.				
9.	I thought my life had been a failure.				
10.	I felt fearful.				
11.	My sleep was restless.				
12.	I was happy.				
13.	I talked less than usual.				
14.	I felt lonely.				
15.	People were unfriendly.				
16.	I enjoyed life.				
17.	I had crying spells.				
18.	I felt sad.				
19.	I felt that people disliked me.				
20.	I could not get going.				

Scoring:	Rarely (Less than 1 day)	Some (1-2 days)	Occasionally (3-4 days)	Most (5-7 days)
Questions 4, 8, 12, and 16	3	2	1	0
All other questions	0	1	2	3

The score is the sum of the 20 questions. Possible range is 0-60. If more than four questions are missing answers, do not score the CES-D questionnaire. A score of 16 points or more is considered depressed.

Five Facet Mindfulness Questionnaire (FFMQ)

Ruth A. Baer, Ph.D.
University of Kentucky

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes <u>your own opinion</u> of what is <u>generally true for you</u>.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 1. When I'm walking, I deliberately notice the sensations of my body moving.

_____ 2. I'm good at finding words to describe my feelings.

_____ 3. I criticize myself for having irrational or inappropriate emotions.

_____ 4. I perceive my feelings and emotions without having to react to them.

_____ 5. When I do things, my mind wanders off and I'm easily distracted.

_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.

_____ 7. I can easily put my beliefs, opinions, and expectations into words.

_____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

_____ 9. I watch my feelings without getting lost in them.

_____ 10. I tell myself I shouldn't be feeling the way I'm feeling.

_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

_____ 12. It's hard for me to find the words to describe what I'm thinking.

_____ 13. I am easily distracted.

_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.

_____ 16. I have trouble thinking of the right words to express how I feel about things

_____ 17. I make judgments about whether my thoughts are good or bad.

_____ 18. I find it difficult to stay focused on what's happening in the present.

_____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

_____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____ 21. In difficult situations, I can pause without immediately reacting.

FFMQ: Continued

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behavior.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

The Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree Strongly
1	2	3	4	5

I see Myself as Someone Who...

____1. Is talkative

____2. Tends to find fault with others

____3. Does a thorough job

____4. Is depressed, blue

____5. Is original, comes up with new ideas

____6. Is reserved

____7. Is helpful and unselfish with others

____8. Can be somewhat careless

____9. Is relaxed, handles stress well

____10. Is curious about many different things

____11. Is full of energy

____12. Starts quarrels with others

____13. Is a reliable worker

____14. Can be tense

____15. Is ingenious, a deep thinker

____16. Generates a lot of enthusiasm

____17. Has a forgiving nature

____18. Tends to be disorganized

____19. Worries a lot

____23. Tends to be lazy

____24. Is emotionally stable, not easily upset

____25. Is inventive

____26. Has an assertive personality

____27. Can be cold and aloof

____28. Perseveres until the task is finished

____29. Can be moody

____30. Values artistic, aesthetic experiences

____31. Is sometimes shy, inhibited

____32. Is considerate and kind to almost everyone

____33. Does things efficiently

____34. Remains calm in tense situations

____35. Prefers work that is routine

____36. Is outgoing, sociable

____37. Is sometimes rude to others

____38. Makes plans and follows through with them

____39. Gets nervous easily

____40. Likes to reflect, play with ideas

____41. Has few artistic interests

Big Five Inventory: Continued

____20. Has an active imagination

____21. Tends to be quiet

____22. Is generally trusting

____42. Likes to cooperate with others

____43. Is easily distracted

____44. Is sophisticated in art, music, or literature

Scoring:

BFI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36
Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42
Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R
Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39
Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44

Self-Compassion Scale Short Form (SCS-SF)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. Indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

1. When I fail at something important to me I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens I try to take a balanced view of the situation.
4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I'm going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me I try to keep my emotions in balance.
8. When I fail at something that's important to me, I tend to feel alone in my failure
9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm disapproving and judgmental about my own flaws and inadequacies.
12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Self-Compassion Short Form: Continued

SCORING KEY
Self-Kindness Items: 2, 6
Self-Judgment Items (Reverse Scored): 11, 12
Common Humanity Items: 5, 10
Isolation Items (Reverse Scored): 4, 8
Mindfulness Items: 3, 7
Over-identification Items (Reverse Scored): 1, 9

To reverse score items (1=5, 2=4, 3=3, 4=2, 5=1).

To compute a total self-compassion score, first reverse score the negative subscale items - self-judgment, isolation, and over-identification. Then take the mean of each subscale, and compute a total mean (the average of the six subscale means).

Rotter's Locus of Control Scale

For each question select the statement that you agree with the most

1. a. Children get into trouble because their patents punish them too much.

b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.

b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.

b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world

b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries

5. a. The idea that teachers are unfair to students is nonsense.

b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.

b. Capable people who fail to become leaders hive not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.

b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality

b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.

b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

b. Many times exam questions tend to be so unrelated to course work that studying in really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.

b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.

b. It is not always wise to plan too far ahead because many things turn out to- be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.

b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.

b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

b. Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.

b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.

b. There really is no such thing as "luck."

19. a. One should always be willing to admit mistakes.

b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.

b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.

b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.

b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.

b. There is a direct connection between how hard 1 study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.

b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.

b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.

b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.

b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.

b. In the long run the people are responsible for bad government on a national as well as on a local level.

Score one point for each of the following:

2. a, 3.b, 4.b, 5.b, 6.a, 7.a, 9.a, 10.b, 11.b, 12.b, 13.b, 15.b, 16.a, 17.a, 18.a, 20.a,

21. a, 22.b, 23.a, 25.a, 26.b, 28.b, 29.a.

A high score = External Locus of Control

A low score = Internal Locus of Control

Modified Credibility/Expectancy Questionnaire (Devilly & Borkovec 2000)

We would like you to indicate below how much you believe, right now, that the program you are receiving will help to improve your mindfulness practice. Belief usually has two aspects to it: (1) what one thinks will happen and (2) what one feels will happen. Sometimes these are similar; sometimes they are different. Please answer the questions below.

First, answer in terms of what you think. Second, answer in terms of what you really and truly feel. We do not want your teachers to ever see these ratings, so please keep your answers secret.

1) At this point, how successful do you *think* this program will be in improving your Mindfulness practice?

1	2	3	4	5	6	7	8	9
not at all useful				somewhat useful				very useful

2) At this point, how much do you really *feel* that this program will help you to improve your mindfulness practice?

1	2	3	4	5	6	7	8	9
not at all				somewhat				very much

Appendix B: Meditation Course Materials

Mindfulness Class Schedule:

Week 1:

Education (~20m):

- Intro to being in an experiment
- Science of Metacognition & Attention (vs. Awareness)
- Traditional advice on laxity and excitement (avoid other aspects of five faults) (relaxation, stability, vividness)
- Quick Review: Mindfulness of Breathing

Reflection (30m):

- Journaling: Where am I at (in terms of my meditation) in relation to this proficiency info?
- Discussion: Personal obstacles, what did we learn?

(break)

Practice (30m):

- Mindfulness of breathing concentration practice

Week 2:

Education (20m):

- Interoception and Emotion Regulation, Difference between “feelings” and “emotions”?
- Positive, Negative Neutral Feelings, Satipathana/Anapanisati: “body in the body” etc.
- Quick Review: Body Scan

Reflection (30m):

- Journaling: Where am I at (in terms of my meditation) in relation to this proficiency info?
- Discussion: Personal obstacles, what did we learn?

(break)

Practice(30m):

- Body Scan Practice

Week 3:

Education (20m):

- Self-as-Context, Flow, etc. "feelings" and "emotions"
- Non-Dual Mindfulness Styles
- Quick review: Open Awareness

Reflection (30m):

- Journaling: Where am I at (in terms of my meditation) in relation to this proficiency info?
- Discussion: Personal obstacles, what did we learn?

(break)

Practice (30m):

- Open Awareness

Week 4:

Education (10m):

- What to expect for the next four weeks (experiment = no live Q&A, questions to socialcog@osu.edu).
- Putting it all together (examples of a session with all three meditations)

Practice (75m):

- Mindfulness of breathing
- Body Scan
- Open Awareness

Week 5:

Practice (90m):

- Mindfulness of breathing (25m + 5m break)
- Body Scan (25m + 5m break)
- Open Awareness (25m + 5m break)

Week 6:
Practice (90m):

- Mindfulness of breathing (25m + 5m break)
- Body Scan (25m + 5m break)
- Open Awareness (25m + 5m break)

Week 7:
Practice (90m):

- Mindfulness of breathing (25m + 5m break)
- Body Scan (25m + 5m break)
- Open Awareness (25m + 5m break)

Week 8:
Practice:

- Mindfulness of breathing (25m + 5m break)
- Body Scan (25m + 5m break)
- Open Awareness (25m + 5m break)

Mindfulness Meditation Instructions

Awareness of Breathing
Decide how long you'd like to practice and set a timer.

Place your body in a comfortable position with your back upright.

Take a few deep breaths to release any unnecessary hardness or tension in the body, then let your breath fall into a natural rhythm.

Acknowledge any sounds in the room, bodily sensations, and thoughts that are moving in and out of your awareness. They will continue to come and go in the background, or periphery.

For a time, notice that you're breathing, notice the sensations of breath.

Then, rest your attention on the sensations of breathing at **one** location in the body: the belly, the chest, or the nostrils. Notice the sensations of the flow of breath there: in and out.

Attune to and attend to the breath.

When your attention is captured by a narrative, planning, or worry, rejoice that you've noticed, and return your attention to the sensations of breath at the location of your choice.

Continue until the timer sounds.

Body Scan
Decide how long you'd like to practice and set a timer.

Place your body in a comfortable position with your back upright.

Take a few deep breaths to release any unnecessary hardness or tension in the body, then let your breath fall into a natural rhythm.

Acknowledge any sounds in the room, bodily sensations, and thoughts that are moving in and out of your awareness. They will continue to come and go in the background, or periphery.

Begin to "scan" your body by taking your attention to specific places, starting at the lowest part of your body and working your way to the top. Spend time noticing the sensations of:

- Your left foot and your right foot

- Your left lower leg and your right lower leg
- Your left upper leg and your right upper leg
- Your pelvis and seat
- Your lower back
- Your belly
- Your chest
- Your upper back
- Your left shoulder, upper arm, elbow, lower arm, wrist, hand, and fingers
- Your right shoulder, upper arm, elbow, lower arm, wrist, hand, and fingers
- Your neck
- Your head
- Your face

When your attention is captured by a narrative, planning, or worry, rejoice that you've noticed, and return your attention to the body part you were previously working with.

For the rest of the duration, let your attention roam throughout your body, noticing any physical sensations as they arise, abide and dissolve. Continue until the timer sounds.

Open Awareness

Decide how long you'd like to practice and set a timer.

Place your body in a comfortable position with your back upright.

Take a few deep breaths to release any unnecessary hardness or tension in the body, then let your breath fall into a natural rhythm.

Let your awareness open wide to the sensory experience of being alive in the present moment.

Take in the sounds in the room.

Notice thoughts coming and going.

Feel the sensations throughout your body.

Be aware of the rhythm of your breath.

Sounds, thoughts, body, breath. Take it all in. Notice how each arises, abides, and dissolves.

When your attention narrows and is captured by a narrative, planning, or worry, rejoice that you've noticed, relax on the out breath, and open your awareness to the sounds in the room.

Sounds, thoughts, body, breath. Take it all in. Notice how each comes and goes.

Continue until the timer sounds.

Motivation Meditation Course Schedule:

Week 1:

Education (20m):

- Introduction to “Applied Mindfulness” (directed thought/analytical meditation)
- What do we mean by Values? Purpose > Inspiration/Values connection
- Quick review: Mindfulness of Breathing

Reflection (30m):

- Journaling: Reflect on the values questions in preparation for meditation.
- Discussion: Personal obstacles, what did we learn?

(break)

Practice (30m):

- Values contemplation practice combined with Mindfulness of breathing

Week 2:

Education (20m):

- Review of “applied mindfulness” and the need for self-directed revision.
- What is Self-efficacy? What could it mean in relation to our practice?
- Quick review: Body Scan

Reflection (30m):

- Journaling: Reflect on the efficacy questions in preparation for meditation.
- Discussion: Personal obstacles, what did we learn?

(break)

Practice(30m):

- Efficacy meditation followed by Body Scan Practice

Week 3:

Education (20m):

- Review of “applied mindfulness” and the need to know the “feeling” goal, and use skillful means, self-compassion, etc. to guide the mind to it. lings” and “emotions”
- What is a “cost” and how do we consider the negative consequences with kindness.
- Quick review of “Open Awareness” practice.

Reflection (30m):

- Journaling: Reflect on "cost" questions in preparation for meditation.
- Discussion: Personal obstacles, what did we learn?

(break)

Practice (30m):

- Cost meditation followed by Open Awareness

Week 4:

Education (10m):

- What to expect for the next four weeks (Experiment = No Live Q&A).
- Putting it all together (examples of a session with all three meditations or combos of them.)

Practice (~90m):

- Motivation Meditation (Value, Efficacy, and Cost: (15m +5)
- Mindfulness of breathing (15m + 5 break)
- Body Scan (15m + 5m break
- Open Awareness (15m + 5m break)

Week 5:

Practice (90m):

- Motivation Meditation (Value, Efficacy, and Cost: (15m +5)
- Mindfulness of breathing (15m + 5 break)
- Body Scan (15m + 5m break
- Open Awareness (15m + 5m break)

Week 6:
Practice (90m):

- Motivation Meditation (Value, Efficacy, and Cost: (15m +5)
- Mindfulness of breathing (15m + 5 break)
- Body Scan (15m + 5m break
- Open Awareness (15m + 5m break)

Week 7:
Practice (90m):

- Motivation Meditation (Value, Efficacy, and Cost: (15m +5)
- Mindfulness of breathing (15m + 5 break)
- Body Scan (15m + 5m break
- Open Awareness (15m + 5m break)

Week 8:
Practice:

- Motivation Meditation (Value, Efficacy, and Cost: (15m +5)
- Mindfulness of breathing (15m + 5 break)
- Body Scan (15m + 5m break
- Open Awareness (15m + 5m break)

Motivation Meditation Instructions

The practice has three themes: Value, Competence, and Importance. For each part we contemplate/reflect on the theme, using our own experiences, reminding ourselves of why we value our practice, establishing confidence, and finding gratitude in our opportunities to engage in it. Deliberate, mindful reflection can help us cut through the transient feelings and thoughts of the "day to day" to re-connect with our most heartfelt aspirations, needs, and our true abilities.

Each of the three themes are reflected on "mindfully". This means two things. First, that we must establish and maintain a relaxed, present-focused state of awareness. For example, just as we would with a brief mindfulness of breathing practice to settle body and mind. Second, it means that just as we would apply mindfulness to bring ourselves back from distraction and stay focused on the breath, we now use it to remain focused on the reflection as it proceeds. The difference between this technique and mind-wandering, what makes it "mindful", is that one lets one's mind generate and connect with ideas within specific boundaries: in and around the reflection theme. When we've gone off topic, we bring the mind back. Initially, this is a dialectic: one part of our mind manages the reflection process, and the other experiences our present-moment sensations and feelings. However, upon a firm conclusion, an "aha", or a "this is how I really feel about this" moment, we can let the ideas drop and just rest mindfully in our feelings.

The provided questions with each theme (that we used to generate ideas) can help facilitate a connection with the topics using our memories, values, imagination, empathy, etc. Ultimately it is up to us, in each session, to be creative, kind, compassionate, and adapt to our situation so that our connection with a theme is *personally authentic* to where we are at situationally/emotionally each time we practice.

At first, it may be easier to use the provided prompt and questions, but over time we may find ourselves "free styling" when the reflection is more familiar. For example, if we often come to the same answers or thoughts, and those thoughts help us connect with and feel the value, etc. we may simply bring up these thoughts or examples in our mind without starting with the questions. *The point of the practice is the states of mind we end in, so any journey we take to get there is perfect.*

We recommend devoting about 15-20% of a session to your motivation, then the remainder to whatever practice you're going to do. For example, if we want to practice mindfulness of breathing for 25 minutes, we might spend the first 5 minutes contemplating our motivation. One could spend the entire session on motivation if desired, but connecting it to our other practices is how it is intended.

How to practice:

1) Begin to enter a mindful mental space, focus on relaxing and stabilizing.

2) Contemplate the "purpose & value of meditation" using the questions below or your own line of reasoning:
    a. Why do you meditate? What do you get out of meditation? What do you hope to achieve in the long term?
    b. Recall the ways that meditation has proven its worth in helping you move toward these goals.

Rest your awareness in the feeling of valuableness you get with whatever you can connect to today.

3) Contemplate and appreciate our own "ability to meditate" using the questions below or your own line of reasoning:
    a. What knowledge and experience do you have that allows you to practice mindfulness successfully?
    b. Recall the opportunities in your life that allow you to engage in mindfulness practices, however small.
    c. Try to imagine some life circumstances which might arise and prevent you from engaging in mindfulness practices (appreciate the freedom of their absence).

Rest your awareness in the feeling of competence and opportunity you get with whatever you can connect to today.

4) Mindfully contemplate the potential "costs of not meditating" using the questions below or your own line of reasoning:
    a. Recognize that life is uncertain. We never know when we will meet new challenges or have our lives changed in unexpected ways.
    b. What would you be missing out on if you didn't fulfill the meditation goals you hope to achieve?
    c. Determine that today's practice matters.

Rest your awareness in the feeling of importance you get with whatever you can connect to today.

5) Determine that one will meditate today as best one can because of the prior reflected on reasons. Spend whatever time is left in your session practicing your preferred method.