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Equanimity and the Attenuation of Psychological Distress

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Abstract

This thesis describes the construction and initial validation of a scale assessing equanimity, the Phenomenology of Meditative Equanimity Measure. Some debate is emerging within the psychological and social sciences literature as to whether common Western definitions of mindfulness conflate both *Sati* and *Upekkhā*. The latter translates to equanimity and is described as an open and receptive attitude towards one's phenomenological landscape. In order to construct the measure, in-depth interviews and focus groups were conducted with experienced meditators of either Mindfulness or Stillness traditions regarding their phenomenological experience of equanimity within meditation. Verbatim accounts were then analysed with Interpretative Phenomenological Analysis. Items were then constructed to represent each of the subthemes of the phenomena. Exploratory Factor Analysis suggested two overarching factors, namely, Centring, the felt-sense of equanimity, and Resonating, extending one's perception of self beyond the confines of the physical body. EFA comparisons revealed identical factor structures across both meditators and non-meditators. Additionally, in a new sample comprising several groups of meditators and non-meditators, Confirmatory Factor Analysis further supported the factor structure of meditative equanimity, conceptualised as a nested-factor model. Measurement Invariance indicated that each of the groups conceptualised the construct in the same manner, with items demonstrating similar loadings on their respective factors, whilst intervals of the scale itself and zero-points were consistent across the groups of interest. Latent Mean Analysis suggested that the phenomenology of meditative equanimity was expressed similarly across the different meditation groups but significantly greater when compared with non-meditators. The scale furthermore demonstrated to have strong reliability, as well as good criterion and construct validity. Finally, the nested-factor model representing the phenomenology of meditative equanimity was found to fully mediate the relationship between awareness of present moment experience and psychological distress. Further examined, in line with previous theories regarding the lateralisation of meditation, the phenomenology of meditative equanimity is argued to primarily represent right-hemispheric predominance. Limitations and further directions for research are discussed.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signature: 

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This thesis is dedicated to my mother.

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"Be Still,
Stillness reveals the secrets of eternity."
Lao Tzu

With the advancing proliferation of mindfulness research, there appears to be subtle differences in how mindfulness is described. This poses a significant issue in terms of understanding the underlying mechanism responsible for the beneficial outcomes mindfulness is so often associated with. The current introductory Chapter discusses a number of inconsistencies within the mindfulness literature and how these may potentially obscure the understanding of how mindfulness exerts its influence on beneficial outcomes. Although discussed extensively within Buddhist philosophy, equanimity has only recently been highlighted within the psychological literature as potentially mediating the relationship between awareness of present moment experience and therapeutic outcomes.

William James, who some consider to be the father of American psychology (Pajares, 2008), once wrote, "The faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgement, character, and will… An education, which should improve this faculty, would be the education par excellence" (James, 1890/1950, p.463). In his famous Gifford lectures given at the University of Edinburgh (1902/2002, p.117), he suggested the importance of meditation for psychological wellbeing. Whilst delivering a lecture in psychology at Harvard, he noticed a Buddhist monk in the audience. Immediately he stopped, drew everyone's attention to the monk, and said that the monk had forgotten more than he (James) would ever know. James was then quoted as saying, "Take my chair, you are better equipped to talk on psychology than I. This is the psychology everybody will be studying in twenty-five years from now" (Epstein, 1995, pp.1-2).

Although James' prediction came to fruition, it did so some time later as evidenced by the proliferation of mindfulness research over the previous few decades. However, a bibliometric analysis of mindfulness research conducted by Valerio in 2016 indicated that 97.1% of the scientific literature in psychology presented

mindfulness as "disembedded' (Schedneck, 2013, p.36) from its contemplative origins. This is important, as there is an ongoing debate within the literature as to whether or not mindfulness within such a contemplative context is different to the secular mindfulness inherent within Western psychology (see: Grossman, 2011; Monteiro, Musten, & Compson, 2015; Schmidt, 2011; Shonin, Van Gordon, & Griffiths; 2014). To complicate this issue further, the understanding of mindfulness in terms of its phenomenological experience and meaning have been debated across religious traditions for thousands of years (Williams & Kabat-Zinn, 2011).

Nonetheless, regardless of its context, research increasingly supports an association between mindfulness and wellbeing as well as attenuated psychological distress (see: Carmody & Baer, 2008; Eberth & Sedlmeier, 2012; Goyal et al., 2014; Holzel et al., 2011; Hosemans, 2015; Van Dam, Hobkirk, Sheppard, Aviles-Andrews, & Earleywine, 2014). A number of studies have further documented the beneficial psychological effects of mindfulness in a variety of contexts, such as the implementation within medical school programs (Hassed, de Lisle, Sullivan, & Pier, 2009; Hassed, Sierpina, & Kreitzer, 2008; McKenzie, Hassed, & Gear, 2012), primary and secondary schools (Maynard, Solis, Miller, & Brendel, 2017), community settings (Juul et al., 2017), for mental healthcare professionals (Hassed, 2007; K. Lo et al., 2017), care-givers of chronic illnesses (Kor, Chien, Liu, & Lai, 2017), parents of pre-school children with disabilities (Lo, Chan, Szeto, Chan, & Choi, 2017), prison inmates (Auty, Cope, & Liebling, 2017), perinatal anxiety and depression (Dhillon, Sparkes, & Duarte, 2017), chronic pain (Hilton et al., 2017), substance use (Li, Howard, Garland, McGovern, & Lazar, 2017), obesity (Rogers, Ferrari, Mosely, Lang, & Brennan, 2017), and, but not limited to, helping survivors of trauma (Shiyko, Hallinan, & Naito, 2017).

Despite the increasingly documented benefits of mindfulness, a consensus regarding its definition in the West has not yet been achieved (Chiesa, 2013). As Vago and Silbersweig (2012, p.1) have stated, the biggest issue in terms of mindfulness within the literature is that, “there remains no single ‘correct’ or ‘authoritative’ definition of mindfulness and the concept is trivialised and conflated with many other common interpretations”. As such, mindfulness, according to Purser and Loy (2013), within the scientific literature relies more on “rhetoric than rigor”. Additionally, debate still continues regarding whether mindfulness is in fact a trait,

state, or process; with Rapgay and Bystrisky (2009) arguing that this ultimately raises the question about what individuals are actually doing when they are practicing mindfulness. The subtly differing conceptualisations within the literature, according to a number of researchers (for example, Carmody, Baer, Lykins, & Olendxki, 2009; Carmody, 2009; Shapiro, Carlson, Astin, & Freedman, 2006) poses a significant challenge in regard to its measurement as well as understanding the underlying mechanism responsible for the beneficial outcomes associated with mindfulness.

A common trend in Western psychology regarding mindfulness is to define it as a relatively fixed trait, as evidenced by over 6,000 citations for the *Mindful Attention Awareness Scale* (MAAS; Brown & Ryan, 2003), which considers mindfulness as dispositional. In contrast, some Buddhist scholars refer to mindfulness as a practice (for example, Bodhi, 2000; Bodhi & Nanamoli, 1995). Yet, rather than a systematic Buddhist practice, Buddhist scholars claim that mindfulness is viewed by Western psychology as a general concept (Bhikkhu, 2011; Bodhi, 2006). According to Bodhi (2011, p.22), a Buddhist scholar, the word mindfulness is now so "vague" in the West that it can be used as a "cipher" for virtually anything. Bhikkhu (2008) concurs, claiming that the term mindfulness has been "stretched out of shape". Even Kabat-Zinn himself (2011), who has been accorded with popularising mindfulness in the West, stated that he ultimately used mindfulness as an umbrella term to describe his work. Mindfulness, according to Kabat-Zinn (2011, p.290) contains "multiple meanings and traditions simultaneously". In a similar context, Hayes and Shenk (2004) have stated that any definition of mindfulness should not be treated too rigidly. Grossman (2008) additionally argues that the psychological literature includes a number of "hybrids", with each attempting to define mindfulness. This point is reiterated by Grossman and Van Dam (2011) as well as Rapgay and Bystrisky (2009).

Despite their criticisms, however, the vast majority of definitions regarding mindfulness within the psychological literature do converge on including the element of bringing one's attention to present moment experience; yet, there are subtle differences to how this is described. For instance, Baer et al.'s (2004) definition includes the ability to describe this experience in the present; Brown and Ryan (2003) as well as Feldman et al.'s (2007) definition only refers to the present moment awareness of mental states; whilst Baer et al. (2004) and Walach, Buchheld, Buttenmüller, Kleinknecht, and Schmidt (2006) extend this to awareness of bodily

sensations also. Brown and Ryan (2003) furthermore assess mindfulness according to what is present when mindfulness is absent, thereby conceptualising it as the absence of mindlessness.

In addition to attending to present moment experience, conceptualisations of mindfulness further incorporate an attitudinal component. There is some consensus in terms of mindfulness being defined by an attitude of acceptance towards this experience (for instance, see: Bishop et al., 2004; Linehan, 1993). However, acceptance is typically utilised to describe a non-judgmental or unbiased stance (for instance, see: Kabat-Zinn, 1996; Sole-Leris, 1986). Moreover, some authors additionally extend the attitudinal component to include other factors such as curiosity and openness (Bishop et al., 2004). Although in light of some consensus, such subtle differences in conceptualisations of mindfulness prove difficult to systematically measure the construct. This is further complicated by the current climate of mindfulness research, which is challenged by a number of methodological issues.

Methodological Issues within the Mindfulness Literature

Tang, Hölzel, and Posner (2015) document that the 'methodological quality' within the mindfulness literature is actually quite low in comparison to other scientific domains. The authors state that there is relatively few studies implementing randomised controlled longitudinal designs, with the vast majority being cross-sectional. For the longitudinal studies that do exist, sample sizes tend to be quite small. The pervasive lack of active control trials was emphasised by Goyal et al. (2014), who identified only 47 studies out of the 18,753 citations analysed to have results of a Mindfulness-based intervention (MBI) compared with those of a contrast group. There additionally tends to be a general lack of long-term follow-up beyond the program itself as well as insufficient controlling for potentially confounding variables. Within the literature, there is an over reliance on self-report measures, sometimes without demonstrating strong validity and reliability. Comparisons involving self-report measures are ultimately performed using the participant's mean across items for the respective scales, thereby not taking into account measurement error.

Furthermore, the design of a particular MBI is quite varied across studies as well as the degree of the mindfulness teacher's experience. Little attention is paid to

assessing a participant's adherence to the program itself (Shonin, Van Gordon, & Griffiths, 2013). Finally, there is the issue of 'experimenter allegiance', in which, as explained by Purser (2015), the MBI developer is often the researcher purporting its effectiveness. Tang et al. (2015) make the further point that the mindfulness literature is not necessarily built on strong foundations of theory, but rather, is founded on the conclusions arrived at through the interpretations of the results pertaining to previous studies. Thus, the researchers conclude that the understanding of the mechanism underlying the benefits of practicing mindfulness is still emerging.

A further related issue that pertains to the validity of mindfulness measures is that the vast majority of studies utilised university students in their Exploratory Factor Analysis. This is problematic to the extent that mindfulness is typically conceptualised according to the factors that such studies identify (for instance, see: Baer et al., 2006). Given that only a small portion of students is likely to have any experience in mindfulness, these convenience samples ultimately undermine the validity of these scales. Grossman (2008) claims that such scales have been validated with the wrong population.

This potentially is the reason why different scales purporting to measure mindfulness have been found to either only slightly to moderately correlate (Baer et al., 2006) or not correlate at all (Thompson & Waltz, 2007). Considering one would expect consistently high associations between such measures, anything below would be a cause for concern. Essentially, this may result in an individual having simultaneously high and low self-reported mindfulness according to two different mindfulness measures. This inconsistency within the mindfulness measurement literature emphasises the point that there is no empirical standard in terms of behaviours, neurological correlates, or standard meditative practice as a way to validate mindfulness measures (Grossman & Van Dam, 2011). According to Schmidt (2011), it is therefore immensely difficult to determine if the measures of mindfulness are in fact a reflection of the construct that they purport to assess.

Grossman (2008) furthermore claims that there is an overconfidence effect, whereby individuals completing a short training in a MBI may report greater mindfulness when compared with individuals who have been meditating for 20 years or more. As Chiesa (2013) indicates, noticing when one is distracted requires a certain degree of attentional capacity. This is likely to result in experienced meditators

noticing how unaware they are at times, as opposed to short-term meditators, who are potentially only aware of when they are aware and not aware when they have been predominately not aware! For example, Grossman (2011) noted how university students who drink alcohol (Leigh, Bowen, & Marlatt, 2005) reported greater mindfulness than experienced meditators (Buchheld, Grossman, & Walach, 2001) on the *Freiburg Mindfulness Inventory* (Walach et al., 2006). This finding suggests the importance of determining the adequacy of items in ensuring their sensitivity to meditative experience, prior to performing factor analyses on a potential measure.

It has been argued by Chiesa (2013) that the inconsistency of responses from experienced meditators and university students who drink alcohol is a consequence of 'response shift' (Howard, Dailey, & Gulanick, 1979); whereby practicing or becoming familiar with something can actually change one's internal standards of how future similar experiences are compared. If this is true, it brings in to question the results of longitudinal studies involving mindfulness, in which practicing mindfulness may in fact change the way the scale itself is interpreted. Related to this point, there is a severe absence of Measurement Invariance (Meredith, 1993) studies within the mindfulness literature, which would identify differences in how mindfulness is conceptualised across different groups, such as meditators and non-meditators. This is especially important as even Baer et al. (2004) have suggested that facets of mindfulness may in fact act differently, and therefore potentially conceptualised differently, according to an individual's meditative experience.

An examination of the current literature identified a total of six studies that performed a Measurement Invariance analysis on available mindfulness measures. These included four for the MAAS (Brown & Ryan, 2003; see: Black, Sussman, Johnson, & Milam, 2012; Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009; Cordon & Finney, 2008) with inconsistent results (see: Ghorbani, Watson, & Weathington, 2009), one for the *Five Factor Mindfulness Questionnaire* (FFMQ; Baer et al., 2006; see: Aguado et al., 2015), and the final one for the *Mindfulness Inventory for Sport* (see: Thienot et al., 2014). Only one of these six studies tested Measurement Invariance across meditators and non-meditators (Aguado et al., 2015); with the others focusing on differences either across cultures, gender, or attachment styles. In terms of the study by Aguado et al. (2015), Measurement Invariance across both meditators and non-meditators identified weak Metric Invariance, suggesting that

items are not assessing the underlying construct in a similar fashion across the two groups. The results pose a significant issue regarding the validity of comparisons between meditators and non-meditators if the scale itself is inconsistently measuring the construct between the groups.

Thus as indicated by Aguado et al.'s (2015) study, Measurement Invariance ultimately facilitates in understanding if the variance of the collective responses by heterogeneous groups were due to the nature of the scale itself. This variance can be the result of diverging conceptualisations of mindfulness, of which the weak Metric Invariance points. Further differences in psychometric conceptualisation can occur through different interpretations of the width of intervals between response-points, and therefore greater interpolation by respondents (Finstad, 2010), as well as different zero-points when the latent variable of mindfulness is presumed to be absent (Milfont & Fischer, 2010).

As mindfulness is typically defined by the scale purporting to measure this construct in a particular context (Grossman & Van Dam, 2011), each scale that rests upon the foundations of the outcomes derived by previous measures essentially means the conceptualisation of mindfulness further proliferates into new 'hybrids' (see: Baer et al., 2006; Bergomi, Tschacher, & Kupper, 2013b). Nowhere in the literature is this more apparent than within the development of the Comprehensive Inventory of Mindfulness Experiences Beta (CHIME-β; Bergomi et al., 2013a). The CHIME-β is a mindfulness scale based on the factor analysis of a student sample, with Principle Components Analysis (PCA; see: Chapter Four for a brief discussion of PCA), of eight mindfulness measures.

Rather than relying on a unifying a priori theory, the researchers based the development of the scale on a number of previous measures each with their own subtly diverging conceptualisation of mindfulness. The results provided 'evidence' for yet another reconceptualisation of mindfulness, which involved four factors. Although the authors of the scales in which the CHIME-β is founded upon agree on a two factorial, presence and acceptance, conceptualisation of mindfulness, each of the scales were identified by Sauer et al. (2013, p.13) to still be in "need of improvement". This however is not achieved through determining the factor structure underlying all items across these scales combined.

Moreover, a greater conceptual understanding of mindfulness may not in fact be developed by referring back to traditional contexts either, as debate still continues regarding the nature of mindfulness within contemplative traditions also. Therefore the issue is not as straightforward as examining what may be missing in the psychological understanding of mindfulness through the analysis of contemplative tests and relevant authorities. Instead of referring to literature in order to understand mindfulness, Grossman (2008) argues to rather turn towards qualitative analysis of interview data with experienced meditators for future research. Such qualitative understanding could essentially be used to determine significant differences between meditators and non-meditators concerning the quality of mindfulness and therefore inform future mindfulness scale development. This solution is reiterated by Chiesa (2013), who recommends an open-question approach to interviewing meditators in order to develop greater insight into the experience of mindfulness itself.

According to Williams, Mercer, and Ryan (2016), the positivist psychology requires the construct under investigation to be operationalised and isolated in order to understand its effects, whereas the Buddhist philosophy is thought to consider a more holistic approach, in which constructs cannot be so easily removed from their interrelationships with overlapping variables. Batchelor (1997) emphasises the problematic nature of psychologists in attempting to understand mindfulness on a purely conceptual level, arguing that mindfulness is a phenomenological experience, with the experience difficult to contain within a concept. However, such a critique could be levelled at all psychological constructs, which psychology aims to develop a deeper understanding of by conceptualising, operationalising and at times quantifying, which it can be argued psychology as a discipline has been quite successful in this regard. Nonetheless, as suggested by Schmidt (2011), mindfulness is somewhat elusive in terms of scientific understanding, as the experience cannot be completely shared with others through the means of a self-report questionnaire. Meaning, responses to a series of items that attempt to capture mindfulness may fail to embody the personal or spiritual nature of the experience.

Proposed Mediators of Mindfulness

The apparent lack of research into the qualitative experience of mindfulness has implications on understanding the underlying mechanism involved. There is however a number of proposed models within the literature that attempts to describe

the mechanism by which mindfulness contributes to therapeutic outcomes. The common mediators mentioned within the mindfulness literature include cognitive decentring (Fresco, Segal, Buis, & Kennedy, 2007), re-perceiving (Shapiro et al., 2006), metacognitive awareness (Teasdale et al., 2002), attenuated rumination (Deyo, Wilson, Ong, & Koopman, 2009), and also defusion (Fletcher & Hayes, 2005). Each of these proposed mediators suggest that mindfulness essentially acts by virtue of changing the direction of cognitive functions, whereby cognitive processes are implemented in order to cultivate the associated therapeutic benefits. The current understanding of mindfulness therefore is based on the cognitive psychological paradigm rather than accommodating the phenomenological paradigm conducive to the investigation of mindfulness.

Rather than being distinct constructs, there is considerable overlap in terms of the meaning and application of the aforementioned mediators. Metacognitive awareness, a concept initially proposed by Flavell (1979) and not within the context of mindfulness, involves developing insight into one's thinking processes, or rather thinking about one's thinking. Cognitive decentring potentially facilitates metacognitive awareness. Decentring is essentially a 'stepping outside' of one's automatic reactions, and in a sense, creating a 'space' between the experiencing of the world and one's typical response in a particular situation (Fresco, Moore et al., 2007). It is suggested by Vago and Silbersweig (2012) that Shapiro et al.'s (2006) re-perceiving is describing the same concept, as within the 'space' a new considered response can be formulated. Moreover, the same authors indicate the interconnected-ness between decentring and non-attachment, treating the constructs in the same manner. The distancing between the experience and the automaticity of one's reaction is additionally referred to through the process of defusion (Ayduk & Kross, 2010; Fletcher & Hayes, 2005). Furthermore, this concept was initially defined as 'observing self' by Deikman (1982). Grabovac et al. (2011) suggest, in the formulation of their model underlying mindfulness, that each of the mediators themselves can in fact be reduced to the regulation of attention by intentionally directing one's cognitive processes to the present moment. According to Chiesa et al.'s (2013) model, such mediators facilitate in cognitive reappraisal of one's experience.

There is further debate throughout the literature as the relationship between responses to self-report measures purporting to assess both mindfulness and therapeutic outcomes has been demonstrated as mediated, to some degree, by a number of other constructs. As already theorised by Fresco, Moore et al. (2007), Gecht, Kessel, Forkmann et al.'s (2014) study supported decentring (as measured by the German version of the *Experiences Questionnaire*; Gecht, Kessel, Mainz, et al., 2014) as partially mediating the variance between three proposed facets of mindfulness (as measured by the short German version of the KIMS; Höfling, Ströhle, Michalak, & Heidenreich, 2011) and depressive symptoms (*Rasch-based Depression Screening*; Forkmann et al., 2009, 2010). However, further studies have indicated that experiential avoidance, non-attachment, compassion, emotional intelligence, as well as meditative insight, have demonstrated the capacity to also mediate such variance.

A recent study conducted by Riley (2014), with a sample of outpatients seeking treatment for problem gambling, found that experiential avoidance (as assessed by *Acceptance and Action Questionnaire - Revised;* Bond et al., 2011) partially mediated the relationship between mindfulness (MAAS; Brown & Ryan, 2003) and problem gambling (*Problem Gambing Severity Index*; Ferris & Wynne, 2001). Experiential avoidance has further been identified as, at least in part, mediating the relationship between mindfulness and a range of therapeutic outcomes, including depression (Skinner, Roberton, Allison, Dunlop, & Bucks, 2010), psychological distress (Moore, Brody, & Dierberger, 2009), and burnout (Zhang, Si, Chung, & Gucciardi, 2016). A further mediator, non-attachment, was identified by Sahdra, Ciarrochi, and Parker (2016) via the *Non-Attachment Scale-7* (Sahdra, Shaver, & Brown, 2010) as partially mediating the relationship between several mindfulness facets (FFMQ-Short form; Baer et al., 2006; Tran, Glück, & Nader, 2013) and beneficial psychological outcomes, such as satisfaction with life (assessed by *Satisfaction with Life Scale* (SLS); Diener, Emmons, Larsen, & Griffin, 1985) and life effectiveness (as measured through the *Life Effectiveness Questionnaire*; Neill, Marsh, & Richards, 2003).

In terms of compassion, Van Dam, Sheppard, Forsyth, and Earleywine (2011) found that self-compassion (*Self-Compassion Scale* (SCS); Neff, 2003) accounted for a greater degree of variance in each anxiety (*The Beck Anxiety Inventory*; Beck & Steer, 1993), depression (*Beck Depression Inventory* (BDI); Beck, Rush, Shaw, &

Emery, 1979), worry (*Penn State Worry Questionnaire*; Meyer, Miller, Metzger, & Borkovec, 1990), and quality of life (*Quality of Life Inventory*; Frisch, 2012), when compared with the variance attributed to mindfulness (MAAS; Brown & Ryan, 2003). The effect of self-compassion on the outcome variables when computed by itself was close to the combined effect of both mindfulness and self-compassion, with the researchers suggesting that the latter potentially mediated the effect of the former. Van Dam (2011) concluded (p.128) that self-compassion along with a "balanced state of equipoise/equanimity seems to be a powerful predictor of psychological distress and quality of life" over and above mindfulness. Similar trends were identified by Gard et al. (2012) and to a lesser degree, Moore (2013), who found self-compassion (*Self-Compassion Scale-Short Form*; Raes, Pommier, Neff, & Van Gucht, 2011) and other-compassion (*Compassion Scale*; Pommier, 2010), although significant predictors of emotional distress (*The Depression, Anxiety, and Stress Scale*; Lovibond & Lovibond, 1995), were contrarily outperformed by mindfulness (MAAS; Brown & Ryan, 2003).

Nonetheless, Ireland (2013) demonstrated that the relationship between compassion (*Santa Clara Brief Compassion Scale*; Hwang, Plante, & Lackey, 2008) and mindfulness (MAAS; Chadwick et al., 2008) was fully mediated by meditative insight (*Meditative Insight Scale*; Ireland, 2013) within a large cross-sectional study involving experienced meditators. Meditative insight was defined within a traditional Buddhist context as the understanding of the universal characteristics of existence, such as suffering, impermanence, no-self, and the emptiness, or alternatively, oneness that underlies all things. Meditative insight was additionally found to partially mediate the relationship between mindfulness and a range of therapeutic outcomes, which is discussed more in Chapter Six: Part Two. Schutte and Malouff (2011) had similar results when the mediator of the therapeutic benefits typically attributed to mindfulness (FMI - Short form; Kohls, Sauer, & Walach, 2009; Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006) was in fact emotional intelligence (*Assessing Emotions Scale*; Schutte, Malouff, & Bhullar, 2009; Schutte et al., 1998). Schutte and Malouff (2011) found that emotional intelligence partially mediated the relationship between mindfulness and positive affect (*The Positive and Negative Affect Scale*; Watson, Clark, & Tellegen, 1988) and life satisfaction (SLS; Diener et

al., 1985), whilst fully mediating the relationship between mindfulness and negative affect (PANAS, Watson et al., 1998).

Nonetheless, the vast majority of such mediation studies analysed the indirect effect by virtue of linear regression. However, linear regression essentially simplifies the issue of measurement error by using item mean scores to represent a construct, thereby assuming tau-equivalence, where each item is presumed to predict the variable to an equal extent. Moreover, regression requires a series of sequential equations between the independent variable and the outcome and also the mediator with the aforementioned two variables, which ultimately increases the incidence of a Type I error. Structural Equation Modelling (SEM) on the other hand, is able to calculate each of the equations simultaneously and has the advantage of taking into account measurement error by virtue of allowing each item to load on their respective factor. This more robust method would ultimately facilitate in developing greater insight into the underlying mechanism of mindfulness (Iacobucci, Saldanha, & Deng, 2007).

Defining Meditation

Further to understanding the underlying mechanism of mindfulness, it is additionally necessary to determine what is meant by meditation and its relationship with mindfulness. Within the psychological literature, this is a common area of confusion due to the fact that a number of authors (for example, Chiesa & Serretti, 2009; Didonna, 2009; Kabat-Zinn, 2009) use both meditation and mindfulness synonymously. Moreover, added to the confusion, Hayes and Shenk (2004) claim that any definition of mindfulness would need to be devoid of meditation. The authors cite the MBIs – Dialectical Behavioural Therapy (DBT; Linehann, 1993) and Acceptance Commitment Therapy (ACT; Hayes et al., 1999), which utilise strategies 'consistent with mindfulness' (Baer et al., 2008), such as acceptance, in the absence of any traditional meditative practices.

Meditation has been defined as, "a family of practices that train attention and awareness, usually with the aim of fostering spiritual and psychological wellbeing and maturity" (Shapiro & Walsh, 2003, p.88). As portrayed by this definition, within the scientific literature, awareness and attention are often used either in conjunction or interchangeably (Rapgay & Bystrisky, 2009). Although both awareness and attention

are considered expressions of consciousness, where awareness monitors the background of one's phenomenological world, attention holds an aspect in view for further investigation (Westen, 1999). In terms of the attentional process underlying meditation, the psychological literature is furthermore inconsistent about stipulating it as either focused (for example, Desbordes et al., 2012; Goyal et al., 2014; Lutz, Slagter, Dunne, & Davidson, 2008), sustained (for example, Jensen, Vangkilde, Frokjaer, & Hasselbalch, 2012; Shapiro, Carlson, Astin, & Freedman, 2006; Vestergaard-Poulsen et al., 2009) or alternatively referring to attention in general (Papies, Keesman, Pronk, & Barsalou, 2014; Tang et al., 2007; Van Dam et al., 2014). This is problematic in that the neuropsychological literature has distinguished between five types of attention (McGilchrist, 2010).

The five types of attention identified within the neuropsychological literature include the two already specified, focused and sustained, as well as alertness, divided, and vigilance. Initially proposed by van Zomeren and Brouwer (1994), each of the different types of attention can be thought of as existing on an attentional axis. The selectivity axis is comprised of focused and divided attention. The latter entails attending to two or more sources of information simultaneously, whist the former brings attention to a single source of information to the exclusion of all else.

The remaining three forms, alertness, sustained, and vigilance, makes up the intensity axis of attention. Alertness is defined as receptivity to the environment and the ability to respond. Sustained attention requires attending to one or more sources of information for a prolonged period of time (van Zomeren & Brouwer, 1994). Vigilance, however, is defined according to the discipline in which it is discussed. In cognitive neuroscience and psychology, vigilance is used to refer to sustained attention on a task (Oken, Salinsky, & Elsas, 2006). Thus, a number of psychological researchers within the field of mindfulness use vigilance as synonymous with sustained attention (for example, see: Britton, Lindahl, Cahn, Davis, & Goldman, 2014; Maclean et al., 2010; Shapiro et al., 2006). Psychiatric clinicians and behavioural scientists refer to vigilance in order to describe attending to potential dangers within the environment; whilst neurophysiologists refer to it as the arousal level according to the sleep-wake cycle (Oken et al., 2006).

Sustained Attention as the Foundation of Meditation

The specification of the type of attention underlying meditation is especially pertinent within the ongoing debate surrounding the operationalisation of mindfulness. The neuropsychological literature indicates that the different types of attention are distinct and can act independently from each other; each with their own associated neurological structures. Regarding vigilance and sustained attention, Wilkins, Shallice, and McCarthy (1987) have demonstrated that individuals with lesions within the right hemispheric frontal lobe, have significant impairments. Korda and Douglas (1997) have found that sustained attention is still retained in individuals with left hemispheric frontal lobe lesions, suggesting that the right hemisphere is primarily responsible for this type of attention. Further studies by Sturm, Reul, and Willmes (1989) and Whitehead (1991) as well as Lawrence, Ross, Hoffmann, Garavan, and Stein (2003) suggest that the intensity axis of attention (sustained, vigilance, & alertness) is primarily a right hemispheric function. Although divided attention potentially involves both the left and right hemispheres (Salmaso & Denes, 1982), Sturm and Büssing (1986) found focused attention to be significantly deteriorated following damage isolated to the left-hemisphere. This, according to McGilchrist (2009) provides evidence for the right hemisphere's control over global and flexible attention, and the left-hemisphere's predominance for attention that has a narrow focus.

The fact that sustained attention is suggested to be predominately a function of the right hemisphere underscores the theory proposed initially in the 1970's suggesting that the therapeutic benefits of meditation were the result of developing right hemispheric attitudinal processes. For instance, Ornstein (1975) argued that meditation facilitates in 'turning off' the left hemisphere's analytic style of cognitive processing. Earle (1981) argued that if meditation involves sustained attention on a sensory object, and if sustained attention primarily involves the activation of the right hemisphere, then it follows that cultivating sustained attention primes the activation of predominately right hemispherical qualities.

In terms of possible mediators underlying the cultivation of therapeutic benefits through mindfulness, this potentially explains the non-cognitive mediators identified within quantitative studies, such as compassion, emotional intelligence, and meditative insight. In support of Earle's (1981) premise, the variables' relationship with the self-regulation of sustained attention could in fact be explained by the

priming of right hemispheric functions. Although it is still not fully understood what each hemisphere contributes in terms of the emotional world, there is substantial neurobiological support that the perception and expression of emotion predominately arises within the right cerebral hemisphere (for instance, see: Alpers, 2008; Borod, Bloom, Brickman, Nakhutina, & Curko, 2002; Gainotti, 2012; Lindell, 2013; Nakamura, Maess, Knösche, & Friederici, 2014; Snow, 2000; Yuvaraj, Murugappan, Norlinah, Sundaraj, & Khairiyah, 2013).

Moreover, Lutz, Brefczynski-Lewis, Johnstone, and Davidson (2008), through their study involving brain imaging (fMRI), found that meditation focusing on the cultivation of compassion was associated with greater activity of right hemispheric regions for expert meditators in comparison to novices. This finding was additionally reported in the comparison between the novice meditators and the contrast group. A number of further studies have indicated that compassion or empathy is primarily a right hemispheric function (for instance, see: Leigh et al., 2013; Tullett, Harmon-Jones, & Inzlicht, 2012; Weed, McGregor, Feldbæk Nielsen, Roepstorff, & Frith, 2010). According to McGilchrist and Rowson (2013), it is through this empathetic identification with others that ultimately mediates a sense of 'openness' and a perception of the interconnected nature of the world, or rather, meditative insight. Interestingly, the experience of insight, of instantaneously finding a solution to a problem, was found to be associated with right hemispheric activation (see: Bowden & Jung-Beeman, 2003), which is potentially the result of seeing the problem in its wider context rather than in its discreet parts.

This is echoed by the neuroscientist Joseph (1992), who suggests that we live in two worlds simultaneously. Although interconnected and working in concert, both right and left cerebral hemispheres have their unique way of perceiving, understanding, and conveying information. This lateralisation of different attentional processes is quite often overlooked in the mindfulness literature, but is crucially important as the two cerebral hemispheres, according to McGilchrist (2009), each derive their own interpretation of the world biased by how they attend to information. The fact that focused attention is found to be primarily a left hemispheric function implies that the left hemisphere's perception of the world is always removed from its context. The perception of the world is constructed from its discreet parts into a coherent whole. The right hemisphere, on the other hand, perceives the world already

as a unified whole, with each part in context. The right hemisphere is associated with a more open and receptive awareness of the world. Such bias in understanding the world, either as the sum of its parts or a unified whole, equates to a different experience or 'way of being' in the world.

Nonetheless, these generalisations regarding the lateralisation of cerebral function can be considered overly simplistic. Recent neuroimaging evidence suggests that the line in cognitive processing is not so clearly drawn and that both cerebral hemispheres tend to 'light up' in a complimentary fashion in the vast majority of cognitive processing activities. Mallgrave (2013), however, argues that a similar capacity to process information does not necessarily equate to processing this information in the same manner.

Two Modes of Cognitive Processing

The different ways of attending to information parallels ideas developed in phenomenology and then shadowed by cognitive theory. Husserl (1999) described that individuals consciously experience reality via two divergent attentional approaches. The first of these, the *natural attitude*, is considered the default pattern of the mind. It involves perceiving the world, including people and events, primarily as objects upon which cognitive operations are carried out. This idea of the default mind converges with recent developments in cognitive theory. Lambie and Marcel (2002) express this mode as 'second-order processing'; Teasdale (1999) uses the term 'propositional processing'; with Kahneman (2011) referring to 'System1' as representing automatic thought; and from an existential orientation, Spinelli (2007) has defined this way of attending to the world as one's 'worldview', which is a framework of sedimented beliefs that colour one's perception of the world. The common thread underlying these theories is a description of processing reality as essentially a 'representation' (McGilchrist, 2009) within the mind. As opposed to experiencing reality, one merely conceptualises this experience. This conceptualisation is evaluative, overlaying the experience with concepts, ideas, judgments and labels, often occurring in an associative and automatic manner (Bargh & Chartrand, 1999). The consequence of this mode of conscious processing is that reality is never experienced impartially. Instead, reality is experienced through this often habitual and conditioned cognitive lens that basically attends to information from the world in an incomplete manner devoid of context.

The second form of conscious processing according to Husserl (1999) is the *phenomenological attitude*, which entails experiencing reality as it genuinely appears without such a cognitive lens. Husserl proposed that the way in which this is achieved is through the process of *phenomenological reduction*. Phenomenological reduction does not involve replacing or necessarily eradicating this cognitive lens. Rather, it involves 'stepping back' from this habitual mode of processing so as to experience reality as it actually occurs. This does not necessitate the absence of sensory experience, thoughts or feelings, but rather such are perceived as they are without the added dimension of cognitive processing (Thompson & Zahavi, 2007). Husserl described this pushing aside of one's automatic cognitive processing, stepping away from the default perception of experience, as "bracketing". In terms of cognitive theory, Lambie and Marcel (2002) referred to this as 'first-order processing'; Teasdale (1999) termed it 'buffered implicational processing'; with Kahneman (2011) adeptly naming it 'System2' as representing more reflective thought; and finally, Spinelli (2007) coined the term 'worlding' to capture the verb-like essence of this attentional process, which was defined as the, "on-going, ever-shifting, process-like, linguistically elusive living of being" (p.18). Each of these theories describes the receptiveness of mind, whereby one's attention is primarily regulated to one's present experience as a whole. Furthermore, this process is not necessarily defined by a detaching from experience, in which there is an independent perceiver, but rather the perceiver is also within the context of what is being perceived.

The Phenomenological Attitude and Mental Health

The latter approach of attending to the world, or rather 'being-in-the-world' as Heidegger (1953/2010) would say, is thought to facilitate in the attenuation of psychological distress and the cultivation of wellbeing. Additionally, a number of authors have highlighted strong similarities between phenomenology and the practice of mindfulness (see: Felder, Aten, Neudeck, Shiomi-Chen, & Robbins, 2014; Nanda, 2009; Owen, 2013; van Deurzen & Tantam, 2015). As is the case with the literature on mindfulness, there is overwhelming evidence to suggest that being authentic to one's primary experience, without the cognitive overlay of secondary processing, is associated with greater satisfaction with life, enhanced self-esteem, reduced anxiety, depression, and stress, alertness and wakefulness, and furthermore, less physical

problems, such as aches and pains as well as headaches (Goldman, 2006; Goldman & Kernis, 2002; Kernis & Goldman, 2006; Kifer, Heller, Perunovic, & Galinsky, 2013; Lakey, Kernis, Heppner, & Lance, 2008; McGregor, McAdams, & Little, 2006; Schlegel, Hicks, Arndt, & King, 2009; Wood, Linley, Maltby, Baliousis, & Joseph, 2008).

Potentially, it is reasonable to assume that not being open to the totality of one's experience, certain aspects of one's experience are then possibly being rejected or ignored. Consequently, according to the existential psychologist, Rollo May (1977), whenever this rejected aspect of one's experience arises, anxiety may manifest before this aspect is rejected once again. Thereby creating a circular process as such experience does not dissipate and the individual must develop greater defences in order to keep this internal experience out of awareness (May, 1977). However, according to Marks (1978, 1987a, 1987b), the anxiety that arises would eventually subside without having to do anything but simply being open to the negatively perceived internal experience. Bugental (1981), another existential psychologist, believed that this cycle underlies the development of all forms of neurosis. According to Cayoun (2011), the majority of psychological theories of mental illness are based primarily on the processes involved in the avoidance of substantially uncomfortable present-moment experiences. Nonetheless, such an account of the underlying nature of mental illness does not address those theories suggesting that some mental illnesses are of a biological nature.

For Bugental (1981 p.47), when ignoring one's internal experience in favour of the habitual and predictable perception of the world, we fail to actualise our potentialities, living "only a fraction of what is latent in our lives". Self-actualisation according to Andringa, van den Bosch, and Vlaskamp (2013) involves a sequence of right-left-right spiral of cerebral hemispheric activation. Thereby one's sense of 'worlding' continuously informs one's 'worldview', which is constantly evolving based on one's phenomenological world. Thus, it is when one's 'worldview' is no longer adaptive, but the individual is unable or unwilling to enter into the dialectic so as to expand their 'representation' of the world, that neurosis essentially manifests.

Evidence for Right Hemispheric Predominance in Meditation

In support of Andringa et al.'s (2013) hypothesis, the dialectic of hemispheric activation as initiating within the right hemisphere has received preliminary support in some comparative studies regarding meditation, potentially suggesting the relationship between the latter and self-actualisation. For instance, Khalsa, Amen, Hanks, Money, and Newberg (2009) found, when compared with a baseline condition, meditation was associated with increased cerebral blood flow within the right hemisphere coinciding with decreased activation of the left hemisphere. Lazar et al. (2005), in a study comparing meditators with matched controls, identified increased cortical thickness within the former, most of which were identified within the right cerebral hemisphere. A similar pattern of greater neuroplastic changes in the right hemisphere, as opposed to the left, when comparing experienced meditators with non-meditators was also documented by Luders, Toga, Lepore, and Gaser (2009). Moyer et al. (2011) demonstrated greater right-ward asymmetry, in comparison to wait-list controls, for a group randomly assigned to a meditation condition that involved primarily just focusing on the embodiment of their breath. Nonetheless, Davidson et al. (2003) and Kurth, MacKenzie-Graham, Toga, and Luders (2010) reported the reverse finding. The researchers identified a left-ward bias through Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), respectively, which emphasises that research into the neurological basis of meditation is still somewhat inconsistent.

Mental Ataraxis

However, the inconsistencies in terms of hemispheric predominance within meditation may potentially be explained through greater integration across both hemispheres. For instance, Kurth et al. (2010) reported attenuated activation of the area previously identified as part of the default network with enhanced integration of both cerebral hemispheres. The idea of greater hemispheric integration was further taken up by McGilchrist in an interview with Emory (2012), who stated meditation could potentially facilitate in the balancing of the two cerebral hemispheres. Within his book, *The Master and his Emissary*, McGilchrist (2009) theorised that throughout history there has been a evolving relationship between the two cerebral hemispheres with a current predominance of the left. Likewise, Meares (1910-1986), a psychiatrist and past president of the International Society for Clinical and Experimental Hypnosis

discussed a mental homeostatic mechanism, a biological balancing, which potentially facilitated in the attenuation of anxiety and the development towards internal growth.

Over the course of his career, Meares redefined how the underlying processes of hypnosis were understood through his theory of Atavistic Regression, producing a number of books and the publication of articles in peer-reviewed journals, such as *Archives of Neurology and Psychiatry* as well as *Australian Family Physician* (see: Meares, 1956, 1957, 1960, 1961, 1963, 1968, 1970, 1976, 1978). Atavistic Regression refers to a regression to a more primordial state characterised by the attenuation of one's critical faculties or potentially what is now referred to as the brain's default mode network (Raichle, 2015). Based on this theory of the underlying mechanism of hypnosis, Meares developed a medical form of meditation called Mental Ataraxis. Mental Ataraxis is defined by an absence of mental disturbance created within the brain's default mode, which is characterised by the presence of cognitive stillness, and is thus more recently referred to as stillness meditation (McKinnon, 1983).

With non-specific suggestion, by repeating words like 'calm' and offering reassurance through therapeutic touch, Meares would facilitate in developing a hypnotic-like meditative state within his clients. There is support within the literature to indicate that suggestibility is in fact associated with the capacity for sustained attention (for example, see: Halsband, Mueller, Hinterberger, & Strickner, 2009; Holmquist, 2000; Holroyd, 2003; Virta, Hiltunen, Mattsson, & Kallio, 2015). Furthermore, there is additionally some evidence for a right-ward predominance during a state of hypnosis (for example, see: Kihlstrom, Glisky, McGovern, Rapcsak, & Mennemeier, 2013; Naish, 2010).

According to Meares (1970, 1976, 1978), anxiety is essentially a disturbed mental equilibrium, with mental homeostasis achieved through natural psychic reparative mechanisms, although he did not elaborate on what this mechanism entailed. Rather than achieving homeostasis, it is likely that the reparative mechanism is referring to homeokinesis, which is defined, in this context, as a self-organising dynamic equilibrium within the mind (Der & Martius, 2012). Elsewhere, Deshmukh (2009) has referred to the Buddhist concept of equanimity as the process of developing homeokinesis.

As a psychiatrist, Meares proposed that the psychotherapist does not resolve the client's anxious state. Instead, the psychotherapist enhances the client's natural psychic reparative mechanisms to function in a more effective manner (Meares, 1961, 1976). This idea coincided with the underlying humanistic psychology movement of that time. Nonetheless, since Meares' death, little attention in terms of research has been directed towards his ideas; yet, his form of meditation continues to be taught and practiced within Australia. Nonetheless, there is little research to back up the claims of this form of meditation that vastly distinct from the mainstream form characterised by mindfulness.

Two General Approaches to Meditation

The most common classification of meditative techniques across the current literature distinguishes two general approaches to meditation, concentrative and insight-oriented (for example, see: Cahn & Polich, 2006; Chiesa & Serretti, 2010; Chiesa, 2013; Desbordes et al., 2012; Hosemans, 2015; Ivanovski & Malhi, 2007; Jha, Krompinger, & Baime, 2007; Naranjo & Ornstein, 1971; Ott, 2004; Rapgay & Bystrisky, 2009; Ramel, Goldin, Carmona, & McQuaid, 2004; Shapiro, Schwartz, & Santerre, 2002). This classification is based on Theravada Buddhist meditative practices, but are common to many Buddhist traditions (Reginald, 2004). These two general approaches are referred to as Samatha and Vipassanā.

Samatha is the process of placing one's attention on a sensory or mental stimulus, such as one's breath or a mantra, to the exclusion of all else. According to the Satipatthāna Suttra, the breath is utilised as the anchor as it essentially combines both the ongoing conscious awareness with viscerosomatic functioning, providing an embodied sense of 'being' (Sangharakshita, 2004). According to Khoury et al. (2017) the embodiment of mindfulness, or what the authors refer to as the bottom-up approach, facilitates in the regulation of emotions through interoceptive awareness. Attention is placed on one's bodily signals rather than contents of the mind, as is defined by the top-down approach to mindfulness. However, Khoury et al. (2017) argue that both top-down and bottom-up approaches work in concert in order to develop equanimity.

Other researchers have suggested that these two approaches are different according to the degree of experience of the meditator. For instance, Chiesa, Serretti,

and Jakobsen (2013) argue that different regulatory processes occur for both experienced and novice meditators. Chiesa et al. (2013) suggest that a more top-down emotion regulatory process involving cognitive reappraisal is inherent within short-term meditative practice. In contrast, the bottom-up regulatory process of experienced meditators involves the detached observation of one's phenomenological world, in which there is no cognitive reappraisal but rather just the observing emotions as they arise within the body. Chiesa et al. (2013) thus argue that the bottom-up process of mindfulness is associated with a non-conceptual or embodied understanding of mindfulness. This differential seat of attention is further reflected by Hartelius (2015), who argues that the two attentional processes are different for each cognitive-behavioural mindfulness and traditional mindfulness. Attention is argued to reside within the mind and cognitive processes within the former, whereas there is a shift to the embodiment of attention within the latter.

Regardless of the seat of attention, cognitive or embodied, the end purpose of Samatha is mental training, or the cultivation of attention, and is therefore often referred to as concentrative meditation in the West (Nandamālābhivaṃsa, 2013). Samatha meditation facilitates in the development of bare attention. The process of placing attention on a particular sensory object for an indefinite period of time, thereby developing sustained attention, provides an objective experience of that sensory object, which is devoid of any projections or ascribed meanings from one's associative memory (Thera, 1962).

Vipassanā, on the other hand, expands this attention to all aspects of one's phenomenological experience within the present moment as it occurs. The purpose of Vipassanā is to attain liberation from mental suffering, which is achieved by understanding the nature of one's mental processes (Nandamālābhivaṃsa, 2013). Vipassanā is often referred to as insight-oriented meditation for this reason, as it is believed to ultimately lead to greater insight regarding one's phenomenological world or awakening from habitual and often unconscious patterns of thought and behaviour (Thera, 1962). Moreover, this attending to one's moment-to-moment phenomenological experience is often referred to as being mindful (Nandamālābhivaṃsa, 2013).

Chambers, Gullone, and Allen (2009) argue that both concentrative and insight-oriented meditation should rather be conceptualised as crossing orthogonal axes as

opposed to separate techniques. In this way, the many forms of meditation throughout all contemplative traditions can be considered to reside on one of four quadrants, with varying degrees of either concentration or insight. However, Bhikkhu (2000) states that within the context of Buddhist philosophy, both concentration and insight need to be cultivated to an equal extent. This is problematic, as according to Gilpin (2008), each of the MBIs tend to focus on directing attention to one's phenomenological world without at first cultivating an increased attentional capacity.

According to the Buddhist scholar, Gunaratana (2009), both meditative techniques are in fact related. They form a dynamic process, whereby Vipassanā meditation transcends and incorporates the concentrative approach. A number of researchers, such as Lutz, Slagter, Dunne, and Davidson (2008) as well as Thrangu and Johnson (2004) now recommend conceptualising both processes as two aspects of meditation in general. Primarily, concentrative meditation forms the foundation by facilitating the development of sustained attention. Through Vipassanā, this enhanced attentional capacity is then directed in a mindful way to all aspects of an individual's present phenomenological experience (Nandamālābhivaṃsa, 2013). Shapiro, Schwartz, and Santerre (2002) have expanded this dynamic model to incorporate contemplative meditation, which builds on the mindfulness approach by incorporating a personal surrendering to a greater being, such as a god, a higher self, or a religious symbol. However, rather than meditating in a spiritual context, Shapiro, Schwartz, and Santerre (2002) are potentially describing a model that incorporates, what has been described as the fundamental aspect of religion and spirituality (Astin, Astin, & Lindholm, 2011; Astin & Keen, 2006), equanimity. As Gunaratana (1985) indicates, it is primarily through *Sati* (Translated from Pali to mindfulness) that one extinguishes *Apekkha* (desire) and cultivates *Upekkhā* (equanimity).

Two Leading Definitions of Mindfulness

A review of the mindfulness literature by Hart, Ivtzan, and Hart (2013) identified two leading theories that have been researched in parallel since the mainstream inception of mindfulness into Western healthcare settings. These two theories were originally proposed by Langer (1989, 2005) and Kabat-Zinn (1994, 2009). Yet, even with today's extensive research on mindfulness, Hart et al. (2013) claim that neither theory has attempted to address the other in terms of clarifying their similarities or reconsolidating their differences.

In the early 1970s, Langer conceptualised mindfulness as a mode of awareness that involved a, "heightened state of involvement and wakefulness" (Langer & Moldoveanu, 2000, p.2) within the present moment as it unfolded. Langer (1989, 2005) differentiated this state of mindfulness from the often superficial, automatic, and habitual cognitive processing as defined by 'mindlessness'. According to Langer (2005), the absence of mindlessness was necessary but not sufficient for the development of mindfulness, as the latter further incorporated an, "openness to novelty" (p.214). Openness was defined as the capacity to perceive oneself within the context of one's environment, receptiveness to novel information, and the ability to hold multiple points of view on a particular subject simultaneously (Langer, 1989; Langer & Moldoveanu, 2000). According to Langer and colleagues, this openness is the defining feature of mindfulness, which acts to promote creativity through curiosity, insight, divergent associations, and the increased capacity for critical thinking (Langer, 2006).

The aim of developing mindfulness, according to Carson and Langer (2006), is to cultivate the capacity to have greater tolerance of uncertainty, demonstrate less reactivity and therefore more flexibility, and develop a meaningful relationship with the external world. This non-specific and rather open conceptualisation of mindfulness has been used in the construction of the Langer Mindfulness Scale (LMS, 2004). The LMS assesses mindfulness according to four factors: capacity to produce novelty, novelty seeking, cognitive flexibility, and engagement.

Parallel to Langer's conceptualisation of mindfulness, the most popular definition within the psychological literature is Kabat-Zinn's; who initially proposed that mindfulness was, "paying attention in a particular way; on purpose in the present moment, and nonjudgmentally" (1994, p.4). This perception of mindfulness has been used by a number of researchers as the foundation in the construction of mindfulness measures (see: Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008; Davis, Lau, & Cairns, 2009; Feldman et al., 2007), further adding to the proliferation of research in mindfulness, but is not devoid of its own problems.

This definition is very informal, without being definite about what nonjudgmental entails. A literal interpretation of Kabat-Zinn's mindfulness essentially describes a process of paying attention with a mind that is free of any judgments. Nonetheless, according to Bodhi (2011), a Buddhist scholar, the English translation of

the term nonjudgmental-ness is used in the Buddhist Suttas, but not in reference to *Sati*. Wallace (2006) claims that *Sati* brings to the mind wholesome and unwholesome thoughts, and the purpose of *Sati* is to differentiate those that are of benefit and those that are not. Rather, Bodhi (2008) suggests that the word nonjudgmental-ness is more so associated with the factors of enlightenment, such as equanimity. As the word nonjudgmental-ness entails, equanimity has been consistently described as a stillness of mind within contemporary mindfulness literature (for instance, see: Brantley, 2014; Catherine, 2008; Hanson, 2009; Holroyd, 2003; Kornfield, 2011; Maurits Kwee, 2013; Salzberg, 2002; Wong, 2012).

Even in Thera's (1962) text that Kabat-Zinn claims to "have started it all" (preface of 2014 edition), mindfulness is described as the, "exclusion or at least reduction, of the *subjective* factor in judgment" (emphasis added, p.28); rather, mindfulness entails a, "careful examination of facts," upon which objective judgments are made. The purpose of this process, according to Thera (1962), is to shape one's mind, and by extension, one's life. Elsewhere, Kabat-Zinn (2003, p.145) defines mindfulness as, "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience". Yet, in this more recent definition of mindfulness, the emphasis has shifted from attention to awareness, with mindfulness being the awareness that arises as a result of paying attention. This ultimately implies that meditation commences from a non-mindful state, with mindfulness achieved through experiencing equanimity.

In both Kabat-Zinn's definitions, nonjudgmental-ness plays a predominate role. However, by defining mindfulness by the absence of judgmental-ness, ultimately opens the floodgates of interpretation in terms of what qualities are actually present when this attitude of judgmental-ness is absent. For instance, Kabat-Zinn (1996) identified seven qualities that encompassed this attitudinal component of mindfulness. Such qualities include the capacity to perceive one's experience impartially; perceiving the meditation as an end in itself rather than a means; accepting the present moment as it is; being patient with the present by not attempting to make it something other than it is; having a sense of trust within oneself; the ability to let go of one's thoughts; and finally, an openness to novelty. Shapiro and Schwartz (2000) extended this by adding a further five qualities including, having a gentle and considerate perception of one's phenomenological experience; giving without the expectation of

receiving; being empathetic towards another's state of mind; being thankful regardless of external circumstances; and also loving others unconditionally.

However, Schmidt (2011) claims that the non-specific nature of such multi-dimensional qualities makes it exceedingly difficult to examine the attitudinal component of mindfulness through empirical means. Nonetheless, with a number of these qualities in mind, Bishop et al. (2004, p.234) operationalised this attitudinal component of mindfulness as an, "orientation of curiosity, experiential openness, and acceptance". Although describing the attitudinal component of Kabat-Zinn's definition with qualities that resemble a state of nonjudgmental-ness, as pointed out by Reise and Waller (2009), the presence of something is not an indication of the absence of its opposite. Moreover, this operationalisation is based primarily on interpretations of mindfulness within the psychological literature as opposed to referring back to the original meaning and intention of mindfulness in the Buddhist literature.

The Meaning of *Sati*

The connection between mindfulness and *Sati* first arose within the Western world through a translation of the seven Suttas from the Buddhist text, *Digha Nikaya* (1899-1921/2007), by Rhys Davids, a scholar of Pali. According to Gethin (2011), it is evident that Davids utilised a number of translations before consistently settling upon mindfulness. The first translations included 'thought' and 'earnest meditation'. It was not until sometime later in translating the seven Suttas that mindfulness was used commonly throughout as the preferred translation of *Sati*. Bhikkhu (2008), a Buddhist scholar, argues that mindfulness was eventually chosen due to its association with the Western adjective 'mindful'. It is thought mindful had been initially used from the fourteenth century in the West as a description of prayer by the anonymously written *The Cloud of Unknowing* (Progroff (Trans.), 1989). Thus, in the post-Darwinian era, with increasing disenchantment felt by many Christians, Rhys Davids potentially chose the word mindfulness with this audience in mind who were ultimately searching for a more secular form of spirituality.

Sati, according to the Pali-English dictionary (Davids & Stede, 2009, p.745) was then defined by memory, recognition, and consciousness. English translations of *Sati* according to the same dictionary cover mindfulness but also an array of other

possibilities, such as intentness or lucidity of mind, alertness, being in possession of one's consciousness, a sense of self-consciousness, and conscience. Nonetheless, Gethin (2011) continues to argue that early translators of *Sati* had difficulty conveying this word as a technical term. For a number of Buddhist scholars, such as Bodhi and Nanamoli (1995, p.994), Namamoli (1991, p.467) Pandita (1992, p.100), Thera (1962, p.24), and Thera (1949, p.xii), the underlying essence of *Sati*, in the context of its use by the Buddha, is sustained attention. Moreover, the interconnected nature of constructs described in Buddhist philosophy means that *Sati* is almost never used in isolation (Bodhi, 2011; Harrison, 2015). *Sati* is commonly referred to in conjunction with *Sampajjana* (Sangharakshita, 2004). *Sampajjana* is translated in English as 'good judgement', 'clear understanding', or 'evaluation'. According to Bodhi (2011), *Sampajjana* provides the bridge between sustained attention and the cultivation of insight, or rather the bridge from Samatha to Vipassanā meditation. For Bodhi (2011, p.15) and Thera (2000), even when *Sati* appears by itself in the Buddhist Suttas, *Sampajjana* is always implied.

A Common Trend: Openness to Experience

Consistent with a number of other conceptualisations of mindfulness, both Langer's and Kabat-Zinn's theories involve the regulation of attention to the present moment as it unfolds. Additionally, Hart et al. (2013) identified that both conceptualisations overlap in terms of describing an attitude defined by an openness to experience. The researchers concluded that Langer could just be describing one aspect of Kabat-Zinn's conceptualisation of the attitudinal component of mindfulness. Rather, it is likely that both Langer's and Kabat-Zinn's definition overlap with regards to the most fundamental aspect associated with mindfulness, openness to experience. This openness to experience is typically used in conjunction with acceptance, which in turn is used as synonymous with equanimity (for reviews, see: Desbordes, Gard, Hoge, & Hölzel, 2015; Zeng, Oei, Ye, & Liu, 2015).

However, Mikulas (2011) claims that such definitions of mindfulness typically confuse contents with the behaviours of mind. According to Mikulas, the contents of the mind include sensory perceptions, memories, thoughts, and interpretation of emotions. On the other hand, the behaviours of the mind refer to the process of selecting the contents of the mind in an attempt to reconstruct them into a coherent whole. Thus, the mind is constantly behaving in this way, prior to, during, and

subsequent to the occurrence of any content of mind within the phenomenological landscape.

Mikulas (2011) argues that there are fundamentally only three behaviours of mind. These include attachment, concentration, and awareness. The author claims that attachment is a grasping of particular contents of the mind; concentration entails sustaining attention on a sensory object for an indefinite period of time; finally, awareness is the experience of the contents of the mind, which can range from identifying with particular contents or being a detached observer to such contents. As awareness and the object of awareness arise within consciousness simultaneously, and as an individual becomes identified with such a content of the mind, they are often confounded as one and the same.

Therefore, Mikulas (2011) suggests that the attitudinal component of Kabat-Zinn's definition of mindfulness is in actuality a reference to the contents of mind rather than the behaviour of the mind, awareness. A similar argument has been postulated by Chiesa and Malinowski (2011) with regards to ACT and DBT. The authors claim that these MBIs, without any formal meditative techniques, primarily concern changing the contents of the mind. Yet, accordingly, mindfulness does not necessarily entail non-judgement, as non-judging is still a content of mind. Rather, mindfulness is simply observing that one is being non-judging. Mikulas (2011) continues to conclude that mindfulness is in actuality a mode of awareness. Mindfulness entails the increasing scope and clarity of awareness. Mikulas (2011) concludes that concentration, mindfulness, and equanimity are all related but distinct concepts. Where concentration can be thought of as the practice of developing sustained attention, mindfulness as the application of this sustained attention to one's phenomenological world, leading to equanimity, a experiential state of mind where all subjective judgement is suspended. The latter, as implied by the second component of mindfulness, is often used in reference to acceptance of all aspects of one's phenomenological world; yet this confounding of constructs has a number of theoretical implications.

Problems with Acceptance as Synonymous with Equanimity

Although there are a number of definitions of acceptance relating to receiving or undertaking action, being perceived as adequate, or agreeing with an idea,

acceptance in the context of psychological phenomena and one's experience is defined by Oxford Dictionaries (2015) as, "a willingness to tolerate an unpleasant or difficult situation". In terms of this definition, Zeng et al. (2015) have noted that there are theoretical differences between both acceptance and equanimity. Primarily, according to Zeng and colleagues, equanimity is characterised by openness towards all aspects of one's phenomenological experience, as opposed to a tolerance for unpleasant or difficult situations. Additionally, acceptance can imply the need to co-exist with negative internal phenomena; yet, the intention of cultivating equanimity in the Buddhist context is to attenuate negative temperament whilst developing positive virtue (Gnanarama, 2000).

Acceptance, according to Rapgay and Bystrisky (2009), actually has the effect of inhibiting the development of bare attention. Rapgay and Bystrisky claim that having the intention to accept all contents of one's phenomenonological experience contaminates the perceptual experience with the intention of being accepting towards that very experience. The authors continue to state that curiosity additionally appears to refer to the internal motivation or intention to understand one's experience, thereby colouring the internal experience with cognitive processing. However, in a state of mindfulness, Rapgay and Bystrisky argue that one attempts to observe one's phenomenological landscape, with no effort expended on trying to be curious or inviting experience, as such would ultimately inhibit mindfulness itself. The authors additionally and paradoxically state that, similar to cognitive therapy, the purpose of mindfulness is to identify and replace maladaptive thoughts with those that are more adaptive. Notwithstanding, commencing mindfulness with a purpose also colours this process with an intention.

Finally, it is likely that the use of acceptance by Bishop et al. (2004) in the operationalisation of the attitudinal component of mindfulness is an error. A page before the authors conclude on the attitudinal component of mindfulness as being an, "orientation of curiosity, experiential openness, and acceptance", they define acceptance as experiential openness. Citing Roemer and Orsillo (2002), they state that, "acceptance is defined as being experientially open to the reality of the present moment" (p.233, Para.6, Line.2). Roemer and Orsillo (2002) further claim that acceptance as openness is beyond the judgments of belief or disbelief, fairness or unfairness. They state that this is necessary in order to reduce reliance on verbal rules

and cognitive processing that ultimately take away from experiencing the moment and the flexibility inherent in the attitude of openness.

Roemer and Orsillo (2002) do not cite from where they obtained this definition of acceptance as experiential openness. However, it was Rogers (1951, p.711) who originally used the term experiential openness in reference to acceptance. Rogers argued, in the context of adaptive child development, when a child feels completely accepted by the parental figure, the child is able to be experientially open to all of their phenomenological experience. This overlaps with Bion's (1967) work on maternal reverie. Rogers (1959, p.206) furthermore used experiential openness in conjunction with being congruent and the expression of self-actualisation.

Regardless of the context of acceptance, the choice of the word as part of the attitudinal component of mindfulness is more likely an oversight, which is problematic insofar that the vast majority of mindfulness scales encompass items containing acceptance in their measurement of this construct (see: beginning of Chapter Two: Measuring Equanimity for a review). Furthermore, some proponents of acceptance being a function of mindfulness, such as Bishop et al. (2004), encourage clients to not only accept what is occurring on the mental landscape, but additionally invite these experiences. These same proponents argue that mindfulness does not need systematic training but is rather a function in everyday life. By claiming that it is a natural ability, which does not need to be actively cultivated, further obscures its original intended meaning and its relationship with equanimity.

Equanimity in Buddhist Thought

The word equanimity is of Latin origin and is a combination of the words *aequus* and *animus*, meaning equal mind, respectively (Hanson, 2009). Based on their understanding of Buddhist philosophy as well as the two-component operationalisation of mindfulness by Bishop et al. (2004) and Kabat-Zinn (1996), Desbordes et al. (2015) define equanimity as encompassing two components. Equanimity is conceptualised as an attitude characterised by openness, even-mindedness, and acceptance; and secondly, it is an enduring quality that is the end result of cultivating this attitude, or rather a trait. In contrast to mindfulness, the idea of equanimity as an outcome of meditative practice has only recently been identified as an important avenue of exploration within psychology (Desbordes et al., 2015).

Upekkhā, of Pali origin, is considered to translate to equanimity in English. According to the Pali-English dictionary (Davids & Stede, 2009), *Upekkhā* is defined as "looking on" with a "hedonic neutrality", as in, "indifference, disinterestedness, neural feeling, equanimity". However, according to Thera's (1956, p.137) commentary of the *Abhidhamma*, considered the ultimate teaching of the Buddha, such ways of looking on with awareness are in fact close equivalents (near enemies) of *Upekkhā*. Furthermore, indifference is conceptualised as an avoidance of values and pursuing long-term goals, which is contrary to equanimity itself (Gunaratana, 2002; Salzberg, 2002). Rather, *Upekkhā* involves looking on with impartiality (for instance, Kabat-Zinn's nonjudgmental-ness), embracing all that is good and bad, pleasurable or painful, things that are agreeable and those that are disagreeable. Thus, the essence of *Upekkhā* is lost when transferring this concept across languages (for instance, see: Gregory, 2012).

Understanding the Pali etymology of the word *Upekkhā* allows for a more accurate interpretation of its intended meaning. *Upekkhā* is derived from the prefix *upa*, meaning "towards", as well as the root *ikh*, meaning "to see" (Gunaratana, 1985). Taken together, *Upekkhā* is a seeing towards all things, it is seeing that is inclusive of everything. *Upekkhā* is a noncritical quality of mind that is receptive and open to all of one's phenomenological experience. This is in contradistinction to the word *Apekkha,* which is commonly translated to mean desire or attachment in English. *Apekkha* shares the same root as *Upekkhā – ikh*, "to see". However, it differs in terms of its prefix, *apa*, meaning "away from" (Gunaratana, 1985). *Apekkha* is a seeing of something to the exclusion of something else. *Apekkha*, then, is a critical quality of mind that excludes, or turns away from, some aspects of one's phenomenological experience in order to turn towards that which is desired or that which one is attached to.

Buddhist philosophy furthermore posits that *Apekkha* is the source of *dukkha*, mental suffering (Gnanarama, 2000). The tension of wanting to turn away from an aspect of one's phenomenological experience causes and perpetuates psychological distress (Chawla & Ostafin, 2007). Developing the capacity to be present with one's experience, regardless of its emotional valance, provides the opportunity to see the interwoven nature of both suffering and joy within one's life (Kornfield, 2008). As

such, equanimity is firmly, “rooted in insight” (Thera, 2000, p.258), and underlies its development.

In Buddhist philosophy, equanimity forms the “underlying structural grid” (Soeng, 2004, p.23) for the sublime states. The sublime states consist of loving-kindness, compassion, sympathetic joy, and also the guiding force and “crown and cumulation” (Thera, 1993, p.13) of these states, equanimity. According to Wallace (2010, p.154), from equanimity, the other sublime states arise. The author claims that “equanimity is absolutely indispensable… from equanimity one may cultivate great loving-kindness and great compassion”. In other words, sustained attention primes the openness and receptiveness inherent within the right hemispheric perception of the world based on its manner of attending to information, which in turn primes right hemispheric qualities, such as compassion and emotional intelligence.

In fact, a few models within the psychological literature support this relationship between the cultivation of attention and equanimity. Primarily, Tang and Tang (2015, p.370), as illustrated in Figure 1.1, proposes that mindfulness facilitates in the attentional and emotional regulatory processes, which develops awareness with equanimity, and ultimately underlies the cultivation of therapeutic outcomes, such as compassion and happiness. Personal communication with the authors (12th July, 2016) confirmed that their model suggests that equanimity mediates the relationship between mindfulness and therapeutic outcomes. In an earlier model, Rapgay and Bystrisky (2009, p.152), as illustrated in Figure 1.2, suggests that labelling, perceptual and cognitive regulation mediates the relationship between mindfulness and equanimity (defined as quiet stillness); with equanimity, in turn, potentially facilitating in the development of therapeutic outcomes.

As illustrated in the models, it is primarily through the practice of developing sustained attention that one develops equanimity (a number of other researchers additionally suggest this relationship, see for instance: Desbordes et al., 2015; Hadash, Segev, Tanay, Goldstein, & Bernstein, 2016; Goldstein, 2016; Harrison, 2015; Lomas et al., 2015). Therefore, the way in which mindfulness is conceptualised has important implications in terms of the inconsistencies within the literature when describing this construct (for reveiws, see: Brown & Ryan, 2004; Grossman & Van Dam, 2011; Grossman, 2011; Thompson & Waltz, 2007). As discussed earlier, Bishop et al. (2004) operationalised mindfulness according to Kabat-Zinn's (1990)

initial definition, which involves two components; namely, the self-regulation of attention in order to provide awareness of immediate experience, and additionally, an orientation of curiosity, openness, and acceptance towards this immediate experience. This conceptualisation of mindfulness does not consider the causality element in Buddhist philosophy, whereby the regulation of sustained attention facilitates in developing such an orientation. Suggesting that the original two-component definition of mindfulness by Kabat-Zinn (1990) is in actuality describing both *Sati* and *Upekkhā* (Desbordes et al., 2015; Hadash et al., 2016; Zeng et al., 2015). This is further reiterated by Olendzki (2011, p.61), who stated that, "mindful attention neither favours nor opposes the object, but rather expresses the quality of equanimity. This is where modern definitions of mindfulness get the sense of not judging the object but of accepting it as it is".

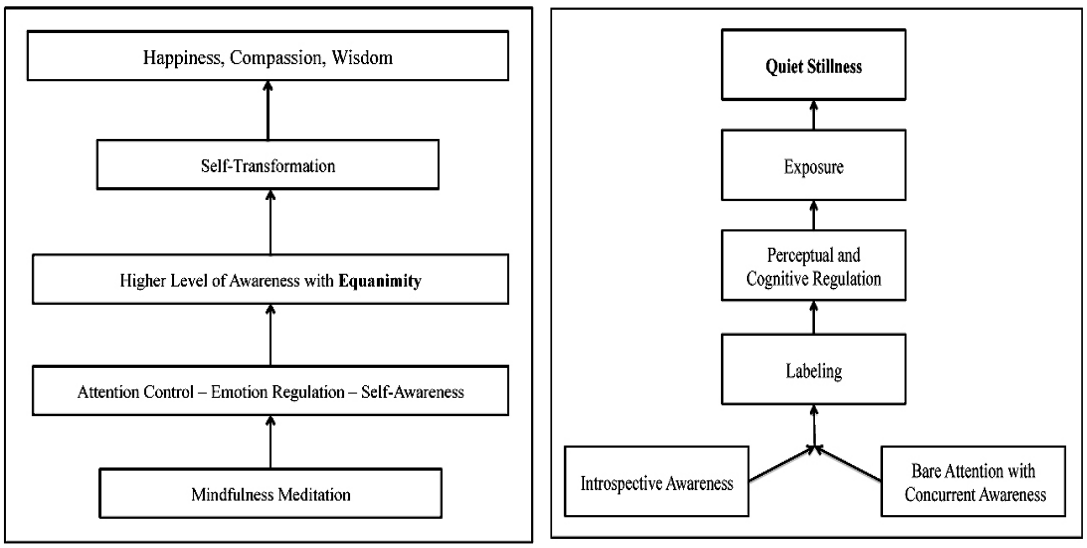


Figure 1.1. (left) Tang & Tang's (2015) model suggesting the relationship between mindfulness and equanimity. Adapted from "Rethinking Future Directions in the Mindfulness Field," by Y. Tang and R. Tang, 2015, Psychological Inquiry, 26(4), p.370. Copyright 2015 by Routledge. Reprinted with Permission.

Figure 1.2. (right) Rapgay & Bystrisky's (2009) model documenting the relationship between the same constructs. Adapted from "Classical Mindfulness: An Introduction to its Theory and Practice for Clinical Application," by L. Rapgay and A. Bystrisky, 2009, Longevity, Regeneration, and Optimal Health, 1172, p.152. Copyright 2009 by New York Academy of Sciences. Adapted with Permission.

The idea that Bishop et al. (2004) and Kabat-Zinn (1996) did not consider the causal nature of the two components indicates mindfulness was incorrectly defined by the process as well as the state that this process aimed to achieve, when in fact, although both are interrelated, they are distinct. This is potentially why such a debate continues regarding the nature of mindfulness in terms of being a process, state, or trait (see: Brown & Ryan, 2004). Instead, concentration can be conceptualised as the process of developing one's capacity for sustained attention, which is then directed to one's phenomenological world in order to develop insight. This whole process consequently cultivates a state of equanimity, defined by an open and receptive attitude towards one's phenomenological experience regardless of its emotional valance.

Although there is a parallel line of research distinct from mindfulness within the social sciences literature in terms of equanimity, there is also a persistent lack of consensus when defining this construct. Kraus and Sears (2009) define equanimity as acceptance of self and others. Mack et al. (2008) extend this definition to additionally include peace and calmness. Other researchers overlap in regards to the latter defining attributes. Astin and Keen (2006) claim that equanimity is not only associated with peace and calm, but also centred-ness and self-transcendence. In a similar way, Boyd Wilson and Walkey (2015) equate it with being at peace, authenticity, as well as a sense of oneness and wholeness. Tsui, Chan, and Tin (2016) summarise these qualities as internal harmony. Whereas Van Tongeren and Green (2010) prefer the usage of integrity of self, worldview, and meaning. For Lomas, Edginton, Cartwright, and Ridge (2015), equanimity is the outcome of decentring, which is defined as tolerance and non-reactivity.

Some other authors, such as Wagnild and Young (1993) as well as Chan et al. (2014), describe equanimity as a facet of resilience. The latter furthermore defines equanimity by virtue of mindful awareness, general vitality, and spiritual self-care. In line with a Buddhist definition, Sakairi (2004) described equanimity as objectiveness and receptivity. Finally, related to this, but potentially more in tune with cognitive theories of mindfulness, Sugiura and Sugiura (2015) refer to equanimity as detached objectivity. Most of these definitions are not based on Buddhist philosophy, with only Sakairi (2004) the result of a qualitative analysis of meditator's descriptions concerning the construct. Still, others have defined equanimity retrospectively as a

result of the cluster of items determined by factor analysis (see: Chapter Two: Measuring Equanimity for a review).

The Pervasiveness of Equanimity

It is surprising that equanimity has only recently been identified as a very important avenue of exploration within psychology (Desbordes et al., 2015) considering the pervasiveness of equanimity throughout various religious and spiritual systems of thought. In the Bhagavad Gita (2:48, Mascaro (Trans.), 2008), equanimity is referred to as the unification of individual consciousness with ultimate consciousness. The Upanishads (Upanishad Vahini: Bhagawan, 2002) describes equanimity as the Absolute one-ness, which is described as one's true nature. Buddhism posits equanimity as the foundation for the end of mental suffering (Udana 8:4; Strong (Trans.), 1902). In Jainism, liberation is attained through equanimity, and is referred to as the true nature of the soul (1:9 Bhagavati Sutra; Sudharmasvāmi, 2008). The Bible (Psalm 46:10 King James Version; 2000) states, "Be still and know that I am God"; and in the Quran (4:135; Ali (Trans.), 2001), it is written, "O you who believe, you shall be absolutely equitable, and observe GOD".

These references suggest that the cultivation of equanimity is not only associated with enhanced wellbeing and the attenuation of psychological distress, but is also considered a means of actualising or transcending oneself (Recall Roger's connection between experiential openness and self-actualisation). The references to equanimity additionally extend from the religious to the philosophical literature throughout history. For instance, Socrates was believed to have equated equanimity with psychological wellbeing, "But the soul, my best friend, should be treated by means of dialogue in order for equanimity to come about. Then it will be easy to bring health to the head and the whole body as well" (Plato, 380 B.C.E/2013, p.132). Plato himself claims that equanimity, the mark of wisdom, was the greatest characteristic of Socrates (Urwick, 1920, p.10). In the book of Confucius, it states that, "In purity and Stillness, your spirit will be revealed" (Wong, 2012, p.6).

For both Descartes and Spinoza, to experience equanimity is to become one with the divine (Pereboom, 1994, p.149). Each of the pre-Socratic philosophers Epicurus, Pyrrho, and Democritus, used the word *Ataraxia* (Greek for Equanimity; recall Meares' Mental Ataraxis) as synonymous with the only true happiness (Warren,

2002). The Stoics described eudemonia (happiness/wellbeing) as a state of equanimity, which is free from disturbances of the mind (Strange, 2004, p.37). Heidegger believed that truth arises from alethic, which Spinelli (2003, p.27) defined as the "ever-disclosing, ever-revealing, openness to being". Although this list is not exhaustive, it does suggest the importance of equanimity throughout history and across cultures. This is even true within the language of Australian Aboriginals, whereby 'Dadirri' refers to "quiet still awareness" (Grieves, 2009, p.24) as a way to bring peace and wholeness to oneself.

Equanimity in Psychology

Although there is little explicit mention of equanimity in psychology, Desbordes et al. (2015) argue that its influence can be seen as an implicit driving force in the development of psychotherapy itself. Within psychoanalytic practice, the analysand is encouraged to adapt an open and receptive attitude towards their thoughts and feelings. The analyst welcomes their free-associations through their free-floating attention regardless of their emotional valance. Perceiving one's mental landscape with equanimity allows aspects of one's experience that had previously been alienated or misinterpreted to become objects of consciousness, which can ultimately be transcended and unified within the self (Wilber, 2000).

According to both Grotstein (2006) and Pelled (2007), Bion's (1967) description of maternal reverie, which is essential to the healthy development of a child, was a description of *Upekkhā*. The mother is essentially experienced as a containing object when she meets the child's projections with a calm and open-receptive attitude. Similarly, Bien (2004) as well as Felder, Aten, Neudeck, Shiomi-Chen and Robbing (2014) argue that person-centred psychotherapy can be interpreted as fundamentally a practice in developing an open and receptive attitude. The qualities of empathy, unconditional positive regard, and genuineness, all arise from the therapists' capacity to attain a state of equanimity. This provides the relational space whereby clients can begin to develop an open and receptive attitude towards their own mental landscape. Additionally, according to Person Centred Theory (Rogers, 1961), the fully functioning individual is characterised by an openness to present-moment experience. Similarly, authenticity, according to Heidegger's phenomenology involves an "opening-up to, or ownership of that which presents itself to us" (Spinelli, 2007, p.50).

For Classens (2010), CBT is phenomenological to the extent that it facilitates in developing awareness and provides a description of an individual's experience such as the triggering event, the thoughts about such an event and the associated emotions. CBT pragmatically brings into question one's 'sedimented' beliefs that filter the experience of oneself, others, as well as the world in general (for instance, seeing the world through the selectivity axis of attention). However, working with the client in order to modify such beliefs does not foster the 'phenomenological reduction', whereby reality is perceived for what it is and as it unfolds. Instead, through CBT, reality is just seen with a different colour lens. This has imaginably been one of the pivotal factors underlying the development of the 'third wave' of cognitive therapies, which incorporate strategies 'consistent' with mindfulness.

Finally, Nicholls and Gray (2007) argue that within adventure therapy, which incorporates counselling with trust activities, wilderness expeditions, and cooperative games within nature, a critical ingredient to personal transformation is the experience of stillness. Similarly, Landreth (2012, pp.76-79) argues that an experience of stillness for the therapist is essential for the therapeutic benefit of the child in child-centred play therapy. Thus, equanimity potentially informs therapeutic practice, which coincides with Schore's (2014) argument that psychotherapy predominantly involves right hemispheric predominance. Therefore, further exploring the nature of equanimity, its development and relationship with the cultivation of attention as well as wellbeing and the attenuation of psychological distress, will then have important implications within future developments in the practice and understanding of psychology.

Summary

Prior to attempting what the title of this chapter suggests, a number of limitations within the mindfulness literature were described. Such limitations have potentially obscured the relationship between both *Sati* and *Upekkhā* within the literature. These limitations concern the subtly diverging definitions of mindfulness as well as being continuously further removed or 'dis-embedded' from its contemplative origins. The problematic nature in defining mindfulness extends to the nature of this construct, as in, whether it is conceptualised as a process, state, or trait.

In developing measures of mindfulness, researchers typically develop items within the context of little or no meditative experience. Although a number of measures exist for mindfulness, some studies have indicated little convergence in terms of variance explained. This highlights the fact that there is currently no empirical standard in which to validate these measures. For the validation of such mindfulness measures, many studies utilise undergraduate students to explore the underlying factor structure of items. However, this demographic is unlikely to have extensive experience in mindfulness. The resulting factor structure is therefore likely inconsistent with those who have extensive meditative experience. Nonetheless, unexpected differences between these two groups in terms of mindfulness are attributed to a 'response shift', whereby experienced meditators perceive the intervals of the mindfulness measure as wider and the zero-point as closer to the true zero when the latent variable is absent.

A number of scales are in fact subtly redefining mindfulness as a result of such factor analyses. Although the vast majority of conceptualisations concerning mindfulness within the literature incorporate a component of attending to present moment experience, the manner in which this is achieved varies. Moreover, there is a strong consensus regarding a second or attitudinal component of mindfulness, however this component, too, subtly varies across researchers in its conceptualisation. It was argued that such 'hybrids' have has resulted from the various interpretations of Kabat-Zinn's conceptualisation of mindfulness involving a nonjudgmental-ness component. In order to be empirically investigated, researchers conceptualise what is potentially present when judgmental-ness is absent. This has led Bishop et al. (2004) to suggest that the attitudes of acceptance, curiosity, and experiential openness define nonjudgmental-ness.

Nonetheless, Desbores et al. (2015) argue that this second component is in fact describing equanimity. A number of researchers however suggest that acceptance is a near enemy, a quality that, on the surface appears quite similar but in actuality is quite distinct. According to the aetiology of the Pali word *Upekkhā*, this openness to experience in fact describes equanimity. Interestingly, the two leading theories of mindfulness within the literature, Kabat-Zinn's (1994, 2009) as well as Langer's (1989, 2005), only converge on describing the importance of openness when conceptualising the attitudinal component of mindfulness. The convergence of

openness as a pivotal factor relating to mindfulness has occurred even in spite of a continued neglect of both Kabat-Zinn and Langer addressing their differences or considering their similarities when defining mindfulness.

A further issue within the literature is the number of variables that have been proposed to potentially mediate the relationship between mindfulness and therapeutic outcomes. As mindfulness is predominately interpreted within a cognitive paradigm, theorised mediators, such as decentring, re-perceiving, non-attachment, and diffusion, typically involve cognitive manipulation of one's phenomenological landscape. Beyond these, a number of further mediators have been identified within quantitative research, including compassion, emotional intelligence, and meditative insight.

According to early theorists, if meditation involved the cultivation of sustained attention, and if sustained attention is primarily lateralised to the right hemisphere, then it follows that meditation may in fact prime right hemispheric qualities. Although the literature is still inconsistent in terms of the neurobiology of meditation, there is some evidence to support this early hypothesis. However, such research is still in its infancy and thus requires more stringent methodological conditions, such as random controlled trials rather than pseudo-experimental studies. Researchers additionally need to be very clear in terms of the meditation training itself, as compassion or embodied-based meditation has been documented to have contrasting neurological underpinnings compared to the more cognitive, as in MBCT or MBSR, techniques.

The experience of equanimity was argued to coincide with the phenomenological attitude, first-order, buffered implicational, System2 processing, and finally, 'worlding'. The manner of attending is defined by a non-reactive stance, which is open and receptive to all of one's phenomenological landscape. Judgments are not placed on any aspect of such experience, as the experience is perceived as a unified whole, with each aspect in context. It was furthermore argued that such an attitude or manner of attending to the world underlies beneficial psychological outcomes.

It is therefore surprising that equanimity within the mindfulness or psychological literature is only very infrequently mentioned. This is especially in light of the fact that it is pervasive throughout a number of contemplative and philosophical traditions. Moreover, the presence of equanimity can be identified within a number of

psychological modalities. As there is currently no available measure that prospectively assesses the phenomenological experience of meditative equanimity according to qualitative accounts provided by experienced meditators, the current thesis aims to fill this gap within the literature.

2. Measuring Equanimity

"Wait without thought:
So the darkness shall be the light,
and the stillness the dancing."

T. S. Eliot

In the current chapter the construction and validation of available measures of equanimity within the psychological and social sciences literature is described. Additionally, a number of popular mindfulness scales are reviewed for items that are potentially assessing the experience of equanimity.

Equanimity in Measures of Mindfulness

Following on from Desbordes et al.'s (2015) identification of both mindfulness and equanimity inherent within Kabat-Zinn's (1996) and Bishop et al.'s (2004) two-component definition, Zeng et al. (2015) performed a content analysis across the items of nine mindfulness measures in order to differentiate the two constructs. These nine measures included the *Mindful Attention Awareness Scale* (MAAS; Brown & Ryan, 2003), the *Kentucky Inventory of Mindfulness Skills* (KIMS; Baer, Smith, & Allen, 2004), the *Freiburg Mindfulness Inventory* (FMI; Buchhfield, Gossman, & Walach, 2001; Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006), the *Cognitive and Affective Mindfulness Scale – Revised* (CAMS-R; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007); the *Southampton Mindfulness Questionnaire* (SMQ; Chadwick et al., 2008), the *Five Facet Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), the *Philadelphia Mindfulness Scale* (PHLMS; Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008), the *Trait Version of the Toronto Mindfulness Scale* (Trait TMS; Davis, Lau, & Cairns, 2009) and the *Child and Adolescent Mindfulness Measure* (CAMM; Greco, Baer, & Smith, 2011). Zeng et al.'s (2015) aim was to determine the separate proportion of items addressing either present moment awareness or equanimity. For the purposes of simplicity within the content analysis, Zeng et al. considered equanimity to be synonymous with acceptance.

Items developed for the MAAS were based on the researcher's experience and previous knowledge of mindfulness, literature on mindfulness and attention, as well a number of scales measuring a variety of conscious states. Thus, no succinct theoretical structure or definition was advanced prior to the development of items. Through a series of studies, the MAAS was identified as uni-dimensional, comprising 15 items assessing the construct *Presence*. Zeng et al.'s (2015) content analysis of these items determined that none were reflective of equanimity. However, in the initial developmental stages, the MAAS incorporated a second, *Acceptance*, factor. This factor was ultimately excluded as *Presence* correlated with wellbeing in a similar fashion to the total scores of the scale, with *Acceptance* subsequently referred to as "functionally redundant in mindfulness" (Brown & Ryan, 2004; p.245). Nonetheless, this conclusion is contrary to the findings of Cardaciotto et al. (2008). The researchers, in analysing the validity of the PHLMS, which incorporates both *Awareness* and *Acceptance* factors, found that *Acceptance* was significantly associated with wellbeing, whereas no such relationship was identified for *Awareness*. Additionally, Kohls, Sauer, and Walach, (2009) argued that acceptance potentially mediates the relationship between mindfulness and the attenuation of anxiety and depression. Therefore, according to Bergomi, Tschacher, and Kupper (2013b), Brown and Ryan's (2003, 2004) conclusion may have wrongly resulted from their negatively worded acceptance items, which were more reflective of self-criticism or inattentiveness rather than acceptance per se. In any case, Brown and Ryan (2003) paradoxically theorise, based on the development of their items and their ongoing conceptualisation, mindfulness inherently involves an "open receptivity to the present", and moreover suggest that this conceptualisation would ultimately need further investigation (p.844).

Although the KIMS was based on a literature review of the current conceptualisations of mindfulness, the authors also stated that it was "strongly influenced" (p.193) by the skills developed through DBT (Linehann, 1993). According to DBT, these mindfulness skills include observing internal and external phenomena, describing what is being observed without judgment, acting with awareness, and acceptance. However, Bergomi et al. (2013b) argue that mindfulness is potentially pre-conceptual and may not necessarily be conducive to description, which ultimately entails the categorisation of experience. This is reiterated by

Cardaciotto et al. (2008), who claim that describing as a factor of mindfulness is redundant, as this implies a conceptualisation of the experience. Initially 77 items were developed for the scale, which was reduced to 39 subsequent to the content analysis by a panel of 11 individuals trained in DBT. EFA on the measure identified the four skills inherent within DBT. According to Zeng et al.'s (2015) content analysis, all items from the subscales measuring the skill *Acceptance without judgment*, such as, *I believe some of my thoughts are abnormal or bad and I shouldn't think that way* (Item 16; Reversed), were found to be addressing equanimity.

The FMI was developed primarily based on Sole-Leris' (1986) definition of mindfulness, which incorporated the attentional observation, unbiased by one's emotional or intellectual associations, so as to experience phenomena as it truly appears. Although analyses of the original 30-item scale indicated an unstable factor structure, the most consistent factor identified was *Openness*. As a result, Buchhfield, Gossman, and Walach (2001) suggested that this facet of mindfulness is of central significance. The researchers additionally discussed the overlapping nature of both the *Nonjudgmental* and *Openness* factors; arguing that the former entails an attitude characterised by the latter. Within the shortened 14-item scale developed by Walach et al. (2006), Zeng et al. (2015) identified approximately two fifths of items as representing equanimity, including, *I accept unpleasant experiences* (Item 8). Moreover, a CFA conducted by Kohls et al. (2009), identified two factors underlying the 14-item measure, with three fifths of all items loading on a factor characterised by *Acceptance*. This finding was consistent with Sauer, Ziegler, Danay, Ives, and Kohls (2013) who also identified two factors, namely *Presence* and *Acceptance*, through Rasch analysis across 13 items from the short version.

The CAMS-R is a 12-item measure based on Kabat-Zinn's (1996) and Bishop et al.'s (2004) conceptualisation of mindfulness. Specifically, the scale involves the four components of *Attention*, *Present focus*, *Awareness*, and *Acceptance*. An item pool of 35 statements was initially developed by the researchers in order to reflect their operationalisation of mindfulness based on the aforementioned conceptualisation. Structural Equation Modelling (SEM) was utilised in order to arrive at the current model. Items were deleted from the measure until the model appropriately fit the data. Nonetheless, through an iterative process of deleting items in order to arrive at a pre-specified model ultimately is prone to interpretational

confounding (Bainter & Bollen, 2014), whereby the meaning of the factor becomes disconnected from the a priori theory originally proposed by the researchers. Zeng et al.'s (2015) content analysis suggested that all three items, such as, *I can tolerate emotional pain* (Item 3), comprising the *Acceptance* factor reflected equanimity. However, Bergomi et al. (2013b) have criticised the scale for essentially attempting to "capture a capacity and willingness to be mindful" (p.10), rather than the experience of mindfulness itself. Additionally, a third of the items did not load substantially on their respective primary factor. Although the authors suggest that this low loading is potentially the result of these items confounding with other constructs, such as worry and rumination, they may alternatively be measuring the striving to be mindful rather than the experience of mindfulness per se.

The SMQ consists of 16-items based on mindfulness and acceptance therapies. The SMQ assesses four related aspects of mindfulness, with each aspect conceptualised as existing on its own continuum. These aspects include *Decentred awareness* as opposed to being lost in one's cognitions; *Sustaining attention* on difficult thoughts or images regarding oneself rather than experiential avoidance; the *Acceptance* of such thoughts or images versus being judgmental of them; and finally, *Letting go* of these internal phenomena rather than ruminating or worrying about them. In assessing these four related aspects of mindfulness, the authors indicated that a scree test revealed the scale was uni-dimensional. Bergomi et al. (2013b) argue that the scale does not necessarily measure the experience of mindfulness per se, but rather the way in which one relates with difficult thoughts and images about oneself. In concordance with this, Zeng et al.'s (2015) content analysis indicated that all 16 items, including, *Usually when I have distressing thoughts or images, I am able to just notice them without reacting* (Item 1), reflected a relatedness to potentially distressing thoughts and images in an equanimous way.

The FFMQ resulted from an EFA of the five aforementioned mindfulness measures (MAAS, FMI, KIMS, CAMS, and SMQ). Incidentally, a scree test revealed the existence of five factors – *Nonreactivity*, *Observing*, *Acting with awareness*, *Describing*, and *Nonjudging*. According to the authors, the results suggested a factor structure almost identical with the KIMS except for the addition of *Non-reactivity*. However, Bergomi et al. (2013b) argued that the KIMS had the largest pool of items in this analysis, more than twice that of the others, and as such, potentially had a

significant impact on the determination of the factor structure. According to Zeng et al. (2015) each of the items in both the *Nonjudging* and the *Nonreactivity* dimensions, such as, *I tell myself I shouldn't be thinking the way I'm thinking* (Item 25, *Non-judging*, Reversed), reflected the process of accepting one's experience. It is also noted that all items loading on *Nonjudging* and *Acting with awareness* were reverse scored. Interestingly, Zeng et al. (2015) suggested that only half the items in the *Observing* dimension represent cultivating awareness. This essentially translates to the suggestion that only half the items within the entire scale actually reflect the two-component definition of mindfulness. This inconsistency is potentially due to the fact that the approach of Baer et al. (2006) was primarily experiential rather than theoretical, where the researchers did not a priori define mindfulness. Additionally, a consequence of merging the 112 items across the five measures is that some potentially problematic items may be overrepresented, whilst more valid items may be underrepresented (Bergomi et al., 2013b).

The PHLMS was similarly developed according to the two-component definition of mindfulness proposed by both Kabat-Zinn (1996) and Bishop et al. (2004), in which mindfulness was defined by the behaviour of mind entailing present moment awareness and how this behaviour is conducted, through acceptance. Initially, clinical psychologists and graduate students developed a total of 105 statements that were believed to reflect either awareness or acceptance. Items were removed following the demonstration of low face validity according to a panel of six experts who had previously published in the field of mindfulness. A scree test of the remaining items indicated a two-factor solution. Through a subsequent EFA, the ten items that loaded highest for each factor were retained. Although unintentional, this resulted in all items on the *Awareness* factor being positively stated, whereas all *Acceptance* items were negatively worded. However, Netemeyer, Bearden, and Sharma (2003) warn against reverse worded items in scale development as they have the potential to load on their own independent factor. Nonetheless, according to Zeng et al. (2015), all items comprising *Acceptance*, including the negatively worded item, *I try to distract myself when I feel unpleasant emotions* (Item 2, Reversed) were identified as reflecting the reverse of equanimity.

The Trait TMS is a modification of the state version of the same scale developed by Lau et al. (2006). The state TMS was also based on the two-component

conceptualisation of mindfulness as proposed by Kabat-Zinn (1996) and Bishop et al. (2004). The consensus team comprising Bishop et al. (2004) established the initial pool of items in order to immediately assess the degree of mindfulness in a preceding meditation session. An EFA suggested two related factors, namely *Decentring* and *Curiosity*. The Trait version consists of the same items but with the modification of all items worded in the present tense. However, this was not followed by further factor analyses to determine if this change had impacted the factor structure of the scale. Instead, similar validity analyses were conducted that were implemented for the state version with both sets of analyses subsequently compared. Interestingly, the researchers found that although the *Decentring* factor was related to meditative experience, the *Curiosity* factor was not. Bergomi et al. (2013b) argues this result indicates that curiosity is related more specifically to MBSR. In support of this conjecture, Zeng et al.'s (2015) content analysis did not identify any items within the curiosity dimension to reflect either awareness or equanimity. However, half the items in *Decentring* were potentially assessing equanimity through items such as, *I approach each experience by trying to accept it, no matter whether it is pleasant or unpleasant* (Item 9). In concluding their paper, Lau et al. (2006) redefine mindfulness according to the identified factors, in which mindfulness is a "state of curious, decentred awareness of one's experience" (p.1462).

The CAMM is primarily based on the KIMS but adjusted for the measurement of mindfulness skills within school aged children and adolescents. Three of the four facets in the KIMS are represented in the CAMM, which include *Observing*, *Acting with awareness*, and *Accepting without judgment*. *Describing* was not included as the authors theorised that the young person's developmental level will have a significant impact on the degree to which they identify with particular items. Interestingly, this facet was criticised by Bergomi et al. (2013b) as conflicting with the experience of mindfulness. Through an analysis of the scree plot, the authors concluded that all single-, two-, and three-factor solutions were feasible. An EFA was then performed according to the three-factor solution. These factors included *Not accepting responses to thoughts and feeling*, *Avoidance of these internal phenomena*, as well as *Observing*. However, the latter was dropped from further analyses due to demonstrating inconsistent patterns to what the authors referred to as mindfulness. The *Observing* factor demonstrated positive correlations with thought suppression and somatic

complaints as well as non-significant correlations with internalising and externalising symptoms. Subsequent to the deletion of this factor, a number of the remaining items failed to load on a primary factor or indicated significant cross loading. As a result, the authors then preferred the single-factor solution consisting of ten items. Of these, Zeng et al. (2015) suggested that three fifths, for instance, *I get upset with myself for having certain thoughts* (Item 8, Reversed), were assessing equanimity. Nonetheless, the skill of observing within children had inconsistent associations to what would be expected, such as positive correlations with thought suppression and somatic complaints. In addition to this, the fragile factor structure, especially in the context of removing a factor, ultimately puts into doubt the validity of the measure as well as the original scale that the measure is founded upon.

As mentioned at the beginning of the chapter, despite identifying particular subscales within some of the available mindfulness measures as reflecting equanimity, Zeng et al.'s (2015) content analysis identified items that reflected equanimity by virtue of assessing the attitude of acceptance. Moreover, the items themselves concerned the process of developing acceptance rather than the experience of acceptance itself. Nonetheless, as discussed in Chapter One, corresponding with Gnanarama (2000) and Rapgay and Bystrisky (2009), who identified problems with defining equanimity by virtue of acceptance, Zeng et al. (2015) additionally argue that there are a number of theoretical differences between the two constructs. Acceptance in the context of psychological phenomena is defined by "a willingness to tolerate an unpleasant or difficult situation" (Oxford Dictionaries, 2015). However, Zeng et al. (2015) argue that equanimity is primarily an attitude of being open and embracing towards all aspects of one's phenomenological experience regardless of its emotional valance, as opposed to tolerance of just unpleasant or difficult situations. Additionally, acceptance can imply the need to co-exist with negative phenomena; yet, according to Gnanarama's (2000) commentary on Buddhist philosophy, the intention of cultivating equanimity in the Buddhist context is to attenuate negative temperament whilst developing positive virtue. Instead, the authors argue that contrary to acceptance, equanimity involves the balancing of non-judging of negative internal phenomena with the concerted effort to additionally change this phenomenological landscape.

Self-report Measures of Equanimity

According to Zeng et al. (2015), although some of the subscales within the mindfulness measures assess equanimity defined as acceptance, none can adequately measure the original meaning of equanimity as proposed in Buddhist thought. Moreover, Hadash et al. (2016) argue that there is currently no "established operationalisation or measurement methodology that reflects equanimity" (p.1217). Desbordes et al. (2015), nonetheless, have identified a number of self-report measures within the social sciences that have previously attempted, in some way, to measure the construct of equanimity. These measures include the *Aspects of Spirituality Scale* (Büssing, Ostermann, Matthiessen, & Bussing, 2007), the *Integrated Spiritual Intelligence Scale* (Amram & Dryer, 2008), the *Self-Other Four Immeasurables Scale* (Kraus & Sears, 2009), *the Peace, Equanimity, and Acceptance in the Cancer Experience Scale* (Mack et al., 2008), and the *Resilience Scale* (Wagnild & Young, 1993). In addition to these, other measures of equanimity not identified by Desbordes et al. (2014) include the *Equanimity Scale* (Astin, Astin, & Lindholm, 2011; Astin & Keen, 2006), the *Holistic Well-Being Scale* (Chan et al., 2014), the *Cognitive Styles Modified by Meditation scale* (Sakairi, 2004), and the *Enlightenment Scale* (Boyd-Wilson & Walkey, 2013)**.**

The Decoupling Model of Equanimity

In response to Desbordes et al.'s (2015) identification that contemporary conceptualisations of mindfulness may in fact capture both present moment awareness as well as equanimity, Hadash et al. (2016) formalised the 'decoupling model of equanimity'. The authors argue that equanimity is fundamentally a decoupling of one's 'desire' from their 'hedonic tone', whereby one's experience is met with mental balance. According to the authors, equanimity is conceptualised as an attitude of acceptance, a willingness to "tolerate" experience regardless of its emotional valence in association with attenuated reactivity that is of a habitual nature. The authors note that this definition is consistent with Buddhist notions of equanimity whilst quoting from Olendzki (2006), who defines equanimity as "an attitude that is capable of embracing either pleasure or pain without reflexively reacting to them" (p.258). However, as discussed in Chapter One, tolerating experience is passive, whereas embracing experience is active, where one does not necessarily imply the other.

Acceptance was suggested by the authors to be reflected through the opposite of thought suppression (Wegner, Schneider, Carter, & White, 1987) and distress tolerance (Leyro, Zvolensky, & Bernstein, 2010), which were measured according to the *White Bear Suppression Inventory* (Wegner & Zanakos, 1994) and the *Distress Tolerance Scale* (Simons & Gaher, 2005), respectively. *Non-reactivity* was further broken down into the component parts of anxiety sensitivity (Reiss & McNally, 1985) and additionally cognitive reactivity to sad mood (der Does, 2002), which were assessed through the *Anxiety Sensitivity Index-III* (Taylor et al., 2007) and the revised version of the *Leiden Index of Depression Sensitivity* (der Does, 2002; Solis, 2015). The authors note that although this may be the factor structure of equanimity for novice meditators, a qualitatively distinct factor structure could in fact be present for experienced meditators.

Rather than developing a scale of equanimity from the ground-up, the authors used currently available measures reflecting their conceptualisations of acceptance and non-reactivity. The conceptualisation was based primarily on the author's interpretation of the construct rather than a qualitative analysis of experienced meditator's experience of equanimity. Where no empirical standard has been established regarding what constitutes equanimity, it is not possible to determine if the combination of these measures actually assess this construct. Moreover, as suggested by the nature of such measures, equanimity was interpreted in a cognitive paradigm, where the construct is assimilated to fit within a number of cognitive scales already constructed. This ultimately implies that valuable information regarding the experience of equanimity that does not fit into these scales is neglected and lost. Moreover, Hadash et al.'s (2016) conceptualisation only considers how equanimity relates to negative states and therefore does not appreciate the nature of being equanimous towards positive emotions as well. In terms of this conceptualisation, where the construct is measured in negative terms, Reise and Waller's (2009) point is reiterated here; the presence of a particular construct, or in this case, set of constructs, does not necessarily imply the absence of its opposite.

Through SEM, the authors indicated that a higher-order model of equanimity, with two lower-order factors comprising *Acceptance* and *Non-reactivity*, measured via two scales each, was an acceptable fit within a sample of 191 individuals from the general population of northern Israel. This model itself was chosen as being the best

fit in comparison to four other potential models. However, the fit statistics for the model suggesting two higher-order factors with four lower-order factors was not necessarily significantly different to the model eventually chosen. In order to assess this model of equanimity with the current sample, each of the four scales were translated from English to Hebrew. Yet, no further validity analyses were conducted to determine if the scales still measured what they purported to measure given the translation across languages. Furthermore, no Measurement Invariance was conducted on each of the scales, which would indicate if individuals from the respective countries (where the scales were developed and Israel) conceptualised the constructs in the same way.

Using the four aforementioned scales to assess the proposed two-factor conceptualisation of equanimity, Hadash et al. (2016) further investigated the relationship between mindfulness training and equanimity. The same sample was randomly assigned into either a mindfulness-training group (n = 138) or a contrast condition (n = 53). Individuals within the former group were provided with mindfulness training for one-hour each week across three weeks. Participants were additionally requested to listen to an audio-guided meditation of five-minutes duration on several occasions throughout the remainder of the week. Although there was a good overall retention rate for the training (60%), there was no measure concerning the adherence to further mindfulness activities. Assessments of equanimity occurred at the baseline (CFA study), at the beginning of the third week (mid-intervention), as well as both one- and six-weeks follow-up.

The results revealed a three-way interaction between group, time-points, and self-reported mindfulness. Thus, individuals from the mindfulness group who reported high levels of mindfulness according to the *State Mindfulness Scale* (Tanay & Bernstein, 2013) indicated attenuated reactivity over the entire time-frame of the study. Nether the contrast group or individuals low on self-reported mindfulness from the treatment group reported a reduction in reactivity over the duration of the study. Conversely, no interaction was identified for *Acceptance*. The authors considered that this inconsistent result could potentially be due to not expressively focusing on the development of acceptance within the meditation training. Nevertheless, it may just be that equanimity, although related to acceptance, is a distinct construct.

Aspects of Spirituality Scale (ASP)

Initially, Büssing, Ostermann, and Matthiessen (2007) asked 38 devout spiritual individuals from Germany and Switzerland who identified with various religious orientations, such as Catholic, Protestant, non-defined Christian, Bahá'i, Muslim, Judaism, Buddhism, Hinduism, and Atheism, about their particular view of spirituality and its outward expression. This led to the identification of nine aspects of spirituality found to be somewhat consistent amongst the spiritually diverse interviewees. These nine domains included the *search for meaning in life*, *acting ethically*, *practicing in a ritualistic manner*, *practicing in everyday life*, *transcendence of self*, *a sense of unity*, *reverence*, *a trust in God*, and finally, *insight and wisdom*.

Based on consistency of themes across the interviews, the researchers developed 40 items in order to assess the aforementioned nine proposed domains of spirituality. The researchers then had 488 individuals respond to the 40 items according to a five-point Likert scale, from *does not apply* (0) to *applies very much* (4). Participants included hospital staff, such as doctors and nurses, as well as individuals identifying as Buddhist, Christian, Bahá'i, and Muslim. The authors stated that they had conducted a factor analysis on the collected responses according to the standard procedure. However, they did not specify what this procedure entailed.

Although not stating explicitly how they arrived at such a conclusion, the authors indicated that a 'primary factor analysis' suggested a seven-factor solution, explaining 62.9% of the variance. The researchers did however state the eigenvalues associated with each factor in descending order, which suggests that the factors were identified through the eigenvalues greater than one rule. The extraction and rotation methods used in the factor analysis were omitted from the documented study. This information is important to report as the extraction method reveals the sample's distribution, whilst the rotational method points towards the author's a priori theory regarding how the factors are related (Costello & Osborne, 2005).

The seven factors identified within the scale included 1) *Prayer, trust in God and shelter*; 2) *Insight, awareness, and wisdom*; 3) *Transcendence conviction*; 4) *Compassion, generosity, and patience*; 5) *Conscious interactions*; 6) *Gratitude, reverence, and respect*; and finally 7) *Equanimity*. The latter was interpreted to be an aspect of the search for insight and wisdom domain, which was developed through the

themes arising from the interviews. The authors additionally theorised equanimity to be subsumed under Martsolf and Mickley's (1998) spiritual domain of 'becoming', defined as an unfolding of life and self-reflection.

Only three statements were identified as loading on the *Equanimity* factor. These items included, *Trying to practice equanimity*, *Trying to achieve spirit calm*, and *Meditate*, which were responded to on a five-point Likert scale, from *does not apply* (0) to *applies very much* (4). The subscale demonstrated marginal internal consistency, $\alpha = .68$. This is potentially in part due to the item *Meditate* having a low loading on *Equanimity*, .32, as well as having only three items comprising the subscale. Although the authors did not provide information regarding the cross-loading of items between the factors, they did however identify this item as initially loading on factor one, as in, *Prayer*. This item was assigned to *Equanimity* based primarily on theoretical grounds.

Equanimity was moderately correlated with the factors *Prayer*, *Insight*, and *Transcendence* within the ASP scale. It is interesting that *Equanimity* was not moderately correlated with the factor identified as *Compassion*, especially as Buddhist philosophy posits that equanimity underlies its development (see: Belgard, 2008; Soeng, 2004; Thera, 1993). These associations were more exploratory in nature, and therefore, no a priori theory regarding the potential correlations between factors was used to establish construct validity. Beyond comparisons with the separate subscales of the ASP, no construct validity was established.

Unsurprisingly, analysis of the sample indicated that individuals identifying as Buddhist scored highest on this aspect of spirituality, whereas those who indicated no affiliation with religion or spirituality scored the lowest in terms of equanimity. This could potentially be explained by responses to the item *Meditate*. It is very likely that this item would be associated with formal practice whereby Buddhist practitioners would score higher than non-Buddhists on this item. As the item accounts for one-third of the entire subscale score, it is potentially biased in terms of measuring the experience of equanimity across religious orientations. Moreover, whilst gender and age were found to have had no significant impact on equanimity, the combination of age with religious affiliation did. Additionally, equanimity was also found to be greatest within individuals who were either divorced or widowed when compared with individuals in a relationship. Interestingly, and contrary to the findings of Astin,

Astin, and Lindholm's (2011) as well as Keen's (2010) research, education status did not have an effect on the subscale.

Büssing et al.'s (2007) study did not involve further analyses confirming the factor structure of the ASP. As the sample pool for the initial EFA comprised individuals from a number of religious orientations, a multi-group CFA with a new sample of individuals from various religious orientations could have demonstrated the consistency of the factor structure across individuals practicing different religions. Regardless of establishing factorial validity, the statements reflecting equanimity are quite ambiguous. The statements lack appropriate explanation, such as defining the phrase 'spirit calm'. Moreover, each statement represents the process of attempting to achieve this state, rather than the experience of equanimity itself. Furthermore, as the scale development was primarily explorative in nature, the researchers did not develop a theoretical basis of equanimity prior to the scale's construction.

Another study conducted by Büssing, Föller-Mancini, Gidley, and Heusser, (2010) aimed at confirming the factor structure of the ASP through a further EFA. The study identified six factors with only two of those factors remaining unchanged in terms of the items loading thereon. It is also interesting to note that although equanimity is theorised to be the foundation to religious and spiritual practice (see: Marcus, 2003), the *Equanimity* subscale was dropped in the development of a shortened version of the ASP (Büssing, Föller-Mancini, Gidley, & Heusser, 2010).

The Integrated Spiritual Intelligence Scale

Coinciding with the development of the ASP, a paper presented at the annual American Psychological Association Conference in 2008 by Amram and Dryer described the development and the preliminary validation of the *Integrated Spiritual Intelligence Scale* (ISIS). The authors defined spiritual intelligence as the capacity, "to apply, manifest, and embody spiritual resources, values, and qualities to enhance daily functioning and wellbeing" (p.1). Initially, Amram (2007) conducted interviews with 71 spiritual and religious leaders from a variety of religious orientations. Such orientations overlapped with the study by Büssing et al. (2007) but also further extending the interviews to individuals from Shamanic/Pagan, Eclectic, Non-dual, Taoist, and Yogic backgrounds.

An ecumenical grounded theory approach across the 71 interviews suggested a total of seven overarching themes, including *consciousness*, *grace*, *meaning*, *transcendence*, *truth*, *peaceful surrender*, and *inner directedness*. *Peaceful surrender* was equated with equanimity and was associated with surrendering to something greater than the self, a sense of inner-wholeness, and self-acceptance. Initially, Amram and Dryer (2008) generated 400 items related to the seven themes associated with spiritual intelligence as identified by Amram (2007). Subsequent to the input by a panel of 12 volunteers regarding clarity, redundancy, and face validity, a total of 148 items were retained, with a matched number of reversed and positively worded items. Although citing potential issues with a number of items in terms of the aforementioned criteria, the authors did not indicate if such volunteers were familiar with the spirituality literature, especially with regards to equanimity.

A PCA with Varimax rotation and Hierarchical Cluster analysis on responses provided by a sample of 263 American adults suggested the existence of 22 subscales; one of which was labelled *Equanimity*. Some of the other subscales were also retrospectively defined as *Joy*, *Immanence*, *Transcendence*, *Relatedness*, *Egoless-ness*, *Inner-wholeness*, *Openness*, *Presence*, and *Trust*. Nonetheless, the authors did not identify the means as to how they arrived at a 22-factor solution.

For the specific measurement of equanimity, the items included, *When things are chaotic, I remain aware of what is happening without getting lost in my experience*, *I get upset when things don't go the way I want them to go* (Reversed), and, *Even when things are upsetting and chaotic around me, I remain centred and peaceful inside*. Such items were responded to on a six-point Likert scale, from, *rarely or almost never* (1) to *always or almost always* (6), according to the degree that such an item reflects an individual's experience over the previous six to 12 months. The mean of the subscale represents the subscale score, with higher means indicative of more frequent experiences of equanimity. The authors additionally constructed a short version of the ISIS, which incorporated the two items, across each factor that revealed the highest item-total correlation. For the *Equanimity* subscale, this involved the latter two stated items.

In terms of the internal consistency for the *Equanimity* subscale, α was equal to .74, with the overall scale demonstrating high internal constancy, α = .97. However, the alpha coefficient is influenced primarily by the number of items within the scale

regardless of the dimensional nature of the scale itself (see: Sijtsma, 2009). Although theorising equanimity to be strongly associated with wellbeing, the scale was found to only have a weak association with the SLS (Diener et al., 1985), $r = .29$. In terms of test-retest reliability, analysis of responses by 26 participants on two occasions with a six-week interval, revealed a strong association of the repeated administration, $r = .77$. The authors additionally indicated that group comparisons between business leaders ($n = 15$) and business students ($n = 21$) revealed significantly higher means for the former as opposed to the latter on 19 out of the 22 subscales.

However, it was not specifically stated if equanimity was included in those identified as significantly different between the two groups, not to mention the fact that this may not necessarily be the best representative samples to perform comparisons of the experience of equanimity. Similar to the ASP, no CFA was conducted on the subscales in order to confirm the factor structure. Furthermore, no criterion or construct validity analyses were conducted so as to determine the robustness of the questions purporting to assess the experience of equanimity.

Self-Other Four Immeasurables Scale (SOFI)

Kraus and Sears (2009) constructed the SOFI scale as a way to measure the four wholesome attitudes underlying Buddhist philosophy. These attitudes include loving-kindness, compassion, joy, and equanimity. Initially, the items were developed based on the theoretical qualities of the four immeasurables, as derived from Nhat Hanh's (1991) *Old Paths White Clouds*. Specifically, adjectives were compiled according to the defining feature of such qualities, as well as their near and far enemies. This resulted in the identification of 16 adjectives with four of these potentially related to equanimity in various ways.

The adjective of 'accepting' was referred to as the defining feature of equanimity by the authors. Both 'indifferent' and 'apathetic' provided descriptors of equanimity's near enemies. A near enemy in Buddhist philosophy refers to an emotional experience that can superficially be confused as similar to the wholesome quality, but on a deeper level is actually quite distinct. According to Kornfield (1993), the wholesome attitudes provide a sense of connectedness with others, whereas near enemies perpetuate a sense of separateness. Kornfield (1993) uses the example of pity as compassion's near enemy. Compassion acknowledges another's suffering as a

reflection of the shared human condition. Pity, on the other hand, recognises the other as distinct and remote from oneself and therefore the suffering experienced by the other is perceived as different from one's own. Buddhist philosophy makes the further distinction of a far enemy, which is the opposing attitude to the wholesome quality. According to Kraus and Sears's (2009) framework, the far enemy of equanimity was considered to be 'preoccupied'. However, this is debated within the Buddhist literature, with the Dalai Lama and Chodren (2014, p.218) referring to "attachment, anger, prejudice, and partiality" as the far enemies of equanimity.

In developing the scale, each of the 16 adjectives was paired with *toward myself* and *toward others*, thereby comprising a total of 32 items. The items were rated on a five-point Likert scale, from *very slightly* (1) to *extremely* (5), according to the extent to which the adjective applied to oneself or to one's sense of relatedness with others. Initially, an EFA with a sample of 124 liberal arts students, using Maximum Likelihood (ML) for extraction and Varimax rotation, suggested a six-factor model explaining 64.91% of the total variance.

Potentially due to a number of limitations in conducting the factor analysis, a clear factor structure of the four immeasurables was not identified. The authors arrived at the six-factor model through the eigenvalues greater than one rule, which has been demonstrated to over-extract the number of factors within a dataset (Thompson, 2004; Zwick & Velicer, 1986). Additionally, the ratio of sample size to items was only four to one. According to Costello and Osborne's (2005) meta-analysis of studies exploring factor structures within self-report measures, only 40% of studies with similar item-sample ratios generated the correct factor structure. The implementation of an orthogonal rotation, such as Varimax, indicates that the authors a priori conceptualised that the four immeasurables as not associated with each other.

The non-correlated conceptualisation of the immeasurables is interesting considering that the researchers proposed that compassion potentially mediates the relationship between mindfulness and wellbeing. In their introduction, the authors explain that heightened compassion may change the way one relates with oneself. As reported by Fredrickson, Cohn, Coffey, Pek, and Finkel (2008), wellbeing is theorised as interwoven with loving-kindness and joy; and therefore the factors comprising the SOFI need to be a priori specified as correlated, as in, an oblique rotation of factors, in order to reflect this interwoven relationship.

In any case, the EFA resulted in the removal of 'indifferent', the near enemy, and 'preoccupied', the proposed far enemy, of equanimity. Both were identified as either loading less than .50 on a primary factor or have a .40 cross-loading with a secondary factor. The six ensuing factors identified were *Positive qualities toward both self and other*, *Negative-self*, *Negative-other*, *Overwhelmed self-other*, *Apathy self-other*, and *Judgmental self-other*. The last three factors were conceptualised as near enemies of compassion, equanimity, and loving-kindness, respectively.

However, in the sample of students assessed, it is unclear to what extent they would be able to differentiate between the wholesome quality and the corresponding near enemy, when both on the surface are perceived as similar but on deeper analysis are actually quite distinct. Potentially, in this demographic, it would be expected that the defining feature of the wholesome quality as well as its near enemies would load on the same factor, especially in the case of equanimity and apathy. Nonetheless, it is clear that judgmental can be easily distinguished from loving-kindness, and overwhelmed from compassion. According to Wallace (2010), these are not actually near enemies of their respective wholesome qualities. In fact, attachment and pity are mentioned as the near enemies of both loving-kindness and compassion, respectively. Moreover, apathy is not mentioned at all as the near enemy of equanimity. Rather the adjectives themselves potentially arise from the researcher's misunderstanding of the near and far enemies in Buddhist thought.

Due to the 'complexity' and lack of utility of these factors comprising the near enemies of equanimity, they were subsequently removed from the scale, leaving only *Accepting-self* and *Accepting-other* as the two primary items assessing equanimity. Although the eleven times equanimity is used throughout the book, *Old Paths White Clouds* (Nhat Hanh, 1991), it is not once referred to in the context of acceptance. In fact, on closer examination of the book from which the original 16 adjectives were derived, it does not propose to be a theoretical representation of the four immeasurables. It is rather a series of fables retelling the life and teachings of the Buddha from both the Buddha's as well as a young follower's perspective.

Subsequently, only three factors in the scale remained, including, *Positive-self/other*, *Negative-self*, and *Negative-other*. Comparisons of the means for both *Positive-self* and *Positive-other* suggested that the latter was significantly greater than the former. The authors interpreted this as evidence that the two should be treated

separately, thereby providing a total of four factors. A further EFA on the same sample, with ML and Varimax, was performed after the removal of half the original items, explaining 59.63% of the variance. The finding of a three-factor solution was used to suggest the consistency of the scale. However, this deletion did not follow an iterative process, as the removal of each item has an impact on the loading and cross-loading of remaining items and may potentially impact on the overall factor structure between each individual deletion (Wille, 1996). Moreover, this EFA essentially capitalises on chance; analysing a refined model on the same sample will inevitably result in a better fit.

In order to determine the convergent and discriminant validity of the now four-factor scale, the authors performed a PCA on these factors as well as a number of other measures assessing positive and negative affect (PANAS; Watson et al., 1988), mindfulness (CAMS-R; Feldman et al., 2007), and self-compassion (SCS; Neff, 2003). Leaving beside the fact that PCA is an item reduction technique (Fabrigar, MacCallum, Wegener, & Strahan, 1999), the researchers did find what was expected, such as positive affect, mindfulness, and self-compassion, all loading on the same factor as *Positive-self* and *Positive-other*. However, the measures were treated as single items within a large scale, in which the authors had totalled the scores in each factor or measure prior to the analysis. This reflects the process of parcelling, which essentially camouflages the potential cross-loadings of particular items in each scale (Brown, 2015). It therefore is not necessarily the most valid way of demonstrating the scale's construct validity.

Further construct validity was attempted through a cross-sectional comparison of non-meditators (n = 104) with a group of meditators (n = 12). Mean comparisons across the four factors indicated that meditators scored significantly greater on all factors except *Positive-other*. This finding is counter-intuitive in consideration of the original intention of meditation as developing compassion and loving-kindness, which are primarily other-focused (Wallace, 2010). Yet this finding remains inconclusive based on the extremely small sample of meditators as well as its cross-sectional nature.

Although having been implemented in a number of studies (see: Kang, Gray, & Dovidio, 2015; Wheeler & Lenick, 2015), the scale has not yet been confirmed in further samples through a CFA. Additionally, as equanimity is referred to as

underlying the development of the other immeasurables (see: Chapter One), it would be interesting to perform a SEM to determine the adequacy of such a model. However, this is far from possible to analyse considering the inconsistencies between the original a priori theory regarding the immeasurables and the resulting measure.

Peace, Equanimity, and Acceptance in the Cancer Experience Scale (PEACE)

The PEACE scale was specifically designed to measure acceptance, calmness, as well as one's struggles and difficulties when facing terminal illness. Mack et al. (2008) define equanimity, in the context of living with terminal cancer, as *peaceful acceptance*. The development of the scale grew out of the Coping with Cancer Study conducted by Balboni et al. (2007), which examined the relationship between religious and spiritual support, religious coping, and quality of life within 230 individuals with advanced stages of cancer.

The Coping with Cancer Study involved interviews with a number of individuals who were at least 20 years of age and had received a prognosis of less than a year to live after failure of chemotherapy treatment. Additional information for the measure was provided by clinical observations and reviews of the literature in terms of living with terminal illness. This resulted in the development of 38 potential items, which were administered to a sample of 160 individuals from the Coping With Cancer Study cohort. Individuals were required to respond to each of the items on a four-point Likert scale, from *not at all* (1) to a *large extent* (4).

Analyses of these responses reduced the item pool to 12, with the other 26 removed due to demonstrating low, < .30, item-total correlations. The authors did not indicate if these items were removed in an iterative manner, as the removal of each individual item will impact the item-total correlation of each of the remaining items. Examination of the scree plot for the 12 items suggested the existence of two factors. Through an EFA (extraction and rotation unspecified) these two factors were identified as *Peaceful acceptance* and *Struggles with illness*. Both factors were inversely and significantly related. *Peaceful acceptance* consisted of five items, as provided in Table 2.1, and demonstrated adequate internal consistency, $\alpha = .78$. Item-total correlations for the five items were low to moderate, from $r = .33$ to $r = .66$.

These items primarily assessed an individual's ability to accept their diagnosis as well as experiencing a sense of inner peace, calmness, and tranquillity.

Table 2.1.

Items in the Peaceful Acceptance Subscale of the PEACE Measure

To what extent are you able to accept your diagnosis of cancer?
To what extent would you say you have a sense of inner peace and harmony?
To what extent do you feel that you have made peace with your illness?
Do you feel well loved now?
To what extent do you feel a sense of inner calm and tranquillity?

Comparisons across 153 of the 160 participants indicated that *Peaceful acceptance* was not related to gender, ethnicity, marital status, income, education, or religion. *Peaceful acceptance* was however found to be significantly lower in individuals diagnosed with a depressive or anxiety disorder. The same was indicated for those who reported to have negative coping strategies, as assessed through the 15-item *Brief COPE instru*ment (Carver, 1997). Additionally, individuals who considered themselves to be either moderately or highly spiritual reported a greater degree of *Peaceful acceptance*.

Although PEACE is ultimately limited in its application according to the context of individuals living with terminal illness, it does indicate that *Peaceful acceptance* is associated with positive coping strategies, a sense of wellbeing, and spirituality. Importantly, no difference in *Peaceful acceptance* was identified between individuals who were aware of the nature of their terminal illness compared to those who did not know their illness was terminal. This suggested that *Peaceful acceptance* was associated with spirituality and wellbeing rather than merely cognitive acceptance of one's death.

Peaceful acceptance was found to be associated with lower incidence of depression, anxiety, and PTSD. Nonetheless, due to the cross-sectional nature of the study, the causal relationship between mental health and *Peaceful acceptance* is unknown. Of all the scales measuring equanimity, the PEACE scale is the most

consistently cited within the context of issues associated with nearing end-of-life, but has yet to be examined through a CFA. Nonetheless, given the sensitive nature of its contents, the questions are particularly leading and can potentially pose problem with regards to demand characteristics.

The limitations of the PEACE considerably parallels Tsui et al.'s (2016) measure of equanimity within the nursing literature. Tsui et al. measured equanimity by virtue of two questions, which included, *the ability to maintain internal harmony*, and additionally, *sorrowful in dealing with patients with miscarriage and stillbirth* (Reversed). The items are responded to on a scale of 100 and are designed predominately to ascertain the experience of equanimity within nurses as a result of dealing with these particularly traumatic situations. Due to the very constricted nature of the scale's application, no validity analyses were conducted. However, the authors did find that self-reported equanimity via the two items did in fact moderate the expression of compassion amongst nurses.

The Resilience Scale

For the development of the Resilience Scale, Wagnild and Young (1990) interviewed 24 women aged between 67 and 92 who had experienced a significantly distressing life event, such as death of a loved one, loss of good health, or relocation, within five years prior to the study. The participants had additionally adapted in a positive way subsequent to the distressing event, as indicated by adequate social involvement, a mid to high sense of morale, and also self-reported to have successfully adjusted. When asked how they overcame the associated distress, most of the women indicated that they met the event "head on".

The interviews were then analysed according to a grounded theory approach, in which the themes and patterns that emerge across the interviews are identified and organised into theoretical categories. A theory is consequently developed based on these categories, which is then compared with the current literature describing the same subject area (Glaser & Strauss, 1967). The researchers identified five related themes: *equanimity*, *perseverance*, *self-reliance*, *meaningfulness*, and *existential aloneness*. These themes were considered to reflect the core concept of resilience as, according to the authors, each exemplified flexibility and adaptability. The theoretical grounding of resilience was primarily found in the existential writings of May (1986)

and Frankl (1985), who discussed the development of particular virtues: courage, integrity, and wisdom, as well as finding meaning, respectively, in order to overcome distressing events.

Wagnild and Young (1993) defined equanimity as having a balanced perspective, which was primarily based on the women's accounts of developing a sense of acceptance of the distressing event itself. Additionally, the authors suggested that equanimity involves an openness of experience and an ability to 'sit loose' with what occurs in one's world.

A series of 25 statements were then extracted verbatim from the narratives in order to reflect the overall experience of resilience. A panel of four individuals, including two psychometricians and two nurses, then reviewed the statements. However, the researchers did not indicate to what degree these individuals were versed in the literature of resilience. The assessment of face validity resulted in minor changes of some items. Subsequently, the 25 items were tested for clarity and internal validity within a sample of 39 undergraduate nursing students. Analyses suggested the entire scale had excellent internal consistency, $\alpha = .86$. Moreover, preliminary construct validity was demonstrated through a significant and negative relationship with depression (*Beck Depression Inventory*; Beck, Steer, & Brown, 1996), and a positive association with life satisfaction (*Life Satisfaction Index A*; Neugarten, Havighurst, & Tobin, 1961) and morale (*Philadelphia Geriatric Centre Morale Scale*; Lawton, 1975), as well as objective and self-reported measures of health (Linn & Linn, 1980).

The items were then administered to a sample of 810 adults, who responded to the item according a seven-point Likert scale from *disagree* (1) to *agree* (7). A PCA with oblimin rotation (suggesting that the authors conceptualised the factors as interrelated; see: Chapter Four: Exploratory Factor Analysis for a discussion) was then conducted on the collected responses. The researchers identified between one and two factors as determined on the scree plot. However, using Kaiser's (1970) criterion, five factors were identified with eigenvalues greater than one. The researchers then inspected the scale according to between two and five potential factors. Examination of the item loadings for the factor structure comprising three, four, and five factors, indicated significant cross-loading between the factors for many of the items. A two-factor solution, explaining 44% of the variance, suggested that

resilience consisted of the factors *Personal competence* as well as *Acceptance of self and life*.

Acceptance of self and life comprised eight items assessing qualities of adaptability, balance, flexibility, and a balanced perspective regarding one's experiences (Wagnild & Young, 1993). However, six of the items had low loadings on this factor, < .50. In addition to this, four of the items demonstrated significant cross-loading between the two factors, each with less than .10 difference in loading.

Although the validity of the scale appears to be quite promising (see: Wagnild & Young, 1993), the validity was analysed for the scale as a whole, as opposed to the separate factors. This is possibly due to the unclear nature of the factor structure. Further research studies utilising the scale have also emphasised the inconsistent nature of its factor solutions (see: Aroian, Schappler-Morris, Neary, Spitzer, & Tran, 1997; Nishi, Uehara, Kondo, & Matsuoka, 2010). The theorised five-factor solution, in accordance with the initial themes in which the scale was founded, has only been identified within one study.

In this particular factor solution, Lundman, Strandberg, Eiseman, Gustafson, and Brulin (2007), found that equanimity was represented by six items as provided in Table 2.2. However, such items do not necessarily assess equanimity alone. Item two describes non-rumination, item four does not differentiate between equanimity and apathy, and item five is conflated with self-worth. This ultimately suggests that the scale measures aspects associated to equanimity as well as its near and far enemies, rather than the experience of equanimity itself.

Table 2.2.

Items Considered to be Assessing Equanimity from the Resilience Scale

I take things one day at a time.
I do not dwell on things I cannot do anything about.
I usually take things in stride.
I seldom wonder what the point of it all is.
It's okay if there are people who don't like me.
When I'm in a difficult situation, I can usually find my way out of it.

The Equanimity Scale

Astin and Keen's (2006) measure of equanimity was developed in the wider context of measuring spirituality and religiousness in college students. Although according to Paloutzian, (2017, p.3), there is still no "satisfactory definition of religion and spirituality" (p.3), the researchers defined spirituality as the process of creating meaning in life, developing a sense of purpose, as well as an experience of the sacred and mystical. It was additionally stated that spirituality involved intuition, creativity, and a sense of being connected with others and the world. An individual's experience of spirituality is more idiosyncratic than that of one's experience of religiousness; which involves an adherence to faith-based beliefs and rituals that primarily concern the nature and origin of oneself and the world.

The authors noted that spirituality could be expressed as either apart from or through religion. Thus, it was necessary to develop a scale that reflects the varied manifestations of one's spiritual experience within or absent of religion. However, spirituality is considered to be multi-dimensional, in which no single scale can adequately measure this construct alone (for instance, see: Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988; MacDonald, 2000).

The conceptualisation of the different domains of spirituality and religion was primarily based on Hill and Hood's (1999) extensive analysis of 125 measures in the field. This analysis involved the examination of every item from these 125 scales, which identified 12 consistent domains across each of the self-report measures. These included: *worldview*, *wellbeing*, *practice*, *self-assessments*, *compassion*, *sense of connectedness*, *spiritual quest*, *mystical experiences*, *spiritual development*, *metaphysical beliefs*, *attitudes towards religion/spirituality*, and *affiliation*.

These 12 domains acted as a framework for the development of a new pool of 175 items constituting the College Student's Beliefs and Values (CSBV) survey (Higher Education Research at UCLA, 2004). These items were created through the analysis of definitions of spirituality in the literature and the modification of items from the previous 125 scales assessing religiousness and spirituality. The authors stated that they did not want to use items verbatim from previous scales due to spirituality often being conflated with religious practice. In previous measures, spiritual perspectives and theological beliefs were considered synonymous.

Furthermore, internal and external experiences of spirituality were rarely distinguished in the previous scales.

The authors separated the 175 items according to six a priori clusters consisting of *conservative Christian*, *liberal Christian*, *cultural creative*, *wellbeing*, *religious skepticism*, and *religious/spiritual change*. A further two clusters were created that comprised *beliefs and values* as well as *behaviours and experiences*, reflecting internal and external representations of spirituality, respectively. Although the items themselves were developed according to Hill and Hood's (1999) content analysis and subsequent identification of 12 spiritual and religious domains, the authors did not mention how their eight clusters of items corresponded with the former.

A sample of 3,700 undergraduate students from 46 universities (country unspecified) responded to the initial 175-item measure. A separate PCA with Varimax rotation was conducted according to each of the eight clusters. The authors stated that the factor analyses were conducted a number of times on each cluster. On each occasion, the number of components that were rotated varied with a varying number of items in order to identify a simple structure underlying the cluster. Upon identifying a simple structure, internal consistency was evaluated, with items deleted if found not contributing to the reliability of the identified subscale. Correlations between the resulting scale and items from other clusters determined if the latter could be incorporated into the former.

According to Costello and Osborne (2005), rerunning the factor analysis whilst specifying a different number of components and varying the presence of particular items potentially "compromises the integrity of the data" (p.3). Moreover, although PCA is the default for EFA in the Statistical Package for the Social Sciences (SPSS), it is in fact a data reduction technique and is not conducive to extracting factors from a particular dataset (Costello & Osborne, 2005). Again, similar to Kraus and Sears (2009), rotating the data with the Varimax method implies a priori that the factors were not considered to be not associated with each other.

From the eight clusters, the authors identified 19 components. However, 12 directly related to the initial clusters. The remaining seven components were argued to reflect Hill and Hood's (1999) domains. However, this explanation is inconsistent

with how the items were originally developed, ultimately suggesting that the items comprising the 12 retained components were developed according to a different method previously specified.

Four of Astin, Astin, and Lindholm's (2011) components were identified within the wellbeing cluster, with one of these components being retrospectively referred to as *Equanimity*. *Equanimity* consisted of five items, as provided in Table 2.3, which are responded to on a three-point Likert scale. The authors suggested that responses to the scale should be interpreted according to scores of five to nine indicating low equanimity, with high equanimity inferred by scores of 14 to 15. Internal consistency for the *Equanimity* component was measured in the range of α = .72 and α = .76. Comparisons of items within this particular subscale with other measures assessing religiousness and spirituality suggested that similar elements are present in both the *Daily Spiritual Experience Scale* (Underwood & Teresi, 2002) and the *Existential Well-Being subscale* (MacDonald, 2000).

Astin and Keen (2006) subsequently argued that the construct equanimity is "the prototypic defining quality of a spiritual person" (p.47). According to the authors, equanimity is associated with a sense of authenticity and higher state of consciousness, characterised by a more 'world-centric' perception of reality. It is defined by a sense of calmness, centred-ness, peacefulness, and most fundamentally, self-transcendence, defined as the ability to rise beyond the limitations of one's external experience and find existential meaning. Elsewhere, Keen (2010) refers to equanimity as the capacity to allow one's experience to be what it is without clinging or moving away from it. This definition is consistent with Zeng et al.'s (2015) identification of Item 9 from the Trait TMS as reflective of equanimity.

In a seven-year longitudinal study comprising 14,527 students from 136 universities, Astin et al. (2011) found a four-percent increase of individuals reporting high equanimity. The results indicated that at the commencement of university, only 19% of students reported high equanimity. However, upon graduating, this figure rose to 23% for the same cohort. According to the authors, this finding suggested that tertiary education facilitated the development of equanimity over time. This particular study additionally found that equanimity was associated with better grades and student wellbeing, as well as attenuated academic distress. Importantly, the

researchers found that students who consistently meditated reported the highest levels of equanimity within the study.

Table 2.3.

Items from the Equanimity Subscale

During the past year how frequently have you experience each of the following: (frequently, occasionally, not at all)
Been able to find meaning in times of hardship.
Felt at peace/centred.
How well do each of the following describe you (very descriptive, somewhat descriptive, not descriptive)
Feeling good about the direction in which my life is headed.
Being thankful for all that has happened to me.
Seeing each day, good or bad, as a gift.

The Holistic Well-Being Scale

Chan et al. (2014) define Holistic wellbeing as the "absence of affliction, and the presence of equanimity" (p.290). Affliction is considered to represent a maladaptive attachment within a constantly changing world, ultimately leading to psychological distress when the object itself, which is the focus of attachment, eventually changes. The researchers ambiguously defined equanimity as, "a state where a person abolishes his or her own sense of self, actively engages in spiritual cultivation, and remains peaceful in the face of death and other challenges in life, while acutely aware of the needs of self, others, and surroundings" (p.292). Elsewhere, the researchers refer to equanimity as "a state of optimal human functioning characterised by peaceful acceptance of changes and mindful awareness of human conditions" (p.305). The non-specific nature regarding this definition of equanimity is problematic in that it is particularly difficult to measure.

In order to develop the *Holistic Well-Being Scale*, Chan et al. (2014) assembled an expert panel of social workers, counsellors, a psychologist, and another

individual who, it was broadly stated, had a good understanding of Chinese culture. Most of the individuals comprising the panel provided psychotherapy within the framework of the Integrative Body-Mind-Spirit model (Lee, Ng, Leung, Chan, & Leung, 2009), which integrates Western psychotherapy with Eastern philosophy. These individuals discussed and developed 90 items that conceptualised either affliction or equanimity in their physical, mental, or spiritual manifestations.

These items were then piloted in a sample of 165 individuals from Hong Kong who participated in workshops aimed at developing health and wellbeing. The authors did not provide information regarding how the items were responded to, such as the timeframe in retrospectively responding to one's experience as well as the number of points on the Likert scale. A preliminary EFA (extraction and rotation methods not specified) suggested that 22 of the 90 items either did not load on a primary factor or had significant cross-loadings between both factors. This resulted in the removal of these 22 items for the main study as well as the re-wording of other items based on participant feedback.

Nonetheless, Costello and Osborne (2005) recommend a sample of at least 10 participants per item when conducting an EFA. In this case, a ratio of 1:1.83 dramatically increases the probability of items loading on the wrong factor, error in determining significant eigenvalues (as in, the number of factors potentially retained), the error in factor loadings, and the possibility in finding Heywood cases – factor loadings outside the range of zero to one, or rather an impossible outcome. In fact, Costello and Osborne (2005) found that EFAs conducted with a 1:2 ratio, of items to participants, converged on the correct factor structure only 10% of the time. Thus, the researchers revised the scale in the context of the EFA having a 90% chance of providing an incorrect solution.

Rather, if the researchers' aim was ultimately to reduce the number of items within this phase of the study, a PCA would have been more appropriate (Fabrigar et al., 1999; Matsunaga, 2010). Alternatively, if the researchers wished to determine the adequacy of items based on the difficulty experienced by the participants when responding, the implementation of Item Response Theory could have instead served this purpose (Reise, Widaman, & Pugh, 1993).

For the main study, 2,423 individuals were recruited through initially responding to an advertisement for research conducted by Ho et al. (2012) that explored the effects of Qigong on Chronic Fatigue Syndrome (CFS). Individuals not meeting the selection criteria for the latter study, as in those who did not meet the unofficial diagnosis of CFS, were redirected to participate in an online survey assessing Holistic Wellbeing. In addition to responding to the 68 items reflecting both affliction and equanimity, individuals additionally responded to measures assessing quality of life (*12-Item Health Survey*; Lam, Tse, & Gandek, 2005), mood (*The Hospital Depression and Anxiety Scale*; Zigmond & Snaith, 1983), life meaning (*Sense of Coherence Scale*; Antonovsky, 1993), mindfulness (TMS; Davis et al., 2009), and hope (*The State Hope Scale*; Snyder et al., 1996).

Individuals who responded to the survey were divided into two groups in order to conduct both the EFA and CFA. An EFA (extraction method not specified) with Varimax rotation was conducted on a sample of 1,228 mostly middle-aged married women. The researchers interestingly claimed that a total of seven factors were identified as having an eigenvalue greater than one on the scree plot. However, it is confusing as to whether they are referring to seven factors above the elbow of the scree or rather to the outcome of the eigenvalues greater than one rule, as they appear to have enmeshed the two when reporting.

According to the researchers, the EFA reduced the item pool from 68 to 30 items. Although there was no mention as to whether the 38 items were removed due to cross-loading or not loading on a primary factor. Additionally, the researchers did not indicate how the results of this EFA related to the preliminary EFA, where items were already excluded for these very reasons. In fact, similar findings, if not identical, consistent with the previous EFA, would have been expected. This inconsistency is potentially explained by the insufficient sample size used within the previous factor analysis and the very large possibility of an incorrect solution.

Chen et al. (2014) claimed that of the seven identified factors, three represented affliction with the remaining four assessing equanimity. The latter comprised 16 items in total and are provided in Table 2.4. Yet, it is unclear as to why the researchers implemented Varimax rotation within the EFA, thereby rotating the data orthogonally, which essentially implies they presumed a priori that the identified factors were not correlated with each other. However, this conceptualisation suggests

otherwise. According to the researchers, equanimity encompasses *Non-attachment* defined by the ability to let go; *Mindful awareness*, being aware of the emotional life within oneself as well as others; *General vitality*, representing an individual's energy and vitality; and lastly, *Spiritual self-care*, defined as the pursuit of inner peace. Each factor demonstrated moderate to excellent internal consistency, ranging between α = .670 and α = .892.

A CFA was then conducted with the second half of the original sample (n = 1,195), which shared similar demographic properties with the first half. With a few minor adjustments, such as allowing residual covariance between two dyads of items, the factor structure was confirmed. It is interesting to note that a two-factor second-order solution did not significantly improve the model fit over the seven-factor solution. This finding is counter-intuitive considering one would expect the seven factors to fit within a model with only two higher-order factors, namely *Equanimity* and *Affliction*. Instead of attempting to understand the apparent discrepancy between the results and the expected outcome, the researchers concluded that the four different factors of equanimity must therefore operate independently. Nonetheless, the four factors of equanimity were found to moderately correlate with each other and additionally demonstrated very similar associations with the outcome measures assessing quality and meaning of life, hope, and mood.

Subsequent to the CFA, correlational analyses and ANOVAs were performed between the factor loadings of each item and the demographic variables of gender, educational level, and marital status. The researchers aimed to determine associations as well as differences across each of the factors according to these demographics. Although finding significant differences across a range of these variables, it is unclear why the researchers did not perform a Multi-Group CFA. The differences in the demographic data could be used to define the groups in the Multi-Group CFA, which could then be used to determine the consistency of the factor structure within different expressions of the population.

Furthermore, weak correlations between all four factors of equanimity and the measure of mindfulness indicated little overlap between both mindfulness and equanimity. This finding is surprising considering one of the identified factors of equanimity was labelled *Mindful awareness*. This particular factor's association with the two TMS factors, *Curiosity* and *Decentring*, was identified as, r = .267 and r =

.277, respectively. The researchers claimed this result was due to the different wording of each measure, as in the difference between the TMS and the *Mindful Awareness subscale* of equanimity. Nonetheless, the wording itself is insufficient to explain these differences, as the content in the items across measures is still quite similar. Instead, it appears that the results reflect an unclear theoretical framework in terms of equanimity, which is perpetuated by the non-specific definition of this construct. Rather than citing the definition as a potential problem confounding the results, Chen et al. (2014) argued that their results essentially reflects the complexity of Holistic Wellbeing. Thereby ultimately redefining the construct based upon the results of their study.

Adding further confusion to their findings, Lee, Fan, and Chan (2015) had 318 individuals seeking treatment for cancer in Singapore respond to the *Holistic Wellbeing Scale*. Analyses identified five significant eigenvalues but only three factors discernable according to the scree plot. PCA with Promax rotation suggested that a number of items had significant cross-loading between the three factors, resulting in their removal. It is interesting that here the researchers used an oblique, in contrast to the orthogonal rotation implemented in the original study. The three factors were identified as *Disturbed-self*, *Embittered-others*, and *Blissful-self*. The latter was discussed as corresponding with equanimity, which was conceptualised as a way of relating with the world and oneself. The researchers claimed that the original scale is not invalidated by the inconsistent findings, but rather reflects the cultural differences in coping styles among individuals from either Hong Kong or Singapore. Nonetheless, in order to substantiate this argument, the researchers should have performed Measurement Invariance on the scale comparing responses for either of the two cultural orientations.

Table 2.4.

Items Addressing Equanimity within the Holistic Well Being Scale

Non-attachment	I can accept the ups and downs in life as they come.
	I can accept changes in life with a sense of ease.
	I can let go if I so desire.
	I am at peace with whatever life holds in store for me.
	I am able to accept the many disappointments in my life.

Mindful awareness	I am able to notice changes in my mood.
	I am able to notice both my physical condition and bodily sensations.
	I am aware of the changes in other people's moods.
	I am aware of the needs of others.
General vitality	I am full of energy.
	I am enthusiastic about my life.
	I can fully concentrate on what I am doing.
	I sleep well.
Spiritual self-care	I often search for inner peace.
	I have a rich religious/spiritual life.
	I take care of the needs of my mind and body.

Cognitive Styles Modified by Meditation Scale

In order to develop the items for the *Cognitive Styles Modified by Meditation Scale*, Sakairi (2004) had 40 experienced and 52 novice meditators describe, in written format, the way in which practicing meditation had changed their style of cognitive processing. This resulted in a total of 145 statements. However, this process of data collection may be biased towards the more obvious changes in cognitive processing, thereby ignoring the more subtle changes that are not easily captured in a short sentence. The implementation of interviews or focus groups with the meditators may have potentially provided richer information regarding these cognitive changes. As the items entailing cognitive changes as a result of meditation were combined across both novice and experienced meditators, it is unclear if some of the items pertain specifically to the latter as opposed to the former. This would imply that some cognitive changes are predictive of the overall length of meditative practice.

These 145 statements were then sorted into categories by the researcher and a meditation instructor according to the K J method (Scupin, 1997). The K J method is a creative problem solving methodology, where similar statements are grouped together, with each group labelled by a common theme. Themes are then arranged to the researcher's current understanding of how the themes are connected in terms of

cause and effect, associations, interdependence, or mutual exclusiveness. The themes and how they relate are revised until it provides a clear and concise model. This process allows the most important aspects of the model to be highlighted, and due to the dynamic nature of sorting, is mostly free from potential biases on behalf of the researcher.

A total of ten themes were identified including the experience of increased receptiveness to one's external environment and phenomenological world. The ten categories and the items therein were cross-validated by a panel of four judges. However, the author provides no information regarding the individuals on this panel, such as their area of expertise. Items categorised, by at least three of the four panellists into different themes other than that identified by the primary researcher, were removed. This resulted in 127 sentences describing cognitive styles modified by meditation, forming the basis of the measure. The researcher then developed 60 items across the ten categories that reflected these statements by the meditators.

These 60 items were then administered to a sample of 268 undergraduate students (country unspecified), who were required to indicate the degree that each item applied to them on a five-point Likert scale from *never* (1) to *always* (5). A subsequent EFA (both extraction and rotation unspecified) indicated the presence of three distinct factors with eigenvalues greater than one, explaining 48% of the variance. One of the three factors was labelled *Receptiveness*, with the author suggesting it as being synonymous with objectivity and equanimity. Eight items with the highest loading on their respective factors were retained for the measure, resulting in a total of 24 items for the entire scale.

However, limitations potentially influencing the resulting factor structure include the smaller than recommended sample size, a potentially problematic factor identification technique, as well as non-specification of the rotation method. The latter would ultimately indicate if the researcher a priori theorised the independent or correlated nature of the resulting factors. Moreover, although the items were developed based on descriptions of cognitive styles by both long- and short-term meditators, the adequacy of such items, as being sensitive to the practice of meditation was not determined. Comparisons between meditators and non-meditators across each of the 60 items would have indicated which changes in cognitive processing were associated specifically with meditation. This is important as some of

the items may just reflect styles of cognitive processing already present within the individual, but by practicing meditation the individual may have become more aware of such processes. Finally, by not including the country in which the participants resided, it is unclear if the EFA was conducted on participants from the same country as the meditators where the items were initially developed, thus controlling for potential cultural bias.

The researcher then conducted another EFA (both extraction and rotation again unspecified) on a larger sample comprising 548 individuals (country unspecified). The sample was further broken down into 172 meditators, 164 non-meditators, and 212 undergraduate students. This second EFA across the entire sample identified a similar factor structure, with the exception of two items from another factor now loading on *Receptiveness*, so ten items in total. However, these two items, *My thinking is positive* and *My thinking is optimistic*, have significant cross-loading, as defined by at least a .32 loading on a secondary factor (Tabachnick & Fidell, 2007). This is not unexpected considering such items reflect cognitive wellbeing rather than the receptive nature of equanimity.

Additionally, two other items, *My emotions are under control* and *I enjoy my work without being obsessive*, were subsequently removed from the measure due to weak loadings, as defined by less than .50 loading on the primary factor, with the final subscale indicated in Table 2.5. The deletion of these two items is understandable in that they are both potentially associated with emotional intelligence and work engagement, respectively, rather than receptiveness. Nonetheless, the fact more than a third of items comprising the *Receptiveness* subscale had problems associated with their loading, indicates that the factor is potentially unstable across different samples. Although to some degree replicating the factor structure of the measure in the second EFA, it is unclear why the author did not perform a CFA instead. Moreover, with such a large heterogeneous sample comprising three separate groups, a Multi-group CFA and Measurement Invariance could have provided a substantial degree of validity for the scale.

Instead, these three groups were compared across means for each of the factors comprising the measure. In terms of *Receptiveness*, the results of those who were engaged in meditative practice were significantly greater than the other two groups, non-meditators and undergraduate students. Nonetheless, such comparisons

were conducted with *t*-tests rather than between-groups MANOVA, which ultimately increases the probability of making a Type I error – the identification of a significant difference when none actually exists. Moreover, as the sample sizes were quite large ($n > 100$), latent mean analysis could have provided more information in terms of group differences.

Further validity for the scale was determined in a longitudinal study comprising 57 individuals commencing a 10-week course in meditation. Pre- and post-comparisons revealed that individuals reported significantly greater Receptiveness over the 10-week duration. However, meaningful conclusions cannot be drawn from this result in the absence of a contrast group.

Nevertheless, the *Receptiveness* subscale has been implemented in a number of studies demonstrating favourable results. In a sample of 127 Japanese undergraduate students, *Receptiveness*, referred to as detached objectivity by the author, Sugiura (2004) found the construct to significantly predict reductions in both negative appraisal (*Penn State Worry Questionnaire* (PSWQ); Meyer et al., 1990) and meta-cognitions underlying worry (*Problem-Solving Related Meta-Cognitions*; Sugiura, 2002). Similar results were obtained by Sugiura and Sugiura (2015), who identified strong positive correlations between the *Receptiveness* factor and refraining from catastrophic thinking (*Cognitive Control Scale*; Sugiura & Umaoka, 2003) and detached coping (*Coping Styles Questionnaire*; Roger, Jarvis, & Najarian, 1993). Detached objectivity was also found to be negatively associated with negative beliefs (*Meta-Cognitions Questionnaire - short form*; Wells & Cartwright-Hatton, 2004) and worry (PSWQ; Meyer et al., 1990) in the same study.

Table 2.5.

Items Assessing Equanimity from the Cognitive Styles Modified by Meditation Scale

I see things as they are.
I accept the past as it is.
I can think objectively when I am in trouble.
I see things from various angles.
I observe things from a distance.
My attitude is positive.

My thinking is optimistic.
I do not push myself.

The Enlightenment Scale

Despite the fact that it was not explicitly stated, the *Enlightenment Scale* developed by Boyd-Wilson and Walkey (2015), is a measure of equanimity. Equanimity itself has been defined in the Buddhist literature as underlying the process of enlightenment (see for example: Thera, 2005; Walsh, 1983). The authors define enlightenment as an experience of the authentic self, a sense of oneness, wholeness, and being at peace. In order to develop the scale, Boyd-Wilson constructed a series of 200 statements reflecting her experience and study of enlightenment. These 200 statements were reduced to 92, potentially due to redundancy, but this procedure was not specified.

Through content analysis, the researchers had six individuals who were well versed in the literature of enlightenment, a Buddhist monk, four Hindus, and an eclectic spiritualist, rate the appropriateness of each of the items on a five-point Likert scale, from *disagree* (1) to *agree* (5), according to the degree that they believed such statements reflected their understanding of enlightenment. Low ratings on eight items resulted in their removal, whilst feedback for another 10 items eventuated in their modification, leaving a total of 84 items. Although the researchers determined face validity of items by virtue of the agreement by 'enlightened' individuals, this content analysis involved no contrast group where comparisons could be made across individuals with an understanding of enlightenment and others without such knowledge.

Next, the researchers recruited a sample of 506 mature-age students enrolled in an undergraduate degree in Open Polytechnic within New Zealand. The sample was split randomly in two subsamples, with $n = 306$ in group A and $n = 200$ in group B. All individuals responded to the 84 statements comprising the measure. A PCA was then conducted on group A in order to reduce the item pool. According to the authors all items loaded significantly on the same factor, explaining 41% of the variance. However, the procedure of identifying factors was not specified.

Subsequently, thirty of the highest loading items were then retained for further analyses.

The researchers then performed an EFA (extraction unspecified) with Varimax rotation on the same group. Nonetheless, the use of the same sample for both PCA and EFA needs to be avoided as it essentially "capitalises on chance" (Matsunaga, 2010, p.101). Although it is common practice to initially determine the number of factors prior to factor rotation (Costello & Osborne, 2005), the authors ran EFA with a two-, three-, and four-factor solutions in order to determine the best fit in terms of factor loadings across each of these situations. It is curious that a uni-dimensional solution was not assessed in the EFA considering this would have been expected from the results of the previous PCA. The two-factor solution resulted in 15 items loading on each factor, accounting for 44% of the variance; whist the three-factor solution retained ten items on each factor, explaining 48% of the variance. The four-factor solution was disregarded due to some of the factors comprising only a few items as well as low loadings of items on their respective primary factors.

A CFA was then performed with Group B. This provided 'evidence' for both a one-dimensional and two-factor solution, with the authors arguing that the two-factor solution was essentially more robust. These factors were retrospectively named *At peace* and *Open hearted*. No hierarchical factor structure was tested for the two-factor solution. However, in testing the CFA, the authors combined a number of items into parcels, citing its necessity due to the unreliability of single items. Items were combined on the account of demonstrating a similar size in loading on the same factor. However, the authors omitted the degree that each item in the same parcels cross-loaded on the non-primary factor. Four parcels of items were used in both the one-dimensional and two-factor CFA, thus two parcels for each factor in the latter. The authors provided no account on the spread or which specific items made up each parcel.

Marsh, Lüdtke, Nagengast, Morin, and Von Davier (2013) argue that it is 'ill-advised' to use parcelling within scale development. In fact, by using parcels, a different model is being confirmed than what was tested in the EFA. The use of parcelling results in a significant loss of information in regards to factor loadings (Meade & Kroustalis, 2006). Additionally, cross-loading items are "camouflaged" especially in cases where the latent variable is not uni-dimensional (Brown, 2015).

Therefore, Marsh et al. (2013) recommend parcels to only be used in exploratory structural equation models, rather than confirming a model directly.

Issues concerning face validity of certain items are apparent throughout the scale. *At peace* contains a number of items that reflect a sense of optimism and wellbeing. Some items are absolutist statements about oneself rather than relating with one's phenomenological world in an equanimous way. However, of particular interest is the consistent theme of wholeness, centring, and being at peace, throughout some of the other items and consistent with a number of other scales previously described. *Open hearted* defines enlightenment by virtue of what it is not. Statements reflect relating to others, although in a positive way, mostly indicating how the presumed enlightened individual would not conduct him or her-self.

Preliminary construct validity for the scale was established through a positive association with the *Brief Serenity Scale* (Kreitzer, Gross, Waleekhachonloet, & Reilly-spong, 2009) as well as a strong negative relationship with the neuroticism index of the *Revised Eysenck Personality Questionnaire* (Eysenck & Eysenck, 1964; Francis, Lewis, & Ziebertz, 2006). Moreover *t*-tests compared the scores on the *Enlightenment Scale* across gender for the entire sample. No difference was identified for the uni-dimensional construct or the *At peace* factor in the two-factor measure. A significant difference was identified in the *Open hearted* subscale, with females reporting greater self-reported frequency and intensity of this factor. The authors cited studies that suggested women demonstrated greater altruistic qualities, which therefore lends validity to the subscale. The authors could have potentially capitalised on this difference between the genders using the latter to define the groups in a multi-group CFA and additionally performing Measurement Invariance. Furthermore, comparisons of meditators with non-meditators would have facilitated construct validity as well as adding another dimension in the multi-group CFA.

In another study, Boyd-Wilson and Walkey (2015) rerun the CFA on the two-factor solution of the *Enlightenment Scale* with a sample of mature-aged students (n = 585) from New Zealand. Analyses demonstrated a good fit of the model. However, this was again achieved through parcelling items, thereby potentially masking problems with invariance of factor loadings. Although the researchers moved one item between the two factors due to inconsistent loading, it is unclear if parcelling of items was generally consistent across the two CFA studies. Information regarding this

process was omitted by the researchers on both occasions. The final scale is provided in Table 2.6.

This same study aimed at developing convergent validity of the scale, which was demonstrated through a significant and positive association with the seven-item *Freiburg Mindfulness Inventory* (Jimenez, Niles, & Park, 2010), whilst only marginally and negatively associated with self-enhancement bias (SEB). SEB is defined as the tendency to exaggerate positive traits whist minimising the negative. This was measured according to Boyd-Wilson, McClure, and Walkey's (2004) 12-item measure based on Alicke's (1985) 149 traits. Scores on the former were additionally divided into low, medium, and high SEB. Comparisons across the three groupings suggested that SEB decreased as a function of greater *Open heartedness*. *At peace* remained consistent across the varying categories of SEB. Surprisingly, higher self-reported mindfulness was associated with greater SEB.

Table 2.6.

Items Comprising the Enlightenment Scale

At Peace
In the "core" of me I'm content no matter what.
My life runs smoothly, even through challenges that arise.
Life isn't a big struggle anymore though it can be tough sometimes.
I have a sense of well-being.
Overall, things for me get better and better.
I trust my future.
I accept things as they are rather than wish helplessly that they were better.
Things for me have a basically peaceful feel to them.
My problems aren't problems now; they're just things I deal with in the normal flow of events.
I don't need to do or be or have anything more in order to feel whole. I feel whole now.
I don't get depressed and think I'm worthless.
I feel whole whether alone or with others.
I feel "centred in myself" even when interacting with others or doing something.

I understand who I am.

I don't feel that life has dished me out a bad deal.

Rather than trying to force good things into my life, I see that whatever happens is good.

Open Hearted

I don't belittle people.

If people abuse me, I don't abuse them in return.

I don't gossip about people in a mean or busybody way.

I don't put people down in my thoughts.

I don't carry around resentment about people.

I tend not to insist that my interpretation of things is the right one.

If other people are unpleasant I don't think they are bad people.

I see the loveliness in others, no matter who they are.

On a fundamental level, everyone I meet seems whole and beautiful to me.

Fundamentally, I'm neither inferior nor superior to others.

It's nice when people appreciate me but its of no real concern to me if they don't, or even dislike me.

I'm OK with having less material wealth than some other people have.

I take nothing personally.

I don't know ahead of time exactly what I need to do and I'm fine with that.

Summary

Equanimity has been referred to as the prototypical feature of religion and spirituality (Astin, Astin, & Lindholm, 2011; Astin & Keen, 2006). This is evident through the consistency of its expression by various religious and philosophical orientations (see: Chapter One). As indicated by both the ASP and ISIS, it is evident that items across measures addressing spirituality, religiousness, and mysticism, would at least in part reflect equanimity. However, analysis of all measures of spirituality, religiousness, and mysticism is well beyond the scope of the current thesis.

A content analysis conducted by Zeng et al. (2015) identified a number of items assessing equanimity within current mindfulness measures. However, such

items primarily assess the process of accepting negative phenomena, and therefore cannot be used as an adequate measure of equanimity. Despite some researchers (for example, Kraus & Sears, 2009; Mack et al., 2008) in the field of equanimity also referring to the construct as interchangeable with acceptance, there is some consensus that equanimity involves a particular way of relating. This relatedness is marked by a receptiveness and openness to whatever is occurring within one's phenomenological world. Although a general lack of agreement regarding the theoretical framework of equanimity is still pervasive within the literature, validity analyses have determined that equanimity is generally associated with increased wellbeing and attenuation of psychological distress. Moreover, based on items developed to address this construct, it appears that there is some consensus within the literature that equanimity encompasses the experiences of centring, a sense of wholeness, and peacefulness.

As illustrated in Table 2.7, in terms of the nine available self-report measures of equanimity, four of the measures lacked any theoretical underpinning, with subscales retrospectively labelled *Equanimity*. Other measures lacked appropriate operationalisation of the construct, meaning that they could not be tested systematically. Still, other scales demonstrated vast inconsistencies between the underlying theory and the resulting measure itself.

The majority of the measures utilised interviews for item construction, yet researchers of only one measure interviewed individuals who meditated. Even so, content validity of such items was determined in the absence of a contrast group comprising non-meditators. The number of factors underlying the scales was often identified through the eigenvalues greater than one rule. However, this manner of determining factors is unreliable as it has been associated with overestimating as well as underestimating the number of factors (Thompson, 2004; Zwick & Velicer, 1986). Construction of three of the measures utilised the scree test for factor determination, yet this is predominately a subjective method requiring the researcher's own discretion (Zwick & Velicer, 1986).

Only two measures had been tested with CFA. Of these two, one measure involved the use of parcels in order to overcome the apparent unreliability of the items across different samples. The other was confirmed subsequent to several minor modifications. Additionally, all but one scale a priori assumed that the factors

comprising the particular measure were correlated, which is counter-intuitive considering that most, if not all, of the components overlapped a considerable amount.

In light of the shortcomings of available measures that purportedly assess equanimity, no comprehensive self-report measure of equanimity currently exists. Thus, moving forward in the literature and for the assessment of equanimity, it is necessary to have a measure of equanimity that rests upon a well-founded a priori conceptualisation of this construct, demonstrating factor structure replicability across different samples as well as strong construct validity. Finally, in order to ensure that unbiased comparisons can be performed between meditators and non-meditators, the scale must demonstrate Measurement Invariance across such groups of respondents.

Table 2.7.

Scale Development Properties According to the Current Measures of Equanimity

Scale	ASP	ISIS	SOFI	PEACE	Resilience	Equanimity	Holistic Wellbeing	Cognitive Styles	Enlightenment
Retrospective Subscale	Yes	Yes	No	No	No	Yes	No	Yes	No
Construction of Items	Interviews	Interviews	Literature	Interviews	Interviews	Literature	Panel	Interviews	Interviews
Type of Analysis	n.s.	PCA & HC	EFA	EFA	PCA	PCA	EFA; CFA	EFA	EFA; CFA
Factor Determination	E > 1	n.s.	E > 1	Scree	E > 1; Scree	n.a.	E > 1; Scree	E > 1	Unrestricted
Extraction	n.s.	-	ML	n.s.	-	-	n.s.	n.s.	n.s.
Rotation	n.s.	Varimax	Varimax	n.s.	Oblimin	Varimax	Varimax	n.s.	Varimax
Hierarchical Structure	n.t.	n.t.	n.t.	n.t.	n.t.	n.t.	No	n.t.	n.t.
No. Factors	1 of 7	1 of 22	1 of 4	1 of 2	1 of 2	1 of 17	4 of 7	1 of 3	1, 2, & 3
No. Items	2 or 3	3	2	5	8	16	16	8	30
No. Response	3	6	5	4	7	3	n.s.	5	5
Internal Consistency	.68	.74	n.s.	.78	n.a.	.72 - .76	.67 - .89	.87	.82 to .93

Note. n.s. (not specified); n.t. (not tested).

3. The Phenomenological Experience of Equanimity

"Let it be still and it will
gradually become clear."
Lao Tzu

Due to the inconsistent definitions of equanimity in the literature, an inductive approach was utilised in the development of items that would eventually comprise the measure. An inductive approach involves having experts within the field provide descriptions of the experience being investigated (Hinkin, Tracey, & Enz, 1997). The descriptions are then sorted into themes, where items are then generated accordingly. This is in contrast to the deductive approach (Schwab, 1980), where the theory or literature underlying the construct is used to primarily generate the items, which will eventually be used to assess the construct of interest. Therefore, the first in the series of studies aimed to understand the experience of equanimity from the perspective of those experienced in either one of two very different techniques of meditation (Mindfulness and Stillness). Primarily, mindfulness meditators develop equanimity through sustained attention within the present moment, whereas Stillness meditators develop such a state through hypnotic suggestion combined with therapeutic touch. Nonetheless, both are theorised to develop equanimity as result of practice. Further to this aim was the evaluation of whether individuals who practice different forms of meditation experience equanimity in the same way. These aims were explored through the facilitation of small focus groups and in-depth one-on-one interviews with experienced meditators of either tradition, where their personal experience of equanimity was discussed. The purpose of these groups and interviews was to inform the development of a measure that would be used to assess this construct.

Method

Participants

Mindfulness Meditators. Originally eight Mindfulness meditators confirmed attendance for the focus group, however one individual withdrew citing a conflicting schedule. Of the seven participants, two were male and five were female. The participants' ages ranged from 44 to 73 (M = 58.71, SD = 9.78). Individuals reported to have between 10 and 50 years (M = 26.86, SD = 12.81) experience in mindfulness

meditation. Considering their total meditative experience, participants indicated they had on average meditated between three and seven times a week (M = 5.30, SD = 1.70), with an average meditation session lasting anywhere between 10 and 60 minutes (M = 35.43, SD = 15.23). In total, three in-depth interviews with experts in mindfulness meditation were conducted. However, within the interview process of the first in-depth interview, it came to light that the interviewee had initially trained under Ainslie Mears prior to studying mindfulness meditation in a Buddhist context. The second interviewee was an experienced teacher in the field and constantly referred to the experiences of their students rather than their first-hand experience. The third and final in-depth interview, used for subsequent analyses, was conducted with an individual who trained in the Buddhist tradition and has been teaching mindfulness meditation for over 20 years. During this period, this individual had meditated on average four times a week for approximately 31 to 45 minutes per session.

Stillness Meditators. The focus group of Stillness meditators comprised eight individuals. Of these participants, two were male and six were female. Their ages ranged from 40 to 68 (M = 55.88, SD = 8.02). The years of experience in stillness meditation ranged between three and 40 (M = 15, SD = 11.99). Considering the total length of experience in stillness meditation, the participants ranged on average between three and seven (M = 4.53, SD = 1.30) practices of meditation per week. The average length of stillness meditation sessions ranged between 10 to 60 minutes (M = 26.56, SD = 13.99). The in-depth interview took place with an expert in stillness meditation who had originally trained as a student of Ainslie Mears. This individual is a 67-year-old female and has been engaged in a regular meditative practice everyday for 31 to 45 minutes on average for over forty years. Table 3.1 provides an overview of each of the participants according to the two meditation techniques.

Procedure

This particular study, involving focus groups and interviews with experienced meditators, received approval from the Monash University Human Research Ethics Committee (MUHREC), project number CF15/4207 – 2015001781 (see: Appendix 3.1 for Ethics Certificate). Initially, an advertisement, as provided in Appendix 3.2, which described the aim of the current study was sent to both the Stillness Meditation Therapy Centre (SMTC) and the Australian Teachers of Meditation Association (ATMA) in order to recruit an expert in either stillness or mindfulness meditation,

respectively. The email outlined the meaning of equanimity from a Buddhist perspective and stated that the study wanted to ascertain their felt-sense of this experience within meditation. This correspondence resulted in the organisation of one-on-one interviews with an expert in each tradition. The experts in their respective meditation techniques also facilitated in the recruitment of participants for the focus groups through word of mouth and placing an advertisement for the focus group within their online newsletters. Individuals interested in participating in the focus groups were asked to contact the primary researcher via email. The interviews and focus groups took place between late November 2015 and February 2016.

Table 3.1.

Overview of Participants within the Focus Groups and In-Depth Interviews

Name	Gender	Age	Years Meditating	Frequency per Week	Session Duration (min)
Mindfulness meditators:					
Alexander	Male	73	50	7	31-45
Bennett	Male	61	28	7	21-30
Celeste	Female	62	30	7	31-45
Dorian	Male	57	25	3-4	10-20
Evelyn	Female	44	15	5-6	21-30
Frieda	Female	49	10	3-4	46-60
Gabriel	Female	65	30	7	46-60
*Henrick	Male	47	25	3-4	31-45
Stillness meditators:					
Iris	Female	68	15	5-6	10-20
Jeremiah	Male	57	20	7	10-20
Kayla	Female	52	6	3-4	21-30
Lucille	Female	40	40	3-4	31-45
Makayla	Female	60	3	3-4	21-30
Neela	Female	55	10	5-6	21-30
Odelia	Female	55	6	3-4	46-60
Padrick	Male	60	20	5-6	10-20
*Qiana	Female	67	40	7	31-45

Note. * indicates one-on-one in-depth interview. All names have been changed to ensure anonymity.

Prior to the interviews or focus groups, an explanatory statement, as provided in Appendix 3.3, outlining the logistics of the study, informed consent, and confidentiality, were sent to each of the participants through email. Individuals participating in the focus groups were additionally informed about the limits of confidentiality in terms of talking in a group setting. The explanatory statement was also briefly discussed on the day of the interview or focus group in the form of asking participants if they had read it and whether or not they had any questions. It was further reiterated that the interview or focus group would be confidential and that they were free to stop the process and leave at any time they wished.

The aim of the study was introduced to the participants as wanting to understand their internal experience of equanimity within meditation. Equanimity was defined according to Buddhist philosophy as 'an open and receptive attitude towards one's internal and external worlds'. It was additionally stated that the term 'stillness' is often used to describe this attitude. The majority of participants were more familiar with stillness as opposed to equanimity, which was true for both Stillness as well as Mindfulness meditators.

Next, each of the participants were asked to sign a consent form (see: Appendix 3.4) giving their permission to audio record the interview or focus group, having the general trends of the discussion reported, and being contacted for future research. Demographic data was also collected regarding the participants' age, gender, and years of meditative experience. Participants were also asked to estimate how many times they meditated on average per week and also the average duration of these sessions.

Subsequent to collecting this information, participants within the focus groups were invited to introduce themselves to other participants and provide a background regarding their interest in meditative practice. This provided an opportunity for individuals to become familiar with the other participants and comfortable enough to share insights from their own internal experience. The interviews and focus groups were semi-structured, thereby taking into consideration the potentially different inter-personal dynamics across each occasion. This allowed for open discussion between participants in the focus groups. The researcher additionally used prompts in order to investigate the participants' experience on a deeper level. The interviews as well as the focus groups concentrated on the same open-ended questions, which are provided in

Table 3.2. The interviews additionally included spontaneous prompts in order to provide a deeper understanding of what the interviewee discussed.

Table 3.2.

Focus Group / Interview Schedule

1. What does equanimity / stillness mean to you? What is your definition of equanimity / stillness?
2. Describe a common or recent experience where you were in a state of equanimity / stillness whilst meditating.
3. Describe the experience of integrating equanimity / stillness into your everyday life.
4. Briefly describe your philosophical or religious influence with regard to equanimity / stillness.
5. Considering this influence, what is your understanding of what happens to yourself during equanimity / stillness?

The one-on-one interviews with the expert meditators took approximately 45 minutes, whereas the focus groups were approximately 90 minutes in duration. Participants were not offered financial reimbursement for their time, but were offered tea, coffee, and light refreshments. With the exception of the introductions at the commencement of the focus groups, both the interviews and focus groups were audio recorded. The primary researcher then transcribed the audio recordings verbatim. Pseudonyms were used for each participant in order to ensure anonymity and protect confidentiality.

The resulting transcripts were each separated into a number of paragraphs. These paragraphs were identified according to when a different person spoke. Within the one-on-one interviews, these paragraphs were identified when the primary researcher asked a new question or provided a prompt. However, none of the primary researcher's utterances were counted as a paragraph in itself. For the Mindfulness meditators, the focus group (Transcript a) comprised 42 paragraphs, and the interview (Transcript b) consisted of 29 paragraphs. In terms of the Stillness meditators, the focus group (Transcript c) comprised 174 paragraphs, and the interview, 32

paragraphs. The large disparity between the total paragraphs of each of the focus groups is due primarily to the group dynamics on the day. The Mindfulness meditators discussed is a more serial fashion, with each person taking turn to answer the questions. The Stillness meditation focus group, on the other hand, discussed in a more parallel manner, with individuals responding and adding to what others had said.

Data Analysis

The transcripts of the interviews and focus groups were then analysed using Interpretive Phenomenological Analysis (IPA; Smith, Flowers, & Larkin, 2009). Prior to analysis, a number of articles implementing IPA were also examined (including, Arroll & Senior, 2008; Callary, Rathwell, & Young, 2015; de Visser, Wheeler, Abraham, & Smith, 2013; Harman, Guilfoyle, & O'Connor, 2014; Marriott & Thompson, 2008; Senior, Smith, Michie, & Marteau, 2002; Smith & Rhodes, 2015). The goal of IPA is to understand how individuals make sense of their experience. This analysis was chosen due to its capacity to systematically describe as closely as possible the participant's phenomenological experience. Thereby providing an in-depth account of the experience as well as the individual's insights into how they make sense out of such an experience.

IPA is a process of analysing each transcript individually and then comparing across the analyses of all the transcripts. For the purposes of this study, individual responses or accounts within the particular focus groups were treated separately. These accounts were then compared across the other accounts within the respective focus group and also with the in-depth interview with an experienced meditator practicing the same meditation technique. This occurred for each of the respective meditation techniques resulting in two sets of IPAs. There are a number of stages within this method of investigation. Primarily, an individual transcript is read a number of times, allowing the researcher to familiarise themself with the words spoken by the interviewee; repeated reading of the transcript evokes new insights on each occasion. Initially, notes were taken in terms of things of interest, interpretations of what was discussed, and also summaries of the ideas involved. From these notes, emergent themes are identified through key words or phrases that facilitate in explaining the experience of the individual. This process is repeated for each remaining account. Table 3.3 illustrates a portion of the emergent themes as an example, with the remaining emergent themes provided in Appendix 3.5.

Table 3.3.

An Excerpt of the Emergent Themes Identified (taken from Appendix 3.5)

Alexander	Bennett	Celeste	Dorian
Not bodily stillness.	Physicality.	Physicality.	Letting go.
Flowing energy.	Not a meditative	Karma Yogi	Stillness occurs
Importance of	experience.	meditating in	when you let go.
movement in	Set of habits.	activity.	Pure awareness.
meditation.	Attention to	Being the witness.	No narrative within
Opening up.	physical.	Going home.	mind.
The release of	Focus on present.	Deep, profound,	No elaborating
feelings.	Focus on sensations.	experience.	thoughts.
Grounded.	No thought of past	Depth of stillness.	Experience of
Be in the world.	or future.	Practice.	flow.
Open and available.	Vipassanā meditation.	Witness as the soul.	An ‘isness’.

Themes recurrent throughout each of the individuals’ accounts were extracted, whilst additional themes were also provided with space to come to the forefront. Thematic connections were then made within each individual’s accounts, with themes elaborated or modified relative to the other individual’s accounts within the respective meditation technique. This provided a structure comprising superordinate themes, themes, as well as subthemes. Those themes that were not identifiable in at least half the group were discarded, so as to best reflect the sample of the respective meditation technique. At this stage, the transcripts were read again to establish that the identified connections and themes could be easily perceived within each of the individuals’ accounts regarding the experience of equanimity. Table 3.4 provides an example of the quotations that contributed to the formation of the theme ‘embodying mindfulness’, which consisted of the subthemes ‘focus on physicality’ and ‘letting go’ for the Mindfulness meditators. The remaining of the quotations for each of the subthemes identified across the two groups is provided in Appendix 3.6. The resulting IPAs regarding the experience of equanimity in either mindfulness or stillness meditation is provided in the following sections.

Table 3.4.

Quotations that Underlie the Theme Embodying Mindfulness

Embodying Mindfulness			
Focus on the Physicality			
A*: To always go with the bodily sensations to what you're experiencing, plus the sensory awareness of what's going on around.*	B: *Bring the attention down to the physicality, real-time physicality of what's happening right now, what you do, what do you feel body, hearing, seeing… when you bring your attention there, you are still essentially, because sensations are real time.*	G: *Invariably want to bring that stillness into your physicality.*	H: *… mindfulness should be practiced and taught is as embodied mindfulness. And I think one of the dangers of psychological mindfulness is that mindfulness will be reduced to a cognitive function*
Letting Go			
B: *… they all lost their classification and they all joined up and became one kind of floating, my whole body became a floating field of sensations.*	D: *Just let it go, and that's when it all occurs, so to speak, with no conversation or narrative, thoughts are still raging, you're feeling things, but you're not actually thinking about it.*	F: *I'm choosing to relinquish, to let go of everything else but I'm also choosing to just face and be with what's there so in order to do that, I have to get still to some degree.*	G: *Surrender is coming up for me just now, and it is a measure of just surrendering thoughts in the mind.*

The Experience of Equanimity within Mindfulness Meditation

IPA analysis across each of the accounts within the focus group (Transcript a) as well as the in-depth interview (Transcript b) with Mindfulness meditators identified three superordinate themes associated with the experience of equanimity. These superordinate themes encompassed Samatha (Process), 'being-ness', and self-perception. Figure 3.1 illustrates each of the superordinate themes as well as their individual clusters of themes and subthemes.

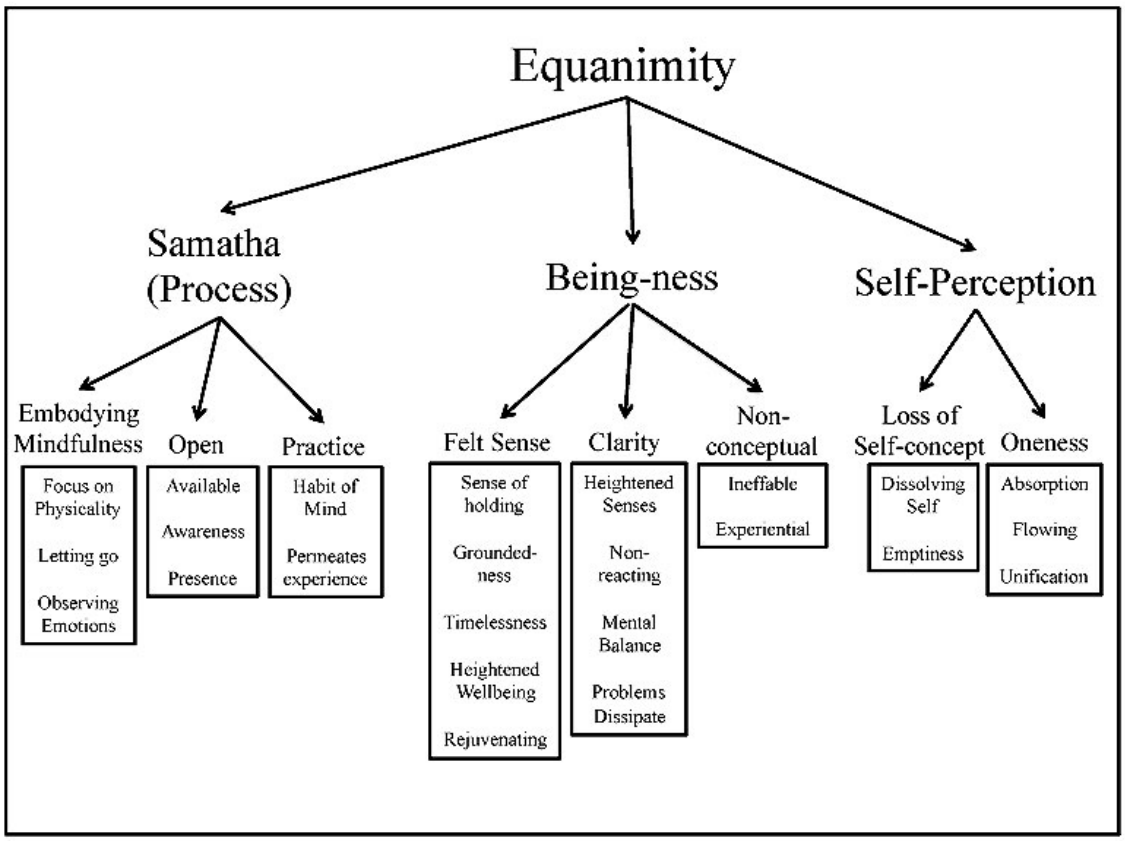


Figure 3.1. Superordinate themes, themes, and subthemes associated with the experience of meditative equanimity according to Mindfulness meditators

Samatha (Process)

Throughout the discussions, the idea of concentration, or Samatha, was quite prevalent. This was considered to be the foundation in developing equanimity through mindfulness meditation rather than the actual experience of equanimity itself. Accordingly, it was primarily through one's efforts of attention that the conditions

were created for the experience of equanimity to arise. This superordinate theme includes the concepts of embodying mindfulness, being open, and practice.

Embodying mindfulness. The idea of embodying mindfulness entails bringing one's attention into the body and observing one's phenomenological world. Letting go of one's interpretations or judgments regarding whatever arises facilitates in this close internal observation.

Focus on Physicality. According to all the Mindfulness meditators, bringing one's attention into one's physicality was considered to be the foundation of developing an experience of equanimity. A number of participants described the pertinence of this process (Bennett, Para.3a; Alexander, Para.2a; Frieda, Para.8a; Celeste, Para.11a; Henrick, Para.27b). Focusing on the physicality, according to Alexander, is "to go always with the bodily sensations related to what [you] experience plus the sensory awareness of what's going on around [you]" (Para.1a). As articulated by Bennett, the purpose of bringing one's attention purely on one's physical sensations is because they exist in the present:

> When you bring the attention down to the physicality, real time physicality of what's happening now, what you do, what do you feel in your body, hearing, seeing, feeling, tasting, when you bring your attention there, you are still, essentially, because sensations are real time (Para.3a).

For Henrick, the process of mindfulness was synonymous with focusing on one's physicality. He emphasised that mindfulness is not a function of the mind, but an embodied experience, claiming that, "mindfulness should be practiced and taught as embodied mindfulness. And I think one of the dangers of psychological mindfulness is that mindfulness will be reduced to a cognitive function" (Para.25b).

***Letting go*.** According to the Mindfulness meditators, the process of developing equanimity not only involves bringing attention into the body, but also letting go of one's attachments to mental conceptualisations. The idea of letting go was reiterated by all the Mindfulness meditators, who articulated this process in a variety of ways. Bennett, for instance, referred to it as mental noting, "noting this, letting go" (Para.29a); in which, the presence of thoughts were acknowledged in order to facilitate the mind in shifting its attention. Frieda spoke of this process of letting go of one's attachments as, "choosing to relinquish" (Para.30a). The idea of letting go for Celeste was expressed as, "surrendering thoughts in the mind" (Para.27a). Henrick

identified this process as one of allowing, "allow the mind to become quieter" (Para.6b). However, equanimity does not necessarily imply the absence of thoughts, but rather that the thoughts are not elaborated or judged as they arise. As Dorian stated, letting go of one's attachment to thoughts implies seeing them, "with no conversation or narrative, thoughts are still raging, you're feeling things, but you're not actually thinking about it" (Para.6a).

Observing emotions. Focusing on one's physicality and letting go of one's attachment to mental contents allows one to be present with the physical sensations that arise as a result of experiencing emotions. According to Dorian, this process, "is actually a barometer of how you are right now, if I haven't practiced lately and I go and sit, I know I'm scattered, I'm fidgety, I'm irritable, I go, 'yep, that's how I am right now'" (Para.20a). Henrick claimed that observing one's emotional experience facilitated understanding how and when emotions arise and he can therefore exercise more control over them. He stated:

> …Observe these emotions starting to form and also observe what happens when those emotions dissipate. And so if you're attending carefully to your body and your breathing, even informally, during the day, then you can kind of see the storm coming before it hits in full force. You know, and you, can potentially do something to alter that course" (Para.28b).

For Alexander, experiencing the physical sensations associated with the particular emotions allowed the emotions to be understood and to become, in a sense, "digested" (Para.26a). Similarly, Bennett claimed that, "without one's mentality getting in the way, they (emotions) will naturally change as they are processed and so on" (Para.3a). These individual accounts described the experience of emotions dissipating when their associated physical sensations were observed. This was potentially due to the process of letting go of one's attachment to mental conceptualisations, with cognitive strategies no longer implemented that act to avoid experiencing these emotions. When these avoidant strategies were not present, the emotion can potentially be experienced, understood, and processed.

Open. The Mindfulness meditators described several components related to the experience of being open. These components were considered to be the way in which the process of embodying mindfulness was conceptualised, rather than the experience of equanimity itself. The subthemes of being open encompassed being

available to one's internal experience, having an awareness of this experience, as well as being present to whatever arises within one's internal world.

Available. The Mindfulness meditators referred to the process of developing an experience of equanimity as being available, which entails staying present with one's internal experience. For Evelyn, to cultivate equanimity was to, "be available and open" (Para.37a). Celeste pointed at the interrelated nature of presence, availability, and the process of letting go, when she mentioned that equanimity is founded upon being, "here, available, and quiet" (Para.27a). Additionally, Gabriel stated that it was, "complete availability to everything and very much at the physical level" (Para.4a). Frieda expressed availability as "choosing to be with what's really there" (Para.30a). Thus, letting go and focusing on one's physicality allows one to be available to one's internal experience without the cognitive strategies that facilitate in maintaining or avoiding such experience. As Alexander suggested, equanimity is being "open and available to whatever is happening, just being present with it, and there's nothing to try to do to manage it or anything" (Para.1a). This signifies that being available is mutually exclusive with reactivity or being judgmental towards whatever is occurring within one's phenomenological world.

Awareness. The participants associated the experience of equanimity with being aware of what is occurring within oneself as well as one's sense impressions of the external world. As indicated by Alexander, equanimity involves "just be[ing] aware of what is happening" (Para.26a). Some participants utilised differing terminology to refer to such awareness. For instance, Bennett interchanged watching and observing, "whenever you are watching, you are essentially still, you're the observer" (Para.9a), whereas Celeste called the process "being the witness" (Para.11a). Frieda talked about equanimity as being "an inward place behind one's mental activity" (Para.8a) from which one's internal experience can be observed. A number of participants referred to the experience as pure awareness. Dorian stated that within equanimity, "there is this pure awareness of whatever is going on around you" (Para.6). Frieda defined this when she said, "pure awareness, hits the mark for me, that awareness of being aware" (Para.8a). Similarly, Henrick stated that, "I am aware of being aware" (Para.10b) within equanimity.

Presence. The result of the dynamic process involving focusing on one's physicality and letting go of the mentality is the cultivation of presence. Frieda

articulated this interconnectedness when she said that the process involved "constantly bringing yourself back into the moment by being aware of the physicality" (Para. 8a); where letting go of the mentality is implicit in the awareness of the physicality. All of the participants identified presence as an important component underlying the experience of equanimity. Presence entailed a lack of mental drifting to either sides of the pendulum of time. As Bennett indicates, "there's no memory, there's no anticipation, there's only what's happening now" (Para.3a). This is recapitulated by Dorian who described his experience as, "I'm just being present, I'm not even pre-judging or pre-thinking" (Para.34a); thus within equanimity there is no need to pre-empt the future. Gabriel said that it was a process of "coming completely into the present in all ways" (Para.4a). This sense of presence appears to occur simultaneously in both the mind as well as the body. Alexander stated that the process made him "collected and present in myself" (Para.42a), and also Evelyn who said that within equanimity she experienced "being present with myself". These last two statements potentially parallel the ways of being present; one is present 'in' their body, whilst simultaneously present 'with' their mind.

Practice. Embodying mindfulness and being open requires practice. It is a constant process of acknowledging the thought and then surrendering or relinquishing it, moving attention back into the physicality in order to be open to what is occurring within, and then repeating the process over and over again. Practicing in this way leads to this process becoming a *habit of mind*, or training of attention, and as such it begins to *permeate experience* beyond the formal meditation practice itself.

Habit of mind. In order to experience equanimity, according to the Mindfulness meditators, one must develop the habit of continuously shifting attention from the mentality and into the physicality. In this manner, the "skill" (Evelyn, Para.37a) of equanimity becomes a form of "mental training" (Dorian, Para.6a), a "trick of the mind" (Bennett, Para.9), or a "flick of the switch" (Celeste, Para.11a). When acknowledging the presence of thoughts, Frieda claims "you've gotta keep making that choice again and again [to move into the physicality]" (Para.30a). The purpose of developing this mental habit is to promote the experience of equanimity beyond the actual meditation itself. As articulated by Bennett, creating the habit of mind entails "practice[ing] a set of protocols that will lead to the appearance of stillness, not necessarily in meditation, but in life itself" (Para.12a). Celeste refers to

the cultivation of this habit as a "transferable" (Para.11a) skill, which can be transferred across a variety of contexts.

Permeates experience. The Mindfulness meditators indicated the capacity for equanimity to arise in seemingly everyday situations. With practice, Bennett stated that, "it sort of gradually comes up and permeates everything you do and everything that happens" (Para.12a). Additionally, Henrick claimed that, "stillness is able to be observed and experienced in the mix of activity" (Para.5b). This was reiterated by Gabriel, who stated, "I can experience that when I'm cooking, or when I'm doing something equally pragmatic or just day-to-day" (Para.36a). Dorian added, "I probably have more equanimity experiences outside of meditation nowadays, what came to mind, I had one last weekend walking the dog" (Para.34a). Celeste indicated that the experience of equanimity "influences your connections with others" (Para.11a). The impact on relating with others was also reiterated by Evelyn (Para.37a), who described a recent experience of equanimity facilitated the capacity for her to be present with her daughters when they were distressed. Similarly, Dorian, as a psychotherapist, mentioned the arising of equanimity within the therapeutic relationship, which facilitated in being open and empathetically identifying with his client's experience (Para.35a).

Being-ness

Within the IPA analysis and as illustrated in Figure 3.1, equanimity was found to be associated with the experience of 'just being'. This superordinate theme of 'being-ness' encompasses themes associated with the actual experience of equanimity itself. These themes include the felt-sense of equanimity, the non-conceptual nature of this experience, as well as the experience of clarity within equanimity.

Felt-Sense. The Mindfulness meditators identified a number of ways in which the experience of equanimity manifests as a felt-sense of 'just being'. These subthemes included a sense of holding, a feeling of being grounded, the experience of timelessness, heightened wellbeing, and also feeling rejuvenated within and subsequent to experiencing equanimity.

Holding. The vast majority of participants within the focus group of Mindfulness meditators discussed the actual experience of equanimity as a sense of holding. This sense of holding appeared to exist in relationship with something

beyond the self. For instance, Alexander spoke about being, “aware of density and something holding” (Para.5a). Thus, this place of holding was perceived as solid and strong and potentially provided a sense of comfort for him. This holding, according to Frieda, is associated with a sanctuary that provides reprieve from her thoughts, “being able to rest a bit in that place… a place you can access that’s sitting behind all the mental activity” (Para.8a). Similarly, Bennett spoke about it as “a sense of stability within the storm of life” (Para.3a). Both Evelyn (Para.8a) and Celeste (Para.11a) referred to this place of holding as, “home”. The former described this inward place as “sacred” and a “very safe place”. The latter referred to it as “going home – home of the soul”.

Grounded-ness. Common to the discussion of most of the Mindfulness meditators is a felt-sense of being grounded within the experience of equanimity. The sense of grounded-ness is associated with a feeling of existing within as well as being part of the world. Both Alexander (Para.1a) and Evelyn (Para.37a) mentioned specifically how equanimity provides them with a sense of “grounding”. This parallels Gabriel’s experience, where she claimed that equanimity made her feel “fully anchored in the world” (Para.36a). Dorian described the sense of grounding as “you tune into yourself” (Para.22a). In the same way, Alexander stated that the sense of grounding is a process of tuning into oneself as well as being aware of one’s experience of the world through physical sensation. He argued, “getting people to sit and just be aware of what’s happening on the inside and the outside so that, that grounded-ness can be completed” (Para.26a).

Timelessness. The experience of equanimity appeared to have an impact on one’s relationship of existing within time. Accordingly, time is no longer experienced as linear. Henrick claimed, “our sense of time shifts when we’re meditating and a long time can feel like a short time… a large part of it I think is to do with the quality of focus that occurs” (Para.18b). Although Henrick discussed the experience of time as being to some degree instantaneous, other individuals refer to the experience of equanimity as being timeless, as existing outside the realms of time itself. Referring to a moment of equanimity, Bennett said, “it was only that eternal moment” (Para.29a); and yet, elsewhere Bennett stated that it was “a momentary glimpse of something which I have no idea” (Para.29a). This suggests that although the experience of equanimity is felt as timeless, this sense of timelessness is paradoxically experienced

as fleeting. Additionally, Celeste said that, "sometimes these things don't take long, they'll only be for half a minute or whatever but it could have been, you know, eternity" (Para.27a). Accordingly, the experience of equanimity is not confined by the linearity of time; a substantial amount of time in equanimity can feel like a moment, whist a moment in equanimity can feel timeless.

Heightened Wellbeing. Each of the participants discussed a feeling of heightened wellbeing within the actual experience of equanimity. This sense of wellbeing was consistently described as peaceful. Henrick spoke about equanimity as being associated with "a level of peace, a level of serenity" (Para.2b). Gabriel referred to the experience as "incredible peace" (Para.28a). Celeste claimed that equanimity provided her with an "incredible source of peace, and light, and love" (Para.27a). Bennett discussed the practice of meditation and the experience of equanimity in the context of it being a reprieve from his depression. He stated that through a period of not practicing, he noticed himself thinking, "You're just depressed because you're missing this" (Para.29a). Henrick claimed that, "one of the things that I can notice when I'm still is that I'm able to experience a degree of joy without any external stimulation" (Para.22a). Thus, his experience of heightened wellbeing within equanimity led him to conclude that there exists a sense of joy that arises from within, which is not dependent on external circumstances.

Rejuvenating. Some of the Mindfulness meditators discussed the feeling of rejuvenation as a result of experiencing equanimity. According to the participants, this sense of rejuvenation lasted for some time subsequently. As Celeste explained, "you pull that current into you in such a way that it, the residue of that lasts for quite a considerable amount of time" (Para.27a). The drawing on the current of equanimity and bringing it into oneself was reiterated by Frieda who argued that "I think it is that idea that you can't just think, 'oh yeah, I've done a bit of that, so I'll be able to keep accessing it when I need it', well, that kind of withers away" (Para.30a). Here, Frieda is emphasising the need to practice in order to cultivate experiences of equanimity that can later be utilised as a sort of internal resource. For Henrick, the development of this internal resource exists within his experience of joy that arises in equanimity, "joy is a very important product, by-product, of equanimity that provides me with a kind of resource" (Para.23b).

Clarity. The Mindfulness meditators discussed the idea of mental clarity as arising within the experience of equanimity. The cultivation of mental clarity occurred in several different ways, such as clarity of the senses, developing a space within the mind whereby situations could be considered without reacting, a sense of mental balance, and also perceiving problems as just dissipating

Heightened Senses. Some of the participants talked about greater sensory awareness within the experience of equanimity. According to Henrick, "[equanimity] allows me to observe the finer details of that sensory experience" (Para.9b). Bennett discussed the momentary experience of everything else being suspended in time except for the wind, "… and it was the sound of the wind" (Para.12a). Gabriel spoke about her sensory awareness within equanimity in greater depth, indicating that within equanimity her experience of heightened senses occurred on several dimensions:

> I was acutely aware of the warm breeze and light shining through the windows and the blue towel, and the gentle movement of the towel, totally aware of the physical experience I was having, with the wind on my body and the sounds, and I was in that moment of great stillness. (Para.28a).

Non-reacting. Some of the Mindfulness meditators also described having a moment of clarity within equanimity where they were able to respond in a considered way, as opposed to reacting in an automated manner. As expressed by Celeste, "[equanimity] clarifies the mind so much that you make much better responses and choices and things" (Para.11a). Evelyn added, "…but I was so pleased with myself that I could just, that I didn't react and I could sort of hold it" (Para.37a). Thus, the clarity inherent within equanimity facilitates holding the space without reacting to what is happening. Additionally, Henrick reiterated the idea of equanimity as creating a space within the mind. He stated, "there's a moment of stillness where you see clearly, 'okay, this is what is happening' and there is enough space for you to make a choice" (Para.29b). Equanimity creates space within the mind so that clarity can be applied to a particular situation, which is untainted neither by previous experiences nor by conditioned and learned reactions.

Mental Balance. Some of the Mindfulness meditators discussed the idea of equanimity developing mental balance, in which they were able to sustain a balanced perception of particular situations. Bennett described the experience of mental balance as a, "sort of a growing resonance, or growing harmonic" (Para.12a). Further

articulating the idea of mental balance within equanimity, Dorian stated that there is a, "tricky balance between being present and presence, between I and not-I" (Para.43a). This suggests that equanimity facilitates in simultaneously holding two diametrically opposed views. Similarly, Henrick expressed the idea of mental balance manifesting as the capacity to perceive the finer details of a particular situation as well as perceiving the situation within its wider context. He stated, "am I going to take the, if you like, close up view or the longer view, and I think that an experience of equanimity probably helps me do both those things" (Para.11b).

Problems dissipate. The experience of equanimity contributed to a sense of mental clarity, in which problems were no longer perceived with the same level of awareness. All of the participants described the experience of their problems dissipating as a result of experiencing equanimity. With regard to his problems, Bennett claimed that, "they all evaporate" (Para.3a) within equanimity. Alexander used the terminology of, "dissolved away" and used the analogy that, "it ended up being as transparent as the air we're looking through" (Para.5a). Celeste described the experience of her problems dissipating as a melting away, "it was like whatever was really upsetting the mind at that point had just melted, it was of no significance anymore" (Para.27a). Frieda expressed it as a dropping away, in which equanimity was experienced as "a place that you can go and you're dropping behind everything else" (Para.8a). Gabriel recounted that the mental clarity associated with the experience of equanimity facilitated in changing the way the problem was actually perceived. She stated that, "everything that I had been dealing with, thinking about, dropped away, and I didn't come back to them in the same way" (Para.28a).

Non-conceptual. The non-conceptual nature of equanimity was discussed by each of the Mindfulness meditators. These discussions concerned its ineffable nature and also the idea that equanimity is experiential rather than a conceptualisation existing only within the mind.

Ineffable. The majority of participants expressed the difficulty in conveying their experience of equanimity though words. For instance, Dorian stated that, "it's something, it's very hard to quantify" (Para.3a). Similarly, Celeste also attempted to explain her experience but the thought of it stops mid sentence as words appeared to be insufficient, "and it was like in that moment, it is hard to describe" (Para.27a). At times, participants' use of language conveyed that the experience was beyond the

realms of everyday life. Frieda (Para.8a), Celeste (Para.11a), and Bennett (Para.29a) called equanimity a "profound experience". Evelyn said that equanimity was "fleeting, and profound, and beautiful" (Para.7a). Of the experience, Bennett said, "it was, every description I've ever heard seems to match up, it was ubiquitous, omnipresent, infinite, eternal, and all of that stuff" (Para.3a).

Experiential. The reason participants found equanimity particularly hard to describe is that the nature of equanimity is experiential and by talking about it, the experience becomes an idea within the mind rather than the experience itself. Bennett argued, "once you talk about it, you turn it into a story, a fiction, an imagining" (Para.25a). Thus, through its conceptualisation, one becomes detached from the experience and the experience is therefore no longer considered to be as real as it was within that moment. This understanding was reiterated by a number of participants. Dorian claimed that within equanimity "there is a sense of just is, there's an 'isness' in that and in saying that, it takes it away" (Para.6a). According to Frieda, "the moment you've tuned to something cognitively about it, you've lost that sense of pure awareness" (Para.8a). For Celeste, in attempting to describe equanimity "it slips through your fingers" (Para.28a). Equanimity is a "process of discovery" (Bennett, Para.17a), and as such, is "more about an experience" (Henrick, Para.13b) rather than a conceptualisation.

Self-Perception

The Mindfulness meditators reported that the experience of equanimity had a significant impact on how they perceived themselves and the world around them. This change in self-perception was associated with a loss of their own self-concept as well as perceiving themselves as indivisible from the world around them.

Loss of Self-Concept. The participants described that the experience of their conceptual idea of themselves as disappearing was associated with equanimity, often leaving in its place a sense of emptiness.

Dissolving Self. A number of the Mindfulness meditators described perceiving their sense of identity dissolving within the experience of equanimity. As explained by Dorian, "when it arises, you know, then there is no you. And to me that's stillness. I whoever I am, doesn't exist at that time" (Para.6a). The 'whoever I am' within this statement additionally indicates that the dissolution of the self within equanimity has

surfaced existential questions for this participant. Henrick stated that that the dissolving self was "kind of a sense of the body disappearing, the identity disappearing" (Para.16b). Thus, the perception of oneself dissolving is not exclusive to one's sense of identity, but also extends to one's physical body. Bennett further articulates this perception of one's sense of identity and physical separateness disappearing within equanimity. He stated that:

> All the sensations in my body, which had previously had, were denoted as this is pain, that's thinking, that's hearing, they all lost their classification, and they all joined up and became one kind of floating, my whole body became a floating field of sensations… I disappeared (Para.29a)

Emptiness. It appears that a sense of emptiness arises within equanimity as a result of one's sense of dissolving conceptual identity. Describing this emptiness, Henrick said, "I'm aware that I'm aware but there's not much left to be aware of" (Para.10b). This experience of pure awareness invites the existential conundrum, where if the self has dissolved, then ultimately who is the one aware? Furthermore, Evelyn (Para.7a) stated that, "although there's sort of nothing in that space [where the identity existed]." Some of the participants also described their perception of emptiness as it being quite animated. Alexander referred to the "energy of emptiness" (Para.26a), whilst Bennett argued that, "the point is to develop a relationship with the emptiness" (Para.29a). Interestingly, both Dorian (Para.34a) and Celeste (Para.39a) described the experience of emptiness from a perspective of utility. They both expressed the idea of emptiness as facilitating them being a "vessel" of equanimity, which allowed them to have a positive impact on others whom they came in contact with.

Oneness. The loss of self-concept within equanimity is interrelated with a sense of 'oneness'. Participants described this experience of 'oneness' as expressed through a sense of absorption, a sense of flowing, as well as a feeling of unification.

Absorption. Most of the Mindfulness meditators described a sense of "extraordinary absorption" (Bennett, Para.12a). Absorption was defined as one's sense of self being dissolved into the wider context of the external world, with nothing separating the subject from the object. As articulated by Alexander, "it's a connection of the inside and the outside, so that it's seamless, and it's sort of, there's no sense of what's inside the skin, and no sense of what's outside the skin"

(Para.26a). This experience was reported by others to occur external to the formal meditation itself. As stated by Evelyn, who was describing an experience of watching her children at the beach, "just seeing them really absorbing the beach and nature and being able to sit and do nothing" (Para.37a). This statement potentially indicates a bidirectional nature of absorption. The self becomes absorbed into the world, whilst simultaneously the world becomes absorbed within the emptiness where one's conceptual sense of self stood. This idea is also expressed by Celeste, who stated that, "I was able to allow the mind to become so locked on, and be able to absorb that" (Para.27a). Additionally, Henrick stated that, "I'm so absorbed in the experience that I lose the sense of observation" (Para.11b). This indicates that there are potentially varying degrees of absorption. If Henrick were not 'so' absorbed, but 'just' absorbed enough, he is possibly suggesting that he would still have a sense of observing the experience.

Flowing. The participants associated equanimity with experiences where their lives just seemed to flow. This experience of flow could be interpreted as absorption in motion. Absorption is the elimination of the barriers between the conceptual self and the external world, whereas flow is the experiential outcome of this absorption. As such, flow is interrelated with the dissolving self, "and it's always, for me that's about, I'm not there so to speak, it's just flowing" (Dorian, Para.34a). Celeste referred to the experience as a "sense of flow" (Para.27a), whilst Bennett called it the "flow of life" (Para.12a). Gabriel said that the experience of equanimity "makes life flow more easily" (Para.36a). Alexander claimed that the experience of flow in life is associated with the expansion of one's consciousness, stating that "once it flows, we start to expand our consciousness" (Para.1a). Here, it is likely that Alexander is referring to the context of processing emotions as a result of being present with their associated physiological sensations. By being present without one's cognitive strategies, which facilitate in avoiding the emotional experience, the emotions can then be processed, and therefore developing one's understanding of oneself and one's emotional world.

Unification. Some of the participants described the experience of feeling part of something greater than themselves within equanimity. Gabriel stated that, "I feel part of something much, much vaster than just the individual being that I am, it's not gone" (Para.28a). This suggests that this feeling of being connected exists beyond the actual experience of equanimity itself. For Celeste, the philosophical undercurrent to

the experience of equanimity "is a dimension where all souls originated from, the supreme soul" (Para.11a). Henrick conceptualised the meaning of equanimity in a practical manner rather than being primarily spiritual in nature. He claimed that, "the experience of oneness means that I'm fully engaged with whatever that experience is" (Para.12b). This suggests that the experience of absorption, as well as experiencing the flow of life, both contribute to this sense of 'oneness'.

The Experience of Equanimity within Stillness Meditation

The IPA, which was performed across the individual accounts within the focus group (Transcript c) as well as the one-on-one interview (Transcript d), suggested that the experience of equanimity within stillness meditation also consisted of three superordinate themes. As illustrated in Figure 3.2, these superordinate themes include the actual process of stillness meditation, the experience of 'being-ness', and also a change in how the individuals perceive themselves as a result of meditating.

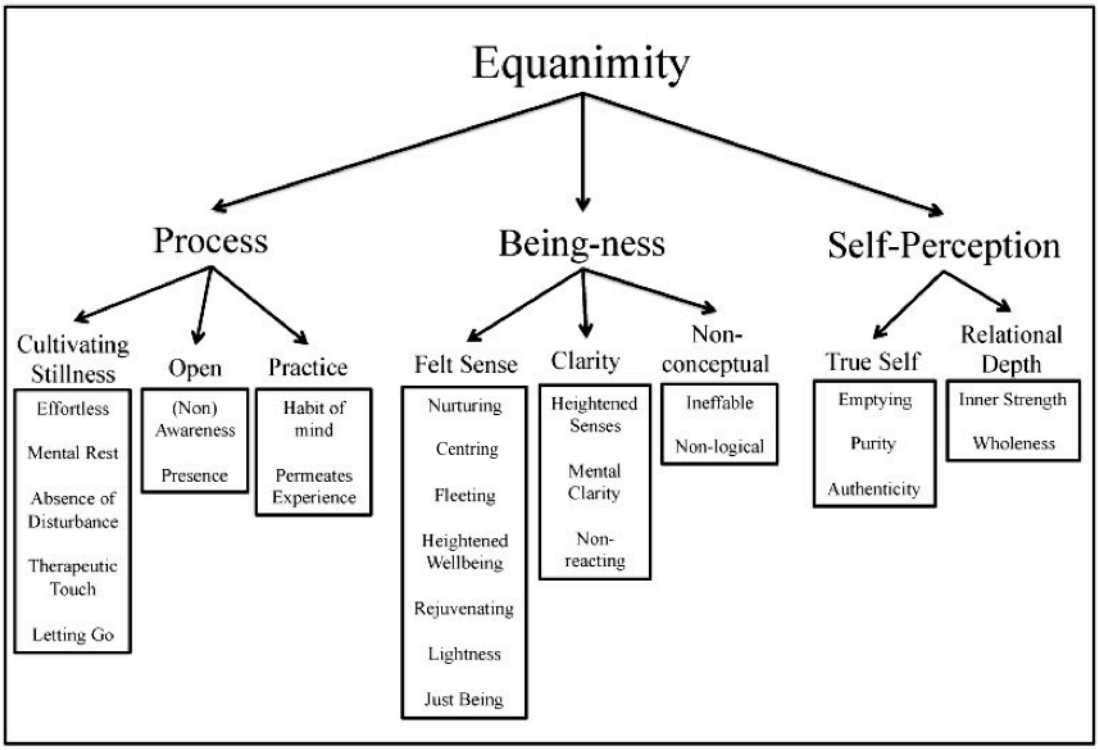


Figure 3.2. Superordinate themes, themes, and subthemes associated with the experience of meditative equanimity according to Stillness meditators

Process

The participants described the process of stillness meditation from a conceptual or structural perceptive as well as an experiential one. The former entails their conceptualisation of the process in cultivating equanimity, whereas the latter described the experience of this process as a sense of being open. Moreover, participants identified the importance of practice in the process of cultivating equanimity.

Cultivating equanimity. The cultivation of equanimity was referred to as primarily a natural process. The experience of this process was described as a feeling of mental rest and an absence of disturbance within the mind. The process of stillness meditation itself incorporates therapeutic touch, which was reported to facilitate the capacity to let go of one's attachment to thought and experience a sense of embodiment.

Naturalness. The majority of participants conceptualised the process of cultivating equanimity as a natural function of the mind that can be developed through meditation. Iris described equanimity according to it's "naturalness and allowing the body's own regulating mechanism to come into play" (Para.1c). This was reiterated by Qiana, who said that, "it's a very natural faculty being accessed and being developed" (Para.9d). Jeremiah conceptualised the naturalness of equanimity by virtue of being a, "natural homeostatic mechanism" (Para.7c). Similarly, in describing this process, Kayla said that, "the brain is actually bringing itself back into its own balance" (Para.159c). This was reiterated by Odelia, who described a process parallel to the homeostatic mechanism within the body when she stated, "… and that it's a natural thing, that our bodies just do anyway" (Para.171c).

Physiological Rest. According to the participants, the process of developing equanimity is experienced as a way of resting. Lucille succinctly stated, "in stillness there is rest" (Para.98c). Equanimity, according to some of the participants, allows one's brain to just rest. Iris said that in equanimity, "the brain has the ability to rest" (Para.5c). Odelia mentioned that, "the thing that's happened for me to be aware of my brain and my brain resting" (Para.29c). By using such language as 'the brain' and 'my brain', suggests that these two participants refer to a dichotomy between their mind and brain. Additionally, Jeremiah mentioned that, "it has a rest, only you're still

conscious, you're not drowsy, you're not asleep" (Para.98c). Again, 'it' potentially referring to the physiological self, and ultimately identifying with the conscious self. According to Qiana, this experience of rest within stillness meditation extends from the brain and throughout the body. She claimed that, "I think that it is a state of profound global rest. Global physiologically and mentally, your whole being" (Para.7d).

Absence of Disturbance. The participants described the process of stillness meditation as essentially an "absence of disturbance in the mind" (Qiana, Para.1d). According to Qiana, this disturbance is defined as "thoughts or focus of any kind or being mindful or being attentive, responding to irritations or distractions or noises or discomforts of any kind" (Para.5d). The process of developing equanimity entails not being distracted by one's conceptualisations of emotions (Neela, Para.82c), one's interpretation of senses from the external world (Iris, Para.83c; Lucille, Para.90c; Jeremiah, Pasra.31c) or one's thought processes (Lucille, Para.90c). These participants are describing the absence of secondary processing of their primary experience.

Therapeutic Touch. Therapeutic touch is utilised within Stillness meditation in order to facilitate a hypnotic-like meditative state within the practitioner. A number of the participants spoke about therapeutic touch within the context of cultivating equanimity. The experience of therapeutic touch was described as powerful, healing, and also facilitative in the actual process itself. Neela explained that she "found the touch experience… to be extraordinarily powerful… I didn't expect it to be the case but I found that to be very healing" (Para.30c). Jeremiah explained the importance of therapeutic touch as opposed to the reliance on language within stillness meditation. He said that, "we had touch before we had language, so it is a very, very old simple form of communication, very powerful" (Para.74c). Some of the participants added that it is through the use of touch that they were able to let go and develop within themselves an even deeper level of equanimity. Makayla said that, "I think the touch does it. It helps with the letting go" (Para.72c). Similarly, Iris stated, "the touch seems to have a profound effect on the process… so there's something in the reassurance of the therapist" (Para.73c).

Letting go. Each of the Stillness meditators mentioned the process of letting go as essential in cultivating an experience of equanimity. This was associated with

the letting go of disturbance, or the secondary processing of their experience. Jeremiah said, "there's a part of your mind that you just let go of" (Para.98c), whilst Odelia stated that, "just get your head out of the way and the rest just flows" (Para.171c). Padriac referred to the process of letting go of his awareness in order to develop equanimity. He mentioned, "so when you become aware, I let it go, and all of a sudden I'm at stillness, if I can describe it as an 'at'" (Para.68c). This process, according to Qiana, is a letting go of one's perceived identity. Referring to her sense of self she said that, "you're not conscious of that during the stillness because you've moved into that, you've let go of that" (Para.25d). However, Iris identified the counter-intuitive nature of letting go. Letting go essentially implies that this process potentially aims to grasp at the experience of equanimity, thereby making it even more elusive. She mentioned "letting go is a doing thing, so for me… it is just about letting and we're not making the effort to capture that [sense of] being" (Para.62c).

Open. The result of the process inherent within stillness meditation is an experience of being open. For the Stillness meditators, this experiential openness was associated with not being aware of oneself and, yet paradoxically, a sense of presence.

***Non-awareness*.** A number of participants claimed that within the experience of equanimity they had no awareness of themselves. Jeremiah explained, awareness comes after the fact, "it's only afterwards that you realise where you were" (Para.31c). Some of the participants described the process of coming back to awareness, but then letting that go in order to re-experience equanimity. Padriac said, "so when you become aware, I let it go, and it's all of a sudden I'm at stillness" (Para.68c). Similarly, Qiana explained that she "might go to a point of very profound depth but then awareness comes back in again and you just ignore the awareness and you slip back into that" (Para.3d). Nevertheless, some of the participants described experiencing equanimity with awareness of their physicality. Odelia said that, "it's the weirdest thing, to be so still and you know that you are in your body" (Para.29c), whilst Lucille related that, "you know your body's there" (Para.47c). Therefore potentially indicating that equanimity occurs at the level of feeling present within oneself, rather than aware of oneself as separate to awareness itself.

***Presence*.** As described, some of the participants suggested not being aware of oneself within the experience of equanimity, and yet others indicated that they were aware of being present within themselves. In regards to experiencing the process of

equanimity as presence, Kayla described this as, “being able to really be there” (Para.112c). Similarly, Qiana explained that, “you’re there and there’s kind of an affinity with that” (Para.23d). A number of participants discussed this presence within the self in the context of the present moment. Lucille, for instance, said, “you’re just there, quite present” (Para.90c). Jeremiah stated that, “you’re there, you’re in each infinitesimal moment as it happens” (Para.59c). Iris concluded, “so you’re just in that moment” (Para.67c). This suggests that although individuals describe an experience of non-awareness, it appears that this non-awareness refers to one’s conceptual self. Instead, individuals describe the experience of embodied awareness.

Practice. The participants identified the importance of practice in cultivating the experience of equanimity. By creating the conditions necessary for equanimity to arise, the experience itself becomes a habit of mind. This then facilitates equanimity in permeating one’s experience beyond the formal meditation practice itself.

Habit of Mind. Each of the Stillness meditators emphasised the importance of practice in order to develop equanimity as a habit of mind. The cultivation of this habit over time was described by Makayla as, “built up over a period of time” (Para.122c), and also Padriac, who said, “its almost as if, over time you can develop it” (Para.127c). By developing the experience of equanimity as a habit, especially in terms of constant practice in the beginning of learning stillness meditation, Iris argues that, “something changes, it’s like a barrier is broken through” (Para.104c). Kayla, a psychologist, mentioned having a, “regular practice”, facilitates in developing greater relational depth with her clients (Para.111c). Neela described having practiced for six years and as a result feels that it is “really powerful within (her) daily experience” (Para.120c). However, as articulated by Jeremiah, the intention of practice should invariably be for the sake of practice itself without necessarily intending to develop equanimity. He says, “I focus on the process that I gotta have a regular practice and just about everything else comes second to that… then the outcomes take care of themselves” (Para.71c). Qiana described the importance of developing this habit, where equanimity begins to permeate experience beyond the formal meditation itself. She said that, “you introduce it into your life, you practice it, you become proficient at it, you live it, and then it flows into everything that you are and everything that you do!” (Para.10d).

Permeates experience. All of the participants detailed the experience of equanimity in their lives, which arose from their consistent practice of meditation and thereby developing a habit of equanimity. Iris discussed that consistent practice leads to "then being able to translate that into the larger wider world" (Para.32c). Lucille said that she thinks it is "interesting you can also experience stillness when you're not in meditation" (Para.90c). Additionally, Kayla described it as, "just the peace and stillness but continuing on through the day" (Para.112c). In terms of how equanimity impacts her everyday life, Odelia said that equanimity provides her with a sense of calmness in her busy life. She states that, "my life has been so crazy hectic mad non-stop, to be able to, to almost feel like I can touch calm" (Para.19c). Similarly, Jeremiah considered that, "you can still be still with lots of things happening that you feel quiet within" (Para.31c). Makayla expressed the impact of equanimity as affecting the way she related to herself and others, "… but also just in the way, a view of self and a way of interacting with the world" (Para.124c). This indicates that equanimity is not confined to the meditative experience, but rather meditation creates the conditions that make it possible for equanimity to arise in everyday situations.

Being-ness

The discussions of the experience of equanimity additionally identified the superordinate theme comprising a sense of 'being-ness'. This superordinate theme was discussed as consisting the themes of the actual felt-sense of 'being-ness', the self as resting, and also the non-conceptual nature of this experience.

Felt Sense. The participants described the felt-experience of equanimity within stillness meditation as a sense of being nurtured, feeling centred within themselves, the experience as fleeting, experiencing a heightened sense of wellbeing and rejuvenation, as well as a sense of lightness and 'just being'.

***Nurturing*.** The Stillness meditators described equanimity as a safe place within oneself whereby one were able to feel nurtured or a sense or holding. This experience was described as a feeling of being "contained" (Kayla, Para.112c), "supported" (Iris, Para.128c), and "sustain[ing]" (Qiana, Para.8d). Odelia described the sense of nurturing as arising within herself, she said, "I feel like it's a way of caring for myself" (Para.97c). Additionally, Makayla expressed that the place of holding was quite fortified when she said, "and I would say too there's nothing that

penetrates it" (Para.93c). Qiana described the place of holding as a, "nurturing emptiness, well, it feels very safe" (Para.30d).

Centring. The majority of participants described the experience of equanimity as a feeling of being centred within oneself. Although some of the participants referred to this process as being in tune with oneself (Iris, Para.164c & 168c; Lucille, Para.165c; Jeremiah, Para.166c), it was generally defined as a form of embodied presence. This entailed being present within oneself even when things are happening that are pulling at one's attention. As explained by Padriac, "a sense of centring, without all the pushing and pulling that goes on with all the pressures of life" (Para.41c). Similarly, Lucile described the experience of equanimity as, "it's like a sense of centeredness, but you're not necessarily taken away by anything that's occurring" (Para.92c). Jeremiah referred to the process of centring by, "it brings us back to ourselves" (Para.105c). However, although Qiana said it was, "a centring", she also indicated that centring does not necessarily imply doing anything, but rather being truly present within oneself. She continued to say that, "probably centring is a bit of a logical sort of word, it kind of implies doing something, but I think it means integrity" (Para.29d). According to this experiential interpretation of equanimity, centring facilitates in the development of one's sense of authenticity.

Fleeting. A number of participants mentioned that the experience of equanimity was quite fleeting. This implied that they were able only to catch momentary glimpses of the experience. Lucille stated that, "its just literally glimpses of it that come and go" (Para.47c). This was reiterated by Makayla, who said "…and as soon as, it's almost fleeting" (Para.69c). Padriac described the process of trying to grasp the fleeting experience by the expression, "and that if you try and measure it, you've lost it anyway" (Para.64c). Although these participants described the experience of equanimity as fleeting, Qiana mentioned that the actual experience of equanimity was timeless, in that, "there's a sense of timelessness about it" (Para.22d). The differing experience of equanimity as fleeting and timeless does not necessarily mean that both are mutually exclusive. Rather it is likely that equanimity itself is experienced as timeless, yet when one experiences equanimity one's awareness of it is quite fleeting.

Heightened Wellbeing. Within equanimity, all of the participants described an experience of heightened sense of wellbeing. Most of the participants referred to this

sense of enhanced wellbeing as a feeling of calmness (Qiana, Para.3d; Makayla, Para.115c; Iris, Para.91c; Jeremiah, Para.59c; Neela, Para.18c, Odelia, Para.19c). Moreover, Kayla described it as a "felt sense of joy and peace" (Para.14c). Lucille stated that the heightened wellbeing manifests as a "sense of bliss" (Para.23c). Iris stated that it was a sense of "contentment" (Para.25c). Finally, Qiana said that within equanimity, she experiences a "control over [her] wellbeing" (Para.7d). Thereby suggesting internal loci of control that facilitates in managing a sense of wellbeing.

Rejuvenating. Each of the Stillness meditators described the experience of equanimity as a resource that provided them with an enriched sense of energy or rejuvenation. Both Lucille and Odelia spoke about the "energy" (Para.48c and Para.97c, respectively) they experienced as a result of equanimity, whilst Jeremiah mentioned that, "you feel rejuvenated afterwards" (Para.99c). Iris said that within equanimity, "sometimes it [is] more rejuvenating than sleep" (Para.100c). Qiana likened the experience to "recharging batteries on a very regular basis" (Para.7d). Other participants described the "extraordinary resource" (Neela, Para.120c), as something that they could build upon and access when needed. Makaya said that she "can draw on it quite explicitly" (Para.122c). Padriac claimed that, "it's almost as if, over time, you can develop it, an inner well… and practicing helps to fill it up with a bit more water" (Para.127c). Additionally, Kayla claimed that, "you can go and resource it. You can get what you need from it" (Para.131c).

Lightness. The participants associated the experience of 'being-ness' with a felt-sense of lightness. Jeremiah said that he, "get[s] a sense of lightness sometimes" within the experience of equanimity (Para.61c). Neela mentioned that she, "think[s] it's a lightness of being" (Para.54c). Lucille made sense of this experience by, "its like I'm not carrying anything, like within my mind or within my body, its just lightness" (Para.47c). Moreover, Qiana alluded to her idea that the experience of lightness is potentially a deeper meditative state, saying that, "there's that lighter state of, lighter meditative state" (Para.9d). This statement indicates that within meditation, one's mind and or body can potentially be experienced on a continuum from denseness to lightness of being.

Just Being. As reported by the participants, there is a sense that within equanimity one exists in a state of 'just being'. Lucille explains that, "it's not an act for me, it's a being" (Para.84c). Within this experience of 'just being', one's sense of

self is absent, as Qiana described, “the ‘I’ is just resting” (Para.26d). This state however is not experienced as an absence, as Iris claimed that, “it’s not really an absence, it’s a being” (Para.85c). Thus, this sense of being is diametrically opposed to one’s conceptualisation of self, with the former related to centring and authenticity. Odelia reaffirmed this notion when she said that within equanimity, “I’m just being with me” (Para.44c); Kayla also reiterated this when she stated that in equanimity you are “just being yourself” (Para.106c). The sense of ‘just being’ may in fact be the experience of authenticity itself, rather than the conceptualisation of such.

Clarity. The Stillness meditators described having greater clarity as a result of experiencing equanimity. This sense of clarity manifested as magnifying the senses, mental clarity, as well as clarifying one’s responses to the world in a non-reacting manner.

***Heightened Senses*.** Although participants mentioned the absence of the senses within equanimity, they did discuss the experience of heightened senses as an outcome of this state. Qiana said that through equanimity, “the senses become more alive” (Para.29d). These same words were used to describe Kayla’s experience who also added that it was, “a more open clarity of seeing, of hearing” (Para.35c). For Jeremiah, the sense of touch was more predominate, “the sense of touch in my hands and the face seems to be magnified” (Para.61c). Neela conceptualised that the enhancement of the senses is due to the mind not categorising the sense experience and can therefore be experienced for what it is. She claimed that its, “like when you let go of all your attachments of what certain things mean and you’re just experiencing the sensation for what it is” (Para.55c).

***Mental Clarity*.** Coinciding with the clarity of the senses experienced through equanimity, some of the participants additionally discussed the development of clarity in terms of their thinking. Both Qiana (Para.29d) and Kayla (Para.113c) explicitly referred to their experience of equanimity as “clarity”. Makayla spoke about her mind being “just clearer, it crystallises thinking and the capacity to think” (Para.116c). This clarity for Padriac was described as a sense of balance, “regardless of whatever day I’ve had or issues I’m dealing with, there’s a sense of balance” (Para.13c).

***Non-reacting*.** Some of the participants discussed that through equanimity, they had developed the ability to no longer automatically react in ways that they were

accustomed to. For Iris, this was expressed as a "sense of control" (Para.107c). Kayla said that equanimity "gives me temperance", which is defined in this context as exercising self-restraint from reacting. A few of the participants described responding, as opposed to reacting, which involves a conscious consideration. Odelia said that, "I feel like my reactions are much more measured" (Para.114c); whilst Qiana said that she is now "responding differently" than prior to having an experience of equanimity (Para.13d).

Non-conceptual. The experience of 'being-ness' was described as non-conceptual. The Stillness meditators described the experience of equanimity as not conducive to being conceptualised or grasped by the mind. The non-conceptual nature of equanimity was discussed according to two aspects, namely its ineffable nature and existing beyond the realms of logic.

Ineffable. All of the participants described having difficulty putting their experience of equanimity into words. Iris claimed that, "I can't really put words around it" (Para.49c). In attempting to describe his experience, Jeremiah said that, "English is a terrible language, I mean…" (Para.78). Kayla claimed that her experience, "doesn't lend itself terribly to words" (Para.26c). Similarly, Lucille stated that equanimity is, "very elusive, in that trying to put it into words" (Para.16c). Neela said that she was, "having trouble describing it" (Para.94c). Qiana referred to the experiential nature of equanimity by claiming that, "I don't think you can describe it, I think you have to experience it" (Para.17d). Additionally, Makayla pointed out the dynamic nature of equanimity and that by attempting to put one's experience in words the experience itself becomes static. She said that she, "want[s] it to be free, not tied down by words" (Para.155c). Odelia referred to the experience as "profound" (Para.19c), and as such cannot be conveyed through words; whilst Jeremiah referred to the "ineffable nature of it" (Para.172c).

Non-logical. As well as being an ineffable experience, some of the participants claimed that understanding the experience of equanimity requires that one must at first suspend their logical judgment. Kayla said that, "its not easy for all people because we have such logically trained brains" (Para.104c). Padriac described a separation of equanimity and logical thinking, saying that its, "trying to describe something logically that isn't that part of the brain" (Para.12c). In a similar way, Lucille said that the experience of equanimity is, "that not being of the rational logical

world" (Para.163c). Makayla spoke about the, "mystery", of the experience, and as such cannot be apprehended by the logical mind.

Self-Perception

As a result of experiencing equanimity, the Stillness meditators discussed the ways in which the experience itself had changed how they perceived themselves. This change in self-perception was conceptualised in terms of uncovering the true self, which ultimately paved the way to developing a deeper relationship with oneself.

True Self. The Stillness meditators discussed the capacity to cultivate a sense of their true selves within the experience of equanimity. This process entailed an emptying of that which did not speak of their true sense of self. This was then experienced a sense of purity, both mentally and physiologically. Participants conceptualised this process of emptying as developing authenticity.

Emptying. The process of letting go was conceptualised by a number of the Stillness meditators as an emptiness or empting. Lucille spoke about the embodiment of emptiness, she said that she experienced a, "sense of emptiness, and its just, but there is a physical sensation with that, in which, I can't describe" (Para.47c). Similarly, Qiana discussed the experience of emptiness within equanimity. However, on closer reflection, she mentioned that it resembles a process of emptying rather than a state of emptiness. She said, "it's not like a scary emptiness or a lonely emptiness. It's safe, it might be more of an emptying, than an emptiness actually" (Para.29d). The process of emptying was described by some of the participants as self-actualising, Padriac referred to it as, "moving away all the stuff that makes you less of who you are" (Para.42c). Empyting facilitates in generating a sense of rejuvenation, as indicated by Odelia, "just to give myself space to let things in, it's a combination of letting things empty and then somehow that gives you more energy" (Para.97c).

Purity. Some of the participants additionally conceptualised the experience of equanimity as a process of accessing a sense of purity. Makayla said that for her, "the word pure came to mind" in describing equanimity (Para.17c). Similarly, Neela said that, "I think there's such a purity in this sensation of being really still" (Para.55c). Kayla used the sense of one's life as synonymous with purity when describing "this purity or a sense of life" (Para.145c). Other participants delineated that the sense of purity is associated with experiencing their authentic selves, for instance, Iris referred

to this sense of purity as an "untainted self" (Para.146c). Jeremiah spoke of the sense of purity as "rediscovering the true self without all the conditioning that we receive" (Para.147c).

Authenticity. The majority of the Stillness meditators associated the experience of equanimity with a "sense of authenticity" (Kayla, Para.140c). Padriac stated that within equanimity one is essentially "coming back to [oneself] as an authentic person, authentic being" (Para.41c). Qiana termed this authenticity as, "the essence of yourself" (Para.23d). Furthermore, Jeremiah argued that, "its almost like people identify with this false sense of self, and the true self that we're growing towards is the sense of equanimity" (Para.105c). A few of the participants referred to this authenticity as an inner knowing, in terms of knowing the self and how to express that self. Lucille mentioned that, "it's just, you come from a very different place, in you know, in, you know what you want to do" (Para.141c). Additionally, Kayla stated that within equanimity there is, "a knowing of the self, an authentic version of the life force, 'being', that we are without all this other stuff in the way" (Para.145c).

Relational Depth. Each of the Stillness meditators reported experiencing greater relational depth, in which the experience of equanimity facilitated in the participants developing a greater internal relationship within themselves. This relational depth manifested in terms of cultivating inner strength and a sense of wholeness.

Inner Strength. All of the Stillness meditators commented on the development of inner strength as a result of experiencing equanimity. Odelia (Para.133c) and Makayla (Para.132c) mentioned that they specifically experienced a development of "inner strength"; whilst Lucille defined it as a, "stronger sense of self" (Para.15c). Iris stated that equanimity was "a strengthening of one's individual integrity" (Para.45c). Makayla said that through equanimity she "felt that [she] developed a core of strength" (Para.122c). Jeremiah talked about the outcome of such inner strength as, "it certainly helps you take your own path" (Para.137c). Additionally, Qiana described this aspect of relational depth as self-empowering and the capacity to be in control of oneself. She said that she experienced equanimity as, "a state of inner strength and power, not power in a negative sense, but self-empowering, calm control" (Para.8d). Thus, the experience of developing inner

strength through equanimity appears to derive from a sense of authenticity and being true to oneself regardless of external circumstances.

Wholeness. Finally, some of the Stillness meditators described a sense of wholeness within themselves during the experience of equanimity. As articulated by Makayla, "I'm just thinking of the word wholeness or unity because we get so fragmented in all our tasks, and duties, and responsibilities" (Para.39c). Iris, reaffirmed this sediment when she described equanimity as a, "sensation of 'at-oneness' within that whole experience of simply being still" (Para.25c). Qiana stated that, "the self to me remains very intact, very whole…" (Para.16d). Furthermore, Jeremiah talked about the interwoven nature of both a sense of wholeness and centring, "it's like you get your whole being tuning the way it should" (Para.166c).

Summary

In order to understand the phenomenological experience of equanimity within meditation, the first study involved focus groups and in-depth interviews with experienced meditators who practiced either mindfulness or stillness meditation. Due to the subtle differences regarding the definition, and the difficulty in defining this construct, an inductive approach was utilised in the development of potential items to quantify the phenomenological experience of equanimity within meditation. Thus, items were developed through the process of analysing the content of the focus groups and in-depth interviews through IPA. Each of the themes and subthemes across the two groups would then be used to inform items.

Although some disparity was found in the conceptualisation of the experience of equanimity between the two groups of meditators, Clark and Watson (1995) suggest the systematic sampling of all relevant items that may represent the construct being investigated. The authors additionally recommend the use of content redundancies, where several items represent each individual subtheme, as this is primarily the foundation of the internal consistency of a particular measure.

Moreover, according to Hinkin, Tracey, and Enz (1997), it is necessary to create at least twice as many items as anticipated for the final scale. Approximately one-half will be discarded through the content adequacy and factor analysis stages. Netemeyer, Bearden, and Sharma (2003) recommend between eight and ten items per

factor as ideal, therefore, the current study aimed to develop an item pool of approximately 40 items in the event that the experience of equanimity potentially encompassed at least two related factors.

Both Mindfulness and Stillness meditators described differing processes in developing the experience of equanimity within meditation. Although the focus of the measure is the phenomenological experience of equanimity itself, rather than the process involved in cultivating this experience, it is interesting to compare and contrast these varied processes. For instance, Mindfulness meditators described the process as involving bringing one's attention back into the physicality of their experience, defined by one's sensory awareness and bodily sensations. Focusing on the embodiment of one's experience facilitates bringing one's attention into the present moment as such can only occur within the 'now'. Focusing on one's physicality extends to the observation of how one's body responds to the experience of emotions. A number of participants described emotional experience dissipating, as 'looking at' emotions provided the opportunity to process a potentially negative emotional experience.

In a similar way, Stillness meditators discussed the embodiment of 'being', with the process of cultivating equanimity as a natural experience. Physiological rest defined the naturalness of equanimity; which is potentially a result of activating a homeostatic mechanism originally proposed by Ainslie Meares. A number of Stillness meditators described the process of cultivating equanimity as an absence of disturbance. This entails not necessarily 'looking at' one's thought processes or emotions that arise within the meditation itself. Rather it was described as a 'letting' of one's awareness and for one's awareness to dissipate through the experience of meditation.

With regards to the themes associated with the phenomenological experience, as opposed to the process, Figure 3.3 illustrates that there was a substantial overlap in how equanimity was described through IPA comparisons between the two groups. Despite elements of the experience being described in different ways, the two groups converged in terms of the 'being-ness' superordinate theme, which included the themes of the felt-sense, clarity, and non-conceptual aspects of equanimity.

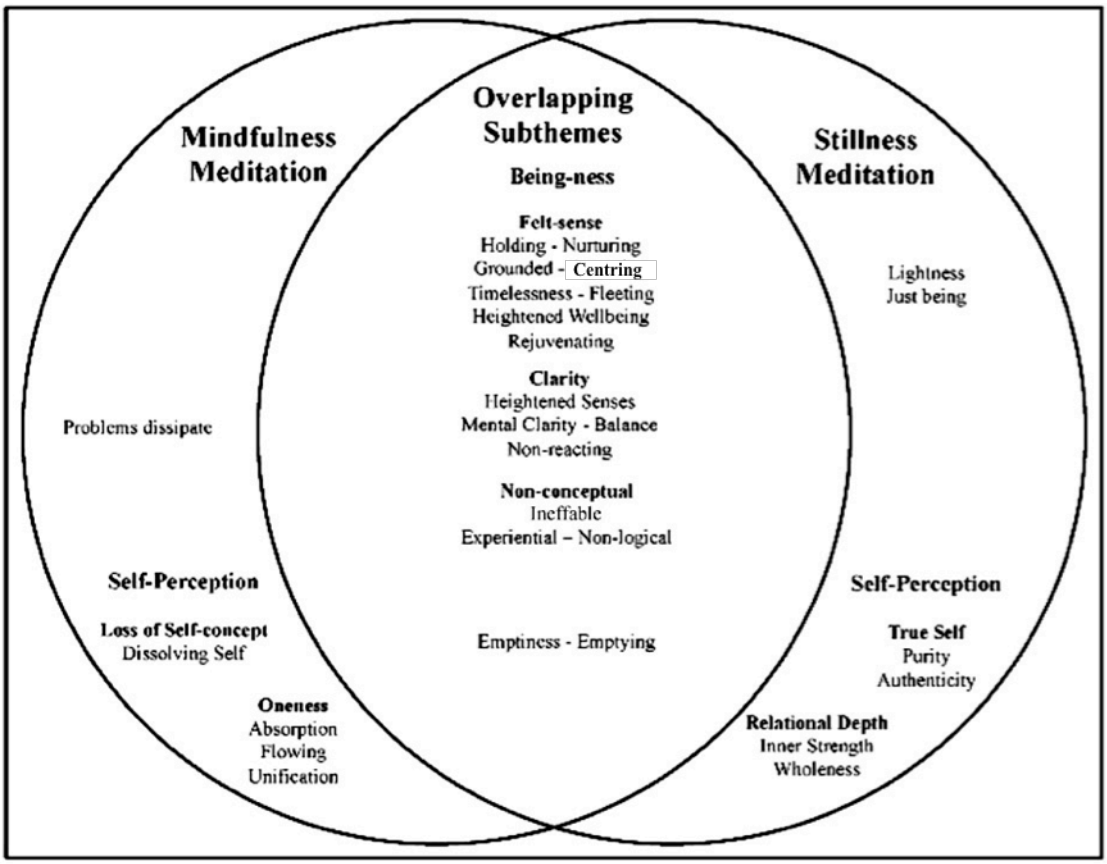


Figure 3.3. Overlapping themes and subthemes regarding the experience of meditative equanimity across both Mindfulness and Stillness meditators

Being-ness

The experience of equanimity, as described by both Mindfulness and Stillness meditators, converged in terms of the phenomenology of 'being-ness'. This involved commonalities in the felt-sense of the experience of equanimity, a greater sense of clarity during or as a result of the experience, and additionally, consistencies between the groups in terms of having difficulty in describing this very experience.

Felt Sense. As illustrated in Figure 3.3*,* the felt-sense of the phenomenological experience of meditative equanimity was similar across the two groups. Terminology, however, in explaining equanimity was subtly disparate across the groups. Such disparaity may indicate the differential conceptual understanding of the experience resulting from different teachings and continuing discussions within each form of meditation, each further applying their own terminology for the same experience. This explanation additionally points towards the non-conceptual or ineffable nature of the

experience, where words closely related were grasped at as a means of conveying the experience.

Holding / Nurturing. The Mindfulness meditators described the experience of equanimity as being a place of holding or rather a sense of being held. This holding was described as a sanctuary that provides a sense of fortified stability within oneself. Some of the individuals referred to equanimity as home, which, when experienced, feels very safe. Similarly, the Stillness meditators talked about a sense of being nurtured, where some individuals described the experience of feeling contained, supported, sustained, and 'at home' within themselves. In addition, some other Stillness meditators referred to it as feeling quite protected, in that, nothing can disturb this space and consequently feeling very safe in the experience.

Grounded / Centring. The Mindfulness group discussed the felt-sense of being grounded within oneself and world when experiencing equanimity. This was described as a feeling of being anchored as well as being in tune with oneself. Similarly, the Stillness meditators described the experience of being in tune with oneself through the process of centring or embodied presence. This implies being able to stay present within oneself when the demands of day-to-day living are continuously pulling at one's attention.

Timelessness / Fleeting. As mentioned by some of the participants, when experiencing equanimity, time is no longer experienced as linear. It is as if the moments of experiencing equanimity exist outside the normal realms or is suspended in time itself. Both Mindfulness and Stillness meditators described the experience of equanimity as eternal or timeless as well as fleeting. However, it appears from the discussion within both groups that the experiencing of equanimity is felt to be eternal, yet it is difficult to grasp with one's awareness and therefore it becomes very fleeting. Or rather, as soon as the timeless experience is perused, it dissipates.

Heightened Wellbeing. Both groups associated the experience of equanimity with a sense of heightened wellbeing. For some of the Mindfulness meditators, this heightened wellbeing encompassed a sense of peace, serenity, and also the experience of joy as arising from within. Correspondingly, the Stillness meditators discussed the experience of equanimity as one of calmness, joy, and a sense of being at peace with oneself.

Rejuvenating. Similarly, individuals across the two groups reported that the experience of equanimity was associated with a feeling of rejuvenation. The sense of rejuvenation was reported by one Stillness meditator as being similar to the rest obtained from sleeping. Both groups referred to this sense of rejuvenation as a resource or source of energy that could be developed over time and used when needed. However, it was also stated by individuals within both groups that this resource would deplete over a period of time, so had to be replenished through further meditative practice.

Lightness. Although many themes, in terms of the felt-sense of equanimity, were found to overlap for experienced meditators of either meditative tradition, only individuals practicing stillness meditation discussed the idea of feeling a sense of lightness. The sense of lightness was primarily described in the context of a lightness of 'being', where one is not weighed down by the contents of one's mind. Some individuals further associated the lightness with a deeper meditative state.

Just being. Similar to the theme of lightness, a sense of 'just being' within the experience of equanimity was only further reported by the Stillness meditators. This experience was discussed in contrast to one's conceptualisation of oneself, where the sense of 'just being' was a 'being with' or 'being oneself' in an authentic way. Nonetheless, this does in fact correspond with the Mindfulness meditators' discussion of the process entailing bringing one's attention into the physicality in order to 'let go' of one's cognitions. The result of this process is a 'being-ness' that is open to whatever is occurring on the internal landscape without attachment or grasping.

Clarity. Similar to the theme of 'being-ness', practitioners of both forms of meditation converged on the idea of clarity within the experience of equanimity. Such clarity was expressed through heightened senses, a greater clarity of mind, and a deeper capacity to respond rather than react in habitual ways. Mindfulness meditators however, extended this sense of clarity to experiencing their perceived problems as dissipating through a re-conceptualisation or contextualisation of the actual problem.

Heightened Senses. Surprisingly, Mindfulness meditators described experiencing a heightened sensory experience within equanimity itself, whereas Stillness meditators did not. Nonetheless, the latter did report experiencing a heightened sensory experience subsequent to experiencing meditative equanimity.

Both groups indicated that the enhanced sensory experience encompassed the visual, auditory, and tactile senses. Although having heightened sensory experience at different stages, both groups did converge on the idea that it was related to experiencing the sensations for what they were without conceptualising or judging the occurring sensations. In this way, individuals were able to stay with the finer details of such an experience; in which reality itself was felt as though it were suspended with only sense impressions remaining.

Mental Clarity / Balance. Although both groups associated equanimity with developing mental balance, some of the Stillness meditators described experiencing a sense of mental clarity. This was referred to as one's thinking being crystal clear whilst additionally having a sense of mental balance regardless of what was happening in one's experience. Similarly, the Mindfulness meditators described the capacity to retain a balanced perspective in situations typically perceived as difficult. Mental balance was defined as the ability to potentially hold two mutually exclusive perspectives simultaneously, and moreover perceiving the finer details of a particular situation as well as its contextualisation.

Non-reacting. Participants from both groups associated the experience of meditative equanimity with developing the capacity to respond in a considered way in contrast to reacting in a habitual and conditioned manner. Some of the meditators described this process as creating a space within the mind; which allowed them to step back from a particular situation, and make a choice about how they would like to act rather than just blindly following old behavioural patterns.

Problems dissipate. In regards to the mental clarity achieved through equanimity, only the Mindfulness meditators further discussed the experience of feeling like their problems just dissipated or dissolved. Fundamentally, by experiencing equanimity, problems were no longer conceptualised in the same way as prior to such an experience. Both groups did nonetheless discuss mental clarity and the re-contextualisation of everyday experiences through meditation. It is therefore possible that Stillness meditators also experienced perceiving their problems in context. However, whether or not they experienced this as a dissipating of such problems remains unclear.

Non-Conceptual. The non-conceptual nature of equanimity was strongly converged on by both groups of meditators. Primarily expressed as indescribable, both groups had trouble in identifying words to convey their experience. Moreover, the experiential or non-logical aspect of this experience underlay the non-conceptual nature of equanimity. In which, words were felt to fixate the experience in space and time, when in fact the experience itself was dynamic.

Ineffable. Both groups of meditators concurred with the idea that the phenomenological experience of equanimity was difficult to put into words. Both groups mentioned that the experience was profound and, as such, was very hard to describe. One of the Stillness meditators explained that equanimity could not be conveyed at a conceptual level; instead it needs to be experienced in order to be understood. Another meditator from the same group indicated that by explaining the experience it becomes static.

Experiential / Non-logical. There was agreement across both meditation groups regarding the experiential nature of equanimity. For the Mindfulness meditators, in describing the experience of equanimity, the experience then becomes an idea within the mind and no longer an embodied felt-sense. However, as words cannot do justice to the experience, the embodied sense is lost in translation. The experience itself potentially becomes confused with the conceptualisation of the very same experience. The Stillness meditators added that within the experience of equanimity, one must suspend logical judgments, as such judgments act to conceptualise and categorise the experience.

Self Perception

Although the aspects of 'being-ness' that were associated with equanimity overlapped quite considerably between both the Mindfulness and Stillness meditators, the way in which the groups perceived themselves within such an experience contrasted significantly. Generally, the Mindfulness meditators had discussed the experience of their independent self as dissolving, allowing them to feel interconnected with the world. On the other hand, Stillness meditators did experience a degree of disintegration of their self-concept, with a sense of their true self as emerging within that space. This true sense of self was referred to as authenticity, with individuals reporting having greater relational depth within themselves as a

result. As there was a substantial degree of difference between the two groups in their self-perception within equanimity, the experience of each group is discussed separately.

For the Mindfulness meditators, the self-concept that is typically used to characterise and differentiate oneself in everyday life was experienced as dissolving within the experience of equanimity. This ultimately implied, and was reiterated by several members of the focus group, that the experience of one's self-concept as dissolving allows for the feeling that one is more than merely a physical body and sense of identity. Related to this idea is the sense of emptiness discussed by a number of participants. However, this sense of emptiness is not synonymous with nothingness, as many individuals referred to it as quite animate, in that, it had energy of its own and one can develop a beneficial relationship with it. The relationship with this sense of emptiness extends outwards; several of the participants described the process of emptiness where, as the self-concept begins to dissolve, it can no longer be used to differentiate oneself from others and therefore is no longer a barrier in being truly present with others.

Although the Mindfulness meditators had a sense of their self-concept dissipating, which was further associated with a feeling of emptiness, this in fact potentially facilitated a feeling of 'oneness' that was expressed in a variety of ways. Primarily, absorption provides a sense of interconnectedness with the world, where there is no separation between the object of observation and the subject observing. Absorption, according to some of the participants, ultimately makes it difficult to differentiate between the world and oneself, as if they were merging into one. Secondly, without the barrier of one's self-concept differentiating between subject and object, the Mindfulness meditators discussed the experience of one's life as flowing. Finally, the sense of 'oneness' experienced through the dissolving self-concept is conceptualised as an unification with something greater than oneself, whatever that may be for the individual.

Rather than a sense of emptiness, Stillness meditators described the process of emptying, where the experience of equanimity allows for the emptying of aspects that they feel are not an authentic representation of who they are and who they wish to be. Similar to the Mindfulness meditators, the experience of emptying was associated with the term, 'energy'. An individual stated that by emptying non-authentic aspects

of oneself, one experiences more internal energy, as if the non-authentic aspects consume a considerable amount of internal resources. Stillness meditators described the outcome of the process of emptying as experiencing a sense of purity. This sense of purity was associated with experiencing the richness of life without the untainted self before the development of their differentiated self-concept. It was as if in these moments of experiencing meditative equanimity, the world was perceived as perfect without the layers that one's perception adds to the construction of their worldview. Finally, Stillness meditators discussed developing a sense of relational depth within oneself through the experience of equanimity. This developing relational depth was associated with feelings of great inner strength and also a sense of wholeness within the oneself.

Construction of a Preliminary Scale

For the development of particular items for each theme, Anastasi and Urbina (1997) suggest that the number of items per factor should be weighted according to the overall importance of that particular factor in measuring the underlying construct. In situations where items are over-representative or under-representative of the different facets of the construct, any inferences derived from the scores on the items will invariably be biased. Thus, in accordance with this, where a considerable overlap existed between the themes as discussed by the two groups of meditators, more items were generated in order to represent these. However, fewer items were generated to represent themes that were clearly divergent, such as the differential self-perception across the two groups. Essentially, at least two items were developed for overlapping themes, whereas only one item was created for clearly divergent themes. The initial items generated for the measure of the Phenomenological Experience of Meditative Equanimity is provided in Table 3.5.

In the construction of preliminary items comprising the scale, none of the items were reverse-coded. Netemeyer, Bearden, and Sharma (2003) found that using reverse coded items within a measure potentially produces a factor structure that separates the reverse-coded and non-reversed items into disparate factors. Over four studies, Swain, Weathers, and Niedrich (2008) identified the phenomenon previously referred to as "Mis-response", where individuals responded to reverse and non-

reversed items on the same side of the neutral point. The authors suggest that the cognitive demands of manipulating the reverse-coded items opens the possibility for such items to be misinterpreted and therefore inviting inconsistent responding.

A seven-point Likert scale was used as the format for responding to the newly developed measure of meditative equanimity. A number of studies have found that a seven-point scale is the most robust method in order to ascertain a participant's true score according to each item. For instance, Diefenbach, Weinstein, and O'Reilly (1993) investigated the differences in implementing Likert scales with either a two-, five-, seven-, nine-, eleven-, twelve-, or percentage response alternatives. The researchers found that the seven-point scale was the most accurate in terms of ranking matches of the participant's overall scores, and participants reported that this format was easiest to use when providing a response to their experience.

Furthermore, Nunnally (1978) found that the greater number of choices within the scale increases the scale's reliability, which tends to plateau at seven-points. Additionally, Russell and Bobko (1992) found that providing a response-set that mirrors a continuous distribution has a positive impact on the overall effect size determined by the measure. Similar to Diefenbach et al. (1993), Russell and Bobko (1992) demonstrated that a five-point response format does not provide the capacity to express subtle differences. Similarly, Finstad (2010) found that comparisons between five- and seven-point scales suggested that participants would interpolate responses, such as provide responses outside the provided scale points, on the former as opposed to the latter. Finstad (2010) concluded that this finding represents complications in terms of implementing an online scale where participants cannot interpolate the space between two points. Thus, it was recommended that online surveys utilise a seven-point scale, which is more likely to reflect the individual's true evaluation regarding their experience.

Table 3.5

Preliminary Items to assess the experience of equanimity

Themes/ Subthemes	***Please indicate on a scale from Never (1) to Always (7) how reflective each statement is of your experience over the previous week.***
Being-ness	
Felt-Sense	
Holding/ Nurturing	1. I feel a sense of stability within myself even when things are not going my way.
	2. I feel safe within myself, knowing that no matter what happens, I'll be okay.
	3. It is difficult to explain, but I experience a sense of nurturing within myself
	4. I experience being 'at home' with myself.
Grounded-ness/Centring	5. I experience moments of being in-tune with myself.
	6. I experience a sense of being grounded in the world.
	7. When things in my life are pulling for my attention, I experience a sense of being centred within myself.
Timelessness /Fleeting	8. I experience moments that feel like they are suspended in time.
Heightened Wellbeing	9. I experience a sense of joy arising from within which is not dependent on external circumstances.
	10. I experience a sense of calmness within myself.
	11. I experience being at peace with myself.
Rejuvenating	12. I have moments where I feel spontaneously rejuvenated almost as if I had just woken from resting.
	13. I experience having a resource within myself that I can draw upon when I am low on energy.
Lightness	14. I experience a sense of lightness within myself as if I'm not weighed down by anything within my mind.
Just Being	15. I experience moments where I am content 'just being' without the internal pressure of having to do anything.
Clarity	
Heightened Senses	16. I have sensory experiences where a sense impression occurs but I am not conceptualising or judging it.
	17. I experience the finer details of my sensory impressions.
	18. I experience moments where reality feels suspended and all that's left is my sensory experience.
Mental Clarity /Balance	19. I experience moments where my thinking is crystal clear.
	20. I experience a sense of mental balance regardless of what is happening in my life.
	21. I experience perceiving my problems within their wider context.
	22. I experience being able to simultaneously hold a close-up as well as a distant perspective of my life.
Non-reacting	23. I experience a space within my mind where I am able to step back from a situation and consider before responding rather than reacting automatically.

Problems dissipate	24. I experience moments where it feels as though all my problems disappear, and when I intentionally return to them I don't see them in the same way.
Non-conceptual	
Ineffable	25. I experience moments so profound, they are often hard to describe.
Experiential /Non-logical	26. I experience moments that if I were to try and explain them, it would take away from the experience itself.
Self-Perception (Mindfulness meditators)	
Self-concept	
Dissolving Self	27. I experience myself as being more than my body and sense of identity.
Emptiness	28. I experience moments of being 'empty of myself', which allows me to be truly present to others.
Oneness	
Absorption	29. I experience moments where I feel interconnected with the world.
	30. I experience moments where I find it hard to differentiate between myself and the world, as if they were merging into one
Flowing	31. I experience my life as flowing.
Unification	32. I experience myself as connected to something greater than myself, whatever that may be.
Self-Perception (Stillness Meditators)	
Self-concept	
Authenticity	33. I experience an inner knowing that I am authentic with myself.
	34. I follow my own path, regardless of societal expectations.
Emptying	35. I experience moments where I feel that I am emptied of aspects of myself that don't truly represent who I am.
Purity	36. I experience moments of such purity, as if the world is perfect in these moments.
Relational Depth	
Inner Strength	37. I experience moments of great inner strength.
Wholeness	38. I experience a sense of wholeness within myself.

4. Exploratory Factor Analysis

"Only in Stillness does the
imperceivable become discernable".
B. H. McGill

The next study, subsequent to the development of items, aimed to determine the factor structure of equanimity within meditation. This was achieved through the collection of responses from a substantially large sample that responded to an online survey, which consisted of the items developed through the IPA of experienced meditators' discussions regarding the phenomenological experience of meditative equanimity, as outlined in the previous chapter. However, Izquierdo, Olea, and Abad (2014) recommend running preliminary analyses on the items so that only the "most adequate" of items are used in the Exploratory Factor Analysis (EFA; Spearman, 1904). In situations where items have been developed through the deductive approach, the adequacy of items is typically determined by inter-rater validity, where a panel of experts in the field rates the appropriateness of each item (Hinkin et al., 1997). As an inductive approach was used for the construction of items in the present study, a series of evaluative comparisons were conducted. Thus, to determine the adequacy of items, responses to the measure by meditators were compared with non-meditators, in order to ensure that each item was sensitive to the experience of equanimity as cultivated through meditation. Additionally, an individual's meditative experience was expected to be predictive of their scores across each of the items. Subsequent to these preliminary analyses, an EFA was conducted on the items identified as adequate.

Method

Recruitment

An email outlining the aim of the study, which contained a link to the online survey, was sent during April 2016 to each of the individuals who were contacted for participation in the focus groups and interviews. The email asked participants to forward the email to their networks of meditators and non-meditators. In addition, the

same email was sent to both the ATMA and the SMTC, the content of which was replicated in their online newsletters. Advertisements for the study were also forwarded to meditation centres around Australia via email. The project was additionally advertised on the social networking site, Facebook, in which individuals were requested to repost the survey; with this snowballing method of convenience sampling facilitating in the further recruitment of the Non-meditating sample. The advertisement used for the recruitment of participants is provided in Appendix 4.1.

Participants

In total, 525 individuals responded to the online survey, of which there were 408 completers. Of the completers, 168 were male and 240 were female. The mean age for the entire sample was 51.80 (*SD* = 13.82), with a range between 24 and 80 years of age (35 individuals did not specify age). It is likely the vast majority of participants were from Australia, however with advertising on social media there is a probability that a small portion were from countries outside Australia.

As respondents were asked to indicate whether or not they meditated and also identify which form they practiced, the sample was further broken down into five subsamples. These subsamples included Samatha (*n* = 70), Vipassanā (*n* = 115), Stillness (*n* = 57), Non-specified (*n* = 42), and Non-meditators (*n* = 124). The Non-specified group was made up of individuals who reported that their meditation technique was not listed as one of the options. Responses from this group in terms of their meditative style included ‘Heart’ and ‘Analytical’, amongst others. A breakdown of mean age, age range, and gender representation for the five subsamples is provided in Table 4.1.

Moreover, all individuals who reported that they meditated were asked to provide an estimate of the years of meditative experience regarding their specified technique. Individuals were also asked to estimate the number of sessions per week and the average duration, in minutes, of these sessions. The mean for each of these variables across the four meditating subsamples is provided in Table 4.2.

Table 4.1.

Mean Age, Range, and Gender across the Five Subsamples

	N	*M* Age (*SD*)	Age Range	M	F
Samatha	70	53.73 (*13.15*)	25 – 78	35	35
Vipassanā	115	48.31 (*12.39*)	24 – 79	51	64
Stillness	57	52.15 (*14.84*)	24 – 80	16	41
Non-specified	42	50.63 (*13.21*)	25 – 73	19	23
Non-Meditators	124	53.91 (*14.65*)	24 – 80	47	77

Note. Of the 35 participants who did not specify age, seven were Non-meditators, four from the Samatha group, 15 were Vipassanā meditators, five from the Stillness group, and four from Non-specified. All individuals specified gender. M = Male, F = Female.

Table 4.2.

Meditative Experience Across the Four Meditating Subsamples

	M Years (*SD*)	*M* Sessions (*SD*)	*M* Length (*SD*)	*M* Experience* (*SD*)
Samatha	18.66 (12.45)	6.46 (3.09)	29.70 (13.60)	576.69 (581.40)
Vipassanā	15.11 (11.43)	6.19 (3.10)	34.12 (16.87)	596.30 (779.80)
Stillness	15.46 (13.09)	6.81 (3.61)	34.12 (15.30)	687.74 (958.52)
Non-specified	18.98 (12.82)	7.86 (4.08)	36.79 (18.21)	896.48 (1046.81)

Note. Two individuals from the Vipassanā group and one from the Samatha group not specify any of the three variables. *Indicates total meditative experience, the calculation is provided on p.134.

Procedure

This particular study was approved by the Monash University Human Research Ethics Committee project number CF16/136 – 2016000696 (see: Appendix 4.2 for Ethics Certificate). The advertisement email described the current study as exploring the experience of equanimity cultivated through meditation. After completing the survey, participants were asked to forward the email to their networks if they wished. Participants were additionally informed that if they agreed to participate, they could withdraw at any time during the process of completing, with any data already provided being excluded from the results. If participants wanted more information about the study, they were invited to click on the link to the online survey, which opened to the Explanatory statement (see: Appendix 4.3).

The Explanatory statement described the process of how the items were generated through focus groups and interviews with experienced meditators regarding their experience of equanimity. The current study was described as exploring the construct underlying these items. Individuals were informed that the survey would take no more than 20 minutes to complete. Information pertaining to the requirements of participation was also provided; these included being at least 18 years of age and proficient in English. Participants receiving the email advertisement were informed that they had previously indicated that they would like to be contacted in order to participate in further research on meditation. Or alternatively, individuals from their network believed that they may be interested in participating and subsequently forwarded the link for the survey to them.

When respondents felt they had sufficient information to proceed with the study, they were invited to click on the 'next page' tab at the bottom of the screen. It was determined that when participants had done so, they had provided their informed consent. The participants would then begin the survey proper. The survey itself was completed online through the survey software Qualtrics, which allowed individuals to complete the questionnaire on any Internet-enabled device able to open a web browser, including computers, tablets, and smart phones.

All respondents were initially asked to provide basic demographic information, such as their age and gender, and were asked to indicate if they currently meditated. Participants who indicated that they currently practiced meditation were asked to indicate which meditative technique best described their practice. The options included: Samatha / Concentrative, Vippasanā / Insight-oriented or Mindfulness, Stillness meditation as developed by Ainslie Meares, and finally, Non-specified. Those who chose the latter option were further invited to provide a description of the meditative style that they predominately used. Individuals indicating that they do not meditate bypassed these questions and were forwarded directly to complete the 38-item measure.

In terms of the measure itself, participants were asked to indicate on a seven-point Likert scale, from one (*never*) to seven (*always*), how reflective each statement was regarding their experience during the previous week; with higher scores suggesting more frequent and intense experiences of these themes representing equanimity. At the completion of the 38-item measure, respondents were asked to

leave their email address if they would like to be contacted for further research. All participants completed the items in the same order. No individuals were compensated for the time taken to complete the survey.

Data Analysis

In terms of evaluating the adequacy of items, MANOVA was used to determine mean differences for item responses between the four meditation groups and the Non-meditating group. Regression analyses were implemented to determine if responses for each of the items could be predicted by a meditator's cumulative hours of meditative experience. In conducting factor analyses, EFA with Principle Axis Factoring extraction and Direct Quartamin rotation was used on the combined sample of meditators. The same method was used to determine the underlying factor structure of the items for the Non-meditators but within a bootstrapping paradigm. To determine the similarity between the factor scores obtained from the two groups, a Tucker's Coefficient of Convergence was calculated on the Procrustes rotated data. The aforementioned analyses were conducted with SPSS version 24 (IMB Corp, 2013).

Results

Basic Demographic Comparisons

Prior to determining each item's adequacy as well as analysing the factor structure underlying the items, the five subsamples were compared across the demographic variables of age and gender. In terms of age, Levene's (1960) test for equality of variance indicated that the variance in age between groups was relatively equal, F (4, 368) = 1.10, $p > .05$. A one-way Analysis of Variance (ANOVA) indicated that age was significantly different between groups, F (4, 368) = 2.72, $p < .05$. A Tukey (1949) Honestly Significant Difference (HSD) Post-hoc test revealed that this difference in age existed between the Vipassanā and Non-meditating groups, with the latter significantly younger than the former (mean difference = -5.57, $p < .05$). No further significant differences in terms of age were noted between the groups. Regarding gender representation, no significant difference across the five subsamples was found, χ^2 (4) = 7.60, $p > .05$.

To compare meditative experience across the four meditation groups, an estimate was generated through the three variables, Years of experience, Sessions per week, and Duration of each session. Primarily, the Duration variable was divided by 60 in order the convert the data from minutes into hours. The Sessions variable was then multiplied by 52, which provided an estimation of total sessions a year. These two variables were then multiplied together with the Years variable, providing an estimate of cumulative hours of meditative experience. An ANOVA comparing total meditative experience across the four meditation groups was then performed. This indicated that the four groups did not differ significantly in terms of meditative experience, $F(3) = 1.63$, $p > .05$.

Data Screening

Across the matrix of cases by items, there were a total of 47, out of 15,542 cells, with missing data. The Little (1988) Missing Completely at Random (MCAR) test, using the estimation method of Expectation-Maximisation, indicated that this missing data was indeed MCAR, $\chi^2(1138) = 1210.77$, $p > .05$. Rather than implementing pair-wise deletion for this missing data, Allison (2003) and Ludbrook (2008) recommend multiple imputation in order to replace the data, as it its less biased than the former. Ultimately, Sterne et al. (2009) identified that replacing missing data through multiple imputation decreases measurement error and increases precision of statistical analysis.

In terms of multiple imputations, the variables specified in the model were the 38 items comprising the preliminary measure. Each item was set to a minimum of one and maximum of seven, as multiple imputation has been found to impute numbers beyond the possible range of scores for the scale (Sterne et al., 2009). Imputations were set to just one, as the aim was impute and replace just 0.3% of the dataset. The items as well as the grouping variable were used as predictors of this missing data. Consequently, only the missing cells were replaced with the EM-based prediction with the original observed scores remaining the same within the imputed dataset.

The dataset was then screened for univariate outliers across each of the items according to the grouping variable. This was achieved by identifying scores within each of the five groups that were 3.29 standard deviations away from the mean according to each item's z-distribution. An iterative process identified a total of 15

univariate outliers for the Samatha group, 36 within the Vipassanā, 10 in the Stillness meditation group, five for Non-specified, and none in the Non-meditating group. Each of the outliers identified were on the lower end of the z-distribution (below $z = -3.29$).

Tabachnick and Fidell (2007) have suggested replacing the outliers with the mean across each of the data-points within the corresponding cell. Nonetheless, Cousineau and Chartier (2010) argue that this method potentially increases the likelihood of a Type I error by diminishing the spread of the population distribution and producing a more leptokurtic distribution of the observed scores. Instead, the use of multiple imputation in order to replace univariate outliers has been recommended by a number of researchers (see: Cousineau & Chartier, 2010; Dang & Serfling, 2011; Elliott & Stettler, 2007). Thus, each of the univariate outliers were deleted and replaced using multiple imputation, in the same manner described for the MCAR data.

Multivariate outliers were assessed through linear regression by regressing items comprising the measure, the independent variables, onto the grouping variable, defined as dependent. This provided the option of computing a value of Mahalanobis Distance (1936) for each of the cases in the dataset. The significance levels of each of the Mahalanobis values were calculated from the inverse χ^2 Distribution, with the Distance score and 38 (items) as the two degrees of freedom, respectively. Examination of the significance levels for Mahalanobis Distances resulted in the identification of 42 multivariate outliers, $p < .001$. Of these cases, eight were from Samatha, seven from both Vipassanā and Non-specified, four from Stillness, and 16 from the Non-meditating group. However, Cousineau and Chartier (2010) argue that multivariate outliers are problematic to the extent that they are the result of "spurious activity" on behalf of the respondent. Closer inspection of these cases revealed that each were valid data-points, and not the result of spurious activity defined as inconsistent responding, and were therefore retained in the dataset.

In terms of multivariate normality, Small's (1980) Omnibus test for Multivariate Normality was calculated by virtue of DeCarlo's (1997) syntax, as provided in Appendix 4.4. Results indicated that the data was not multivariatly normally distributed, $\chi^2 (76) = 642.79$, $p < .001$. The distribution was positively skewed, likely a result of the large number meditators within the sample. Due to the identification of non-normality as well as the presence of multivariate outliers, the dataset was transformed through both $\log^{10}$ and Square-root transformations.

However, as neither solution improved the normality of the distribution, the dataset was analysed as per normal.

Adequacy of items

Inspection of the scatterplot matrices for each pair of items according to the grouping variable suggested linear relationships between each dyad combination of the items. To test multicollinearity, Variance Inflation Factors (VIF), which determines the degree that the regression coefficient is enhanced due to collinearity, were computed. A VIF range between 2.076 and 4.196 suggested that multicollinearity was not a problem; most researchers recommend a VIF of less than 10 (Hair, Tatham, Anderson, & Black, 1998; Kennedy, 1992; Marquardt, 1970; Neter, Wasserman, & Kutner, 1989), while Rogerson (2001) suggests a value less than 5. Box's (1949) M test was significant, F (2964, 115464.20) = 6445.28, $p < .001$, indicating that covariance matrices of the items were not equal across the groups. Levene's test, as provided in Table 4.3, demonstrated that the following items in particular had unequal variances across the five subsamples: one to seven, 9 to 17, 19 to 24, 27, 29, 31 to 33, and 37 to 38.

Pilli's (1955) Trace multivariate statistic has been demonstrated to be robust to violations of normality (Tabachnick & Fidell, 2007). Thus, Pilli's Trace indicated a significant main effect for the 38 items across the five groups, F (153, 1476) = 2.25, $p < .001$. Subsequent post-hoc analyses for items with unequal distributions across the groups (as above) were carried out using the Games-Howell (1976) test, which is particularly robust to violations of normality. For those items that met the normality assumption in regards to group variances, post-hoc comparisons were compared with Tukey's (1949) HSD.

As also indicated in Table 4.3, post-hoc analyses, even with a Holm-Bonferroni (Holm, 1979) adjusted significance of $p = .0013$, demonstrated that the four meditation groups scored significantly greater than the Non-meditating subsample across the vast majority of items. However, problems were noted for items presented in Table 4.4, all of which indicated quite small or non-significant differences between the meditation groups and the non-meditators. It should be noted however, that family-wise adjustments were not performed for group differences across each individual item. This occurred for two reasons; namely, the adjustment for

Table 4.3.

Mean Comparisons between Non-Meditators and the Four Meditation Groups across each Item

Item	Levene's Test[1]	Between-Groups MANOVA[2]	Post-Hoc Comparisons with Non-meditators (Mean Difference)			
	F	*F*	Samatha	Vipassanā	Stillness	Non-Specified
1.	10.49***	15.18***	.87***	.73***	1.11***	1.04***
2.	**2.99***	**4.9****	**.63***	**(.41)**	**.75****	**(.51)**
3.	6.11***	13.55***	.96**	1.06***	1.38***	1.07**
4.	10.05***	8.59***	.85***	.63**	.83***	.87**
5.	**6.50*****	**6.00*****	**.61****	**.53****	**.74****	**(.58)**
6.	13.06***	9.08***	.82***	.77***	.99***	(.62)
7.	8.83***	18.01***	1.23***	1.03***	1.30***	1.12***
8.	.21	9.75***	1.12***	.74***	1.18***	1.30***
9.	5.09***	24.15***	1.28***	1.19***	1.28***	1.75***
10.	9.63***	21.77***	1.17***	.81***	1.24***	1.34***
11.	9.06***	14.15***	.81***	.57**	1.02***	1.13***
12.	4.00**	18.16***	1.34***	1.08***	1.54***	1.40***
13.	3.88**	12.71***	.83**	.99***	1.27***	1.35***
14.	4.95**	28.38***	1.35***	1.32***	1.72***	1.95***
15.	6.51***	18.56***	1.28***	1.07***	1.24***	1.53***
16.	10.70***	15.22***	1.33***	1.01***	.89***	1.55***
17.	3.63**	9.11***	.88**	.95***	.77*	1.27***

18.	0.23	13.77***	.94**	.97***	1.49***	1.61***
19.	**4.70****	**3.21***	**(.39)**	**(.24)**	**.66***	**.63***
20.	9.14***	17.92***	1.08***	.93***	1.27***	1.37***
21.	9.06***	10.03***	.89***	.70***	.81**	.82**
22.	**5.03****	**3.70****	**(.35)**	**.49***	**.70***	**.70***
23.	7.16***	12.21***	.85***	.61***	.84***	.91***
24.	3.53**	13.86***	.85**	1.07***	1.38***	1.37***
25.	0.12	12.47***	.98**	.88***	1.33***	1.77***
26.	1.80	12.02***	1.23***	1.05***	1.17***	1.68***
27.	4.92**	12.95***	1.11***	1.14***	1.33***	1.76***
28.	2.02	18.49***	1.47***	1.28***	1.35***	1.80***
29.	2.71*	18.93***	1.27***	1.17***	1.34***	1.66***
30.	0.34	13.43***	1.09***	.88***	1.23***	1.99***
31.	3.90**	10.57***	.93**	.98***	.99**	1.37***
32.	**4.28****	**8.78*****	**(.45)**	**.78****	**1.17*****	**1.55*****
33.	**6.81*****	**5.93*****	**(.32)**	**.55***	**.96*****	**.84****
34.	**0.19**	**4.39****	**(.48)**	**(.33)**	**(.59)**	**.94****
35.	1.08	13.94***	1.00***	.76**	1.38***	1.75***
36.	0.58	16.21***	1.51***	1.02***	1.64***	1.71***
37.	**6.58*****	**4.40****	**(.54)**	**.51***	**.71****	**(.65)**
38.	8.13***	9.81***	.84**	.76***	1.13***	.99***

Note. [1] Degrees of Freedom (4, 403); [2] Degrees of Freedom (4); Significance Levels: ***$p < .001$; **$p < .01$; *$p < .05$. Bold represents possible inadequate items.

Type I error would have substantially increased the probability of a Type II error. Such a compromise is especially pertinent when attempting to find as many items as possible measuring equanimity. Secondly, the correlated nature of items, which Type I errors account for, would be further explored and dealt with in the EFA phase.

Each of these eight items were subsequently removed from the measure due to not being sensitive in determining differences between meditators and non-meditators regarding the experience of equanimity as cultivated through meditation. Nonetheless, it is possible that such items do measure an aspect of equanimity that meditation does not necessarily cultivate. However, this would prove to be difficult to measure within the current study due to the fact that a cross-sectional design was utilised rather than longitudinal for item validation. Differences between the four meditation subsamples occurred within three items, and only between the Non-specified and Vipassanā groups (Item 14: *I experience a sense of lightness within myself as if I'm not weighed down by anything within my mind*, $MD = .68$, $p < .05$; Item 24: *I experience moments where it feels as though all my problems disappear, and when I intentionally return to them I don't see them in the same way*, $MD = .89$, $p < .05$; and Item 36: *I experience moments of such purity, as if the world is perfect in these moments*, $MD = .69$, $p < .01$). Although a non-significant difference between the Non-specified and Non-meditators was identified for Item 6: *I experience a sense of being grounded in the world*, the three meditation groups did demonstrate a significant difference. This item was therefore retained for further adequacy testing.

Table 4.4.

Items Removed due to Non-significant Differences between Non-meditators and One or More Subsample of Meditators

2. I feel safe within myself, with a knowing that no matter what happens, I'll be okay.
5. I experience moments of being in-tune with myself.
19. I experience moments where my thinking is crystal clear.
22. I experience being able to simultaneously hold a close-up as well as a distant perspective of my life.
32. I experience myself as connected to something greater than myself, whatever that may be.
33. I experience an inner knowing that I am authentic within myself.
34. I follow my own path, regardless of societal expectations.
37. I experience moments of great inner strength.

To further determine adequacy of items, regression coefficients were calculated between meditative experience and each item comprising the measure. More specifically, scores on each of the items should be significantly predicted by an individual's cumulative meditative experience. Again, Type I error was not accounted for due to the aforementioned reasons. As indicated in Table 4.5, scores on all but one item, Item 8: *I experience moments that feel like they are suspended in time*, were significantly predicted by an individual's meditative experience. This item was therefore removed from the measure.

Table 4.5.

Meditative Experience Predicting each of the 30 Remaining items

Item	R^2	F (1, 281)	β	t
1.	.069	2.52***	.262	4.53***
3.	.028	7.94**	.166	2.81**
4.	.062	18.59***	.250	4.31***
6.	.044	12.93***	.210	3.60***
7.	.032	9.09***	.178	3.01**
8.	**(.012)**	**3.42**	**(.110)**	**1.85**
9.	.041	11.95**	.203	3.46**
10.	.049	14.33***	.221	3.79***
11.	.064	19.21***	.254	4.38***
12.	.022	6.27*	.148	2.50*
13.	.059	17.62***	.244	4.20***
14.	.059	17.48***	.243	4.18***
15.	.059	17.37***	.242	4.18***
16.	.072	21.76***	.296	4.66***
17.	.038	10.97***	.194	3.31***
18.	.030	8.49***	.172	2.91***
20.	.059	17.56***	.243	4.19***
21.	.049	13.15***	.212	3.63***
23.	.028	8.15**	.168	2.86**
24.	.074	22.23***	.272	4.71***
25.	.063	18.71***	.251	4.33***
26.	.046	13.34***	.214	3.65***

27.	.020	5.57*	.140	2.36***
28.	.070	22.21***	.272	4.71***
29.	.034	10.81**	.193	3.29**
30.	.045	13.02***	.211	3.61***
31.	.043	12.61***	.208	3.55***
35.	.015	4.15*	.212	2.04*
36.	.025	7.19**	.159	2.68**
38.	.024	9.75**	.184	3.12**

Note. *** $p < .001$; ** $p < .01$; * $p < .05$. Bold indicates possible inadequate item.

EFA: Meditating Sample

Comparisons across the groups through MANOVA identified significant differences between the non-meditators and the meditation groups regarding the remaining 29 items comprising the measure. In such cases, Fabrigar, MacCallum, Wegener, and Strahan (1999) recommend initially performing separate EFAs on different groups in order to avoid potentially inflating the variance scores, thereby resulting in inaccurate low factor loading estimates. This will invariably result in the occurrence of just two sets of EFAs as no differences were identified across the four groups of meditators. Even though a significant difference was noted between the Vipassanā and Non-specified groups for three items, such differences were not considered overly problematic in terms of increasing group variances across items especially when contrasted with the differences between these meditators and non-meditators.

Although there are no absolute rules regarding the sample size necessary for EFA, the sufficiency of the sample is dependent on the ratio of the sample to the number of items, saturation of the factors, as well as the heterogeneity of the sample (Costello & Osborne, 2005; de Winter, Dodou, & Wieringa, 2009). To ensure all these conditions are met, Hair, Tatham, Anderson, and Black (1998) and Kerlinger (1986) recommend a ratio of 10 participants per each item when conducting EFA. For the meditators ($n = 284$), a sample-item ratio of 9.79 was obtained, which approximately meets this criterion. However, the Non-meditating sample ($n = 124$) falls well below this, but will be dealt with subsequent to the combined meditating group.

For the entire meditating sample, univariate and multivariate outliers were already dealt with as part of the initial data screening. Small's (1980) Omnibus test of Multivariate Normality was significant, χ^2 (56) = 432.57, $p < .001$. Evaluation of the correlation matrix between each possible dyad of the remaining 29 items did not suggest evidence of multicollinearity, VIF = 1.836 to 4.530. Moreover, Field (2009) claims that correlations between two items greater than .80 implies that one needs to be eliminated prior to EFA. However, as indicated by the range of associations between $r_s = .253$ and .778, this was not a problem with the current dataset of meditators.

Two important statistical analyses were necessary to determine whether the current dataset was appropriate for EFA. These include the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Kaiser, 1970, 1974) and the Bartlett's Test of Sphericity (Bartlett, 1950). Primarily, the KMO Measure of Sampling Adequacy provides a score between zero and one. A score closer to zero indicates that only a small proportion of variance is common across the variables, suggesting that EFA is not appropriate (Kaiser, 1974). On the other hand, a score closer to one suggests a substantial common variance, which means that the EFA can potentially discover distinct and reliable underlying factors within the dataset. According to Hair et al. (1998), a score between .50 and .60 is unacceptable, whereas a score from .80 to .90 and above is considered excellent. In terms of the combined meditating sample, the KMO Measure of Sampling Adequacy suggested that the current dataset was excellent for EFA with a score of .95. Secondly, Bartlett's Test of Sphericity is a measure indicating whether each item is interrelated with other items, such that the corresponding correlation matrix is an identity matrix. According to Tabachnick and Fidell (2007), Bartlett's Test of Sphericity needs to be significant ($p < .05$) in order to proceed with EFA. For this dataset, Bartlett's Test of Sphericity was highly significant, χ^2 (406) = 5488.32, $p < .001$.

Despite violations to multivariate normality, it is primarily the extraction method of Maximum-Likelihood that is constrained by skewness, kurtosis, and multivariate outliers (Briggs & MacCallum, 2003; Rowe & Rowe, 2004). Thus, the extraction method utilised within the EFA was Principle Axis Factoring (PAF), which is particularly robust to violations of normality (Fabrigar et al., 1999). Although other methods are not constrained by distributional assumptions, such as Minimum

Residuals and Unweighted Least Squares (Jöreskog, 2003), PAF is argued to generate the best results with non-normally distributed datasets (Costello & Osborne, 2005).

Varimax rotation is the most common rotation method within the EFA literature. Nonetheless, Costello and Osborne (2005) argue that its implementation in the social sciences is counter-intuitive. Varimax is an orthogonal rotation method, which produces results that are easily interpretable as it assumes that the factors are uncorrelated. Yet rarely in the social sciences are factors uncorrelated, and by using an orthogonal rotation, valuable information regarding the relationship between the factors is lost in the process of analysing the data.

Thus, Costello and Osborne (2005) recommend using an oblique rotation method in most situations to allow the factors to correlate. Nonetheless, oblique rotations essentially come with the consequence of greater inter-factor correlations and cross-loading, which tend to reduce overall factor loadings (Schmitt & Sass, 2011) and therefore make it more difficult to derive meaningful theoretical factors (Netemeyer et al., 2003). According to Osborne (2015) however, oblique rotation will invariably derive superior factor solutions when compared with those obtained through orthogonal solutions. For the current analysis it was theorised that if there were a number of factors underlying the phenomenological experience of meditative equanimity, these factors would indeed overlap considerably.

The most common oblique rotation methods include direct Oblimin, Quartimin, and Promax. Costello and Osborne (2005) indicate that there is no preferred technique, with each also being found to produce similar results (Fabrigar et al., 1999). Direct Quartimin computes the factor scores by going directly from the unrotated data to the rotated factor pattern without controlling for the degree of obliqueness between the related factors. This provides a "simple solution" (Jennrich & Sampson, 1966). Direct Oblimin follows the same procedure but implements an extra parameter in order to arrive at the factor structure, which can be used to predetermine the amount of obliqueness between the factors (Comrey & Lee, 1992). Promax, on the other hand, treats the factors at first as relating orthogonally, and once reaching maximum orthogonal rotation, the data is then rotated in an oblique fashion (Abdi, 2003).

In consideration of the way in which each technique analyses the data,

Howard (2016) recommends the use of Direct Quartimin. Promax uses both orthogonal and oblique methods, whereas Direct Oblimin should only be used, according to Howard (2016), in cases when there is strong theoretical justification for predetermining the degree of obliqueness between factors. Moreover, Direct Quartimin has been demonstrated to directly find the underlying factor pattern and provide exceptional results with complex datasets (Browne, 2001). Thus, for the current analyses, the oblique rotation method of Direct Quartimin was utilised.

In determining the number of factors underlying the dataset, an unrestricted EFA was conducted using the extraction and rotation methods as specified. Cattell's (1966) scree test, as illustrated in Figure 4.1, suggests either a two or potentially a three-factor solution. The eigenvalues greater than one rule (Kaiser, 1960), as indicated in Table 4.6, suggests retaining a total of four factors, explaining 56.61% of the total variance. However, the scree test is subjective and the eigenvalues greater than one rule is considered unreliable (Zwick & Velicer, 1986). The former is subject to experimenter bias, especially in terms of expectation, whilst the latter has been demonstrated to substantially overestimate, and sometimes underestimate, the number of factors underlying a dataset (Thompson, 2004).

Although Costello and Osborne (2005) recommend using the scree test in determining factor retention, they only do so on the account that most available statistical software programs cannot compute Horn's (1965) Parallel Analysis. Parallel Analysis or Eigenvalue Monte Carlo Simulation has been validated as the most robust method in determining the factor structure underlying a number of items (Humphereys & Montanelli Jr, 1975; Ledesma & Valecro-Mora, 2007; Zwick & Velicer, 1986).

The Eigenvalue Monte Carlo Simulation compares observed eigenvalues taken from the correlation matrix with eigenvalues extracted from the simulation of a number of parallel datasets. This provides the expected eigenvalues based on the process of generating random data correlation matrices from the current dataset and averaging the resulting randomly generated eigenvalues for each factor. Any eigenvalue in the original dataset that exceeds those randomly generated is considered significant (Thompson, 2004). Using the SPSS syntax developed by O'Connor (2000; see: Appendix 4.5) the Eigenvalue Monte Carlo Simulation was set to create 1,000 parallel normally distributed samples derived from the current dataset. For the

randomly generated data, the highest mean eigenvalue was 2.03, which was exceeded by the first two eigenvalues from the actual dataset. As illustrated in Figure 4.1, overlaying the scree test, two eigenvalues were considered significant, $p < .05$, suggesting a two-factor solution. In terms of variance explained, only 4.78% was lost in the two-factor, as opposed to the four-factor, solution.

Table 4.6.

Factors Extracted through Eigenvalues Greater than One Rule for Meditators

Initial Eigenvalues				Extraction Sums of Squares		
Factor	Total	Variance%	Cumulative%	Total	Variance%	Cumulative%
1	13.55	46.71	46.71	13.12	45.26	45.26
2	2.29	7.90	54.61	1.88	6.48	51.74
3	1.24	4.29	58.90	.81	2.80	54.54
4	1.01	3.48	62.38	.60	2.07	56.61

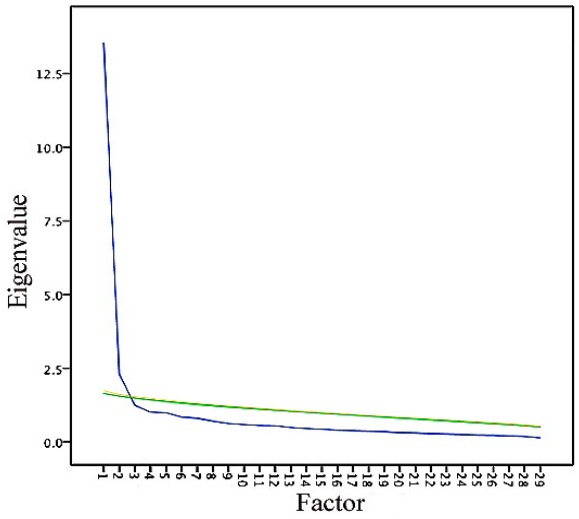


Figure 4.1. Monte Carlo Parallel Analysis for items responded to by meditators

Based on a two-factor solution, the EFA was rerun using PAF as the extraction method and Direct Quartimin for rotation. As depicted in Table 4.7, a large number of items significantly loaded on either one of the two factors. Contrary to what might be expected through the use of an oblique rotation method, only a few items, 9, 13, 14, and 24, had substantial cross-loadings on both factors (> .32 as defined by Tabachnick

and Fidell, 2007). Additionally, these items as well as items 12, 15, 21, 23, and 31, did not reveal a strong factor loading (>.50) on a primary factor (Tabachnick & Fidell, 2007).

According to the norm within social science research, item retention on an identified factor typically follows a standard of .5/.2 or .6/.3 in terms of acceptable factor loadings (Henson & Roberts, 2006; Park, Dailey, & Lemus, 2002). Items are retained if they exceed a loading on their primary factor of .5 or .6, whilst not exceeding a .2 or .3 loading on another factor. For the current study, the more conservative .6/.3 rule was implemented. This suggested that the nine items, as provided in Table 4.8, should be removed from the measure due to unsubstantial loading on a primary factor (above .6) or significant cross-loadings, whereby no primary factor can be clearly distinguished.

As suggested by Wille (1996), each of the nine items were deleted in a step-wise fashion with a re-analysis of the Pattern Matrix at each sequential stage. Accordingly, the potential exists to compromise the integrity of the data by deleting all nine items at once, as the deletion of each item may affect the factor loading as well as the cross-loadings of the remaining items. However, as indicated in Appendix 4.5, only small variations in factor loadings and cross-loadings were noted throughout the step-wise deletion of these nine items.

Therefore, EFA of the Phenomenological Experience of Meditative Equanimity Measure, as responded to by individuals who currently meditate, resulted in two underlying factors comprising 20 items in total. As demonstrated in Table 4.8, nine items clearly loaded on the first factor. The IPA themes of this factor encompassed *Holding-Nurturing*, *Grounded-ness-Centring*, *Heightened Wellbeing*, *Mental Clarity-Balance*, and *Wholeness*. Thus, this factor was subsequently labelled "Centring" as it primarily included items assessing the internal experience of meditative equanimity.

Of the 20 items, 11 items clearly loaded on the second factor, which concerned itself with the experience of oneself in the world within equanimity. The relevant IPA themes included *Heightened Senses*, *Ineffable-Non-logical*, *Dissolving self*, *Emptiness-Emptying*, *Absorption*, and *Purity*. This second factor was labelled "Resonating" due to capturing the outward expression of equanimity. Resonating was

found to be moderately correlated with Centring, $r = .65$. However, Pearson's (1895) correlation is not necessarily the best measure of association between factors, which will be discussed further in Chapter Six: Further Validity Analyses.

As indicated in Table 4.9, each item was additionally found to strongly correlate with other items within their respective subscale. Item-total reliability was excellent for both Centring and Resonating, with, $\alpha = .904$, and, $\alpha = .926$, respectively; which is sufficiently above Kline's (1993) and Nunnally's (1970, 1978) recommendation for the early stages of scale development. Moreover, such reliability coefficients are above the same authors' recommendations of .80 and .90 in terms of scale's application within further research. However, as noted by other researchers, these recommendations of reliability do not correspond to empirical justification (Helms, Henze, Sass, & Mifsud, 2006; Iacobucci & Duhachek, 2003; Schmitt, 1996).

Although Cronbach's alpha is the most widely used measure of internal reliability, it is not directly related to the actual structure of the scale (Sijtsma, 2009), but is rather a characteristic of the sample itself (Dimitrov, 2002). Alpha is biased by the number of items in the scale, with a larger number of items typically associated with a greater reliability coefficient (Cortina, 1993; Duhachek, Coughlan, & Iacobucci, 2005; Streiner, 2003). Related to this, the coefficient assumes uncorrelated errors and therefore cannot determine the dimensionality of the scale; a large number of items from different factors will produce a high alpha regardless of the degree of relation between the factors (Sijtsma, 2009). Alpha also makes assumptions of multivariate normality (see: van Zyl, Neudecker, & Nel, 2000) as well as tau-equivalence (Kristof, 1974; Novick & Lewis, 1967; Ten Berge & Zegers, 1978); equal loading of items on their respective factor.

In order to overcome these limitations, Trizano-Hermosilla and Alvarado (2016) recommend the use of the omega reliability coefficient (McDonald, 1999) for "greater theoretical and empirical advantages" (p.769). Through a series of Monte Carlo simulations, Trizano-Hermosilla and Alvarado (2016) alternated the sample size, the number of items, as well as different conditions of tau-equivalence in order to compare both alpha and omega. The results indicated that omega equalled (when equal loadings were assumed) or outperformed alpha in every situation. Although problems for omega were noted for non-normality, the coefficient still performed better than alpha in circumstances involving violations to multivariate normality.

Table 4.7.

	Pattern Matrix for the 29 Items		*Final Pattern Matrix for the 20 Items*	
	Centring	*Resonating*	*Centring*	*Resonating*
1.	**.830**	-.102	**.805**	-.062
3.	**.640**	.035	**.630**	.057
4.	**.754**	-.022	**.738**	.017
6.	**.566**	-.008	**.585**	.013
7.	**.729**	-.025	**.703**	.011
9.	.455	.364		
10.	**.797**	-.058	**.774**	-.024
11.	**.858**	-.103	**.829**	-.067
12.	.445	.293		
13.	.392	.330		
14.	.375	.418		
15.	.433	.308		
16.	.094	**.605**	.088	**.612**
17.	.082	**.630**	.080	**.632**
18.	-.001	**.740**	.003	**.740**
20.	.**720**	.095	**.686**	.125
21.	.463	.247		
23.	.394	.203		
24.	.321	.456		
25.	.001	**.841**	.016	**.828**
26.	-.040	**.792**	-.023	**.775**
27.	-.074	**.749**	-.058	**.745**
28.	.196	**.600**	.193	**.611**
29.	.194	**.621**	.198	**.638**
30.	-.190	**.918**	-.172	**.910**
31.	.229	.533		
35.	-.040	**.660**	-.019	**.647**
36.	.125	**.656**	.136	**.645**
38.	**.589**	.203	**.597**	.222

Note. Bold indicates items significantly loading on their respective factors.

Widhiarso and Ravand (2014) illustrate the calculation of omega for multidimensional nested-factor models (see: Chapter Five for a discussion on nested-factor or direct hierarchical models). Where the standardised factor loading of each latent variable are summed and squared. These are then added and form the numerator of the equation. This is divided by the same figure but added to the sum of unique variance within the model. The standardised factor loadings were calculated using Satorra-Bentler's (2001) robust standard errors as a correction for non-normality in Mplus (also see: Chapter Five for further discussion on compensating for multivariate non-normality). The resulting calculation for the direct hierarchical model of the Phenomenological Experience of Meditative Equanimity was $\omega = .895$ (see: Appendix 4.6 for factor loadings and unique variances on which this calculation was based).

Table 4.8.

Items Removed due to Significant Cross-Loading or not Loading on a Primary Factor

9. I experience a sense of joy arising from within, which is not dependent on external circumstances.
12. I have moments where I feel spontaneously rejuvenated almost as if I had just woken up from resting.
13. I experience having a resource within myself that I can draw upon when I am low on energy.
14. I experience a sense of lightness within myself as if I'm not weighed down by anything within my mind.
15. I experience moments where I am content in 'just being', without the internal pressure of having to do anything.
21. I experience perceiving my problems within their wider context.
23. I experience a space within my mind where I am able to step back from a situation and consider before responding rather than reacting automatically.
24. I experience moments where it feels as though all my problems disappear, and when I intentionally return to them I don't see them in the same way.
31. I experience my life as flowing.

Table 4.9.

Item-Total Correlations and 'α If Deleted' for each Item within their Respective Factors for Individuals who Meditate

	Centring			*Resonating*	
Item	Item-Total *r*	α if deleted	Item	Item-Total *r*	α if deleted
1.	.721	.892	16.	.649	.922
3.	.644	.898	17.	.660	.922
4.	.720	.890	18.	.715	.919
6.	.564	.902	25.	.803	.915
7.	.665	.894	26.	.726	.919
10.	.708	.892	27.	.676	.921
11.	.732	.890	28.	.703	.920
20.	.717	.890	29.	.729	.919
38.	.702	.892	30.	.764	.917
			35.	.610	.924
			36.	.701	.920

EFA: Non-meditating Sample

In terms of computing the EFA for the Non-meditating group (n = 124), reliability of the factor loadings of each of the items is inherently limited by the insufficient sample size (Costello & Osborne, 2005). However, MacCallum, Widaman, Zhang, and Hong (1999) argue that high commonalities (> .5) between the items, indicating satisfactory saturation of the factors, means that it is possible to compute an EFA with a sample as little as n = 60. On the other hand, low commonalities resulting in poor factor saturation would require a sample of at least, n = 100 to 200. Nonetheless, as noted by Zygmont and Smith (2014), commonalities are difficult to estimate prior to initially conducting the EFA.

Instead, it is possible to obtain a degree of reliability within the EFA for the small sample size through the implementation of Exploratory Bootstrap Factor Analysis (EBFA; Lu, Miao, & McKyer, 2014; Zientek & Thompson, 2007). Bootstrapping is a resampling method, where resamples of the original sample are

drawn hundreds or even thousands of times. Each individual case is replaced within the dataset prior to the selection of the next case. Thus, in each resample, a case can appear on more than one occasion. In this way, multiple variations of the sample are created, with each resample being equal in size to the original sample (as in, $n = 124$). The implementation of this procedure aims at approximating the factor loadings of the population of non-meditators from the current sample, which according to Kline (2005) and Thompson (2004), is theoretically robust provided the sample is representative of the larger population.

An EFA is then computed for each of the many resamples. To compensate for the variations in terms of the factor loadings across each of the resamples, a Procrustes rotation is used to rotate all resamples into their best-fit position. This rotation method makes the factor loadings of each of the resamples as close to the other resamples' target matrix as mathematically possible, given the limitations of the resamples' variation from the initial sample (Lu et al., 2014; Zientek & Thompson, 2007). According to Zientek and Thompson (2007), the Procrustes rotation generates the best results when used to compare the factor loadings generated by different samples through EFA.

The Procrustes rotation of the factor loadings then provides a common factor space across all resamples. The coefficients obtained from each of the resamples' Procrustes-rotated patterns are then averaged and the standard deviations are calculated. The computed standard deviations of the empirically estimated sampling distribution are used to estimate the standard errors of the factor loadings. According to Guthrie (2001), when the standard error of the Procrustes-rotated factor loading is considerably small, in comparison to the average mean bootstrap estimated factor loading, then the factor loading is stable across all the resamples. The estimate is therefore likely to be reliable and can potentially be repeated in other larger samples. In other words, the mean bootstrap factor loading is divided by its respective standard error; high scores indicate significant factor loadings, which can be interpreted as predictive of larger samples.

In terms of the initial data screening for the non-meditators, the univariate and multivariate outliers were dealt with as previously discussed, with the data identified as multivariatly non-normal, χ^2 (56) = 138.77, $p < .001$. The VIF was beyond the criterion proposed by Rogerson (2001), 2.575 to 7.076 (Item 38). However, the range

of VIF was still within normal limits (Hair, Tatham, Anderson, & Black, 1998; Kennedy, 1992; Marquardt, 1970; Neter, Wasserman, & Kutner, 1989). The heightened VIF was substantiated by as greater than expected association between Items 20 and 38, r_s = .805 (with a lower range of r_s = .157 between the remaining items). Although this provides some evidence of multicollinearity between the aforementioned items, neither was removed for the current EFA. This was primarily due to the current dataset not directly informing item retention, but using the bootstrapped resamples to achieve this aim.

Prior to the calculation of EBFA, the number of factors to extract needs to be determined through analysis of the original Non-meditating sample. According to the eigenvalues greater than one rule, three factors underlie the dataset, which accounts for 66.22% of the total variance (see: Table 4.10). However, as illustrated in Figure 4.2, the scree test and the Eigenvalue Monte Carlo Simulation clearly converge on a two-factor solution. In order to test the data from the original Non-meditating sample (n = 124) regarding its adequacy for EFA, the KMO Measure of Sampling Adequacy was excellent at .93. Bartlett's test of Sphericity indicated that each item responded to by the Non-meditating group was sufficiently correlated, χ^2 (406) = 3148.21, p < .001.

Initially, an EFA was performed on the original Non-meditating sample using PAF for variance extraction and Direct Quartimin to rotate the data. The resulting factor loadings are displayed in Table 4.11. Next, the EBFA was computed with the syntax developed by Zientek and Thompson (2007), which is provided in Appendix 4.8. In concordance with the previous EFAs, PAF was used for extraction and Direct Quartimin for rotation within the bootstrapping paradigm. The number of factors was set as two, whilst the number of bootstrap resamples was set to 1,000. This essentially resulted in 1,000 EFAs conducted on different resamples generated from the original sample of non-meditators. The factor loadings obtained from each EFA were Procrustes-rotated and averaged to provide a bootstrap factor loading for each of the items, which is also provided in Table 4.11.

Zientek and Thompson (2007) do not specify a lower limit in terms of the value of the bootstrap mean divided by the standard error, which is essentially used to determine the significance of each factor loading. Lu, Miao, and McKeyer (2014) identified the lowest significant factor loading with M(BR)/SE as equal to 7.14. Thus,

for the current study, significant factor loadings were identified by this value approximately equalling or above seven.

Table 4.10.

Factors Extracted through Eigenvalues Greater than One Rule for Non-Meditators

Initial Eigenvalues				Extraction Sums of Squares		
Factor	Total	Variance%	Cumulative%	Total	Variance%	Cumulative%
1	14.79	50.99	50.99	14.42	49.73	49.73
2	3.15	10.85	61.84	2.80	9.65	59.38
3	1.27	4.39	66.22	.92	3.19	62.57

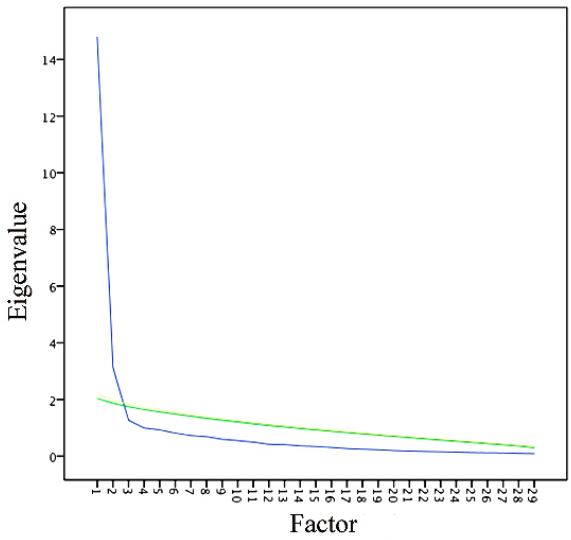


Figure 4.2. Monte Carlo Parallel Analysis for items responded to by Non-meditators

Using this criterion, only two items, 21 and 31, did not reach significance in terms of their mean bootstrap factor loading. Additionally, items 9, 12 to 14, and 24 (see: Table 4.8 for removed items) had significant (> .32) cross loading between both factors. After the removal of these seven items, the Resonating factor directly mirrored the pattern of loading items identified for the combined sample of meditators. Although also corresponding to the pattern of items loading for the meditators, the Centring factor for the Non-meditators has the additional items of 15

and 23. These two items were removed from the analyses as there is a strong potential that meditators and non-meditators interpreted both items differently.

Corresponding to what was performed with the meditating sample, an EBFA was computed after the step-wise deletion of each of these nine items. However, as suggested by Zientek and Thompson (2007), one of the limitations of computing EBFA is that it takes SPSS many hours to perform. Despite this limitation, Appendix 4.9 demonstrated that similar to the meditating sample, only very small but not substantial variations were noted subsequent to the step-wise deletion of each of these items. As displayed in Table 4.12, the EBFA for the final 20-items provides the most accurate factor loadings and cross-loadings for each of the items in the context of the remaining items as responded to by the Non-meditating sample.

Reliability of the 20-item measure for the Non-meditating sample (n = 124) was then calculated. For the nine items of Centring, internal reliability using Cronbach's Alpha was $\alpha = .942$. For Resonating, comprising eleven items, reliability was $\alpha = .934$. Table 4.13 demonstrates the item-total correlations for each item within their respective factors, as well as Cronbach's α if such an item was deleted. This indicated that, similar to the meditating group, each item is strongly related the scale as a whole. In terms of the direct hierarchical model of equanimity, reliability for the measure was determined to be, $\omega = .926$.

Comparison of Pattern Matrices

Tucker's Coefficient of Convergence was calculated to determine how closely the pattern matrix of items for both the meditators and non-meditators resembled each other. According to Lorenzo-Seva and Ten Berge (2006), this is achieved through a series of equations. Firstly, the factor loadings of the items within one group are multiplied by the corresponding factor loading from the other group; these are then summed together according to the factor in which they arise. Secondly, the original loadings are squared and summed separately for each group, with the resulting calculation added together for each individual factor. Finally, the figure provided by the first equation is divided by that obtained in the second for each of the factors.

Table 4.11.

Factor loadings from Initial Non-Meditating Sample and Bootstrap Procrustes-rotated Mean Loadings from 1,000 Resamples across the 29 Items

	Centring				Resonating			
Item	Sample	BR	*SE*	*M*(BR)/*SE*	Sample	BR	*SE*	M(BR)/*SE*
1.	**.801**	**.982**	**.020**	**47.968**	-.139	-.134	.135	-.991
3.	**.771**	**.991**	**.013**	**78.135**	.015	.039	.125	.309
4.	**.736**	**.982**	**.045**	**21.845**	-.007	.051	.174	.291
6.	**.857**	**.976**	**.024**	**40.756**	-.175	-.176	.128	-1.377
7.	**.781**	**.988**	**.019**	**52.998**	.057	.095	.124	.768
9.	.514	.800	.108	7.404	.344	.570	.156	3.657
10.	**.817**	**.988**	**.020**	**50.140**	.040	.087	.128	.677
11.	**.937**	**.991**	**.011**	**91.054**	-.108	-.063	.116	-.541
12.	.317	.541	.172	3.115	.503	.815	.119	6.832
13.	.603	.884	.095	9.288	.249	.427	.167	2.555
14.	.343	.560	.147	3.814	.533	.808	.112	7.187
15.	**.711**	**.981**	**.033**	**29.781**	.037	.094	.165	.573
16.	.121	.232	.169	1.375	**.673**	**.956**	**.064**	**14.822**
17.	.150	.265	.149	1.780	**.683**	**.952**	**.048**	**20.018**
18.	-.101	-.052	.156	-.331	**.854**	**.986**	**.027**	**37.166**
20.	**.757**	**.986**	**.034**	**28.443**	.119	.206	.136	1.515
21.	.475	.847	.140	6.036	.225	.457	.232	1.970
23.	**.517**	**.938**	**.088**	**10.610**	.133	.273	.195	1.400
24.	.305	.537	.168	3.215	.503	.817	.119	6.892
25.	-.152	-.111	.121	-.914	**.915**	**.986**	**.013**	**75.268**
26.	-.025	.028	.146	.193	**.823**	**.989**	**.028**	**35.544**
27.	-.061	-.022	.139	-.158	**.773**	**.990**	**.015**	**67.350**
28.	.076	.166	.138	1.205	**.700**	**.976**	**.030**	**32.202**
29.	.292	.525	.182	2.882	**.504**	**.823**	**.120**	**6.835**
30.	-.021	.035	.170	.203	**.754**	**.984**	**.039**	**25.390**
31.	.486	.724	.121	5.977	.439	.668	.126	5.316
35.	-.005	.052	.148	3.51	**.645**	**.988**	**.018**	**55.397**
36.	.032	.092	.129	7.20	**.755**	**.987**	**.018**	**54.461**
38.	**.795**	**.959**	**.037**	**26.005**	-.164	.256	.112	2.282

Note. Bold indicates items significantly loading on their respective factors.

Table 4.12.

Factor Loadings from the Initial Non-Meditating Sample and Bootstrap Procrustes-rotated Mean Loading from 1,000 Resamples for the Remaining 20 Items

	Centring				Resonating			
Item	Sample	BR	SE	M(BR)/SE	Sample	BR	SE	M(BR)/SE
1.	**.825**	**.989**	**.012**	**79.571**	.125	-.108	.105	-1.021
3.	**.769**	**.986**	**.025**	**39.628**	-.054	.113	.121	.927
4.	**.669**	**.971**	**.053**	**18.489**	-.065	.160	.169	.948
6.	**.821**	**.991**	**.011**	**93.170**	.109	-.093	.099	-.940
7.	**.759**	**.983**	**.021**	**46.743**	-.089	.151	.105	1.429
10.	**.807**	**.983**	**.021**	**46.682**	-.082	.154	.101	1.523
11.	**.908**	**.996**	**.007**	**138.348**	.058	-.012	.091	-.126
16.	-.83	.134	.136	.985	**.703**	**.981**	**.031**	**31.737**
17.	-.136	.221	.146	1.447	**.705**	**.966**	**.042**	**23.216**
18.	.086	-.082	.106	-.778	**.850**	**.991**	**.011**	**93.630**
20.	**.733**	**.960**	**.034**	**28.419**	-.158	.251	.012	2.126
25.	.148	-.147	.095	-1.557	**.901**	**.984**	**.013**	**74.127**
26.	-.009	.026	.109	-.241	**.807**	**.994**	**.012**	**86.032**
27.	.050	.051	.115	.440	**.765**	**.992**	**.011**	**89.389**
28.	-.111	.181	.131	1.381	**.688**	**.974**	**.032**	**30.583**
29.	-.282	.471	.179	2.635	**.527**	**.858**	**.102**	**8.419**
30.	-.031	.067	.144	.465	**.717**	**.987**	**.023**	**43.270**
35.	-.001	.022	.144	.154	**.640**	**.989**	**.017**	**58.226**
36.	-.057	.094	.099	.947	**.748**	**.991**	**.014**	**69.047**
38.	**.764**	**.945**	**.037**	**25.664**	-.216	.311	.100	3.106

Note. Bold indicates items significantly loading on their respective factors subsequent to the step-wise deletion of non-significantly loading items.

Table 4.13.

Item-Total Correlations for each of the Items for the Non-meditating sample

	Centring			Resonating	
Item	Item-Total r	α if deleted	Item	Item-Total r	α if deleted
1.	.729	.938	16.	.715	.929
3.	.768	.936	17.	.750	.927
4.	.685	.941	18.	.774	.926
6.	.784	.935	25.	.782	.926
7.	.733	.938	26.	.779	.926
10.	.827	.933	27.	.705	.930
11.	.845	.933	28.	.729	.928
20.	.796	.935	29.	.660	.931
38.	.849	.932	30.	.714	.929
			35.	.619	.933
			36.	.753	.927

Lorenzo-Seva and ten Burge (2006) have suggested that a factor across heterogeneous groups is fairly similar if the Tucker's Coefficient of Convergence is within the range of .85 and .94. Furthermore, the factor can be assumed to be equal across groups if this figure is .95 or above. For factor loadings of both the meditating and Non-meditating samples, Tucker's Coefficient of Convergence was, $r_c = .909$ and $r_c = .962$ for Centring and Resonating, respectively. This indicated that whilst Resonating could be considered equal for both meditators and non-meditators alike, Centring is very similar but not quite equal.

However, a more accurate comparison through Tucker's Coefficient of Convergence was obtained when a Procrustes rotation was performed on the factor loadings of the second group in comparison with the first group. This allowed the two sets of factor loadings to be as close to each other, as mathematically possible, in consideration of the different variances inherent within the separate samples (Zientek & Thompson, 2007). In order to compute the Procrustes rotation, the SPSS syntax developed by Wuensch (2016; see: Appendix 4.10) was used. Thus, the pattern matrix of the Non-meditating group was rotated, as close as mathematically possible given

the variance between the groups, towards the pattern matrix of the combined meditating group. The new pattern matrix, as well as the difference (δ) with the original pattern matrix, for the Non-meditating group is provided in Table 4.14.

Table 4.14.

New Factor Pattern of Non-meditating group after Procrustes rotation

Item	Centring (δ)	Resonating (δ)	Item	Centring (δ)	Resonating (δ)
1.	.81 (-.02)	-.06 (-.18)	20.	.69 (-.05)	.13 (.29)
3.	.63 (-.14)	.06 (.12)	25.	.01 (-.14)	.83 (-.07)
4.	.74 (.07)	.02 (.09)	26.	-.03 (-.02)	.77 (-.03)
6.	.58 (-.24)	.02 (-.09)	27.	-.06 (-.11)	.74 (-.02)
7.	.70 (-.06)	.02 (.10)	28.	.19 (.30)	.61 (-.08)
10.	.77 (-.03)	-.02 (.06)	29.	.19 (.48)	.64 (.11)
11.	.83 (-.08)	-.06 (-.12)	30.	-.18 (-.15)	.91 (.19)
16.	.08 (.17)	.61 (-.09)	35.	-.02 (-.02)	.65 (.01)
17.	.08 (.21)	.63 (-.07)	36.	.13 (.19)	.65 (-.10)
18.	.00 (-.09)	.74 (-.11)	38.	.60 (-.17)	.23 (.44)

After the Procrustes rotation of the Non-meditating group towards the pattern matrix of the meditators, Tucker's Coefficient of Convergence was recalculated. This indicated that the factor loadings for Centring and Resonating were identical across the two groups, $r_c = .972$ and $r_c = 1.00$ respectively. This suggested that the factors, which consist of the remaining 20 items, were expressed identically in both meditators and non-meditators alike, with the latter experiencing an enhanced degree of the factors' expression.

Summary

Following development of 38 items from the IPA of the focus groups and in-depth interviews regarding the experience of equanimity during meditation, this section described the adequacy of the items as well as their underlying factor

structure. To determine item adequacy, inter-rater validity from a panel of experts is often used when items are developed through a deductive approach. However, as items were not developed from a literature review but through an inductive approach via discussions with experienced meditators, items were determined to be adequate if there was a significant mean difference between meditators and non-meditators, and additionally if the item was significantly predicted by a meditator's cumulative hours of meditative experience.

MANOVA comparisons revealed a significant mean difference between meditation groups and the non-meditators across 30 items, with eight of the 38 items discarded. Although differences between the Vipassanā and Non-Specified meditation groups were noted for three items, these differences were not considered overly problematic. Additionally, in terms of cumulative hours of meditative experience significantly predicting responses to items, only one item was not considered adequate in this regard.

Due to the mean difference identified between the meditators and non-meditators, it is recommended to perform separate EFAs on such heterogeneous groups. A large variance within the overall sample can result in low and inaccurate factor loadings. Thus, in terms of computing the first EFA, the meditation groups were combined to achieve the 10:1 ratio of participants to items recommended for such analyses. Results of the EFA using PAF extraction with Direct Quartimin rotation indicated a two-factor solution. These two factors were labelled Centring, with nine items, and Resonating, comprising 11 items. The nine items discarded either did not significantly load on a primary factor, (factor loading < .6), or had substantial cross-loading between factors (< .32 difference).

An EFA, again using PAF and Direct Quartimin, was then computed on the Non-meditating sample (n = 124). However, due to not meeting the required participant-to-item ratio, a bootstrapping method was utilised. This allowed for the resampling with replacement of cases, producing 1,000 different samples with the same number of cases. The Procrustes rotated factor scores averaged across the EFAs conducted, provided an estimation of the population of non-meditators.

Results corresponded with that obtained for the sample of meditators, with the exception of two additional items loading on Centring. It was concluded that these

two items may have been interpreted differently by the two separate groups and were therefore removed from further analyses. Finally, to determine the convergence of the factor scores of each of the items loading on Centring and Resonating, Tucker's Coefficient of Convergence indicated, subsequent to the Procrustes rotation, that the factor scores obtained within each group were equal.

5. MGCFA & Measurement Invariance

"Learning how to be still,
Really be still and let life happen –
That stillness becomes a radiance."

Morgan Freeman

The current section aims to confirm the factor structure of the Phenomenological Experience of Meditative Equanimity Measure. Items were initially developed through the process described in Chapter Three. Validity of each individual item was then determined at the beginning of Chapter Four, where meditators scored significantly higher, compared to non-meditators, on each of the 20 items comprising the final measure. Additionally, each item was significantly predicted by cumulative meditative experience for the meditators. An EFA on the valid items suggested that the 20-item scale comprised two factors, Centring and Resonating. This factor structure was consistent for both meditators and non-meditators alike. Prior to replicating these findings in the current study, the items were cross-validated with a different sample of meditators and non-meditators. This was to ensure that item validity was not an artefact of the sample analysed in the previous chapter. Items were then examined through CFA for each group independently across uni-factorial, two-factor, and direct hierarchical designs. Subsequently, Measurement Invariance within a Multi-Group Confirmatory Factor Analysis (MGCFA) paradigm was implemented for the direct hierarchical model of Equanimity. Groups were formed on the basis of non-meditators or individuals who meditated according to their stated technique. Additional groups (meditators only) were reformed based on gender, marital status, and meditating in a Buddhist context as opposed to no religious affiliation.

Method

Recruitment

The recruitment process was similar to that stated in Chapter Four. A convenience sample was obtained through the snowball method over a period of approximately one-month during July and August 2016, with the median response

rate occurring two-weeks into data collection. Individuals interested in participating in the study were additionally asked to distribute the advertisement for the survey amongst their networks. The advertisement (Appendix 5.1) explaining what was involved for participation as well as providing the link to the online survey was again placed in the online newsletters of both the ATMA and the SMTC. In order to generate a larger and more diverse sample, the same advertisement was also placed in the online newsletters of the Victorian Buddhist Society, personal blogs of nationally renowned meditation teachers, as well as Kadampa and Rigpa Australia, both of which offer Buddhist meditation courses through established centres across Australia. Social networking sites were utilised in the further recruitment of the Non-meditating sample.

Participants

As well as including the 20-item measure, the survey included a number of other measures that pertain to the validity analyses provided in Chapter Six. However, individuals who completed up to at least the end of the Phenomenology of Meditative Equanimity Measure were included in the current study. Initially 883 individuals responded to the advertisement by clicking on the link that redirected them to the online survey. Of these, 669 completed at least the 20 items regarding the experience of equanimity. The age of the entire sample ranged between 19 and 84 years, with a mean of 52.19 (SD = 14.08; 22 participants did not specify age). Gender representation for the sample included 426 females and 261 males (seven individuals did not specify gender).

A breakdown of age and gender according to the different groups is provided in Table 5.1. In addition, Table 5.2 provides the average years of practice, sessions per week, and duration of sessions, for the meditators according to their preferred technique. The mean for total meditative experience for each of the meditation groups was calculated in the same manner described in Chapter Four.

Procedure

Following the same procedure in Chapter Four, individuals who received the online newsletter and were interested in participating in the study were prompted to click on the online link embedded within the advertisement. The link provided immediate access to the Explanatory Statement (Appendix 5.2), which explained the

conditions of participation. If participants wished to continue, they were asked to click on the 'next page' tab at the bottom of the Qualtrics screen, thereby providing informed consent. Considering the length of the entire survey, individuals were additionally informed that that they could choose to respond to only the initial demographic questions and the 20-item measure or alternatively complete these sections as well as a range of other measures discussed further in Chapter Six. Participants were informed that they could withdraw at any stage during the process of completing the survey.

All participants were asked to provide their age and gender. Additional questions regarding the demographics of each participant inquired about their marital status, level of education, religious preference, and household income. A breakdown for each group for these variables is provided in Table 5.3. Individuals were then asked if they currently practiced meditation, those that responded "no" were redirected to the first measure.

Table 5.1.

Mean Age, Range, and Gender across the Five Subsamples

	N	*M* Age (*SD*)	Age Range	Gender: M	F
Samatha	101	52.87 (13.94)	19 - 81	48	51
Vipassanā	247	51.25 (12.75)	19 – 80	95	148
Stillness	106	58.84 (10.94)	23 – 84	30	75
Non-specified	73	52.31 (15.54)	21 - 81	26	47
Non-Meditators	142	48.72 (16.03)	19 – 80	54	88

Note. Of the 22 participants who did not specify age three were from the Samatha group, eight were Vipassanā meditators, nine from the Stillness group, and two from Non-specified. Missing cases for gender included two from Samatha, four from Vipassanā, as well as one from each Stillness and Non-specified.

Individuals currently practicing meditation were asked to further indicate their preferred technique from the response set: Samatha / Concentrative, Vipassanā / Insight-oriented / Mindfulness, Stillness meditation as developed by Ainslie Meares, or Non-specified. Those indicating the latter were asked to provide a brief description of their meditation style. Some of these responses included 'holoysync', 'guided

meditation', and 'Falun Dafa'. All meditators were also asked to provide an estimation regarding their years of practice, sessions per week, and the average duration of these sessions.

Table 5.2.

Meditative Experience across the Four Meditating Subsamples

	M Years (*SD*)	*M* Sessions (*SD*)	*M* Length (*SD*)	*M* Experience (*SD*)
Samatha	17.33 (12.82)	6.48 (3.11)	32.78 (15.24)	3884.59 (484.26)
Vipassanā	13.44 (11.47)	6.47 (3.33)	31.12 (15.38)	3061.08 (290.51)
Stillness	14.01 (12.26)	5.81 (3.27)	29.41 (12.97)	2053.61 (257.48)
Non-specified	18.08 (15.21)	6.71 (3.80)	32.97 (14.94)	4372.59 (732.49)

Note. Two individuals from the Samatha, six from Vipassanā, five from Stillness, as well as four from the Non-specified group did not indicate any of the three variables.

Following the previous study, the order of items was randomised in order to control for item-position effects (Hohensinn et al., 2008), where scores on each item may partly reflect their position within the scale. Participants responded to the 20 items on a seven-point Likert scale from *never* (1) to *always* (7) according to the degree that each statement reflected their experience over the previous week. Each of the respondents completed the items regarding equanimity in the same order, as provided in Table 5.4. Subsequent to completing the entire survey, including the further measures referred to in Chapter Six, participants were asked to leave their email address if they would like to go into a draw to win one of two $100 online bookstore gift vouchers.

Table 5.3.

Frequencies for Marital Status, Level of Education, Religious Preference, and Household Income for each of the Groups

	Samatha	Vipassanā	Stillness	Non-Specified	Non-Meditators	Total
Martial Status:	(17)	(39)	(34)	(8)	(9)	
Single	19	52	9	15	39	134
Married	49	116	49	33	77	324
Widowed	4	5	4	2	4	19
Divorced	11	32	7	14	9	73
Separated	1	3	3	1	4	12
Religion:	(14)	(48)	(32)	(6)	(9)	
Christian	7	10	20	6	45	88
Catholic	5	9	11	4	16	45
Jewish	0	3	1	1	8	13
Muslim	0	1	0	0	1	2
Buddhist	53	102	9	19	3	186
Atheist	0	4	2	1	15	22
None	22	70	31	36	45	204
Education:	(14)	(39)	(35)	(7)	(10)	
High School	5	5	5	3	11	29
Some Uni	4	14	4	7	26	55
Technical	3	10	4	8	4	29
Associate	0	10	3	2	8	23
Bachelors	26	70	34	16	43	189
Masters	36	63	17	21	34	171
Doctorate	13	36	4	9	6	68
Household Income:	(14)	(49)	(38)	(6)	(14)	
< $10,000	5	13	0	2	6	2
- $14,999	2	9	2	4	4	21
- $24,999	9	14	2	5	13	43
- $34,999	7	14	5	3	7	36
- $49,999	7	27	7	12	11	64
- $79,999	14	36	10	7	23	90
- $99,999	13	26	10	11	15	71
- $149,999	14	41	17	15	29	116
- $199,999	5	5	8	4	12	34
> $200,000	6	13	7	1	8	35

Note. Numbers in parenthesis indicates individuals per group that did not specify associated variable.

Table 5.4.

Ordering of Items from the Phenomenological Experience of Meditative Equanimity Measure

Item Order		
New	Previous	Item
1. (C1)	38.	I experience a sense of wholeness within myself.
2. (R1)	30.	I experience moments where I find it had to differentiate between myself and the world, as if they were merging into one
3. (R2)	29.	I experience moments where I feel interconnected with the world.
4. (R3)	35.	I experience moments where I feel that I am emptied of aspects of myself that don't truly represent who I am.
5. (R4)	17.	I experience the finer details of my sensory experience.
6. (C2)	3.	It is difficult to explain, but I experience a sense of nurturing within myself.
7. (C3)	6.	I experience a sense of being grounded in the world.
8. (R5)	26.	I experience moments that if I were to try and explain them, it would take away from the experience itself.
9. (C4)	20.	I experience a sense of mental balance regardless of what is happening in my life.
10. (R6)	16.	I have sensory experiences where the sense impression occurs but I am not conceptualising or judging it.
11. (R7)	27.	I experience myself as being more than my body and sense of identity.
12. (R8)	28.	I experience moments of being 'empty of myself', which allows me to be truly present to others.
13. (C5)	11.	I experience being at peace with myself.
14. (C6)	4.	I experience being 'at home' with myself.
15. (C7)	7.	When things in my life are pulling for my attention, I experience a sense of being centred within myself.
16. (C8)	10.	I experience a sense of calmness within myself.
17. (C9)	1.	I feel a sense of stability within myself even when things are not going my way.
18. (R9)	36.	I experience moments of such purity, as if the world is perfect in these moments.
19. (R10)	18.	I experience moments where reality feels suspended and all that is left is my sensory experience.
20. (R11)	25.	I experience moments so profound, they are often hard to describe.

Data Analysis

Primarily, item cross-validity analyses were performed through MANOVA to determine differences across the 20 items between non-meditators and the four groups comprising meditators. Regression analysis indicated whether meditative experience significantly predicted scores on each item for the meditators. The cross-validation of items, data screening as well as testing for adherence to normality assumptions were carried out in SPSS version 24 (IMB Corp, 2013). Confirmatory Factor Analysis (CFA), including Measurement Invariance within the Multi-Group (MGCFA) paradigm, was performed through Mplus version 1.4 (Muthén & Muthén, 2007). Mplus was allowed to run up to 100,000 iterations in order to reach a convergence criterion of .00005 for Quasi-Newton algorithm for continuous outcomes, unless otherwise specified.

Results

Basic Demographic Comparisons

An ANOVA comparison of age revealed a significant difference across the five groups, F (4, 642) = 10.12, $p < .001$. Moreover, a significant Levene's (1960) test indicated that variance in terms of age was not equal across the groups, F (4, 642) = 8.24, $p < .001$. Thus, a Games-Howell (1976) post-hoc analysis suggested that collectively individuals in the Stillness meditation group were significantly older than individuals comprising the four remaining groups. No other significant differences in terms of age were identified between the four remaining groups. Additionally, no significant differences in gender representation were identified across the five groups, χ^2 (4) = 8.85, $p > .05$.

A one-way ANOVA revealed that meditative experience varied significantly between groups, F (3, 506) = 4.54, $p < .01$. Levene's (1960) test of Homogeneity of Variance was significant, F (3, 506) = 8.55, $p < .001$, indicating unequal variances of meditative experience across the four meditation groups. A Games-Howell (1976) post-hoc test indicated that individuals in the Stillness meditation group reported significantly less meditative experience when compared with the three other meditation groups. No difference in meditative experience was identified amongst the three remaining groups.

Data Screening

Regarding the 20 items comprising the measure of Equanimity, the Little (1988) MCAR test, χ^2 (499) = 550.97, $p > .05$, indicated that the missing data from the 79 out of 13,380 cells were missing completely at random. Missing values were then replaced using Multiple Imputation in the manner previously described. In terms of univariate outliers across the 20-items, none were identified in the Non-meditating sample, one was detected for each the Samatha and Vipassanā groups, ten amongst the Stillness meditators, and four for the Non-specified group. Each of the 16 univariate outliers were identified on the lower end of the z-distribution. These data-points were subsequently removed and replaced using Multiple Imputation.

A total of 29 multivariate outliers were identified within the dataset. These cases included one from Samatha, ten from Vipassanā, two within the Stillness meditation group, five from the Non-specified group, and finally, 11 amongst the Non-meditators. However, on closer inspection of these 29 cases, only two appeared to be the result of "spurious activity", where these individuals had responded as either one or seven to each of the 20 items. These two cases were from the Non-meditating group and were removed from further analyses.

Cross-Validation of items

Small's (1980) Omnibus test for Multivariate Normality was significant, χ^2 (40) = 969.95, $p < .001$, suggesting a general departure from normality across the items for the sample as a whole. Linear relationships were suggested between each combination of item-pair according to scatterplot matrices. The VIF ranged from 1.710 to 4.577, suggesting the absence of multicollinarity. The covariance matrices for the items were not equal across the five groups, as indicated by a significant Box's (1949) M test, F (840, 348060.66) = 1.60, $p < .001$. Levene's (1960) test indicated that all items comprising Centring as well as R3, R6, and R10, had unequal variances across the five subsamples.

A Pilli's (1955) Trace multivariate analysis demonstrated a significant main effect for the 20 item measure across the five groups, F (80, 2584) = 4.05, $p < .001$. Even with a Holm-Bonferroni (Holm, 1979) adjusted significance level, $p < .0025$, independent post-hoc ANOVAs indicated significant differences for each item within the five subsamples. As illustrated in Table 5.5, post-hoc comparisons of means

between the four meditation groups with the non-meditators signified that the former reported significantly higher scores than the latter across each of the 20 items.

In addition to these findings, several significant mean differences were noted amongst the four meditation groups. On each occasion, these differences involved the Stillness group scoring significantly higher than the other meditation group in their dyad comparisons. Between the Samatha group, these differences occurred for Items C5, C7, and R10, with the Vipassanā group on items C1 to C2, C6 to C8, R1, and R9 to R10, and finally, item R10 for the Non-specified group.

The next stage of cross-validating the items with the new sample involved determining if scores on each item were predictive of an individual's cumulative meditative experience. As indicated in Table 5.6, an individual's total experience in their preferred meditation technique significantly predicted their response on each of the items comprising the measure.

Table 5.5.

Mean Comparisons between Non-Meditators and the Four meditation Groups across each Item

Item	Levene's Test[1]	Between-Groups MANOVA[2]	Post-Hoc Comparisons with Non-meditators (Mean Difference)			
	F	*F*	Samatha	Vipassanā	Stillness	Non-Specified
C1.	3.65**	12.50***	.74**	.65**	1.16***	.99***
C2.	2.77*	26.92***	1.34***	1.29***	1.70***	1.45***
C3.	3.73**	18.23***	1.03***	1.10***	1.30***	1.13***
C4.	2.65*	27.53***	1.21***	1.09***	1.40***	1.46***
C5.	12.11***	24.76***	.97***	.93***	1.45***	1.31***
C6.	9.00***	14.25***	.86***	.75***	1.18***	1.16***
C7.	4.16**	37.59***	1.31***	1.26***	1.82***	1.48***
C8.	4.10**	43.93***	1.49***	1.38***	1.73***	1.51***
C9.	4.10**	27.84***	1.29***	1.19***	1.38***	1.43***
R1.	0.23	13.96***	1.13***	.89***	1.45***	1.07***
R2.	0.78	9.29***	.84**	.87***	.98***	.99***
R3.	2.67*	11.20***	1.23***	.92***	1.17***	1.10***
R4.	1.04	7.58***	.77***	.78***	.67**	(.56)
R5.	0.84	8.18***	.89**	.74***	.99***	1.12***
R6.	2.54*	27.67***	1.57***	1.39***	1.67***	1.44***
R7.	2.07	10.76***	.92***	.90***	1.09***	1.31***
R8.	0.50	21.52***	1.33***	1.10***	1.54***	1.58***
R9.	0.51	15.20***	1.06***	.93***	1.46***	1.26***
R10.	3.00**	18.75***	.97***	.98***	1.76***	1.07***
R11.	0.97	10.03***	.81**	.89***	1.30***	1.07***

Note. [1] Degrees of Freedom (4, 662); [2] Degrees of Freedom (4); Significance Levels: *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 5.6.

Meditative Experience Predicting each of the 20 Items

Item	R^2	F (1, 281)	β	t
C1.	.021	11.73**	.150	3.43**
C2.	.021	11.66***	.150	3.41***
C3.	.020	11.35***	.148	3.37***
C4.	.028	15.57***	.172	3.95***
C5.	.023	12.89***	.157	3.59***
C6.	.018	10.22***	.140	3.20**
C7.	.018	10.07***	.139	3.17**
C8.	.031	17.30***	.181	4.16***
C9.	.037	20.57***	.197	4.54***
R1.	.025	13.95***	.163	3.74***
R2.	.025	14.24***	.165	3.77***
R3.	.022	12.55***	.155	3.42***
R4.	.048	26.78***	.224	5.18***
R5.	.047	26.10***	.221	5.11***
R6.	.052	28.77***	.231	5.36***
R7.	.037	20.37***	.196	4.51***
R8.	.038	21.17***	.200	4.60***
R9.	.031	17.50***	.182	4.18***
R10.	.014	7.97**	.214	2.28**
R11.	.041	22.68***	.207	4.76***

Note. *** $p < .001$; ** $p < .01$.

Confirmatory Factor Analysis

With the adequacy of the items now cross-validated with the new sample, the factor structure of the measure was then assessed to determine if it was replicable across different samples. This was achieved through running a Confirmatory Factor Analysis (CFA; Joreskog, 1969) with a dataset different to that used in the EFA. CFA is a special type of Structural Equation Modelling (SEM), and is implemented in order to confirm the factor structure of a particular dataset according to an a priori theory

(Brown, 2015; MacCallum & Austin, 2000). Regarding the necessary sample size to conduct SEM, a rule of thumb generally followed within the literature is to have a sample exceeding 200 cases (Barrett, 2007). This figure, according to Myers, Ahn, and Jin (2011) is recommended in order to demonstrate the fit between the theoretical model and the observed data; yet, according to the researchers, at least 300 cases are needed in order to replicate the model in a sample so as to make generalisations to a larger population. Wolf, Harrington, Clark, and Miller (2013) argue that the rule of thumb concerning 200 participants is out-dated. Through a Monte Carlo simulation study, Wolf et al. (2013) demonstrated that the necessary sample size for SEM is dependent on the magnitude of the factor loadings, the number of indicators, the number of specified factors and the correlations between these factors, as well as the variance explained by the model.

It is possible to calculate statistical power for SEM in order to determine the appropriate sample size necessary to detect a desired effect (see: Maccallum, Browne, & Sugawara, 1996; Muthén & Muthén, 2009; Satorra & Saris, 1985). Nonetheless, Wolf et al. (2013) additionally identified that statistical power is not necessarily a function of sample size, but rather is determined through "solution propriety", such as measurement bias and parameter error. Instead, a number of researchers have posited a bare minimum of 100 cases (Anderson & Gerbing, 1988; Ding, Velicer, & Harlow, 1995; Kline, 2005; Tabachnick & Fidell, 2007; Tinsley & Tinsley, 1987), even in situations with less than 20 variables (Gorsuch, 1973). Consistent with this minimum, Kline (2005) suggests that 100 cases per group is also the minimum sample size necessary for multi-group modelling or Multi-Group Confirmatory Factor Analysis (MGCFA). Therefore, the Non-specified group (n = 73) was removed for the purposes of conducting both the independent CFAs and MGCFAs due to its smaller than necessary sample size.

Parallel to the controversy surrounding the minimum sample size necessary for SEM is the disagreement regarding the utility and cut-off values associated with the fit indices assessing the acceptability of a particular model. Barrett (2007) claims that only the chi-square provides clarity when assessing if the observed data fits the specified model, as ultimately fit indices can suggest a wrongly specified model as acceptable. Moreover, Hayduk, Cummings, Boadu, Pazderka-Robinson, and Boulianne (2007) suggest that implementing a strict cut-off in order to determine the

acceptability of a model is ambiguous, as most fit indices are affected by the level of complexity inherent within a particular model. Nonetheless, many researchers recommend the use of fit indices to determine model fit, but acknowledge the problem with following a uniform cut-off (Hu & Bentler, 1998; Marsh, Hau, & Wen, 2004; Yuan, 2005). Thus, instead of "cherry-picking" fit indices that appear to accept a specified model, Marsh, Balla, and Hau, (1996) suggest documenting a range of fit indices. Furthermore, Jaccars and Wan (1996) indicate that in order to overcome the limitations of each model fit index, it is best practice to utilise indices from the four different categories.

The four categories of model fit indices include those that are absolute, relative, indicate parsimony, and those based on the non-centrality parameter (Maruyama, 1998; Tanaka, 1993). Absolute fix indices, such as the Chi-Square (χ^2) and Standardised Root Mean Square Residual (SRMR) indicates that the observed covariance matrix perfectly fits the implied model if the resulting calculation is zero, suggesting no difference. A result of, or close to, zero for the χ^2 indicates that the observed covariance matrix derived from the data is not significantly different from the specified covariance matrix of the model. However, χ^2 is notorious in SEM for identifying a discrepancy between the observed and specified models as a function of the magnitude in sample size, model complexity, non-normal distributions, as well as the correlations between variables (Maruyama, 1998; Tanaka, 1993; Zwick & Velicer, 1986). Instead, a Relative χ^2 has been proposed, which suggests that if χ^2 divided by its degrees of freedom is less than two (Ullman, 2001) or three (Kline, 2005), then the theorised model is considered acceptable.

The SRMR calculates the standardised difference between both the observed and predicted correlation matrix based on the model. As an absolute index, a score of zero indicates absolute fit of the observed data with the specified model. As a transformation of the χ^2 statistic, the index is biased by sample size but is not affected by the complexity of the specified model. According to Hu and Bentler (1999), a value of .08 or less provides evidence of good fit.

The Tucker-Lewis (1973) Index (TLI), otherwise known as the Non-normed fit index (NNFI), is from the Relative Fit category. The TLI is calculated by determining the difference between the Relative χ^2 for both the observed and predicted models. This difference is then divided by the observed Relative χ^2 minus

one. Values range from zero to one, with the latter indicating an exact fit between the observed and predicted models. Unlike the χ^2, TLI is not biased by sample size (Marsh, Balla, & Mcdonald, 1988). According to Hu and Bentler (1999), a cut-off of .90 suggests an acceptable fit between both the observed data and specified model.

Non-centrality-based Indices include the Comparative Fit Index (CFI; Bentler, 1990) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). The CFI equates to a discrepancy function but adjusted for sample size. Specifically, it calculates the ratio of the difference between observed and predicted covariance matrices of both models when all variables are uncorrelated. Thus, the CFI indicates the degree to which the specified model (with correlations between variables) is better than the independent model (without correlations between variables). Similar to the TLI, the CFI is not particularly biased by sample size (Fan, Thompson, & Wang, 1999). However, Raykov (2000, 2005) claims that the CFI is biased by non-centrality. Additionally, Kenny (2015) states that CFI is penalised according to the complexity of the model being estimated.

Values for the CFI range from zero to one, with scores closer to the latter indicating an acceptable fit. According to Hu and Bentler (1999), Fan et al. (1999), and Marsh et al. (2004), a value above .90 suggests the observed and specified models are an acceptable fit. Byrne (1994) suggests that acceptability of the model should be evaluated in terms of the CFI exceeding .93. Notwithstanding, such criteria regarding acceptability of a specified model are primarily guidelines. Therefore, Bollen (1989) suggests that a CFI value of .85 indicates progress in the fit of the model and should therefore also be considered acceptable.

The RMSEA calculates the difference in the square root across the means of the covariance residuals between both the observed and specified models. A result of zero indicates no difference between the two models. Nonetheless, the RMSEA does not have an upper limit and therefore is considered difficult to interpret, as there is yet a consensus regarding what cut-off suggests that the model is no longer acceptable given the data. MacCallum et al. (1996) have proposed an upper limit of .10 in assessing model fit. However, a number of other researchers suggest more stringent cut-offs. McDonald and Ho (2002) place the cut-off at .09, while Hu and Bentler (1999) claim that .08 indicates an acceptable fit but recommend the value of RMSEA be close to, or under, .06. Steiger (1990) has suggested a strict cut-off at .07, whereas

Browne and Cudeck (1989) suggest a good fit is indicated by a value of less than .05.

Hooper, Coughlan, and Mullen (2008) recommend reporting the χ^2 as well as its associated degrees of freedom and significance level, the RMSEA and its confidence interval, the SRMR, and the CFI. The researchers additionally recommend the use of one parsimony fit index. Nonetheless, the authors state that such parsimony fit indices also "penalise for model complexity" (p.55). Additionally, it is argued by the authors that currently there are no universally accepted recommendations regarding the cut-off value for parsimony fit indices, making their interpretation quite arbitrary. Thus, although the previously indicated model fit indices are reported within the current study, those of parsimony were excluded.

A meta-analysis conducted by Jackson, Gillaspy, and Purc-Stephenson (2009), across 194 studies concerning CFA determined that the vast majority disregarded the identification and reporting of outliers as well as the assessment of normality inherent within the data. Other problem areas throughout the literature included no discussion regarding fit indices and their associated cut-off values, as well as not specifying the starting values of certain parameters necessary for the identification of the model. The authors also recommend, similar to others (Boomsma, 2000; Hoyle & Panter, 1995), that all models need to be accompanied by parameter estimates including the standard errors associated with each parameter. A final issue of debate was whether any parameter specified within the model was actually a post-hoc modification rather than having an a priori theoretical justification. Such modifications, argue Jackson et al. (2009), basically capitalises on chance and undermines the validity of the model.

A series of independent CFAs were then planned in accordance with the aforementioned recommendations and carried out for each of the four groups: Samatha, Vipassanā, Stillness meditators, and Non-meditators. The independent CFAs occurred in a three-step sequence. Firstly, a uni-factorial model was computed, as illustrated in Figure 5.1, where all 20 items were restricted to load on the latent variable, Equanimity. Secondly, as illustrated in Figure 5.2, a two-factor solution was conducted, with items loading on their respective factor as identified in Chapter Four. The final stage of computing the CFAs involved a direct hierarchical design (McDonald, 1999), as illustrated in Figure 5.3. A direct hierarchical model or "nested-factor model" (Gustafsson & Balke, 1993) has been recommended over a higher-order model by both Gignac (2008) and Canivez (2014) due to its capacity to represent the

complexity of psychological constructs. Thus, the direct hierarchical model was chosen to represent the interconnected nature of constructs within Buddhist philosophy (see: Christopher & Gilbert, 2007). Equanimity, conceptualised in this way, is dynamic and the interrelation between both Centring and Resonating is represented, rather than the two factors independently loading on the same higher-order factor.

In terms of model identification within SEM, Kenny, Kashy, and Bolger (1998) stipulate that three conditions are necessary in order to identify simple models. Condition A states that, in the case of the uni-factorial model, the latent variable Equanimity, does not have an observed score and therefore must have an indicator with a fixed loading of one. The 20-item measure furthermore satisfies condition B, which states that the minimum number of indicators for predicting a latent variable is three. It is noted that models can have less than three items loading on an unobserved factor, but further conditions must be met in such situations. Finally, Condition C concerns the correlated nature of measurement error inherent within the model. This condition is satisfied by not allowing error variances to correlate between each of the items.

The aforementioned conditions were also satisfied within the two-factorial model (Figure 5.2). The first item for both Centring and Resonating was fixed to a loading of one (Condition A). Each latent variable have greater than three indicators (Condition B). No correlations were specified between any of the items (Condition C). In addition, a further condition exists for models with two or more latent variables. Condition D indicates that for every correlation that one item has specified with another item, this particular item must have an uncorrelated relationship with just as many items. However, this condition is only necessary if instead of uncorrelated measurement error between items (Condition C), the correlation between the latent variables is alternatively set at zero. Thus, measurement error is uncorrelated at the factorial level rather than the indicator level. This ultimately satisfies Condition C, but Condition D adds the precaution of controlling for potential measurement error in such cases.

Finally, the direct hierarchical model (Figure 5.3) satisfies the four conditions of identification set out by Kenny et al. (1998). The first item for each of the three latent variables, Centring, Resonating, and Equanimity, is fixed to a loading of one.

The loading of both Centring and Resonating onto Equanimity is additionally fixed at one (Condition A). Each of the three latent variables has above the recommended number of loading indicators (Condition B). None of the indicators were set to correlate with each other, thereby simultaneously satisfying Conditions C and D. Kenny et al. (1998) add a fifth condition necessary for models where items have a double loading, such as the direct hierarchical model. Condition E states that the correlation between the two latent variables with the same loading indicators must be fixed at zero; thus the correlation between Equanimity and the two latent variable indicators of Centring and Resonating was therefore fixed at zero.

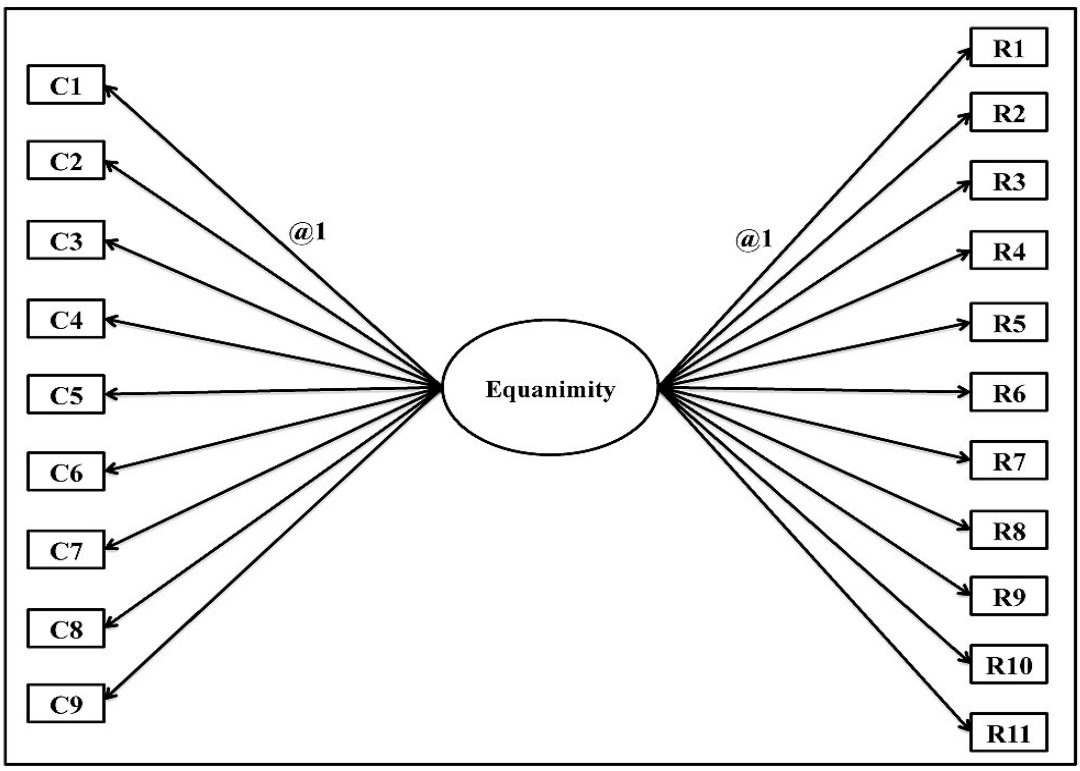


Figure 5.1. Uni-factorial Model of Equanimity (Model one)

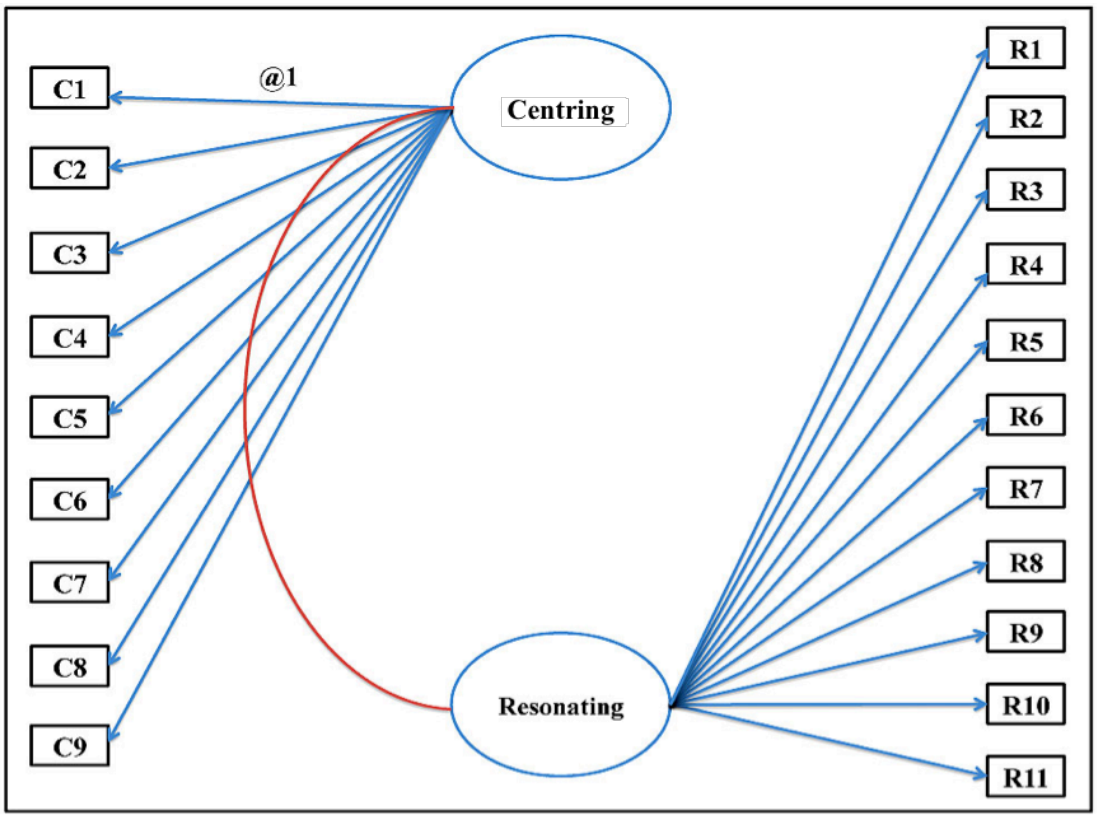


Figure 5.2. Two-factor model comprising Centring and Resonating (Model two)

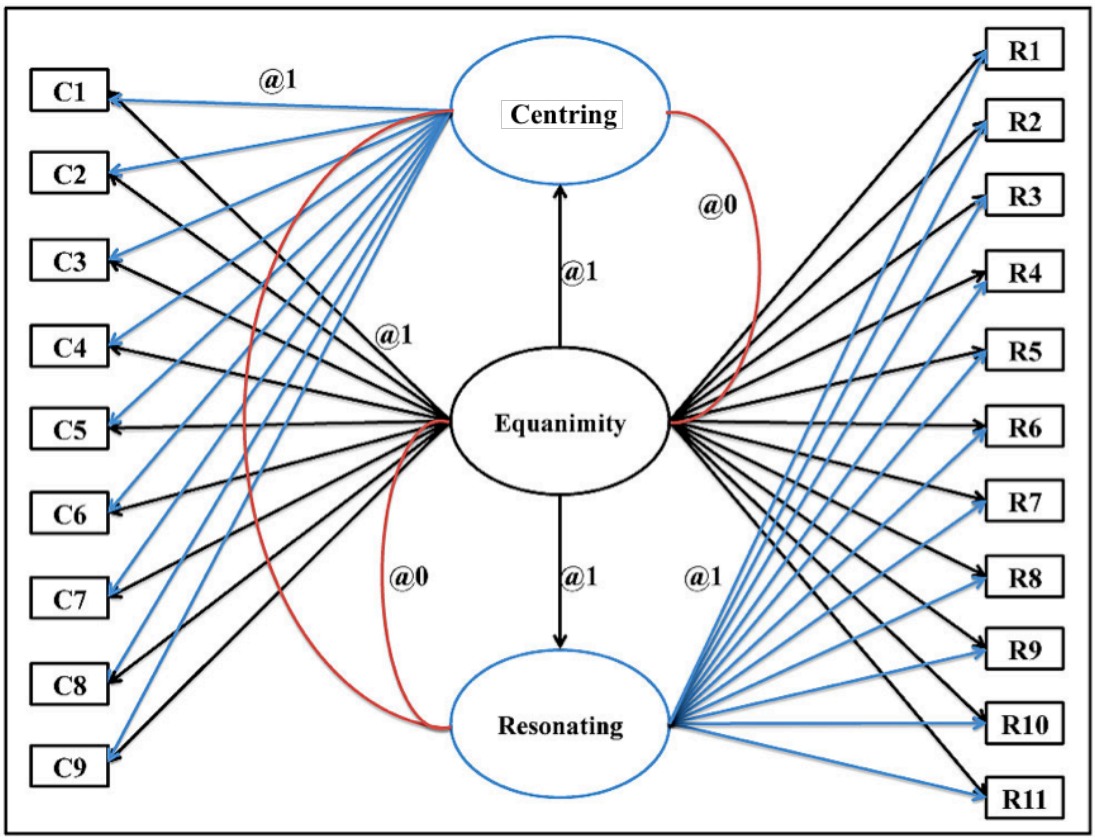


Figure 5.3. Direct hierarchical model, with Equanimity comprised of both Centring and Resonating (Model three)

Multi-Group Confirmatory Factor Analysis

In order to compensate for multivariate non-normality, the proceeding models were analysed with the Satorra-Bentler (2001) Maximum Likelihood Mean Adjusted estimator. Analysis of the variance-covariance matrix of the specified model compared with that of the observed data demonstrated that the Phenomenological Experience of Meditative Equanimity according to the uni-factorial model was not acceptable for all four groups. As indicated in Table 5.7, the Relative SB_χ^2, assessing model fit, ranged between 2.65 and 4.35. Other fit indices substantiated this finding. The RMSEA was > .10, the SRMR > .08, and the CFI was < .90 for each of the four groups. Appendix 5.3 provides the standardised factor loading, intercepts, residual variances, R^2, as well as the standard errors for these values, for each of the four separate uni-factorial models.

In terms of the two-factor solution, the Relative SB_χ^2 for each of the four groups ranged from 1.74 and 2.55. This suggests that only the Samatha group falls within the stringent acceptable range according to Ullman's (2001) criteria. However, the models of the remaining three groups are considered acceptable by the more relaxed criteria proposed by Kline (2005). Nonetheless, the SRMR is well above the acceptable cut-off of .06, as advised by Hu and Bentler (1999). According to Bollen (1989), a CFI of between .879 and .901 across the groups expresses progress in model fit, and on those grounds, should be considered acceptable, or at least, more acceptable than the uni-factorial solution. Standardised results for each SEM are provided in Appendix 5.4.

In terms of computing the direct hierarchical model for the Samatha group, two Haywood cases were noted, where the loadings of these items onto the latent variable were negative. Such impossible solutions can arise due to outliers (Bollen, 1987), under-identification of the model (van Driel, 1978), a mis-specified model (Kolenikov & Bollen, 2012), or sampling fluctuations (Anderson & Gerbing, 1984). Nonetheless, this problem was not noted for either the Vipassanā or Non-meditating groups, suggesting the both under-identification and misspecification of the model are not the cause of the Haywood cases. Additionally, as outliers within each group were addressed prior to the analyses, this cause was ruled out also.

Table 5.7.

Model Fit for each of the Four Groups According to Uni-Factorial, Two-Factor, and Direct Hierarchical Solutions

Group		SB_χ^2	Relative SB_χ^2	RMSEA [95%CI]	SRMR	CFI	TLF	ω
One-dimensional	*df* = 170							
Samatha		450.00***	2.65	.128 [.113, .142]	.100	.753	.724	
Vipassanā		741.95***	4.35	.117 [.108, .125]	.090	.753	.724	
Stillness		500.87***	2.95	.136 [.122, .149]	.096	.763	.735	
Non-meditators		660.10***	3.88	.144 [.132, .155]	.140	.717	.684	
Two-factor	*df* = 169							
Samatha		294.04***	1.74	.086 [.069, .102]	.073	.890	.876	
Vipassanā		430.27***	2.55	.079 [.070, .088]	.074	.887	.873	
Stillness		338.45***	2.00	.097 [.082, .112]	.077	.879	.863	
Non-meditators		340.97***	2.02	.085 [.072, .098]	.088	.901	.888	
Direct Hierarchical	*df* = 149							
Samatha		235.09***	1.58	.076 [.057, .094]	.058	.924	.903	.910
Vipassanā		276.74***	1.86	.059 [.048, .070]	.038	.945	.930	.903
Stillness		250.08***	1.68	.080 [.062, .097]	.058	.928	.908	.919
Non-meditators		230.75***	1.55	.063 [.046, .078]	.043	.953	.940	.903

In terms of the Haywood cases, Chen, Bollen, Paxton, Curran, and Kirby (2001) identified an inverse relationship between sample size and the number of improper solutions. With both Samatha and Stillness groups having the lowest sample sizes and also experiencing Haywood cases, it was concluded that the former was the cause of the latter. However, it is interesting to note that both uni-factorial and two-factorial models did not present with Haywood cases for these two groups. Thus, it is likely that the presence of Haywood cases is due to smaller sample sizes combined with the complexity of the model specified. This suggestion is substantiated by the findings of Gignac (2008) who also reported a number of Haywood cases (see: p.36-37). In order to overcome this problem, the approach proposed by Rindskopf (1983) was adopted, where the parameters of these loadings were free to estimate but constrained to equal above zero.

However, as noted by Chen et al. (2001), constraining parameters within the model in order to overcompensate for improper solutions can result in bias when determining model fit. The researchers essentially found that constraining the parameter estimates has the potential to increase the degree of difference between the specified model and the observed data, thereby negatively biasing model fit. The researchers urge caution regarding interpretation in such situations.

As indicated in Table 5.7, the Relative SB_χ^2 for the direct hierarchical model ranged between 1.55 and 1.86, thereby falling below the stringent criteria as proposed by Ullman (2001). The SRMR was identified as below .06 for each of the four groups. Additionally, the CFI ranged from .924 and .953, therefore providing evidence that the observed data fits well with the specified model according to Byrne's (1994) rigorous cut-off criteria. Model estimates for each of the four groups is provided in Appendix 5.5. Although still fitting the criteria for an acceptable fit, it is worth noting that the least fitting models were those that were additionally treated for Haywood cases, and therefore include some degree of bias in the model estimates. Nonetheless, as the direct hierarchical model was found to be acceptable across all four groups, the model was furthermore analysed for Measurement Invariance in a multi-group modelling context. Measurement Invariance essentially allows groups to be compared in terms of the psychometric properties of the measure itself.

Measurement Invariance Across Groups

Measurement Invariance involves a rigorous sequence of steps that aim to compare at least two groups in terms of particular aspects of the measure itself. Assessing Measurement Invariance comprises a number of comparisons, where each sequential SEM is defined by the application of more stringent constraints (Byrne, 2009; Cheung & Rensvold, 2002; Raju, Laffitte, & Byrne, 2002; Schmitt & Kuljanin, 2008). Measurement Invariance is essential for any meaningful conclusions to be drawn regarding differences between groups in terms of a self-report measure (Byrne, 1994; Jackson, Wall, Martin, & Davids, 1993; Marsh, 1994). Without establishing Measurement Invariance, group differences in the relationship between factors or factor means may represent the ambiguity inherent within the scale itself. This can arise through group differences in understanding the underlying factors and how they relate, the interpretation of particular items, or even the perception of the width of intervals and the zero-point in the rating scale. Once Measurement Invariance is established between groups, Structural Invariance can then be assessed (Little, 1997).

Assessing Measurement Invariance between groups in a hierarchical design involves a series of five nested models. These include the Configural (Buss & Royce, 1975; Irvine, 1969), Factorial (Byrne & Stewart, 2006; Dimitrov, 2010), Metric (Horn & McArdle, 1992) Scalar (Steenkamp & Baumartner, 1998; Vandenberg & Lance, 2000), and Uniqueness (Mullen, 1995; Singh, 1995) models. The higher-order factors are separated out from the subordinate factors in the latter two, with both Scalar and Uniqueness models performed separately for each layer of the design (Chen et al., 2005; Dimitrov, 2010).

However, as the factors within a direct hierarchical model share commonalities regarding these models by virtue of the same items loading onto Equanimity that are present for either Centring or Resonating, these two models were not performed separately for each layer of the design. Currently there are no studies that conduct Measurement Invariance on a direct hierarchical model, thus confirmation of this approach is lacking. Nonetheless, both scalar and uniqueness models are computed separately across the layers of a higher-order design in order to isolate non-invariance. By combining both models, situations involving non-invariance would prove to be more difficult to distinguish the source.

Configural invariance primarily determines if each group conceptualises the constructs in the same manner (Riordan & Vandenberg, 1994). This implies that each group associates the same items with the same factors (Meredith, 1993). Secondly, Factorial invariance, which is only necessary in higher-order designs, tests if the relationship between the factors and the high-order factor is invariant across the groups (Byrne & Stewart, 2006; Dimitrov, 2010).

Thirdly, Metric or Weak Factorial (Meredith, 1993) invariance assesses if the different groups respond to the items in a consistent way. This ultimately determines if the strength between items and their respective factor are invariant across the groups (Bollen, 1989). A number of researchers, such as Byrne and Watkins (2003) as well as Marsh and Hocevar (1985) have suggested that the requirement of Metric invariance can be relaxed provided only a fraction of the items within the scale are variant in terms of their factor loadings across groups. As such, only a small difference in the consistency of item loading across groups will not have a significant impact on the validity of identified differences in factor means between the groups.

Fourthly, Scalar or Strong Factorial (Meredith, 1993) invariance assesses the consistency of the intercepts across the groups. The intercepts are essentially the score on each item when the underlying factor is equal to zero. Basically, this determines if the observed scores, for the individuals across each group, is a reflection of the true score on the latent variable that the item is attempting to assess (Milfont & Fischer, 2010).

The final stage in establishing Measurement Invariance involves comparing the residual variance of each item across the groups through the Uniqueness model. According to Mullen (1995), residual variance or Strict Factorial (Meredith, 1993) invariance may not hold due to respondents from different groups being unfamiliar with the scoring format of the scale itself, which may potentially result in some individuals responding inconsistently.

Nevertheless, Byrne and Stewart (2006), Gregorich (2006), as well as Widaman and Reise (1997) claim that even if two subsamples came from the same population, it is still possible for the subsamples to differ in regards to error variances across items comprising a scale. Milfont and Fischer (2010) therefore argue that the Uniqueness model is optional, in which it holds meaning according to an a priori

theoretical conceptualisation. Instead, Milfont and Fischer (2010) argue that invariance within the Configural, Metric, and Scalar models between groups, are only necessary in order to objectively compare groups in terms Structural Invariance. The researchers did not mention the Factorial model in their study, as the examined model was primarily uni-factorial.

Little (2013, p.143) indicates that as unique variance is in fact a combination of random error as well as systemic error, the latter is expected to be relatively equal across the groups, but the former is not. Little continues that strict invariance is thus potentially only necessary in situations involving the implementation of predefined cut-off scores or another form of classification into specific groups based on the observed scores. Nevertheless, strict invariance does indeed suggest that the factors are measured with the same precision, as in, demonstrating similar degrees of error, across the groups. DeShon (2004) and Wu, Li, and Zumbo (2007) demonstrated that that Strict invariance is essential for meaningful comparisons between groups and suggested that rather than an unnecessary step, it is a prudent step in the establishment of Measurement Invariance. Fundamentally, without determining if differences exist between groups in terms of Strict invariance, any mean differences in the latent variable may in fact be the product of differences in error across the groups compared. Therefore, as Structural Invariance was assessed within the current study, the constriction of the Uniqueness model was further implemented.

Testing for Structural Invariance involves assessing a further three models, nested within the previous five. These include Factor Variance invariance, Factor Covariance invariance, and Factor Mean invariance. As opposed to Measurement Invariance, which compared groups according to facets of the scale itself, Structural Invariance compares the groups on the factors underlying the scale. Primarily, the Factor Variance invariance model compares the range of scores of the factors across the groups. Secondly, Factor Covariance invariance tests for the consistency of the relationship between factors across groups. Lastly, Factor Mean invariance determines if the means of the factors differ between groups (Chen, 2007; Cheung & Rensvold, 2002; Milfont & Fischer, 2010). See Table 5.8 for research questions relevant to the current study that are tested by each of the eight models.

Table 5.8.

Hypotheses of Measurement and Structural Models

Model	Research Questions
Configural	Do groups conceptualise Equanimity in the same way?
Factorial	Is the relationship between both Centring and Resonating with Equanimity the same across the groups?
Metric	Is the strength of the relationship between items and their respective factor the same across groups?
Scalar	Are the intervals and zero-points the same for each group? Do the observed scores reflect scores on the latent variables for each group?
Uniqueness	Do items have the same internal consistency across the groups?
Factor Variance	Is the variability within the factors the same across the groups?
Factor Covariance	Is the relationship between Centring and Resonating expressed the same across the groups?
Factor Mean	Are the means of Centring, Resonating, and Equanimity, the same across the groups?

Nonetheless, Kline (2013, p.215) argues that the reference group method, comparing all groups with an arbitrarily chosen first group, within MGCFA carries the assumption of homogeneity of factor variance across the groups. If this assumption is not met, the resulting analyses may be inaccurate. Thus, testing the Factor Variance invariance model subsequent to establishing Measurement Invariance is ultimately counter-intuitive. Rather, this assumption can be assessed using Levene's (1960) test of homogeneity of variance prior to calculating the Configural model.

Although it is essential to test Structural Invariance only after Measurement Invariance has been established, there is some inconsistency with regards to which nested models to compare when assessing the former. Cheung and Rensvold (2002) recommend comparing the Metric and Factorial models with the Configural model;

the Scalar, Uniqueness, Factor Variance and Factor Covariance models with the Metric model; and finally, the Factor Mean model with the Uniqueness model. On the other hand, Milfont and Fischer (2010) recommend comparing the models in a sequential fashion, so that the Factorial is compared with the Configural model, the Metric with the Factorial, the Scalar with the Metric, and so on.

Typically, in order to test if two nested models significantly differ in situations where the models are estimated with Maximum Likelihood, the χ^2 value of the constrained model (M_0) is subtracted from the comparatively free model (M_1). The difference in degrees of freedom between the two models (Δdf) is calculated following the same logic. The significance of the $\Delta\chi^2$ value is then determined according to the χ^2 distribution, with $p < .05$ suggesting divergence between the two models. However, when estimating with the Satorra-Bentler (2001) scaled χ^2, a different procedure in determining model invariance is required.

Principally, the difference in scaling correction (c_d) between the two models is calculated by multiplying each model's scaling correction with their respective degrees of freedom. The resulting value of the constrained model (M_0) is then subtracted from that obtained from the free model (M_1). This figure is subsequently divided by the difference in degrees of freedom (Δdf: $df_1 - df_0$). Thus, in order to compute the SB_χ^2 difference test (T_d) the SB_χ^2 associated with M_0 is multiplied with the respective scaling correction and is then subtracted from the figure derived from the M_1 calculation. The resulting value of the latter is then divided by c_d (Satorra, 2000). Alternatively, the calculation can be performed online at http://www.uoguelph.ca/~scolwell/difftest.html. This provides the magnitude of difference between the two models estimated with Satorra-Bentler (2001) scaled χ^2. However, this can only be performed if both nested models differ in their degrees of freedom.

Nevertheless, as noted earlier, the χ^2 is overly sensitive, biased by sample size, model complexity, multivariate non-normality, and magnitude of association between variables. Therefore, as noted by Brannick (1995) and Kelloway (1995), an inconsequential difference between the two models, in the context of its limitations, can be determined as significant. Cheung and Rensvold (2002) claim that it is not so much a question of the two models being significantly different in such cases, but rather the significance pertains to the practicality of this difference. Therefore,

interpretation of a significant χ^2 needs to be in the context of the aforementioned limitations as well as the outcome originally expected prior to the analyses.

Alternatively, Cheung and Rensvold (2002) have recommended comparing other goodness of fit indices rather than the χ^2 in order to determine no difference between nested models. Through a Monte Carlo simulation study involving two groups and alternating between two and three factors, Cheung and Rensvold (2002) compared the utility of 20 goodness-of-fit indices in order to determine how they change in accordance with the introduction of new constraints within nested models. The researches found that the CFI, Gamma Hat (Joreskog & Sorbom, 1984), and McDonald's (1989) Non-centrality Index (Mc) were the most robust statistics in assessing between-group differences within the MGCFA context. It was recommended by the authors in adopting a cut-off entailing ΔCFI = .01, ΔGamma Hat = .001, and ΔMc = .02, so as to assume the invariance between two nested models. However, they also note that there is currently no method to control for sampling error and so a cut-off for what constitutes a non-significant difference between models could ultimately differ across samples.

A later study by Chen (2007) implemented the same procedure as Cheung and Rensvold (2002), involving multi-group comparisons of Measurement Invariance whist alternating sample size across the two groups. The study primarily compared the sensitivity of ΔCFI, ΔGamma Hat, ΔMc, and additionally both ΔRMSEA and ΔSRMR in their capacity to detect invariance between two nested models. Chen (2007) found that ΔCFI and ΔGamma Hat were strongly correlated at every level of the MGCFA analyses (r = .97 loading, r = .98 intercept, and r = .95 residual variances), concluding that reporting the latter is redundant when reporting the former. Although consistent in their sensitivity at determining variance between models, the ΔRMSEA was found to consistently outperform ΔMc. As Cheung and Rensvold (2002) did not analyse the ΔSRMR in testing invariance, Chen (2007) stated that it was not possible to compare this fit statistic across the studies. However, he did find that it was more sensitive to changes in loadings than intercepts and residuals.

Interestingly, Chen (2007) found that when testing the loading and intercepts of a model, changes in the CFI were non-monotonic. When the difference between two nested models at the loading level were largely non-invariant, changes in the CFI

would be greater when compared with invariance between nested models. As a consequence of the findings, Chen (2007) developed a series of recommendations with regards to cut-off values in situations with equal or unequal sample sizes. As the latter is pertinent to the current study, Chen (2007, p.501) recommended a cut-off value of ≤ .005 for CFI supplemented by a ΔRMSEA ≥ .01 or ΔSRMR ≥ .005, which would indicate non-invariance. For both the intercepts and residual variances ΔCFI ≥ .005 accompanied with either ΔRMSEA ≥ .01 or ΔSRMR ≥ .025, would suggest non-invariance. Nonetheless, the author cautions the use of strict cut-off values across different models, as a number of factors can influence the value of these fit indices, such as total sample size, the ratio of sample size between groups, and the complexity of the model specified to fit the observed data.

Further to expressing caution in using strict cut-off values, Hortensius (2012) mentions that little discussion has arisen regarding the likelihood of Type I error in assessing Measurement Invariance. As Measurement Invariance involves the assessment of sequential nested models with the same dataset, the probability of a Type I error is therefore increased according the number of models compared. Currently, no solution to the problem has been proposed within the Measurement Invariance literature. Ultimately, without correcting for this, a significant difference identified between two nested models may mean that the difference is in fact inconsequential. Thus, Cheung and Rensvold (2002) as well as Chen's (2007) cut-off values may be considered conservative, where any significant difference found between models will ultimately need further investigation. This issue was touched on briefly by Chen (2007), who reported that the probability of a Type I error was related to the sample size, specifically in regards to SRMR. The SRMR has an inverse relationship with the sample size, and therefore in situations involving larger samples (smaller SRMR), there is a greater chance of a Type I error.

In the studies conducted by both Cheung and Rensvold (2002) as well as Chen (2007), comparisons involved only two groups. Additionally, on both occasions, Maximum Likelihood was implemented to estimate the fit of the observed data with the specified model. Thus, further research is needed in this area in order to determine if these cut-off values can be generalised to comparisons of more than two groups as well model fit estimated with the Satorra-Bentler (2001) correction for non-normality. Further to this, Cangur and Ercan (2015) found that although both the CFI and

RMSEA were not affected by Satorra-Bentler (2001) estimation, the SRMR was. However, this study was on the basis of determining model fit through simple SEM as opposed to a MGCFA context of model comparisons.

Chen's (2007) recommendations for comparisons of each sequential model were used to compare Measurement Invariance across the four groups. In order determine Configural invariance, the direct hierarchical model of Equanimity was computed for each of the groups in a four-tiered model, which simultaneously compares three of the groups with a reference group. For the current analyses, the Samatha meditators comprised the reference group by virtue of the logistics in the actual survey development. In downloading responses from the survey, the Samatha group were labelled group one, Vipassanā group two, Stillness meditators as group three, and Non-meditators as group five (Non-specified were group four). Mplus uses the group with the lowest group coding as the reference point. Nonetheless, Kline (2013) indicates that the selection of the reference group is arbitrary.

In terms of homogeneity of factor variance across the four groups, Levene's test revealed that Centring did not meet this assumption, F (3, 590) = 6.45, $p < .001$, with the Non-meditators demonstrating greater variance than the meditation groups. Whereas homogeneity of factor variance was assumed for Resonating and Equanimity, F (3, 590) = 0.58, $p > .05$, and, F (3, 590) = 1.28, $p > .05$, respectively. Small's (1980) Omnibus Coefficient for Multivariate Normality across the four groups was significant, χ^2 (40) = 819.35, $p < .001$. Therefore, model fit was assessed through the Satorra-Bentler (2001) correction for non-normality.

The model identification in assessing Configural invariance followed the same structure as provided in Figure 5.3. Thus, the loading of the first item per factor was fixed at one. Similarly, the loading of both Centring and Resonating onto Equanimity was also set at one. The correlation between the former two constructs and the latter was set at zero. The correlation between both subordinate factors was free to estimate. In addition to these constraints, to control for the disparity of variance within Centring between the groups, the factor variance of this construct for all groups was constrained to equal the reference group. The factor variance of both Resonating and Equanimity were still free to estimate between the groups. In order to facilitate the identification of the model, as recommended by Hoffman (2011), the factor means for each factor across the groups were initially fixed at zero. Finally, to compensate for

the potential of Haywood cases, item loadings were constrained to be greater than zero for both the Samatha and Stillness groups. The Mplus coding for the Samatha group as well as one non-reference group, Vipassanā, is provided in Figure 5.4. The remaining two groups, Stillness and Non-meditators, follow the same coding as the Vipassanā group, and are therefore redundant to provide.

Convergence was not reached at the .00005 level for the Configural model. According to Muthén and Muthén (1997-2007), non-convergence at this level can typically occur in multi-level modelling using complex data, whereby too many free parameters are present within the model making it difficult to converge. The solution is to lower the convergence level, however, the trade-off is that lowering this value also attenuates the precision in determining model fit. The convergence criterion was therefore lowered to .005 (.0005 still did not reach convergence). As provided in Table 5.9, analysis of the four-tiered CFA model, which compared groups simultaneously with the reference group, suggested good Configural invariance across the groups, Relative $\chi^2 = 1.74$ and CFI = .933. This indicates that the three meditation groups as well as the non-meditators conceptualised the experience of meditative equanimity in the same manner.

Subsequently, the Factorial model was evaluated. According to Cheung and Rensvold (2002), this "Construct-level Metric invariance" determines if the factor loading of the subordinate factors onto the higher-order factor is similar across the groups. This model is nested within the Configural model, but with some slight modifications. The factor loading of both Centring and Resonating onto Equanimity were adjusted from being fixed at one to equal that of the reference group, which was free to estimate. For model identification, the factor variances across the three factors were fixed at one for only the reference group, as suggested by Hoffman (2011). Yet, as the factor variance for Centring across the three non-reference groups was constrained to equal the reference group due to unequal variances, these values vicariously become fixed at one also.

```
Variable:
Names are: Group C1 C2 C3 C4 C5 C6 C7 C8 C9 R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11;

USEVAR are
Group C1 C2 C3 C4 C5 C6 C7 C8 C9 R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11;
Grouping is Group (1=Samatha 2=Vipassanā 3=Stillness 5=Non-Meditators);

Analysis:
ESTIMATOR = MLM; Satorra-Bentler correction for non-normality
ITERATIONS = 1000000;
CONVERGENCE = 0.00005;

Model: Reference group
C by C1@1(L1) C2*(L2) C3*(L3) C4*(L4) C5*(L5) C6*(L6) C7*(L7) C8*(L8) C9*(L9); Item Loading
[C1*](I1) [C2*](I2) [C3*](I3) [C4*](I4) [C5*](I5) [C6*](I6) [C7*](I7) [C8*](I8) [C9*](I9); Intercepts
C1*(E1) C2*(E2) C3*(E3) C4*(E4) C5*(E5) C6*(E6) C7*(E7) C8*(E8) C9*(E9); Error Variances
C* (A1); Factor Variance
[C@0]; Factor Mean

R by R1@1(L10) R2*(L11) R3*(12) R4*(L13) R5*(L14) F6*(L15) R7*(L16) R8*(L17) R9*(L18) R10*(L19)
R11*(L20);
[R1*](I10) [R2*](I11) [R3*](I12) [R4*](I13) [R5*](I14) [R6*](I15) [R7*](I16) [R8*](I17) [R9*](I18) [R10*](I19)
[R11*](I20);
R1*(E10) R2*(E11) R3*(E12) R4*(E13) R5*(E14) R6*(E15) R7*(E16) R8*(E17) R9*(E18) R10*(E19) R11*(E20);
R*;
[R@0];

E by C1Q1 C2* C3* C4* C5* C6* C7* C8* C9* R1* R2* R3* R4* R5* F6* R7* R8* R9* R10* R11*
[C1*](I21) [C2*](I22) [C3*](I23) [C4*](I24) [C5*](I25) [C6*](I26) [C7*](I27) [C8*](I28) [C9*](I29) [R1*](I30)
[R2*](I31) [R3*](I32) [R4*](I33) [R5*](I34) [R6*](I35) [R7*](I36) [R8*](I37) [R9*](I38) [R10*](I39) [R11*](I40)
C1*(E21) C2*(E22) C3*(E23) C4*(E24) C5*(E25) C6*(E26) C7*(E27) C8*(E28) C9*(E29) R1*(E30) R2*(E31)
R3*(E32) R4*(E33) R5*(E34) R6*(E35) R7*(E36) R8*(E37) R9*(E38) R10*(E39) R11*(E40);
E*;
[E@0];

C with R*; Correlation between Centring and Resonating
E on C@1; Loading of Centring onto Equanimity fixed at one
E by C@0; Correlation between Centring and Equanimity fixed at zero
E on R@1; Loading of Resonating onto Equanimity fixed at one
E by R@0; Correlation between Resonating and Equanimity fixed at zero

Model Vipassanā: Non-reference group (repeated identically for both models: Stillness & Model: Non-meditation
groups)
C by C1@1 C2* C3* C4* C5* C6* C7* C8* C9*;
[C1*] [C2*] [C3*] [C4*] [C5*] [C6*] [C7*] [C8*] [C9*];
C1* C2* C3* C4* C5* C6* C7* C8* C9*;
C* (A1); Factorial Variance of Centring constrained to equal that of the reference group
[C@0];

R by R1@1 R2* R3* R4* R5* F6* R7* R8* R9* R10* R11*;
[R1*] [R2*] [R3*] [R4*] [R5*] [R6*] [R7*] [R8*] [R9*] [R10*] [R11*];
R1* R2* R3* R4* R5* R6* R7* R8* R9* R10* R11*;
R*;
[R@0];

E by C1@1 C2* C3* C4* C5* C6* C7* C8* C9* R1* R2* R3* R4* R5* F6* R7* R8* R9* R10* R11*;
[C1*] [C2*] [C3*] [C4*] [C5*] [C6*] [C7*] [C8*] [C9*] [R1*] [R2*] [R3*] [R4*] [R5*] [R6*] [R7*] [R8*] [R9*]
[R10*] [R11*];
C1* C2* C3* C4* C5* C6* C7* C8* C9* R1* R2* R3* R4* R5* R6* R7* R8* R9* R10* R11*
S*;
[S@0];

C with R*;
E on C@1;
E by C@0;
E on R@1;
E by R@0;
```

Figure 5.4. MPlus Syntax for Configural model, displaying Samatha and Vipassanā groups only

Chen (2007) does not provide specific model fit recommendations in assessing the difference between the Configural and Factorial models, primarily as the model analysed in their study was uni-factorial. In the previous study by Chen et al. (2005), which assessed Measurement Invariance within a higher-order design, the criteria specified by Cheung and Rensvold (2002) was used to determine non-invariance. However, Chen's (2007) finding at the loading level are contrary to what Cheung and Rensvold (2002) had stipulated.

Nonetheless, as this model compared loading, but at a factorial level, the guideline for comparing loading invariance between items was applied. The difference in the CFI between the models was .010, which was above the .005 necessary to determine invariance. Recall that Chen (2007) found that a large difference between the models would equate to a small difference in CFI at the item (factor) loading level. Both RMSEA and SRMR do not need further analysis, as Chen (2007) argues that they only need further investigation if the CFI value is not within the recommended range.

Both the Configural and Factorial models did not differ in their degrees of freedom. This was primarily the result of compensating for the factor variance between groups in terms of Centring within the Configural model. Thus, a hand calculation of T_d between these two models results in a negative value. Satorra and Bentler (2001) indicate that due to its asymptotic nature, calculating the T_d can sometimes result in a negative outcome. In these situations, Satorra and Bentler (2010) suggest that the nested model (M_0) should be run again as, in this case, an un-optimised Configural model but with the Factorial model estimates. According to Asparouhov and Muthén (2010), this can be achieved in Mplus by specifying a convergence level of 100,000,000. This level makes the program bypass convergence altogether with the presumption that convergence had already been reached. The resulting new estimate of model fit (M_{10}) ultimately provides a new value of the scaling correction for the unconstrained model (M_1). This new scaling correction for M_1 can be implemented in the formula as provided earlier for the Satorra-Bentler (2001) scaled χ^2 determination of model difference. However, to compute M_{10} requires the Configural model to have converged at the .00005 level. Although a positive T_d could not be calculated for the difference between the Configural and Factorial models, its presence was not considered necessary. Ultimately, the statistic

was not utilised in determining if the models were significantly different from each other.

The next model testing for Metric invariance is nested within the Factorial model, with the only change being the factor loading of each item constrained as equal across the four groups. The first item from each factor was no longer restricted to a loading of one, as they were now free to estimate. Analysis of the difference between both Factorial and Metric models suggested that item loading onto the respective factors was invariant across the groups, ΔCFI = .010.

In order to test invariance of intercepts through the Scalar model, as recommended by Hoffman (2011), the Metric model was adjusted to allow the factor means to freely estimate within the non-reference groups. The factor means for the reference group were still fixed at zero. The intercepts for the non-reference groups across each of the factors were additionally constrained to equal that of the reference group. In contrast to models assessing invariance of loading, the current assessment requires the ΔCFI to be below .005 in order to demonstrate invariance. However, ΔCFI = .016, which was well above this criterion. Nonetheless, both ΔRMSEA and ΔSRMR were within the required range as suggested by Chen (2007), .005 (≥ .01 demonstrates non-invariance) and .006 (≥ .025 indicates non-invariance), respectively. Therefore it was concluded that the assumption of Metric invariance between the groups still holds; where the scale for each of the items have similar zero-points and intervals across the groups.

The final stage in establishing Measurement Invariance consists of testing the Uniqueness model. The Uniqueness model is nested within the Scalar model, but has additional specified parameters where the residual variances for each of the items are constrained across the groups to equal those of the reference group. Similar to the outcome in testing for Scalar invariance, the resulting ΔCFI = .020. Yet, it was not accompanied by a significantly larger than expected value for either the ΔRMSEA or ΔSRMR, thereby demonstrating error invariance for the items across the groups. Thus, the larger than expected values for ΔCFI are potentially the result of the model being penalised for its complexity (Kenny, 2015), or biased by non-centrality (Raykov, 2000, 2005).

Table 5.9.

Measurement and Structural Invariance Analyses across the Three Meditation Groups and Non-Meditators

Model	SB_χ^2 (*df*) [SC]	SB_χ^2/*df*	RMSEA [95%CI]	SRMR	CFI	T_d (Δ*df*)	ΔRMSEA	ΔSRMR	ΔCFI
			Measurement Invariance						
Configural	1041.07 (599) [1.164]	1.74	.071 [.063, .078]	.077	.933	-	-	-	-
Factorial	971.72 (599) [1.166]	1.62	.065 [.057, .072]	.048	.943	-65.75 (0)	.006	.029	.010
Metric	1145.20 (707) [1.173]	1.62	.065 [.058, .071]	.068	.933	173.54 (108)***	.000	.020	.010
Scalar	1307.27 (758) [1.616]	1.73	.070 [.063, .076]	.074	.917	99.16 (51)***	.005	.006	.016
Uniqueness	1495.97 (818) [1.175]	1.83	.075 [.069, .081]	.078	.897	80.70 (60)	.005	.004	.020
			Structural Invariance						
Factor Covariance	1500.73 (821) [1.176]	1.83	.075 [.069, .081]	.081	.897	4.90 (3)	.000	.003	.000
Factor Mean	1616.37 (830) [1.174]	1.95	.080 [.074, .086]	.208	.881	133.89 (9)***	.005	.172	.016

Note. *** $p < .001$

As Measurement Invariance had now been established across the four groups, it was now possible to compare the groups without differences potentially due to diverging conceptualisations of the constructs, disparate interpretation of items, or different perceptions of the intervals and zero-points inherent within the scale itself. Although Chen (2007) did not extend the cut-off recommendations to Structural Invariance, the same recommendations with regards to intercepts and residual variance was implemented to test invariance for the following analyses. Notwithstanding, Cheung and Rensvold (2002) do provide a cut-off value, ΔCFI = .01, for Structural Invariance, Chen's (2007) criteria is more global, which takes into consideration the limitations of each category of the fit indices.

The first model typically assessed in Structural Invariance is the Factor Variance invariance model (Cheung & Rensvold, 2002; Milfont & Fischer, 2010). However, as noted by Kline (2013), this is actually an assumption that must be met within the reference group method in order to obtain accurate results in assessing Measurement Invariance, particularly the Configural model. As the Factor Variance invariance across the groups was assessed prior to the latter, this model was bypassed. In terms of comparing the factorial covariance between Centring and Resonating across groups, within the Factor Covariance invariance model, the correlation between the two factors was constrained to equal the reference group for each of the remaining groups. As indicated in Table 5.9, no difference was identified, ΔCFI = .000, between the Uniqueness and Factor Covariance models.

Closer inspection revealed that the association between Centring and Resonating was substantial for all four groups. Analysis across the Samatha, Vipassanā, Stillness, and Non-meditation groups demonstrated canonical correlations between the latent variables of R_C = .691, R_C = .669, R_C = .738, and R_C = .574, respectively (see: Chapter Six for a discussion on canonical correlations). Although strong, the magnitude in the relationship between the two constructs expressed across the four groups suggests that the constructs are indeed distinct and assess different variance in terms of the experience defined by Equanimity. As according to Field (2009), two variables are thought to considerably overlap as soon as the association between them exceeds .8.

Finally, to test invariance at the Factor mean level, the Factor means of each of the latent variables, Centring, Resonating, and Equanimity, for the non-reference

groups were all fixed at zero. The means of the reference group were already fixed at zero since the calculation of the Scalar model. The resulting ΔCFI = .016, and although the ΔRMSEA was < .01, the ΔSRMR was highly significant at .127. These findings suggest a significant difference between the groups in terms of factor means, which cannot be explained by variations in the conceptualisation of the latent variables or even disparate error variance across the groups.

These results suggests that there is a difference in groups means, but does identify where such differences lie. Structured Mean Analysis was thus performed through a SEM paradigm, which compares the mean of the variables across groups whilst taking into account measurement error. Through Structured Mean Analysis the mean of the latent variable for each group is derived from its linear regression of the scale mean (Dimitrov, 2006). In order to determine group differences, the mean of initial group, or reference point, is set to zero. Thereby, the means of the latent variables for the remaining groups will essentially represent the difference from the reference mean.

The Structural Mean Analysis confirmed the results obtained from the item validity analyses, where significant differences between the meditation groups and non-meditators at the item level were determined. The results of the Structural Mean Analysis suggested that the non-meditators reported significantly less experiences and intensity of Equanimity, when compared with the Samatha and by extension the Vipassanā and Stillness groups, in terms of Centring, Resonating, and the direct hierarchical model. The latent mean differences between groups are provided in Table 5.10.

Table 5.10.

Latent Variable Mean Differences (and Standard Error) from the Samatha Group

	Centring	Resonating	Equanimity
Vipassanā	-.023 (.153)	.083 (.132)	-.050 (.135)
Stillness	.104 (.122)	.193 (.232)	.147 (.125)
Non-Meditators	-.339** (.119)	-.701*** (.145)	-.600*** (.126)

Note. ***p < .001; **p < .01

Measurement Invariance Across Gender

The three meditation groups were collated and then separated into two groups according to gender. The groups comprised n = 173 males (Mage = 52.77, SD = 13.13) and n = 274 females (Mage = 53.35, SD = 12.82). A total of five and seven univariate outliers were identified within both the male and female groups, respectively, and were dealt with in the manner as previously described. Small's (1980) Omnibus test for Multivariate Normality was significant, χ^2 (40) = 540.55, p < .001, with the Satorra-Bentler (2001) adjustment for non-normality again implemented. Levene's (1960) test suggested invariance of factor variances for each, Centring, Resonating, and Equanimity across the two genders, F (1, 445) = .018, p > .05, F (1, 445) = .101, p > .05, and F (1, 445) = .136, p > .05, respectively.

The specified parameters of the Configural model followed the same pattern as previously stated, with the exception of the factor variance of Centring no longer constrained to equal across the groups. Convergence of the Configural model for gender was not reached until a .02 criterion was established. The standardised results of the SEMs are provided in Appendix 5.6. No Haywood cases were identified, providing further support that in the current context they are the result of the combination of both smaller sample sizes and model complexity rather than misspecification or under-identification.

As indicated in Table 5.11, Configural invariance was supported, Relative SB_χ^2 = 2.01, CFI = .930. This demonstrates that both males and females conceptualised the experience of Equanimity in the same way. Moreover, the relationship between Centring and Resonating with Equanimity itself was similar across the two groups, as indicated by a ΔCFI $\geq$ .005 discrepancy from the Configural to the Factorial model.

A change of ΔCFI = .004, but accompanied by ΔRMSEA = .005 and ΔSRMR = .002, when computing the Metric model suggests that each of the items are considered to be reflective of their respective latent factor regardless of gender. When the latent variables were equal to zero, both genders were likely to respond to each item in the same manner, as indicated by a ΔCFI = .005, ΔRMSEA = .001, and

ΔSRMR = .002, difference from the Metric to the Scalar models. The internal consistency of items was furthermore determined to be similar across the two groups, ΔCFI = .009, ΔRMSEA = .002, and ΔSRMR = .002.

As Measurement Invariance was established between both genders, Structural Invariance was then assessed. Primarily, a ΔCFI = .000 between the Uniqueness and Factor Covariance models suggests that the relationship between both Centring and Resonating was consistent across the genders. Closer analysis revealed that this relationship was strong in magnitude for both males, R_C = .645, and females, R_C = .722. Finally, a change of ΔCFI = .002 from the Factor Covariance to the Factor Mean model suggested that both males and females did not differ in terms of their self-reported frequency of experiencing the latent variables.

Measurement Invariance Across Marital Status

The categories of gender were then recompiled, with individuals from the three meditation groups once again divided, but this time according to marital status. In order to generate a large enough sample for computing SEM, those that specified single, widowed, divorced, or separated, were collected into the one group, broadly labelled un-partnered (n = 150; M age = 49.50, SD = 14.54; 67.79% female). This group was then compared with individuals who were married (n = 214; M age = 54.27, SD = 11.24; 54.98% female). The imputed data in place of the univariate outliers in the previous analysis were not carried over for the current analysis, as such would only be relevant within the previous context. Thus, for the two groups, no univariate outliers across each of the items were identified for the un-partnered group, whereas four were detected within the married group. As 87 individuals across the three groups did not specify marital status, Small's (1980) Omnibus test for Multivariate Normality was computed with these cases omitted; a significant result, χ^2 (40) = 462.48, $p < .001$, inferred correcting for non-normality. In the assessment of equality of Factorial Variance invariance across groups, Levene's test for each Centring, Resonating, and Equanimity, was non-significant at the $p < .05$ level on all three occasions, F (1, 362) = .027, F (1, 362) = 2.063, and, F (1, 262) = .430, respectively.

Preliminarily, Configural invariance was established between the Un-partnered and Married groups at a convergence criterion level of .03, Relative SB_χ^2

= 2.00, CFI = .920, suggesting that the experience of meditative equanimity is conceptualised in the same manner regardless of one's relationship status (see: Table 5.12). Appendix 5.7 provides the standardised results for the direct hierarchical model. Moreover, the relationship between Centring and Resonating with the experience of Equanimity was analogous across groups, $\Delta CFI \geq .005$. The resulting $\Delta CFI = .005$ between the Factorial and Metric models was just on the threshold of what Chen (2007) suggested would indicate non-invariance of item loading. Examination of the ΔRMSEA revealed that it was within the expected range for invariance. However, similar to ΔCFI, ΔSRMR was just above the threshold signifying non-invariance.

Nevertheless, Chen (2007) recommends caution in using these strict cut-off values. Additionally, Cheung and Resvold (2002) refer to understanding the practicality of this difference rather than rejecting the model outright. Thus, further investigation of item loadings per factor, as provided in Appendix 5.7, indicated that each was in a similar direction with little divergence between groups. Furthermore, according to Byrne and Watkins (2003) as well as Marsh and Hocevar (1985), a small difference at the metric level will not significantly impact the validity regarding comparisons of factor means across the groups. Some variance in each fit index may also potentially be due to the correction of non-normality (SRMR; Cangur and Ercan (2015) or model complexity (CFI; Kenny, 2015). Finally, the analysis does not correct for the probability of a Type I error, with the suggested cut-off values resulting in a very conservative estimate regarding non-invariance. For these reasons, in consideration of the very slight overstepping of the cut-off values for both ΔCFI and ΔSRMR, the invariance between groups at the metric level was still considered acceptable.

Next, a $\Delta CFI = .002$ from the Metric to the Scalar models implied that scores on each of the items reflect the latent variables for both groups, such that scores in both groups would be similar if the latent variables were equal to zero. Finally, internal consistency of items was equivalent across individuals who were married and those that were un-partnered, $\Delta CFI = .001$. Holding these aspects of the scale constant, objective comparisons between un-partnered and married meditators can be made without any variance attributed to the scale itself. The association between Centring and Resonating corresponded across groups, $\Delta CFI = .000$, with, $R_C = .643$

for un-partnered, and, R_C = .732 for married. Lastly, ΔCFI = .001 between Factor Covariance and the Factor Mean models reveals that the frequency with which a meditator experiences Equanimity is similar regardless of their marital status.

Measurement Invariance Across Meditative Context

The final set of Measurement Invariance concerned whether practicing within a Buddhist framework was associated with a different understanding of Equanimity when compared with individuals who specified that they currently do not practice meditation within the context of any formalised religion. The three meditation groups were recombined and again separated according to identifying as Buddhist (n = 164; *M*age = 52.14, *SD* = 13.75; female = 48.13%) or no religion (n = 133; *M*age = 51.95, *SD* = 12.75; female = 65.41%). Although other religious affiliations were stated within the dataset, none of the groups were large enough (n > 100) to perform a valid SEM on the data.

Again, imputed data replacing univariate outliers were not carried over to the current analysis, with no further univariate outliers identified within the two groups. Small's (1980) Omnibus test of Multivariate Normality was significant, χ^2 (40) = 404.10, p < .001, suggesting the need to again correct for non-normality. Levene's (1960) test across the three factors was not significant for both Centring and Resonating; yet the homogeneity of variance was significantly different between groups for the latent variable, Equanimity. Thus, unequal factor variance for Equanimity across groups was controlled for in the same way as described in the initial Measurement Invariance – constraining all factor variances for each of the groups so that Equanimity was equal to the reference group in the Configural model.

In order to compute the Configural model, the convergence criterion was lowered to .009. As indicated in Table 5.13, analysis demonstrated that this model was acceptable, Relative SB_χ^2 = 1.98, CFI = .906, suggesting invariance in the way both groups conceptualised the experience of meditative equanimity. A ΔCFI greater than .005 between the Configural and Factorial models implied that the relationship between both Centring and Resonating with Equanimity was similar across the two groups. However, the difference between the Factorial and Metric models was marginal at ΔCFI = .005, which was supplemented by a ΔSRMR value of .006. Nonetheless, closer analysis of the loading of each of the items on their respective

factors, as provided in Appendix 5.8, did not reveal any noticeable differences. Thus, according to the reasons indicated previously, fit indices just on the threshold of suggesting non-invariance were interpreted as still providing an acceptable fit to the model.

Next, a ΔCFI = .007 between the Scalar and Metric models was greater than expected for invariance between groups. However, this was not supplemented by greater than expected values for the ΔSRMR and the ΔRMSEA. Comparisons of the internal consistency of items was additionally similar across both groups, ΔCFI = .000, indicating Measurement Invariance in terms of error within the scale between those identifying as Buddhist and those who do not identify with a particular religion.

In terms of Structural Invariance, a ΔCFI = .000 between the Uniqueness and Factor Covariance models suggested that the relationship between both Centring and Resonating was similar across groups. Further analysis indicated that the relationship was strong for individuals who had identified as Buddhist and non-religious individuals, R_C = .613, and, R_C = .769, respectively. Finally, no difference in the latent means was identified, ΔCFI = .000; thereby suggesting that practicing meditation in a Buddhist context was not associated with experiencing a greater degree of Equanimity.

Table 5.11.

Measurement and Structural Invariance across Gender for the Phenomenological Experience of Meditative Equanimity Measure

Model	SB_χ^2 (*df*)	[SC]	SB_χ^2/*df*	RMSEA [95%CI]	SRMR	CFI	T_d (Δ*df*)	ΔRMSEA	ΔSRMR	ΔCFI
				Measurement Invariance						
Configural	623.32 (298)	[1.236]	2.09	.070 [.062, .078]	.053	.930	-	-	-	-
Factorial	592.78 (299)	[1.227]	1.98	.066 [.059, .074]	.048	.936	29.61 (1)***	.004	.005	.006
Metric	612.98 (333)	[1.229]	1.84	.061 [.054, .069]	.050	.940	20.87 (34)	.005	.002	.004
Scalar	652.77 (350)	[1.217]	1.87	.062 [.055, .070]	.052	.935	41.82 (17)***	.001	.002	.005
Uniqueness	712.62 (370)	[1.226]	1.93	.064 [.057, .071]	.054	.926	57.28 (20)***	.002	.002	.009
				Structural Invariance						
Factor Covariance	713.11 (371)	[1.227]	1.92	.064 [.057, .071]	.058	.926	0.83 (1)	.001	.004	.000
Factor Mean	747.26 (374)	[1.237]	2.00	.065 [.058, .072]	.061	.924	19.96 (3)***	.008	.003	.002

Note. *** $p < .001$

Table 5.12.

Measurement and Structural Invariance across Marital Status for the Phenomenological Experience of Meditative Equanimity Measure

Model	SB_χ^2 (*df*)	[SC]	SB_χ^2/*df*	RMSEA [95%CI]	SRMR	CFI	T_d (Δ*df*)	ΔRMSEA	ΔSRMR	ΔCFI
				Measurement Invariance						
Configural	595.60 (298)	[1.221]	2.00	.074 [.065, .083]	.097	.920	-	-	-	-
Factorial	516.77 (299)	[1.205]	1.73	.063 [.054, .072]	.048	.941	29.33 (1)***	.009	.049	.021
Metric	570.78 (333)	[1.211]	1.71	.063 [.054, .071]	.055	.936	54.21 (34)**	.000	.007	.005
Scalar	596.56 (350)	[1.201]	1.70	.062 [.054, .071]	.056	.934	25.13 (17)	.001	.001	.002
Uniqueness	610.64 (370)	[1.212]	1.65	.060 [.051, .068]	.056	.935	16.82 (20)	.002	.000	.001
				Structural Invariance						
Factor Covariance	612.07 (371)	[1.212]	1.65	.060 [.051, .068]	.057	.935	1.43 (1)	.000	.001	.000
Factor Mean	610.58 (374)	[1.213]	1.65	.059 [.050, .067]	.057	.936	5.72 (3)	.001	.000	.001

Note. *** $p < .001$; ** $p < .01$

Table 5.13.

Measurement and Structural Invariance across Buddhists and Individuals not Identifying with a Particular Religion for the Phenomenological Experience of Meditative Equanimity Measure

Model	SB_χ^2 (*df*)	[SC]	SB_χ^2/*df*	RMSEA [95%CI]	SRMR	CFI	T_d (Δdf)	ΔRMSEA	ΔSRMR	ΔCFI
				Measurement Invariance						
Configural	592.57 (299)	[1.220]	1.98	.081 [.072, .091]	.058	.906	-	-	-	-
Factorial	559.17 (299)	[1.226]	1.87	.077 [.067, .086]	.051	.917	-18.66 (0)	.004	.007	.011
Metric	608.69 (333)	[1.217]	1.83	.075 [.065, .084]	.057	.912	48.54 (34)	.002	.006	.005
Scalar	646.20 (350)	[1.207]	1.85	.076 [.066, .085]	.059	.905	38.76 (17)***	.001	.002	.007
Uniqueness	667.16 (370)	[1.214]	1.80	.074 [.065, .082]	.060	.905	22.42 (20)	.002	.001	.000
				Structural Invariance						
Factor Covariance	667.71 (371)	[1.216]	1.80	.073 [.064, .082]	.061	.905	1.02 (1)	.001	.001	.000
Factor Mean	669.83 (374)	[1.214]	1.79	.073 [.064, .082]	.061	.905	1.28 (3)	.000	.000	.000

Note. *** $p < .001$

Summary

The preliminary aim of this section was to cross-validate each of the 20 items comprising the Phenomenological Experience of Meditative Equanimity Measure with a new sample. Results indicated that the four meditation groups, Samatha, Vipassanā, Stillness, and Non-Specified, scored significantly higher on each item compared with the Non-meditating group. Although some differences came to light between the different meditation groups, these variations were considered quite small in contrast to those identified between these groups and the Non-meditators. Additionally, each item was significantly predicted by a meditator's cumulative hours of meditative experience.

Subsequently, CFA was computed for each of the groups with the exception of the Non-specified group, which did not meet the minimum sample size required for SEM. Analyses indicated that the observed data did not fit the specified model in both uni-factorial (Equanimity) and bi-factorial (Centring & Resonating) contexts. However, a direct hierarchical model, which specified the latent variables, Equanimity, Centring, and Resonating, with items allowed to load on both Equanimity and their respective factor, did significantly fit the observed data. A direct hierarchical model represents the dynamic nature of Equanimity and provides some evidence that the construct is greater than the sum of its parts.

Measurement Invariance was then assessed through the MGCFA paradigm. Using Chen's (2007) criteria, analyses indicated that the three meditation groups as well as non-meditators conceptualised equanimity in the same way. The relationship between both the factors Centring and Resonating with Equanimity was similar across the groups. Items were found to load in a similar fashion onto their respective factor for each of the groups. Moreover, zero-points and width of intervals for the scale itself corresponded between the groups. Finally, internal consistency of items was similar across the four groups.

Structural Invariance indicated that the canonical relationship between both Centring and Resonating was similar in magnitude across the groups, from, $R_C = .574$, to, $R_C = .738$. As predicted, differences in the factor means were noted for each of the latent variables. Fundamentally, the three meditation groups scored significantly higher than the non-meditators across each of the latent variables.

Measurement and Structural Invariance was then established for the combined sample of the three meditation groups, which was split according to gender, marital status, and meditating in a Buddhist context as opposed to no religious affiliation. No substantial differences in either Measurement or Structural Invariance were noted across the newly developed groups in terms of their understanding or experience of meditative equanimity.

The results suggest that the Phenomenological Experience of Meditative Equanimity Measure is a robust and valid instrument. Ultimately, the scale can be used to obtain latent mean differences across groups, without such variance being the result of divergent psychometric properties between groups. The next step in validating the scale is to determine reliability as well as criterion and construct validity of the scale and its underlying construct, which is discussed next in Chapter Six.

6. Further Validity Analyses

"I stop thinking, swim
in silence, and the truth
comes to me"

Albert Einstein

The next two sections (6.1 and 6.2) describe the process of further substantiating reliability and establishing validity (criterion and construct) for the 20-item Phenomenological Experience of Meditative Equanimity Measure and the latent variable it is designed to assess. The final section (6.3) aims to determine if the phenomenological experience of equanimity mediates the relationship between mindfulness and beneficial outcomes, such as attenuating psychological distress and enhanced wellbeing.

Initially however, further demographic analyses were performed. Using the entire sample and demographic information from the previous Chapter, analyses aimed to determine if age, education, and income, significantly predicted the direct hierarchical model of Equanimity. Age was found to significantly predict Equanimity, $\beta = .207$, $p < .001$. However, when controlling for the experience of meditating in years, age no longer predicted the outcome, $\beta = .080$, $p > .05$. Similarly, both education and income did not significantly predict the phenomenological experience of Equanimity, $\beta = -.009$, $p > .05$, and $\beta = .012$, $p > .05$, respectively.

6.1. Reliability and Criterion Validity

Further extending the analyses obtained through the determination of omega (see: Chapters Four and Five), reliability was additionally assessed through associations between repeated assessments from the same sample. As suggested by Kline (2005), where a measure is considered reliable when an individual's scores are related over time across two separate occasions, individuals who participated in the Measurement Invariance data collection were invited to complete the 20-item measure subsequent to an approximately one-month interval.

Criterion validity refers to the capacity of a measure to predict an expected outcome. Criterion validity is assessed through both concurrent and predictive validity (see: American Psychological Association Inc., 1974). Concurrent validity can be assumed through a strong relationship with other scales that purport, and have been validated, to measure the same construct. Predictive validity, on the other hand, is assumed by the measure's ability to predict an expected outcome over time. Therefore, in addition to the Phenomenological Experience of Meditative Equanimity Measure, individuals who completed the measure again to establish test-retest reliability were additionally asked to respond to a further scale purporting to assess Equanimity. In terms of predictive validity, the development of Equanimity was analysed as a result of completing a six-week meditation training in mindfulness meditative techniques. The current series of studies for Section 6.1 received ethics approval from the Monash University Human Research Ethics Committee, project numbers CF15/4207-2015001781 and 0337 (see: Appendices 4.1 & 6.1.1 for Ethics Certificates).

Test-retest Reliability

Method

Recruitment

Individuals who completed the survey for the Measurement Invariance study and had indicated that they would like to be contacted for further research (n = 324) were again emailed a link to the new online survey two weeks subsequent to the closure of the MGCFA & Measurement Invariance data collection. Test-retest reliability assessment was based on a one-month interval. As the median response rate to the MGCFA & Measurement Invariance data collection occurred mid-way through the one-month window of data collection, it was assumed that the least biased response rate would occur two weeks subsequent to the previous survey's closure.

Participants

In total, 145 individuals completed the survey within the specified three-day time period. This sample is well above the recommended minimum of 100, as proposed by Nevill, Lane, Kilgour, Bowes, and Whyte, (2001) in order to assess the test-retest reliability of a measure through non-parametric analysis. The sample

comprised 95 females and 49 males (one individual did not initially specify gender). The age of the sample ranged from 20 to 78 years, with a mean age of 49.30 (*SD* = 13.06). The current sample included both meditators and non-meditators alike. Rather than comparing such groups, the study aimed to compare each participant's response to their previously self-reported phenomenological experience of meditative Equanimity

Measures

For both test-retest and concurrent validity, the Phenomenological Experience of Meditative Equanimity Measure was utilised. In the assessment of concurrent validity, the *Equanimity subscale* from the *Cognitive Styles Modified by Meditation Scale* (Sakairi, 2004) was implemented (for information pertaining to the construction and psychometrics of this scale, refer to Chapter Two).

Procedure

Considering that a potential extraneous variable in determining the test-retest reliability of the measure is the amount of practice of meditation, only a three-day time frame was implemented for the collection of the current dataset. Two-weeks subsequent to the closure of the survey for the Measurement Invariance study, individuals who had indicated that they would like to be contacted for further research were again emailed with a link to an online survey containing the 20-item measure as well as a previously developed measure of equanimity. Individuals were informed that the survey would take no longer than five minutes to complete and were asked to respond to the survey within the next three days if they wished to participate. Similar to the previous surveys, individuals were informed that they could withdraw at any time prior to finishing the entire survey with all responses anonymous and confidential. Individuals were however asked to additionally provide their email address in order for the current responses to be matched with their initial response from the Measurement Invariance data.

Data Analysis

When the new dataset was initially downloaded from Qualtrics, a variable 'T_2' was incorporated into the dataset. This was to ensure no confusion in terms of the ordering of both datasets when they were combined. When combined with the Measurement Invariance dataset, the variable 'email' was used for sorting cases

alphabetically. Those that did not have a duplicated email 'T_2' were removed from the current analyses. Those with a duplicate email 'T_2' were sequentially added to their respective cases from 'T_1'. This meant the addition of 20 new variables, which were then renamed according to their respective items but with T_2 included in the variable name.

The reliability of each individual item comprising the measure was assessed through Proportion of Agreement Analysis. Neville et al. (2001) recommend implementing a nonparametric approach to assessing reliability in situations involving non-normal distributions. Frequency distributions used in the calculation of Proportion of Agreement were computed in SPSS. In order to determine the capacity of the latent variable at T_1 to predict the variation at T_2, regression was computed through MPlus and examined according to the direct hierarchical model of Equanimity between both T_1 and T_2.

In terms of data screening, data analysis commenced with a clean set of data from T_1 (due to multiple imputation of missing data and univariate outliers), with data screening revealing ten and seven cells with missing data at T_1 and T_2, respectively. This data was identified to be missing completely at random for T_1, χ^2 (130) = 150.44, $p > .05$, and for T_2, χ^2 (74) = 54.27, $p > .05$. Rather than estimating missing data through multiple imputation, missing data at one time-point was replaced with the same individual's response at the other time-point.

Results

Generally used throughout the literature in scale development, the reliability of a measure is determined through the analysis of the Pearson Correlation Coefficient (1895) between the initial and subsequent assessments (for recent articles impliemting this strategy, see: Jason, So, Brown, Sunnquist, & Evans, 2015; Schatz & Ferris, 2013; Weafer, Baggott, & de Wit, 2013). However, as noted by Bland and Altman (1986) as well as Nevill (1996), the Pearson Correlation determines the relationship between two variables, or in this case separate assessments of the same measure over time. However, reliability is not so much a matter of association but rather concerns itself with agreement between assessments. Moreover, the Pearson Correlation is unable to factor in the degree of measurement bias inherent within each assessment (Bland & Altman, 1986; Nevill, Lane, Kilgour, Bowes, & Whyte, 2001).

Wilson and Batterham (1999) therefore recommend determining the Proportion of Agreement between assessments. This is achieved through assessing the proportion of participants who respond in the same manner across the two assessments. Each item is assessed individually, as there is a strong potential for the poor reliability of particular items to be overlooked, and overcompensated for by the good reliability of others, when assessing the reliability of the scale as a whole.

Nonetheless, as noted by Nevill et al. (2001), this method essentially only examines agreement whist overlooking disagreement. Thus, if respondents consistently report either higher or lower scores, when compared with the initial assessment, the Proportion of Agreement Analysis would not identify such a bias. Moreover, the general nature of agreement would not be examined through only reporting the proportion of individuals with the same responses across assessments. In other words, in determining the exact agreement between administrations, 'near misses', defined by ± 1 of the initial score, are treated in the same manner as a larger disparity, such as ± 3. Nevill et al. (2001) argues that the former is evidently more stable than the latter and therefore should be taken into consideration when assessing agreement over time.

In order to overcome these limitations, Nevill et al. (2001) proposes that the nature of disagreement can be assessed through indicating the limits of agreement in terms of where 95% of the sample reside. This is achieved through reporting both the upper and lower 2.5% of the distribution of difference scores. In association with the Proportion of Agreement for each of the items, ± 1 of the resulting figure is additionally reported to compensate for measurement bias from one assessment to the next. According to the authors, within a five-point scale, good reliability is determined through 90% of agreement within the context of a ± 1-difference score of the repeated assessment, when compared with the initial assessment.

To determine Proportion of Agreement, the scores for each of the items at T_2 were subtracted from their respective T_1 scores, thereby providing a degree of difference between the two time-points. Frequency distributions were then created for the difference scores across each of the 20 items. Table 6.1.1 provides an example of the distribution of difference scores for items C1, C2, R1, and R2, which for each of the items approximates an expected normal distribution of disagreement. From these

figures, the percentage of agreement is calculated either with zero disagreement or with ± 1 disagreement.

As indicated in Table 6.1.2, each of the items were below (< 90%) the criteria proposed by Nevill et al. (2001). However, this criterion was based on determining Proportion of Agreement according to a five-point scale. Therefore, accommodating for the difference in scale format (seven-point), thereby extending the criterion to ± 2, revealed that only two items, R3 (*I experience moments where I feel that I am emptied of aspects of myself that don't truly represent who I am*) and R9 (*I experience moments of such purity, as if the world is perfect in these moments*) at 88.28% and 88.97% respectively, did not reach the 90% threshold, suggesting that these two items are slightly less stable than others.

Table 6.1.1

The Frequency Distribution of the Degree of Difference for Items C1, C2, R1, and R2

Difference	Frequency (%)			
($T_1 - T_2$)	Item C1	Item C2	Item R1	Item R2
-6			1 (0.69)	
-5		1 (0.69)		
-4	1 (0.69)	2 (1.38)	1 (0.69)	1 (0.69)
-3	3 (2.07)	2 (1.38)	3 (2.07)	7 (4.83)
-2	11 (7.59)	9 (6.21)	6 (4.14)	12 (8.28)
-1	17 (11.72)	21 (14.48)	30 (20.69)	36 (24.83)
0	71 (48.97)	66 (45.52)	58 (40.00)	51 (35.17)
1	32 (22.07)	26 (17.93)	31 (21.38)	28 (19.31)
2	7 (4.83)	9 (6.21)	10 (6.90)	7 (4.83)
3	2 (1.38)	7 (4.83)	4 (2.76)	2 (1.38)
4		2 (1.38)	1 (0.69)	1 (0.69)
5				
6				
Total	145 (100)	145 (100)	145 (100)	145 (100)

Table 6.1.2

The Degree of Disagreement for each of the Items in terms of the 2.5 and 97.5 Percentiles as well as the Proportion of Agreement in the Context of 0, ± 1, and ± 2 Point Differences.

	Percentiles				
Item	2.5%	97.5%	PA (%)	PA ± 1 (%)	PA ± 2 (%)
C1	-3.00	2.35	71 (48.97)	120 (82.76)	138 (95.17)
C2	-3.35	3.00	66 (45.52)	113 (77.93)	131 (90.34)
C3	-2.00	2.00	75 (51.72)	120 (82.76)	142 (97.93)
C4	-2.35	2.35	61 (42.07)	122 (84.14)	139 (95.86)
C5	-2.35	2.35	59 (40.69)	121 (83.45)	139 (95.86)
C6	-2.35	2.00	65 (44.83)	123 (84.83)	142 (97.93)
C7	-2.35	3.00	66 (45.52)	118 (81.83)	138 (95.17)
C8	-2.00	2.35	63 (43.45)	123 (84.83)	140 (96.55)
C9	-2.35	2.00	65 (44.83)	120 (82.76)	142 (97.93)
R1	-3.00	3.00	58 (40.00)	119 (82.07)	135 (93.10)
R2	-3.00	2.35	51 (35.17)	115 (79.31)	134 (92.41)
R3	-4.00	3.35	53 (36.55)	107 (73.79)	128 (88.28)
R4	-2.35	2.35	61 (42.07)	124 (85.52)	139 (95.86)
R5	-2.35	3.00	56 (38.62)	114 (78.62)	137 (94.48)
R6	-3.00	3.00	59 (40.69)	115 (79.31)	135 (93.10)
R7	-3.00	2.35	68 (46.90)	117 (80.69)	137 (94.48)
R8	-3.00	3.35	60 (41.38)	119 (82.07)	133 (91.72)
R9	-4.00	3.00	49 (33.79)	105 (72.41)	129 (88.97)
R10	-2.00	4.00	61 (42.07)	110 (75.86)	135 (93.10)
R11	-3.00	3.35	46 (31.72)	106 (73.10)	132 (91.03)

Next, reliability was assessed on a factorial level, which was achieved by computing the direct hierarchical model of meditative Equanimity for each time-point and regressing T_2 on T_1 in order to determine the degree to which T_1 predicted the variance in T_2. In terms of meeting assumptions for regression within a SEM

paradigm (Curran, 2003), scatterplots revealed, as expected, a strong relationship between the variables of interest. According to Small's Omnibus test of Multivariate Normality, both T_1 and T_2 had non-normal distributions, χ^2 (40) = 164.23, $p < .001$, and χ^2 (40) = 181.10, $p < .001$, respectively; which was compensated for with the Satorra-Bentler (2001) correction for non-normality. Although outliers pose a problem in both regression and SEM, the current analysis did not correct for this issue. The primary interest was regressing individual scores from one assessment onto a previous assessment for the same measure. Assuming consistency of responses over time, an outlier at one time-point would be expected to be an outlier at the next.

While allowing the residual variances to correlate between each corresponding item (as in, the error of $C1_{T1}$ with $C1_{T2}$, and so on), results indicated that scores at T_1 strongly predicted responses at T_2, $\beta = .817$, $p < .001$ ($R_c = .899$; for further discussion on canonical correlations (R_c) refer to Section 6.2). This finding is above the .8 level of correlation between the same assessment at different time-points, as recommended by Kline (2005) in order to suggest good test-retest reliability. In terms of the individual factors Centring and Resonating, regression analyses between the different points of assessment suggested that Centring, $\beta = .747$, $p < .001$ ($R_c = .795$), was less stable than Resonating $\beta = .859$, $p < .001$ ($R_c = .907$) over the one-month time-frame.

Concurrent Validity

As mentioned earlier, concurrent validity is subsumed under criterion validity and refers to the degree to which a measure is associated with previously validated measures purporting to assess the same or similar construct. The current analyses utilised responses to the Phenomenological Experience of Meditative Equanimity Measure at T_2 and responses to the *Equanimity subscale* of the *Cognitive Styles Modified by Meditation Scale* (Sakairi, 2004). The participants completed both measures in the same sitting.

In terms of the eight items comprising the *Equanimity Subscale*, three missing data-points were identified along with a single univariate outlier. Each of these four data-points was replaced using multiple imputation with the remaining items of the subscale as predictors. The data was also found to be normally distributed at a multivariate level, χ^2 (16) = 23.13, $p > .05$. Prior to determining the degree that the

direct hierarchical model of the phenomenological experience of meditative Equanimity predicted the variance in the comparison measure, a Confirmatory Factor Analysis was performed on the measures to determine adequacy of the model to use in the SEM paradigm. With ML as the method of estimation, analysis demonstrated that the *Equanimity subscale* (Sakairi, 2004) indicated a working model fit according to Bollen's (1989) criteria. The subscale additionally demonstrated less than adequate internal consistency, $\omega = .449$. The model fit statistics and factor loadings are provided in Appendices 6.2.14 and 6.2.15, respectively.

Next, the latent variable of the comparison measure was sequentially regressed onto the direct hierarchical model of the phenomenological experience of meditative Equanimity. Through robust Satorra-Bentler (2001) correction for non-normality, results indicated that the phenomenological experience of meditative Equanimity strongly predicted the variance of the latent variable underlying Sakairi's (2004) *Equanimity subscale*, $\beta = .653$, $p < .001$. With Centring, $\beta = .728$, $p < .001$, predicting more variance in the comparison scale than Resonating, $\beta = .672$, $p < .001$.

Predictive Validity

Predictive validity refers to the extent that a scale predicts future performance related to the construct. In order to assess predictive validity of the Phenomenological Experience of Meditative Equanimity Measure, the paradigm recommended by Goldberg et al. (2016) was implemented. This entails a group of participants responding to a measure prior and subsequent to a particular treatment. These results are compared with a contrast group where no treatment was undertaken. The comparison of the two groups is based on post-test responses whilst accounting for pre-test responses as a covariate within ANCOVA.

Method

Recruitment

The recruitment of participants for the current assessment of predictive validity was based primarily on convenience sampling. Individuals were recruited at the end of October 2016, from the Melbourne Meditation Centre, which teaches a six-week beginner's mindfulness meditation course in a number of suburbs across Melbourne, Australia. The mindfulness instructor was contacted and had agreed to

have the primary researcher attend the first few minutes of several mindfulness trainings in order to explain the study as well as handout and collect surveys if individuals chose to participate. As incentive for participation in the longitudinal study, participants were informed that those completing the survey at both pre- and post- time-points would go into the running to win one of three $100- gift certificates for an online bookstore. Participants forming the control condition were recruited through word of mouth and social networking sites as acquaintances to the primary researcher and had indicated that they had not practiced meditation previously. No incentive was provided for participants in the contrast condition.

Participants

A total of 49 individuals who were commencing to learn mindfulness meditation participated in the first phase of data collection. Of these, 20 chose to fill in the paper-pencil format of the survey, whilst 29 individuals responded to the online link. However, only 22 individuals who had completed the six-week training in mindfulness meditation responded to the post-treatment measure. Moreover, one respondent failed to provide a codename at T_1 with another apparently changing their codename across assessments (T_2 had a codename that did not exist at T_1); both responses were therefore excluded from the analyses. The mean age of the final 20 participant sample was $M = 47.60$, $SD = 13.69$ (range: 23 to 77), which included three males and 17 females.

As the constrast group also had the option of either format, 21 paper-and-pencil surveys were completed with three completed online. Of these participants, 15 had completed the survey online at T_2 with two participants requesting a paper-and-pencil copy of the survey. The mean age of the 17 completers comprising the non-treatment group was $M = 37.31$, $SD = 10.04$ (range: 20 to 68) and included five males and 12 females.

Procedure

For the pre-treatment survey, both the contrast group and beginning meditators had the option of either filling out the survey in hardcopy format or having a link to the survey emailed to them where they could complete the survey online. A consent form, as provided in Appendix 6.1.2, accompanied the hardcopy version, whilst both online and in-person respondents additionally received the Explanatory Statement

(see: Appendix 6.1.3). To ensure anonymity, each participant was asked to provide a codename that would be used to match up the current survey with that completed in six-weeks time. All participants were also asked to provide their email address, as the survey for T_2 would be completed online with a link emailed to them, along with their codename, at the completion of the six-week mindfulness training. Basic demographic information such as age and gender were also collected in the initial survey. Participants then completed the 20-item measure.

Data Analysis

In order to examine mindfulness training (or no mindfulness training) and its impact on the phenomenological experience of Meditative Equanimity, within-group paired *t*-tests were performed in SPSS (IMB Corp, 2013) for both the contrast and mindfulness meditation groups separately. Subsequently, Analysis of Covariance models (ANCOVAs) were utilised to determine the relative difference between the two groups. Within such models, the grouping variable was stipulated as the predictor, T_2 as the dependent variable, whist controlling for T_1, the covariate.

Results

In terms of data screening, only one cell was identified within the treatment group as missing data at T_1 with none missing for T_2. This missing data-point was replaced using the participant's response from the corresponding cell at T_2. Regarding the contrast group, four cells were identified with data missing completely at random for T_1, χ^2 (36) = 15.79, $p > .05$, with only one missing response found in T_2. This missing data was replaced in the same manner as indicated for the Mindfulness group. No univariate outliers were identified within the separate groups across the summation of scores representing each Centring and Resonating at each time-point. Further assumption testing is provided in Appendix 6.1.5, which indicated normal distributions for each of the summation of scores as well as equal variances between the groups for both factors at the different time-points.

Contrary to expectations, a paired-samples t-test that compared the summated scores of Centring between pre- and post-test revealed no significant difference for the Mindfulness group, t (19) = 1.46, $p > .05$, $M_d = 3.10$. Interestingly, a significant difference was identified within the comparison of pre- and post- summated scores for the Contrast condition, which suggested that Centring decreased as a function of time,

t (16) = 3.30, $p < .01$, M_d = -3.59. In terms of Resonating, comparisons between pre- and post-assessment revealed that the Mindfulness group developed this construct as a result of mindfulness training, t (19) = 3.26, $p < .01$, M_d = 7.30, whereas the Contrast group, with no mindfulness training, were relatively stable over the six-week period. These results are further supported by the Pearson correlations between pre- and post-test for each group, which reveal that the summated scores for the Mindfulness group was more variable over time.

Next, Analysis of Covariance (ANCOVA) was performed across the longitudinal responses of the two groups whist taking into account responses at T_1. ANCOVA models share the same assumptions as previously examined but include two additions. Firstly, independence of the independent variable and covariate; and secondly, the assumption of homogeneity of regression slopes, which assumes that the relationship between the dependent variable and the covariate is the same across groups.

It is evident from Table 6.1.3 that mean differences exist at pre-test between the two groups, therefore violating the assumption of independence of the grouping variable and the covariate. Nonetheless, ANCOVA has been demonstrated to be a robust method in controlling for baseline differences within controlled trials, involving both baseline and follow-up assessments, even when groups significantly differ at baseline on the variable of interest (Senn, 2006; Vickers & Altman, 2001). In terms of homogeneity of regression slopes for the summated scores of Centring, and Resonating, the interaction of the dependent variable (T_2) and the covariate (T_1) across groups was non-significant on both occasions. This ultimately means that the null hypothesis of equal regression slopes across groups for, Centring, F (1) = .48, $p > .05$, and Resonating, F (1) = .73, $p > .05$, was accepted for the two summated scores of interest.

Table 6.1.3

Means, Mean Differences, and Correlations for the Summated Scores across both T1 and T2 for each of the Two Groups

	Mean		M_d	*SD*	95% CI	*r*
Control	T_1	T_2				
Centring	41.29	37.71	-3.59	4.48	[1.28, 5.90]	.884***
Resonating	41.76	39.29	-2.47	5.58	[-.40, 5.34]	.850***
Mindfulness						
Centring	33.00	36.10	3.10	9.52	[-7.56, 1.36]	.652**
Resonating	33.50	40.80	7.30	10.02	[-11.99, -2.61]	.682**

ANCOVA comparisons of T_2 between the two groups whilst holding T_1 constant then revealed no significant difference between groups for the summated scores of Centring, F (1) = 3.48, p = .071, partial η^2 = .095. As indicated by the moderate increase in effect size, the result was trending towards significance, as further revealed by the difference in adjusted means for the Contrast, M = 34.15, 95% CI [29.90, 38.41], and beginning Mindfulness meditators, M = 39.68, 95% CI [35.93, 43.43]. As expected, a significant difference was identified for the summated scores for Resonating, F (1) = 7.23, p < .017, demonstrating a moderate to strong increase over time, partial η^2 = .180; with the adjusted mean at T_2, whilst controlling for T_1, identified as M = 35.86, 95% CI [31.44, 40.28] for the Contrast condition, and M = 43.96, 95% CI [40.04, 47.88] for the beginning Mindfulness meditators.

6.2. Construct Validity

This second section of the validity analyses for the phenomenological experience of meditative Equanimity describes the process of establishing construct validity. Originally proposed by Campbell and Fiske (1959), construct validity comprises both convergent and divergent validity. Convergent validity can be defined by the degree that a measure's items reflect a single construct (see: Hair, Ringle, & Sarstedt, 2011; Hair, Sarstedt, Ringle, & Mena, 2012; Ping, 2004; Webb, Webster, & Krepapa, 2000; Wong, 2013). Discriminant validity, on the other hand, is established

when two constructs that are theoretically purported to be completely unrelated are indeed so. In order to establish the latter, Campbell and Fiske (1959) recommend comparing dissimilar constructs. However, Bagozzi (1993) argued that discriminant validity is quite easily demonstrated in such a paradigm. Instead, as a more stringent test, it was recommended to determine discriminant validity by virtue of demonstrating a differing degree of variance across similar constructs in order to establish unique variance for the construct of interest.

The current section, therefore, describes the process of establishing convergent validity of the phenomenological experience of meditative Equanimity at the level of the construct's indicators. As indicated in Chapter One, Equanimity is predicted to have strong relationships with mindfulness, wellbeing, psychological distress, authenticity, self-actualisation, and a number of other variables that have been demonstrated to at least partially mediate the relationship between mindfulness and therapeutic outcomes. Furthermore, the experience of meditative Equanimity is additionally expected to demonstrate unique variance to the aforementioned latent variables, suggesting that although strongly related, it is indeed a unique construct.

Method

Participants & Procedure

In total 388 individuals chose to continue from the Phenomenological Experience of Meditative Equanimity Measure and complete the additional eleven measures assessing mindfulness, wellbeing, psychological distress, authenticity, self-actualisation, compassion, decentring, experiential avoidance, non-attachment, emotional intelligence, and meditative insight. As this builds on a previous study, the process of ethical approval including informed consent as well as further procedural considerations is provided in Chapter Five. The mean age of the completing sample was 51.79, *SD* = 13.64 (range: 19 to 84). Participants were not divided into groups, as the current analyses concerned comparisons of an individual's response to the aforementioned measure at an item level (convergent validity) as well as comparisons to a number of other overlapping constructs at a factorial level (discriminant validity).

Measures

The Philadelphia Mindfulness Scale (FMS; Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008; Appendix 6.2.1), as already identified in Chapter Two,

measures mindfulness based on the two-component definition proposed by Kabat-Zinn (1990) and operationalised by Bishop et al. (2004). As also previously mentioned, factor analysis of the FMS confirms a two-factor solution. Firstly, *Awareness* is considered the behavioural aspect of mindfulness and is defined as the process of monitoring one's phenomenological experience within the present moment. The subscale assessing this component of mindfulness includes ten items such as, *I am aware of what thoughts are passing through my mind* (Item 1). The second factor, *Acceptance*, described the context of this behavioural component of mindfulness, which, according to the authors of the scale involves an attitude of acceptance, openness, and compassion.

As described by Zeng et al.'s (2015) content analysis of a number of current mindfulness measures (see: Chapter Two), Zeng and colleagues identified a clear divide between both the *Awareness* and *Acceptance* factors, which the researchers argued were assessing the self-regulation of attention and equanimity, respectively. Nonetheless, as argued in Chapter One, according to some researchers (see: Rapgay & Bystrisky, 2009; Zeng et al. 2015) acceptance is a near enemy of equanimity, with the latter described in the Buddhist context as an active, rather than passive, experiential openness and receptiveness to one's phenomenological experience. Therefore, the *Awareness* subscale was implemented within the current study as a strong candidate in clearly measuring mindfulness within the context of the intended meaning of *Sati*, as proposed by a number of Buddhist scholars. The *Acceptance* subscale was utilised in the assessment of divergent validity, whereby it was predicted that the phenomenological experience of meditative Equanimity would demonstrate unique variance when compared with the quality of acceptance.

The items for each subscale are responded to on a five-point Likert scale, from *never* (0) to *very often* (4), with the *Acceptance* subscale reverse coded. Total scores for each subscale range from zero to 40, with higher scores indicative of greater awareness or acceptance qualities. In a sample of 559 American university students, internal consistency for both *Awareness* and *Acceptance* was adequate, $\alpha = .75$ and $\alpha = .82$, respectively. No significant relationship was identified between the two subscales, from $r = -.02$ to $r = -.13$.

In terms of convergent and discriminant validity, the *Awareness* subscale was found to be moderately and positively correlated (Pearson's *r*) with the capacity to

reflect on one's thoughts, as measured by the *Rumination-Reflection Questionnaire* (RRQ; Trapnell & Campbell, 1999). *Acceptance* was found to be associated with lower self-reported anxiety (*Beck Anxiety Inventory*; BAI; Beck & Steer, 1993) and depression (*Beck Depression Inventory-II*; BDI-II; Beck, Steer, & Brown, 1996). Comparisons between the student and a psychiatric clinical sample from the United States (n = 52) revealed that the former scored significantly lower than the latter in self-reported acceptance but not awareness. With the authors concluding that acceptance must play a mediating role in mental health.

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007; Appendix 6.2.2) is a broad measure of affective, cognitive, and psychological wellbeing. It was derived primarily from the *Affectometer-2* (Kammann & Flett, 1983). The *Affectometer-2* is a scale that provides a score of an individual's balance of negative and positive feelings through responses to 20 statements and 20 adjectives. In the construction of the WEMWBS, Tennant et al. (2007) conducted a series of nine focus groups, each comprising up to eight members of the community that broadly represented a range of attributes, such as age, gender, and socio-economic status. Within the focus groups, individuals were asked to complete the *Affectometer-2* and discuss their idea of mental health and how this idea relates to the scale they just completed. The focus groups were recorded and transcribed, with a subsequent content analysis revealing items that were generally difficult to understand or consistently not matching participant's conceptualisations of wellbeing.

Using this data, an expert panel that represented a range of disciplines in the health sciences identified items in the *Affectometer-2* that would be retained or needed rewording. This resulted in only 14 positively stated items covering the hedonic and eudemonic aspects of wellbeing. Participants rate each of the 14 statements, including, *I've been feeling optimistic about the future* (Item 1), from *none of the time* (1) to *all of the time* (5), according to their perceived experience over the previous two weeks. Total scores range between 14 and 70 (seven to 35 for the short-form), with higher scores indicative of greater wellbeing.

Within two samples, university students (n = 348) and individuals representing the general population (n = 1,749) from England and Scotland, the scale was found to produce a near normal distribution (slightly negatively skewed) with no floor or ceiling effects. A CFA identified only one factor across the two

heterogeneous samples. The scale demonstrated good internal consistency, from α = .89 to α = .92, for both the general population and student sample, respectively. Interestingly, the researches found that the median score of the WEMWBS was significantly higher for men than women in the general population.

For the sample of students, convergent validity was indicated through strong positive correlations (Spearman's rho) with the SLS (Diener et al., 1985), the positive dimension of the PANAS (Watson et al., 1988), and the *Short Depression and Happiness Scale* (Joseph, Linley, Harwood, Lewis, & McCollam, 2004). Test-retest reliability was additionally strong for the student sample, $r = .83$, following a one-week interval.

Stewart-Brown et al. (2009) analysed the 14-item scale according to the Rasch model with data received from 779 respondents through the Heath Education Population Survey conducted in Scotland. The Rasch model is primarily used in the analysis of categorical data and considers the individual's response to each item in the context of item difficulty. The model uses Item Response Theory and generalised linear models to determine the probability that an individual's response is a function of their actual true score.

Consequently, a poor fit between the data and the Rasch model resulted in seven items being deleted from the scale. Two of these items were removed due to local dependency or multicollinarity, as in, being highly correlated with other items within the scale; the other five items were removed due to being highly biased by gender. The remaining seven items fit the Rasch model well and was determined through a CFA approach to be uni-dimensional. The correlation between the newly developed seven-item and the initial 14-item scales was high, $r = .954$. However, the internal reliability for the scale fell from α = .906 to α = .845 due to the removal of the seven items; yet the total raw score of the seven-item scale is thought to be more reflective of an individual's true score of the wellbeing latent variable (Stewart-brown et al., 2009). Thus, the short version was utilised within the current study.

The Kessler Psychological Distress Scale (Kessler et al., 2002; Appendix 6.2.3) is a measure of non-specific psychological distress. The scale assesses cognitive, behavioural, emotional, as well as psychophysiological symptoms, which are generally elevated in individuals with diagnosed psychological disorders. In the

development of the scale, the researchers combined items from 18 previously validated measures of psychological distress, resulting in an item pool of 612 statements. This item pool was reduced to 235 due to redundancy or low face-validity. Each of the 235 items were then rewritten in the format asking 'how often each symptom of psychological distress was experienced over the previous 30 days' according to a four-point response format. These questions were then examined for clarity by an expert panel, further reducing the item pool to 45 items. Factor analysis using PAF (extraction unspecified) from the responses to a paper-and-pencil mail-out survey comprising 1,403 participants from the United States suggested the removal of a further 17 items. At this stage, an additional four questions were added, one as a consequence of splitting one question into two, and the other three in order to capture more fully depressive symptoms.

A telephone survey was then implemented again in the United States, which required the sample pool of 1,574 individuals to respond to the 32 items according to a new five-point response format. Again, Factor Analysis, with the same extraction technique, determined that the scale was uni-dimensional. A subsequent Item Response Theory analysis indicated an inconsistent response rate to 11 items. Test Information Curves (TIC) was then computed for each possible combination of ten and six items from the remaining item pool. The final ten- and six-item scales were chosen on the basis of providing the largest amount of information according to the TICs. The internal reliability was found to be adequate for the final two scales, K10 α = .92 to .93, and K6 α = .89 to .92. The final K-10 includes items such as, *During the last 30 days, about how often did you feel nervous* (Item 2), which are responded to on a five-point Likert scale, from *none of the time* (1) to *all of the time* (5). Total scores for the K-10 range from 10 to 50, with higher scores indicative of greater non-specific psychological distress.

The researchers then conducted face-to-face interviews with 153 individuals, whilst oversampling individuals who responded high on the K-10 in a previous phone survey of 1,000 participants. Results from the clinical interviews indicated that the K-10 was sensitive and precise in its ability to differentiate individuals with a DSM-IV diagnosis from psychologically healthy individuals. Interestingly, the researchers found that women consistently scored higher on the K-10 compared with men. These findings were replicated by Slade, Grove, and Burgess (2011) within an Australian

sample (n = 8,841). Slade et al. (2001) reported the K-10 to be sensitive to a psychological diagnosis according to the DSM-IV, with even higher scores identified for individuals with co-morbidity. The study, as mentioned, additionally found that women were generally higher in non-specific psychological distress when compared with men.

Nonetheless, some recent studies have questioned the uni-factorial structure of the K-10. For instance, Sunderland, Mahoney, and Andrews (2012) compared the factor structure of the K-10 across community (n = 8,841) and clinical (n = 2,967) samples within Australia. Comparing a range of models to represent the data, the researchers confirmed the uni-factorial nature of the K-10 within the community sample. However, a two-factor solution, labelled depression and anxiety, best fit the data for the clinical sample. Moreover, Brooks, Beard, and Steel (2006) performed factor analysis on responses by a large Australian sample (n = 1,407; comprised of n = 500 clinical and n = 907 general population), with results suggesting a four-factor solution. A subsequent CFA of a number of predicted models indicated that a four-factor solution with two higher order factors was the best-fit overall. Such variations in the factor structure are important. As noted by Berle et al. (2010), a differing factor structure between heterogeneous samples has implications on the scoring and interpretation of a particular scale.

As indicated in Appendix 6.2.14, a two-factor hierarchical model did not fit the current dataset substantially better than a uni-factorial model. Therefore, the K-10 was analysed within the current study as a uni-factorial construct, as the purpose of the study was not comparing groups but rather comparing an individual's response to the Phenomenological Experience of Meditative Equanimity Measure with a number of potentially similar and dissimilar constructs.

The Authenticity Scale (Wood et al., 2008; Appendix 6.2.4) is based on an extensive review of authenticity within the person-centred literature with emphasis on the work by Rogers (1961) and Wyatt (2001). Originally, 25 items were developed to measure authenticity, which was grounded in an a priori theorised three-factor definition of authenticity. These factors included: *Authentic living*, whereby one's behaviours and emotional expression is congruent with one's emotions, beliefs, and cognitions; *Self-alienation* (reverse scored), defined by a discontinuity between one's actual experience and cognitive awareness of such experience; and finally, *Accepting*

external influence (reverse scored), where one accepts the views of others and conforms to their expectations.

The three-factor structure of the scale was further substantiated through Monte Carlo Parallel Analysis. Through a PAF EFA on a sample of 200 undergraduate students (country of sample not specified), the top four loading items from each of the three factors were retained. For the 12 items, four are positively worded and eight are reverse coded. The items, such as, *I think it is better to be yourself than be popular* (Item 1; *Authentic living*), are responded to on a seven-point Likert scale from *does not describe me at all* (1) to *describes me very well* (7). Total scores range from four to 28 for each of the subscales, with higher scores indicating a greater degree of a particular theorised aspect of authenticity.

Through CFA, the scale was found to be consistent across a variety of different groups, such as ethnically diverse (n = 180), undergraduate students (n = 158), second year psychology students (n = 213), and a sample representing the general community (n = 117). Additionally, different variations of these groups using the demographics of gender and ethnicity also provided adequate fit of the stipulated three-factor model. Nonetheless, Wood et al.'s (2008) data did not support a hierarchical model of authenticity. For the current dataset, as provided in Appendix 6.2.14, a three-factor solution did not fit the current dataset. A hierarchical model of authenticity did however fit the data slightly better, yet the model fit indices were still unacceptable. For analyses within the current study, the latter model was implemented but caution in interpretation is warranted.

In terms of construct validity, Wood et al. (2008) found that the *Authentic living* factor was associated (Pearson's r) with increased wellbeing as measured by the SLS (Diener et al., 1985) and positive affect according to the PANAS (Watson et al., 1988). An inverse relationship was found for the other two factors primarily as a result of their reverse coding. Internal consistency for each of the factors ranged from $\alpha = .69$ to $\alpha = .78$. Test-re-test reliability was also demonstrated to be sufficient, ranging between $r = .78$ and $r = .91$.

Short Index of Self-Actualisation (SAS; Jones & Crandall, 1986; Appendix 6.2.5) is a 15-item measure derived from both the *Personal Orientation Inventory* (POI; Shostrom, 1964) and *Personal Orientation Dimensions* (POD; Shostrom,

1975). Comparisons between both the SAS and POI indicated a moderate association, $r = .67$, for a sample of 100 undergraduate students enrolled in a Texan University. Test-retest was also moderate, $r = .69$, for 67 undergraduate students who completed the measure again 12 days later. The SAS demonstrated good construct validity through positive correlations with measures assessing self-esteem (*Self-esteem Scale*; Rosenberg, 1965) and rational behaviours and beliefs (*Tolerance to Ambiguity Scale*; Budner, 1962), as well as a negative association with neuroticism (*Eysenck's Personality Inventory*; Eysenck & Eysenck, 1968).

A PCA, with Varimax rotation, suggested five-factors by the eigenvalues greater than one rule. According to Jones and Crandall (1986), these factors were indicative of *Autonomy*, *Self-acceptance*, *Trust*, *Acceptance of emotions*, and the fifth was related to *Experiential avoidance*. However, a number of researchers have noted problems with this factor structure (Crandall & Jones, 1991; Ebersole & Humphreys, 1991; Faraci & Cannistraci, 2015; Flett, Blankstein, & Hewitt, 1991; Richard & Jex, 1991; Tucker & Weber, 1988). Most recently, Faraci and Cannistraci (2015) performed a CFA on the 15-item scale with 213 Italian undergraduate students. Resulting goodness of fit analyses were not favourable in terms of the proposed five-factor solution.

A panel of 30 experts in the field of self-actualisation then examined the 15 items. Two items were subsequently removed due to lacking sufficient face validity. An EFA with PAF and Varimax on a sample of 396 Italian undergraduate students suggested a 4-factor solution for the remaining 13 items. It was also noted that three of these items had significant cross-loadings across the factors, and an additional item did not load sufficiently on a primary factor. This reduced the SAS to nine items, one factor with three items and the remaining with only two. These items, such as, *I do not feel ashamed of any of my emotions* (Item 5 *Acceptance of emotions*), are responded to on a four-point scale, from *disagree* (1) to *agree* (4), with higher scores indicating greater self-reported tendency for self-actualisation according to a specific domain.

A CFA with an undergraduate sample ($n = 432$) still could not confirm the four-factor solution underlying the nine items (Faraci & Cannistraci, 2015). The authors nonetheless did not specify how they dealt with the factors comprising only two indicators. Recall that in Chapter Five when describing model identification,

Condition B indicates that factors should have at least three indicators with errors stipulated as uncorrelated. It was additionally suggested that a factor may have two indicators, but a further condition must be satisfied. As well as both indicators having uncorrelated errors within the model, either one of two further conditions must be met. Primarily, both indicators must be set to correlate with a third indicator from a different construct, with errors of the two indicators unrelated to the third and exogenous indicator. Otherwise, the loading should be set as equal for both indicators.

Thus, for the model representing self-actualisation, the three factors with only two indicators initially had their loading constrained to one to meet this further requirement of identification. In terms of the current dataset, a four-factor solution was indicative of a working model according to Bollen (1989). As also indicated in Appendix 6.2.14, a hierarchical model of self-actualisation fit the data substantially better and was therefore used within the current analyses.

The Santa Clara Brief Compassion Scale (SCBCS; Hwang, Plante, & Lackey, 2008; Appendix 6.2.6) is a 5-item shortened version of the 21-item *Compassionate Love Scale* (Sprecher & Fehr, 2005). Sprecher and Fehr (2005) define compassionate love or altruistic love as the experience of feelings, cognitions, and behaviours, that is focused on the concern and caring for others. This experience encompasses an orientation towards supporting others, especially when the other is suffering or in need. Statements assessing compassionate love were developed by adapting items from *The Daily Spiritual Experiences Scale* (Underwood & Teresi, 2002) and the *Agape Subscale* from the *Love Attitudes Scale* (Hendrick & Hendrick, 1986) as well as items derived from an extensive review of the literature regarding love and altruism.

A factor analysis on responses to the scale from 354 undergraduate students from the Midwest of the United States, using PCA with Varimax rotation, indicated that all items loaded on a single factor. Furthermore, moderate Pearson correlations with the *Empathy Scale* (Schieman & Van Gundy, 2000), $r = .45$ (humanity-strangers), and $r = .64$ (close others), suggests both empathy and compassionate love are independent constructs. Sprecher and Fehr (2005) argue that compassionate love is more encompassing and enduring than empathy.

However, Hwang et al. (2008) identified a three-factor solution through the eigenvalues greater than one rule. Sprecher and Fehr (2005) also found evidence of this, but argued for a uni-dimensional construct by virtue of the scree test. The five items retained by Hwang et al. (2008) were based on having the highest item-total correlation coefficients. A subsequent PCA with Varimax rotation indicated that the five items loaded sufficiently on a single factor, with inter-total correlations from r = .70 to r = .82. The short version has comparable psychometric properties to the long version, as indicated by the strong correlation between the two scales, r = .96. Additionally, the short version demonstrated strong internal reliability, α = .90.

The items in the long version can be changed from compassionate love towards family and close others, or to compassionate love for humanity. The short version primarily assesses compassionate love for humanity in general. Statements such as, *I tend to feel compassion for people, even though I do not know them* (Item 2), are responded to on a seven-point Likert scale, from *not at all true of me* (1) to *very true of me* (7). Total scores range from five to 35, with higher scores indicative of greater compassionate love for humanity.

With regards to the predictive validity of the 21-item long-version, analysis of 172 American undergraduate students revealed that compassionate love was strongly associated with prosocial behaviours, such as volunteering and social support. Additionally, when compared with those who did not report any spiritual or religious affiliation, individuals who reported to be highly religious or spiritual scored greater on the *Compassionate Love Scale* (Sprecher & Fehr, 2005).

The Experiences Questionnaire (EQ; Fresco et al., 2007; Appendix 6.2.7) was based upon the *Measure of Metacognitive Awareness* (Teasdale et al., 2002), a measure designed to assess decentring. Items were developed through discussions between Teasdale, Segal, and Williams regarding the agreed upon facets of decentring, which included viewing oneself as separate from one's thoughts, not reacting to experiences that can be considered negative, and the ability to relate to oneself in a compassionate way. These discussions resulted in the formation of 20 items in total, 14 of which represented *Decentring*, whereas six reflected *Rumination* and served to control response bias.

A CFA with ML estimation on responses derived from a sample of 1,150 undergraduate students attending a Midwestern university in the United States did not provide evidence of the hypothesised two-factor solution. A subsequent EFA with ML extraction and Promax rotation revealed two factors according to the scree test. However, the researchers found that one item originally intended to represent *Decentring* loaded significantly on *Rumination*, with yet another item from *Decentring* not loading on either factor.

A rerun CFA on a new undergraduate sample (n = 519) with the removal of these two items also suggested that the data did not fit the specified two-factor model. A uni-factorial model did not fair any better. Therefore, in a subsequent CFA of only the *Decentring* factor, the researchers removed a further two items but added another item from the *Rumination* factor based on its face-validity, and allowed error variances to correlate between six items. These modifications resulted in a good fit between the data and the specified model, with adequate internal consistency amongst the 11 items, $\alpha = .83$. Moreover, Measurement Invariance suggested no difference in response styles between males and females. However, the authors' model fit analyses and model comparisons in terms of Measurement Invariance were omitted from the write-up of the study.

The final measure included items such as, *I can slow my thinking at times of stress* (Item 7), which are responded to on a five-point Likert scale, from *never* (1) to *all the time* (5). Scores range from 11 to 55, with higher scores reflecting a greater propensity to decentre from negatively perceived internal phenomena. In terms of construct validity, analysis of the new Midwestern undergraduate sample suggested negative associations (Pearson's r) with measures of experiential avoidance (*Acceptance and Action Questionnaire*; Hayes et al., 2004), emotional suppression (*Emotion Regulation Questionnaire*; Gross & John, 2003) and also depression (BDI-II; Beck et al., 1996), whilst demonstrating a positive association with reappraisal (*Emotion Regulation Questionnaire*; Gross & John, 2003).

A final CFA was conducted on responses, as part of a pre-MBCT assessment, by a clinical sample comprising of 220 individuals experiencing depression. Results again revealed a good fit of the data with the specified model. Further comparisons of this sample with 50 healthy controls indicated that the latter scored significantly

higher with a large effect size (Fresco et al., 2007). The current dataset furthermore confirmed the uni-dimensional nature of the 11-item scale.

The Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) is a measure of experiential avoidance. Experiential avoidance is defined as the inability to be present with one's current phenomenological experience (body sensations, thoughts, feelings, memories, and so on) and thereby consciously attempting to avoid such internal phenomena even when doing so creates greater distress in the long-term.

Initially, an item pool consisting of 32 statements was derived from the theory of experiential avoidance (Hayes, Wilson, Gifford, Follette, & Strosahilik, 1996), in which ACT is based (Hayes, Strosahl, & Wilson, 1999). These statements covered the need for cognitive and emotional control, the inability to take action towards personal goals, the active avoidance of negative internal phenomena, the negative self-evaluation of such internal experiences, and finally, cognitive fusion.

Hayes et al. (2004) had 460 clients (country unspecified) attending a University counselling service complete the 32-item measure. A subsequent EFA in a SEM paradigm, with ML estimation, was used to iteratively delete items that did not provide a good fit for a uni-dimensional model underlying the data. This resulted in the formation of two scales, a 16-item long version and a 9-item short version with a strong association demonstrated between the two, $r = .89$. The short form consisted of diverse items, four negatively worded and five positively worded, addressing the ability to take action towards one's goals, worry and anxiety, the need to control thoughts, and daydreaming as a coping mechanism. The nine-item scale was additionally cross-validated through CFA using a sample of 419 clients receiving psychotherapy from a different organisation.

In various clinical samples, greater levels of self-reported experiential avoidance was found to be associated with greater levels of depression (BDI-II; Beck et al., 1996), anxiety (BAI; Beck & Steer, 1993), trauma (*Trauma Symptom Inventory*; Briere, 1995), and also a lower quality of life (*Quality of Life Inventory*; Frisch, 1992). Additionally, in a sample of 304 individuals, all Caucasian females, test-re-test reliability was $\alpha = .64$ over a four-month period. However, the scale has been criticised by Bond et al. (2011) for demonstrating just acceptable internal consistency, $\alpha = .70$.

Furthermore, Bond and Bunce (2003) found the factor structure of the AAQ to be inconsistent. The researchers identified two factors underlying the 16-item long version within a sample of 412 call-centre workers from an UK financial institution. Bond et al. (2011) redeveloped the scale in association with researchers who were fundamental in the initial development of the AAQ. The panel of 12 researchers identified 49 items relating to experiential avoidance. Low item-total correlations between items, responded to by an undergraduate sample (n = 206) from Reno, United States, resulted in the removal of 22 items. An EFA on the same sample with Direct Oblimin rotation (extraction unspecified) identified three factors for the remaining 27 items. Low loadings or significant cross-loading resulted in the removal of a further 17 items. Rerunning the EFA on the same sample with the remaining 10 items suggested a two-factor solution, the first with seven items and the second with three items. Only the former factor was retained for further analyses by the authors. Importantly, this factor no longer had reverse coded items.

The uni-dimensional factor structure of the newly developed AAQ-II (provided in Appendix 6.2.8) was confirmed across three heterogeneous samples comprising undergraduate students from Kentucky, USA (n = 433), individuals seeking psychological services in New York (n = 290), and employees of a bank in the UK (n = 583). Measurement Invariance analyses of only the Metric model (item loadings) suggested that the relationship between the items with the underlying factor was similar across these three groups. The scale was additionally demonstrated to have similar convergent validity relationships with the same measures of anxiety and depression used in comparison studies of the initial ASQ.

The ASQ-II was utilised within the current study. The ASQ-II is comprised of seven items such as, *I'm afraid of my feelings* (Item 5 for AAQ and Item 2 for AAQ-II) are responded to on a seven-point Likert scale, from *never true* (1) to *always true* (7). Total scores range from seven to 49, with higher scores indicative of greater experiential avoidance. The internal consistency of the scale was greater than the AAQ, between, α = .78, and, α = .88. Three-month test-retest reliability was also acceptable, r = .81. Finally, the AAQ-II demonstrated a very strong correlation with its predecessor, r = .97 (Bond et al., 2011).

The Seven-Item Nonattachment Scale (NAS-7; Elphinstone, Sahdra, & Ciarrochi, 2014; Sahdra, Ciarrochi, Parker, Marshall, & Heaven, 2015; Appendix

6.2.9) is a shortened version of the 30-item *Measure of Non-Attachment* (MNA; Sahdra, Shaver, & Brown, 2010), which is based on Buddhist thought. Attachment within Buddhist philosophy is defined as the mental affliction that tends to distort the qualities of a perceived object by exaggerating its positive qualities whist neglecting its negative attributes. Attachment has a predominate place within Buddhist philosophy as it is believed that all mental suffering arises from being attached, by grasping or clinging, to objects or relationships within an inherently transitory world (Wallace, 2005).

With the assistance of 18 Buddhist practitioners, Sahdra et al. (2010) originally developed 72 statements related to ideas of nonattachment. The researchers had 301 American undergraduate students respond to the preliminary items. Examination of the scree test revealed one underlying factor. EFA with PAF extraction (rotation not specified) identified 30 items clearly loading (> .40) on the single factor. This factor structure was subsequently confirmed in a sample of 302 American adults, and had demonstrated strong internal consistency, $\alpha = .93$.

Within a sample of 170 American individuals, half of whom were meditators matched with non-meditators according to age, the meditation group scored significantly higher on the *Measure of Nonattachment*. Scores on nonattachment were significantly associated with weekly hours of meditation practice as well as years of experience with meditation (Sahdra et al., 2010). With regards to convergent validity, within a sample of 42 American undergraduate students, the scale was found to be positively associated with measures of mindfulness (MAAS; Brown & Ryan, 2003), non-reactivity (*Non-reactivity to Internal Experience Subscale* of the FFMQ; Baer et al., 2006), self-compassion (SCS; Neff, 2003), generosity (*Generosity Scale*; Kasser, 2005), and subjective wellbeing (SLS; Diener et al., 1985). Negative associations with depression, anxiety, and stress, as measured by the PANAS (Watson et al., 1988), further substantiated construct validity. Finally, within the same sample, test-retest reliability of the scale was found to be $r = .87$.

For the seven-item short-form, items such as, *I can let go of my regrets and feelings of dissatisfaction about the past,* are responded to on a six-point Likert scale, from *disagree strongly* (1) to *agree strongly* (6). Total scores range from seven to 49, with higher scores reflecting greater levels of self-reported nonattachment. Sahdra, Ciarrochi, and Parker (2016) indicated that through Measurement Invariance the uni-

dimensional factor structure of the short index is consistent across age and gender. Additionally, the NAS-7 has been found to be empirically distinct from five a posterior theorised facets of mindfulness (FFMQ; Baer et al., 2008; Baer et al., 2006) as determined by relatively low standardised regression coefficients when predicting nonattachment, $\beta = .07$ to $\beta = .51$.

The Brief Emotional Intelligence Scale (BEIS-10, Davies, Lane, Davenport, & Scott, 2010; Appendix 6.2.10) is derived for the 33-item *Emotional Intelligence Scale* (EIS; Schuttle et al., 1998). The EIS was originally based on Mayer and Salovey's (1993) theory of emotional intelligence, which incorporates three distinct facets related to adaptive cognitive capacity, namely, the ability to identify and express emotions, the regulation of one's emotional world, and the capacity to utilise emotions in situations that involve the necessity of problem solving. Schuttle et al. (1998) initially developed 62 items assessing Salovey and Mayer's definition. Analysis of responses by an undergraduate sample ($n = 346$) from Southeastern United States using PCA and orthogonal rotation suggested that the 62 items separated into four discrete factors. Schuttle et al. (1998) subsequently deleted 29 items to derive a one-factor solution from the data.

However, subsequent research had questioned the validity of this uni-factorial solution. For instance, Petrides and Furnham (2000) found through a ML CFA, on responses by 260 British university students, that the model was a very poor fit to the data. A PCA performed by the same authors on the same sample identified a four-factor solution of the 33 retained items. As a side note, the authors stated that they attempted an oblique rotation but found low factor loading across each of the factors. Additionally, Lane et al. (2009) removed 14 items primarily due to having low content validity as determined by a panel of nine researchers in exercise psychology. Lane et al. (2009) then found evidence for a five-factor solution through a CFA with robust ML in a sample of 1,681 undergraduate-student athletes from the UK. Davies et al. (2010) argue that the five-factor solution best represents the Salovey and Mayer's (1993) definition.

In order to construct the BEIS-10, Davies et al. (2010) analysed the face validity of each of the 33 items comprising the ESI, resulting in the removal of 17 items. A sample of university student-athletes from the same country then completed the 16-item measure. Items such as, *I know why my emotions change,* were responded

to on a five-point Likert scale, from *strongly agree* (1) to *strongly disagree* (5). A CFA with ML estimation demonstrated an acceptable fit for the five-factor model of emotional intelligence. The researchers subsequently retained only the first two highest loading items per factor, which demonstrated even better fit of the model to the observed data. However, such a drastic change to the model would require a separate sample for validity analyses, so as to not capitalise on chance and have the results only pertinent to the current sample. Davies et al. (2010) argues for independence of each of the factors and therefore did not test within a hierarchical design.

In terms of test-retest reliability, Davies et al. (2010) had 111 undergraduate student-athletes from the UK respond to the ten-item measure twice with a time interval of two-weeks between assessments. A nonparametric analysis, regarding Proportion of Agreement between items, indicated that responses to both assessments were at least or close to 90% similar. However, correlations between the summated factor scores across participants for both assessments were of medium magnitude, from $r = .35$ to $r = .48$. The researchers suggest that this was the result of measurement error or that emotional intelligence can fluctuate over time.

For the current study, as per the SAS (Jones & Crandall, 1986), due to only two indicators predicting each factor, each of the items were set to load at one onto their respective factor. As indicated in Appendix 6.2.14, a five-factor solution with uncorrelated errors was confirmed. A hierarchical model of emotional intelligence fit the data slightly better and was therefore used within the current study.

The Meditative Insight Scale (Ireland, 2013; Appendix 6.2.11) was developed according to traditional Buddhist theories underlying Vipassanā meditation. Where the practice of insight-oriented meditation is purported to cultivate understanding of the essential nature of phenomena, as opposed to mental states or underlying processes, to ascertain absolute meaning or the true nature of things. According to this Buddhist philosophy, all phenomena share three characteristics. Firstly, all phenomena are impermanent; they are transitory and constantly changing. Secondly, all phenomena arise in the context of other phenomena, thus all things exist interdependently. Finally, all phenomena are ultimately unsatisfactory, and therefore cannot provide sustaining happiness (Gunaratana, 1985).

Ireland (2013) developed four items to assess an individual's understanding of the three inter-related characteristics of all phenomena. A panel of five Buddhist scholars and researchers reviewed the content validity of these items, resulting in minor adjustments to their wording. Ireland (2013) then recruited a sample of 881 meditation practitioners from across the world, predominately from the United States, Australia, United Kingdom, and Canada, who completed the *Meditative Insight Scale* as well as a number of other measures.

In terms of the *Meditative Insight Scale*, participants were asked to indicate the degree to which their practice of meditation has allowed them to experience particular insights into phenomena, including, *The emptiness and/or oneness, which underlies phenomena and experiences including the ego/personal identity* (Item 4). Responses were provided on a four-point Likert scale, between *not at all* (1) and *to a great extent* (4). Total scores range from four to 16, with higher scores indicative of greater meditative insight.

The sample of 881 individuals was randomly split into two subsamples comprising $n = 428$ and $n = 466$. A PCA on the former group suggested a uni-factorial solution according to the eigenvalues greater than one rule accompanied by the scree test. A CFA with the latter group determined excellent fit of the uni-factorial model, CFI = 1. The latter group additionally demonstrated high internal consistency, $\alpha = .89$.

For the entire sample of meditators, Ireland (2013) implemented a bootstrap multivariate paradigm with sequential linear regression as an extension to the Sobel (1982) test of indirect effects. As a result, Ireland (2013) found that meditative insight fully mediated the relationship between dispositional mindfulness, as measured by the MAAS (Brown & Ryan, 2003), and compassion, as assessed by the SCBCS (Hwang et al., 2008). Ireland (2013) additionally identified that meditative insight partially mediated the effect of mindfulness on happiness (*Subjective Happiness Scale*; Lyubomirsky, 2001; Lyubomirsky & Lepper, 1999), life satisfaction (SLS; Diener et al., 1985), wellbeing (*The World Health Origanisation - Five WellBeing Index Version 2*; Bech, Olsen, Kjoller, & Rasmussen, 2003), resilience (*Brief Resiliance Scale*; Smith et al., 2008), depression and stress (The Short-form version of the *Depression Anxiety Stress Scales*; Henry & Crawford, 2005). However, meditative insight was not found to partially mediate the effect of mindfulness on anxiety.

The scale itself was developed primarily for individuals with an understanding of Buddhist theory regarding the nature of phenomena. In terms of the current study, only the Samatha and Vipassanā meditators were invited to respond to the items comprising this measure. For the current sample of meditators within a Buddhist context, the model fit for the uni-dimensional nature of the *Meditative Insight Scale* was excellent and additionally demonstrated exceptional internal consistency for the meditators within a Buddhist context (see: Appendix 6.2.14).

Data Analysis

The relationship between the latent variables, as purportedly measured by the aforementioned scales, with the Phenomenological Experience of Equanimity was assessed through Canonical Correlational Analysis. In determining the amount of variance of the latent variable Equanimity that underlies the Phenomenological Experience of Meditative Equanimity Measure, the Average Variance Extracted (AVE) was calculated. Comparisons of both the squared Canonical Correlations and the AVE were utilised to assess if Equanimity does indeed indicate unique variance beyond the comparison variables. The analyses for the canonical correlations as well as factor loadings and residuals in the calculation of AVE were computed in Mplus version 1.4 (Muthén & Muthén, 2007).

Results

In establishing construct validity, the common practice within the literature is to determine the degree of correlation of a particular measure with a number of other measures that theoretically assess similar or dissimilar constructs. This is typically demonstrated by Pearson's *r*, as previously illustrated throughout the materials section. Convergent and divergent validity for a particular scale is then purportedly demonstrated if the pattern of correlations is as expected according to an a priori theoretical understanding. However, as noted by Westen and Rosenthal (2003), convergent validity essentially estimates the degree to which the variance attributed to the measure is reflective of the underlying latent variable. This estimation would therefore have to take into account measurement error. As well as measuring the latent variable, all responses to items comprising a particular scale include random factors that are inadvertently encapsulated within the response set (see: Baron & Kenny, 1986).

Therefore, a number of researchers (see: Anderson & Gerbing, 1988; Campbell, Parks, & Wells, 2015; Farrell & Rudd, 2009; Mehmetoglu & Jakobsen, 2017) recommend the implementation of the Fornell-Larcker (1981) criterion when assessing convergent validity. The AVE estimates the ratio of variance within the measure due to the latent variable compared with the variance attributed to random error. AVE is calculated by hand, or with the facilitation of Microsoft Excel, with analyses provided by the standardised factor loading of individual items within a particular measure. Korchia (2017) has developed an excel spreadsheet that can calculate AVE amongst other SEM statistics (see: http://www.watoowatoo.net/sem/sem.html).

To calculate the AVE by hand, the standardised item loadings comprising the latent variable are squared and summed (as in, total variance), providing the numerator of the AVE equation. This figure is additionally utilised within the denominator of the equation but with the addition of the summation of each squared standardised factor loading subtracted from one (1; as in total variance plus total error). The resulting AVE essentially provides an estimation of the average variance across each of the items within the scale. As a ratio, the AVE ranges from zero to one and reflects the ratio of the variance within the measure due to the latent variable as opposed to measurement error. Thus, the higher the AVE, the greater the scale assesses the latent variable compared to random error (Hair, Tatham, Anderson, & Black, 1998).

According to Bagozzi (1994) and Dillon and Goldstein (1984) a ratio above .50 suggests good convergent validity, where the indicators or items determine at least 50% of the variance within the latent variable. Regarding the Phenomenological Experience of Equanimity Measure, the factor Centring was found to have very good convergent validity of underlying items, AVE = .640. However, Resonating was found to include more than fifty-percent measurement error within its assessment, AVE = .480. Overall, the scale as a whole still performed quite well as a global measure of Equanimity, as determined by the direct hierarchical model, AVE = .678. The latter was calculated in accordance with a multi-dimensional model. As the direct hierarchical model partials out uncorrelated factor loadings across the two factors for each item, the two factor loadings for each item were added prior to the calculation of

the overall AVE. The factor loading produced through SEM used in the calculation of AVE for each of the variables is provided in Appendix 6.2.12.

Researchers indicate that that because the squared correlation between two variables provides a measure of the shared variance, it is therefore expected that the AVE statistic of a latent variable should be greater than the squared correlation signifying its relationship with other latent variables (Fornell & Larcker, 1981; Mehmetoglu & Jakobsen, 2017). In other words, discriminant validity can be determined by the unique variance of the latent variable compared with the shared variance of theoretically similar or dissimilar constructs.

Nonetheless, since Campbell and Fiske's (1959) introduction of the idea of discriminant validity, a number of methods have been developed in order to establish the independence of constructs. The most common methods include χ^2 comparisons, Multi-trait Multi-method analysis (MTMM), correlation-based analysis, and comparisons of the scale's AVE with the shared variance of other variables. The χ^2 comparisons involve comparing the χ^2 when the latent variables, that are theoretically purported to be different, are either fixed at a certain figure such as one (as in, $R = 1$) or when this parameter is free to vary. The latter would be expected to be lower than the former if the constructs are assumed to be distinct. In other words, the distinctness model is expected to fit the data better than the model specifying the constructs as identical if the variables are indeed distinct. Nonetheless, as the χ^2 is substantially influenced by sample size and non-normal data, Byrne and Stewart (2006) claim that using this statistic for comparisons between latent variables is "impractical and unrealistic" (p.305).

MTMM (Campbell & Fiske, 1959) compares the association between different methodological approaches with similar constructs. If the correlations converge, such that higher correlations are demonstrated for similar constructs across different methodologies, then discriminant validity is established. However, as indicated by Straub, Boudreau, and Gefen (2004), research has demonstrated that relying on correlations alone can often result in forming incorrect conclusions regarding the pattern of relationships amongst variables.

The correlation-based analysis, the most commonly implemented method in scale development within the psychological literature, examines the association

between variables with theoretically distinct constructs, which are expected to indicate little or no correlation. However, the interpretation of correlational matrices is subjective, with the cut-off differentiating between similarity and disparity primarily up to the researchers' discretion, and is often specific to the context (Campbell et al., 2015). For instance, Carlson, Kacmar, and Williams (2000) and Loehlin (2004) suggest that a correlation of .6 indicates substantially overlapping constructs. On the other hand, Kline (2005) suggests an upper limit of .85 for demonstrating uniqueness of variance. Regardless of the upper limits, Campbell et al. (2015) indicate that any cut-off is primarily a pragmatic rule-of-thumb. The authors claim that empirical support for the establishment of a strict cut-off value for a correlation between two variables, when determining uniqueness, has yet to be provided.

In light of the strengths and weaknesses inherent within each approach of establishing discriminant validity, Campbell et al. (2015) recommend that in situations involving cross-sectional data, the AVE in conjunction with correlational analysis should be used. Although the researchers note that comparing the variance accounted for across theoretically distinct constructs is not necessarily an equal comparison, the AVE is a more objective measure than correlation-based analysis. The researchers argue that if the results of the AVE do indeed suggest uniqueness of constructs, then the AVE alone is sufficient. However, in situations where discriminant validity cannot be established with the AVE alone, it should be supplemented with χ^2 comparison analyses.

Calculating the association between variables with Pearson's *r* then is counter-intuitive if comparing the measure's AVE with the correlation of summated scores for each of the measures, a technique that does not take into account measurement error. The association between variables was therefore assessed through the canonical correlations between the direct hierarchical model of Equanimity, and each Centring and Resonating separately, with SEMs representing the comparison variables. Canonical relates to the process of analysing latent variables that are not directly observed through the use of observed multiple indicators. A canonical correlation then is the multivariate analysis of association between two latent variables (Hair, Black, Babin, & Anderson, 2014). Models of the comparison variables were tested according to the respective dimensionality proposed by the developers of such scales.

Measures with multiple factors were also tested in a hierarchical design, with the best fitting model utilised within the current analyses.

As explained by Hair et al. (2014), Canonical Correlational Analysis assumes a linear relationship between the two latent variables, similar to simple correlational methods in terms of associations between two sets of summated scores. Nonetheless, while simple correlation is restricted to the coordinate system in which the variables are embedded, Canonical Correlational Analysis locates the most optimal coordinate system in which to perform the analysis to maximise the correlation. This essentially means that using the coordinate system of one set of scores, from ordinary correlation, to determine the strength of the relationship with another set of scores, that have a dissimilar coordinate system, could ultimately indicate little association between the two sets of scores, even though a strong linear relationship may be present.

As already stated, a further distinction between simple correlation and canonical correlation is that the former does not take into account measurement error. Measurement error is embedded within the observed variables, with its presence distorting the relationship between sets of scores, and therefore rendering the association less powerful. Additionally, summating the scores for each latent variable inherent within simple correlation ultimately assumes that each item contributes the same variance to the latent variable (tau-equivalence). Similar to simple correlation, no strict assumption regarding multivariate normality is required in Canonical Correlational Analysis. However, Hair et al. (2014) note that normality would ultimately facilitate in optimising the strength of association between the two latent variables. Further assumptions pertain to homoscedasticity or equal variances across the latent variables, as well as multicollinarity, or rather not having redundant items predicting the score of a particular latent variable. Results of data cleaning and assumption testing have been provided in Appendix 6.2.13. Moreover, model fit analyses as well as factor loadings and residuals for each model is provided in Appendices 6.2.14 and 6.2.15, respectively.

From the discussion regarding the relationship between mindfulness and equanimity in Chapter One, it was expected that the phenomenological experience of meditative Equanimity would be moderately to strongly and positively associated with mindfulness and wellbeing, with a similar but negative association with psychological distress. As illustrated in Table 6.2.1, the direct hierarchical model

indicated that the latent variable, Equanimity, had moderate to strong canonical relationships with mindfulness and wellbeing in the expected direction. The expressions of an open and receptive attitude within the person-centred literature, namely authenticity and self-actualisation, also demonstrated moderate to strong associations with Equanimity. Moreover, variables previously found to be at least partially mediating the relationship between mindfulness and therapeutic outcomes were identified as having a moderate positive relationship with Equanimity. Unexpectedly, however, compassion and Equanimity demonstrated only a weak association.

The pattern of relationships for both Centring and Resonating were similar to those demonstrated by the direct hierarchical model of Equanimity. Centring, however, when compared with Resonating, consistently indicated higher canonical correlations with the comparison variables. Furthermore, the direct hierarchical model consistently demonstrated higher associations with the comparison variables than either one of its subordinate, but interrelated, factors. Finally, an examination of the AVE and the shared variance with the comparison variables strongly supports discriminant validity of the phenomenological experience of meditative Equanimity. It is important to flag at this point the demonstration of discriminant validity of Equanimity from acceptance.

Table 6.2.2 provides the matrix of canonical correlations amongst the comparison variables. Compassion demonstrated only weak correlations with each of the other variables. Otherwise, the relationship between the remaining variables that have been found to at least partially mediate the relationship between mindfulness and therapeutic outcomes was consistently moderate to strong. Moreover, as indicated within the canonical correlational matrix, decentring, experiential avoidance, and non-attachment each demonstrated very strong associations with each other.

Table 6.2.1

Canonical Correlations (Standard error) and Shared Variance Between the Factors Centring, Resonating, and the Direct Hierarchical Model of Equanimity with the Comparison Variables

Latent Variable	Centring (AVE = .640)		Resonating (AVE = .480)		Equanimity (AVE = .678)	
	R_c (*SE*)	R_c^2	R_c (*SE*)	R_c^2	R_c (*SE*)	R_c^2
Mindfulness	.453 (.046)	.205	.428 (.049)	.183	.503 (.047)	.253
Acceptance	.391 (.047)	.152	.288 (.052)	.083	.408 (.048)	.166
Wellbeing	.670 (.033)	.450	.431 (.048)	.186	.649 (.037)	.421
Psychological Distress	-.551 (.040)	.304	-.294 (.052)	.086	-.555 (.043)	.308
Authenticity	.515 (.042)	.265	.295 (.052)	.087	.519 (.043)	.269
Self-Actualisation	.560 (.041)	.314	.475 (.046)	.226	.565 (.043)	.319
Compassion	.181 (.052)	.033	.285 (.051)	.081	.246 (.053)	.061
Decentring	.683 (.032)	.466	.591 (.039)	.349	.692 (.033)	.479
Experiential Avoidance	-.668 (.037)	.446	-.473 (.049)	.224	-.648 (.040)	.420
Non-Attachment	.578 (.039)	.334	.432 (.056)	.187	.574 (.047)	.329
Emotional Intelligence	.712 (.112)	.506	.413 (.088)	.170	.707 (.120)	.500
Meditative Insight	.402 (.059)	.162	.491(.059)	.241	.659 (.075)	.434

Table 6.2.2

Canonical Correlational Matrix of the Comparison Variables

Latent Variable	Aw	Ac	Wb	Pd	Au	SA	Co	De	EA	NA	EI	MI
Awareness (Aw)												
Acceptance (Ac)	.364											
Wellbeing (Wb)	.517	.460										
Psychological Distress (Pd)	-.269	-.504	-.725									
Authenticity (Au)	.388	.483	.594	-.644								
Self-Actualisation (SA)	.389	.515	.567	-.594	.851							
Compassion (Co)	.299	.048	.198	-.053	.140	.055						
Decentring (De)	.616	.570	.726	-.621	.596	.662	.230					
Experiential Avoidance (EA)	-.592	-.644	-.741	.740	-.706	-.823	-.240	-.898				
Non-Attachment (NA)	.489	.444	.632	-.685	.671	.682	.267	.713	-.804			
Emotional Intelligence (EI)	.339	.013	.537	-.624	-.200	.679	.201	.522	-.229	.698		
Meditative Insight (MI)	.429	.244	.349	-.243	.261	.359	.265	.572	-.489	.530	.220	

6.3. Equanimity Mediating the Effect of Mindfulness

Using data obtained for Chapter Five as well as the previous section (6.2), the aim of the current study was to determine if the direct hierarchical model of Equanimity mediated the relationship between mindfulness, as defined by present moment awareness, and the outcome variables: psychological distress and wellbeing. To achieve this aim, simple mediation models with bias-corrected bootstrapped mediation analysis was performed within a SEM paradigm. Additionally, a parallel multiple mediation model was assessed for the outcome of wellbeing, as Equanimity only partially mediated its relationship with mindfulness.

Method

Participants

The simple mediation models were performed with the sample documented in the previous section. As the interest of the analyses was not on differences between groups, but rather if an individual's degree of Equanimity could account for the effect of their self-reported mindfulness on the outcome variables, all participants remained as one sample.

Measures

The simple mediation models comprised the latent variables, Equanimity, mindfulness, psychological distress, and wellbeing. The measures assessing these variables, along with their psychometric properties, are provided in the previous section. Moreover, the parallel multiple mediation model conducted only for wellbeing further incorporated compassion, decentring, experiential avoidance, non-attachment, emotional intelligence, and meditative insight. Similarly, measures and psychometric properties for these further variables are described in section 6.2.

Data Analysis

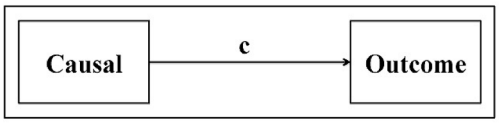
The simple and multiple mediation analyses (Preacher & Hayes, 2008) were performed within a path model paradigm using Mplus version 1.4 (Muthén & Muthén, 2007) with Maximum Likelihood as the method of estimation. Although the distribution of scores for each of the latent variables was non-normal, the current analyses intended to create population estimates of the indirect effect of Equanimity on the therapeutic outcomes to establish its mediating role through the development of

mindfulness. Bootstrapping has been identified as a means in overcoming the problem of non-normal data (for example, Hox & Schoot, 2013), with this technique therefore redundant in Satorra and Bentler's (2001) correction for non-normality. Nonetheless, bootstrapping cannot be used as a means for specific significance testing, but can provide confidence intervals for what could be expected within the general population based on the sample (Hayes, 2013; Kenny, 2016). As recommended by Hair et al. (2011, 2012) and Wong (2013), the current analyses utilised 5,000 bootstrap resamples in order to calculate the confidence intervals of the direct and indirect effects. Finally, consistent with previous analyses, all error terms were stipulated as uncorrelated, which is a necessary assumption in order to derive causal influences from the results (Bollen & Pearl, 2013; Imai, Keele, & Tingley, 2010).

Results

Mediation is a special type of regression analysis and is utilised to test the hypothesis regarding the effect accorded by a causal chain of variables, whereby one variable affects a second variable, which in turn affects a third. Ultimately, the causal model facilitates in developing an understating of the mechanism (mediator) underlying a variable's influence on a particular outcome (MacKinnon, Fairchild, & Fritz, 2007). Within SEM analyses of mediation, the exogenous or independent variable is referred to as a causal variable, as it too can be specified in a model as the mediator or outcome variable (Kenny, 2016).

In order to establish the occurrence of meditation, Baron and Kenny (1986) amongst others (James & Brett, 1984; Judd & Kenny, 1981) have developed a series of four conditions that need to be satisfied. Firstly, as illustrated in Figure 6.3.1 (Path c) the causal variable should initially predict the outcome (as in, mindfulness predicting psychological distress). However, Kenny, Kashy, and Bolger (1998) argue that this step is not necessary, as the causal and a potentially mediating variable may in fact work in conjunction to predict the outcome. MacKinnon, Fairchild, and Fritz (2007) additionally argue the case of inconsistent mediation, where the mediator may potentially act to suppress the effect of the causal variable on the outcome.



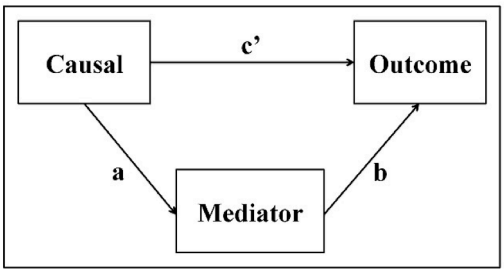


Figure 6.3.1. (Above) Direct effect
Figure 6.3.2. (Right) Mediation model

The second condition, as illustrated in Figure 6.3.2, states that the causal variable should predict variance in the mediating variable (Path a; as in, mindfulness predicting the phenomenological experience of meditative Equanimity). Thirdly, the mediating variable should predict variance in the outcome variable (Path b; as in, Equanimity predicting psychological distress). Finally, for full mediation to occur, when taking into account the variance in the outcome attributed to the mediating variable, the causal variable should no longer predict variance in the outcome (as in, mindfulness no longer predicting psychological distress when accounting for the effect of Equanimity).

Kenny (2016) warns against using statistical testing in the context of mediation analysis. Relying on the significance of regression coefficients between variables is potentially misleading as small regressions can be significant in datasets with large samples, whereas large regressions can be non-significant with analyses conducted in situations involving small samples. Moreover, the change in the outcome variable attributed to the mediating variable is not dependent on the change in total variance explained within the former. This is also the case in terms of the change of the partial correlations between variables in the model. Additionally, the mediating effect cannot be inferred from the change in the inferential statistic (*F*) of the regression coefficient from the causal to the outcome variable. Kenny (2016) suggests that this statistic can change significantly between nested models regardless of the effect of the mediating variable on the outcome.

Rather, the measure of mediation should be determined by virtue of the indirect effect (Hayes, 2013; Kenny, 2016). The indirect effect represents the reduction of the causal variable's effect on the outcome, which is accounted for by the mediating variable. Kenny et al. (1998) have indicated that the proportion of the

mediating effect of the entire model can be calculated by primarily dividing the indirect effect by the total effect on the outcome. However, to determine whether or not the mediating variable has a significant effect on the outcome variable, whilst taking into account the effect attributed to the causal variable, a number of tests have been proposed.

Joint Test of Significance determines if conditions two and three, the causal variable's effect on the mediating variable and the mediating variable's effect on the outcome, is non-zero, thereby suggesting mediation. However, this test assumes that the regression coefficients obtained through conditions two and three are uncorrelated, which is unlikely to be the case. Moreover, although Hayes and Scharkow (2013) argued that the Joint Test of Significance can be just as reliable as the bootstrap method in determining mediation, it does not provide confidence intervals for the degree of the indirect effect.

Until recently, the Sobel (1982) test was the most commonly used measure of the indirect effect in order to establish mediation (for recent peer-review articles implimenting this strategy, see: Bice, Ball, & Ramsey, 2014; Fallah, 2016; Ostafin, Brooks, & Laitem, 2014; Teixeira & Pereira, 2013; Zgierska et al., 2013). The Sobel (1982) test estimates the standard error of the multiplied regression coefficients obtained from Barron and Kenny's (1986) conditions two and three. The indirect effect is then determined by dividing the multiplied regression coefficients from conditions two and three by the square-root of the previously obtained standard error. This provides a ratio of the indirect effect, with its significance being determined by the z-distribution.

However, similar to the Joint Test of Significance, the Sobel (1982) test assumes non-association between regression coefficients. According to Kenny (2016), this assumption is also implied in multiple linear regression. Additionally, Mackinnon, Warsi, and Dwyer (1995) have identified that the sampling distribution of the multiplied regression coefficients of conditions two and three is almost always highly skewed. Nonetheless, the Sobel (1982) test uses the z-distribution to determine mediation, which presupposes a symmetric distribution. The Sobel (1982) test therefore can be very conservative in its estimates.

Instead, a number of researchers (such as, Bollen & Stinet; 1990; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Shrout & Bolger, 2002) have recommended the bootstrapping approach in determining the effect of the mediating variable on the outcome variable when taking into account the effect of the causal variable. As already noted in Chapter Four, which explained the concept of bootstrapping in the context of EFA, bootstrapping involves a resampling with replacement to generate a number of resamples (such as 1,000 or 5,000) of the current sample, the average of which is used to approximate the population. The indirect effect is then calculated within each of the resamples and can therefore provide a 95% confidence interval around the mean indirect effect calculated across the resamples.

However, simulation studies conducted by Bollen and Stinet (1990) as well as Lockwood and MacKinnon (1998) have indicated that bootstrapped confidence intervals are asymmetric, especially in cases of complex models (for example, Steck & Jaakkola, 2003). Instead, MacKinnon, Lockwood, and Williams (2004) recommend the use of a bias-corrected bootstrap, which has been demonstrated to reduce the incidence of Type I error. The Bias-corrected bootstrapped confidence intervals take into account non-normality and the distribution of parameter estimates by adding a penalty equal to one half of the Akaike's parsimonious index (Steck & Jaakkola, 2003). The indirect effect is then considered significant if the confidence interval of the bias-corrected bootstrap mediation analysis does not contain zero (Kenny, 2016).

Preacher and Hayes (2004) initially developed syntax for use in SPSS in order to generate bootstrapped resamples of a particular sample in the context of the mediation paradigm. However, this requires calculating the mean of an individual's scores across each of the indicators reflecting specific variables in the model, therefore not taking into account measurement error. Even Baron and Kenny (1986, p.1177) have indicated that such linear regression subsumes measurement error into the overall model, which ultimately contributes to substantially attenuating the model's fit. Related to this point, and already mentioned in Chapter One, the method utilised in linear regression assumes tau-equivalence, where all of the items underlying the scale are assumed to predict the latent variable to the same degree. Thus, rather than using a multivariate design to predict the latent variable, linear regression is reduced to a univariate function (Iacobucci et al., 2007).

Linear regression furthermore distinguishes between the dependent and the independent variables. In contrast, within SEM, the dependent variable can be specified to become the independent, and vice versa (Bollen, 1987; Kowalski & Tu, 2007). Mediation through linear regression analyses additionally assumes a temporal order to the variables. Nonetheless, considering variables can both simultaneously represent a cause and effect, this distinction through standard regression is invalid (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001; Mackinnon & Fairchild, 2009). According to Gunzler, Chen, Wu, and Zhang (2013) this reciprocal function specifically allows causal inferences to be drawn through the results of mediation analysis within a SEM paradigm.

Bollen and Pearl (2013) argue that, in situations involving the same mediation equation, the results obtained through each linear regression and SEM will consequently differ. The authors argue that this is primarily due to the difference in the aforementioned assumptions underlying each method. Similarly, through a series of Monte Carlo simulations, Iacobucci et al. (2007) compared the efficiency of both linear regression and SEM in a mediation paradigm and found the latter to be consistently more robust and outperforming the former primarily due to taking measurement error into account. Considering the advantages of SEM in conducting mediation, this technique was used to determine the indirect effect through bias-corrected bootstrap confidence intervals.

Simple Mediation Analysis

When factoring in the potential mediating effect of the direct hierarchical model of Equanimity in the relationship between awareness of present moment experience and psychological distress, the indirect effect, representing the attenuation of the relationship between the latter two variables, was determined to be non-zero, $\beta = -.249$, $p < .001$, 95% CI [-.367, -.165]. This finding suggest that, at least in part, the relationship between awareness and psychological distress can be accounted for by the phenomenological experience of meditative Equanimity.

As illustrated in Figure 6.3.3, the direct effect of awareness on psychological distress, when partialling out the effect of Equanimity, contained zero within its confidence interval, $\beta = -.023$, $p > .05$, 95% CI [-.178, .127]. Equanimity accounted for 92% of the relationship between awareness of present moment experience and

psychological distress. As the confidence interval for the direct effect between awareness and psychological distress contained zero, Equanimity could be considered as fully mediating the relationship between awareness and psychological distress within the population.

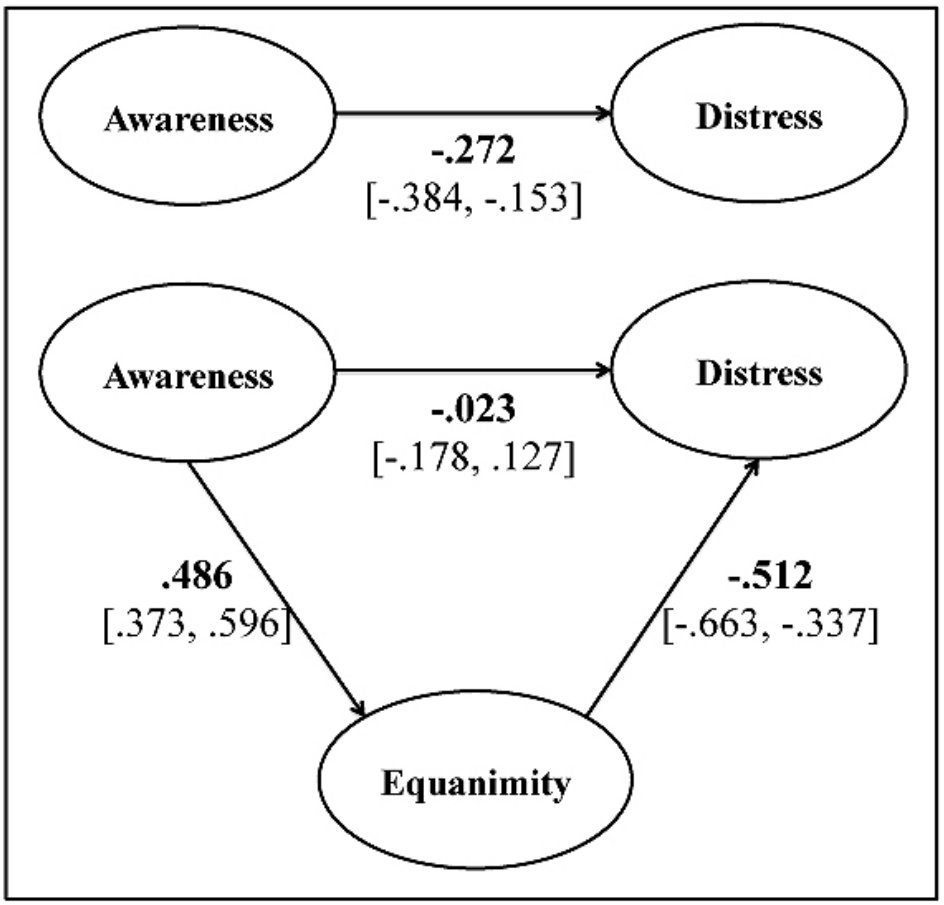


Figure 6.3.3. Regression coefficients and bias-corrected bootstrapped confidence intervals for the mediating effect of Equanimity on awareness and psychological distress

Regarding wellbeing, the indirect effect of the direct hierarchical model of Equanimity indicated that the latent variable mediated, at least in part, the relationship between awareness of present moment experience and wellbeing, $\beta_{ab} = .258$, $p < .001$, 95% CI [.184, .347]. As provided in Figure 6.3.4, the attenuated direct effect of awareness on wellbeing was estimated at, $\beta = .257$, $p < .001$, 95% CI [.118, .386].

Unlike the simple mediation results for psychological distress, Equanimity only accounted for exactly half of the effect of awareness on wellbeing. Although this provides evidence for partial mediation of Equanimity on the relationship between awareness of present moment experience and wellbeing, Equanimity alone is not sufficient to explain the entire relationship between the two latent variables within the population.

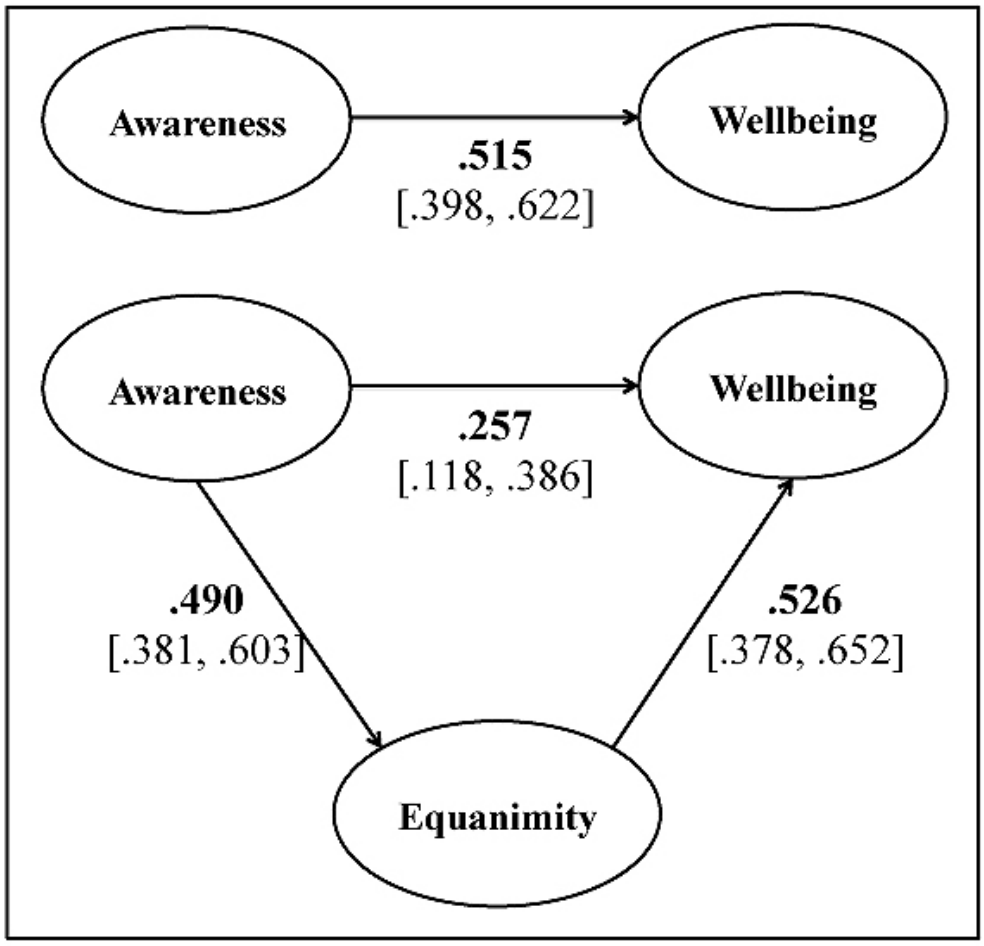


Figure 6.3.4. Regression coefficients and bias-corrected bootstrapped confidence intervals for the mediating effect of Equanimity in the relationship between awareness and wellbeing

Multiple Mediation Analysis

A nested multiple mediator paradigm was subsequently implemented to further explore the underlying mechanism pivoting the relationship between awareness of present moment experience and wellbeing. The multiple mediation model was computed using ML and bias-corrected bootstrapping to determine confidence intervals around the direct and indirect effects. As illustrated in Figure 6.3.5, a parallel mediation model regressed each of the latent mediating variables onto awareness, with wellbeing regressing, in turn, on the mediators.

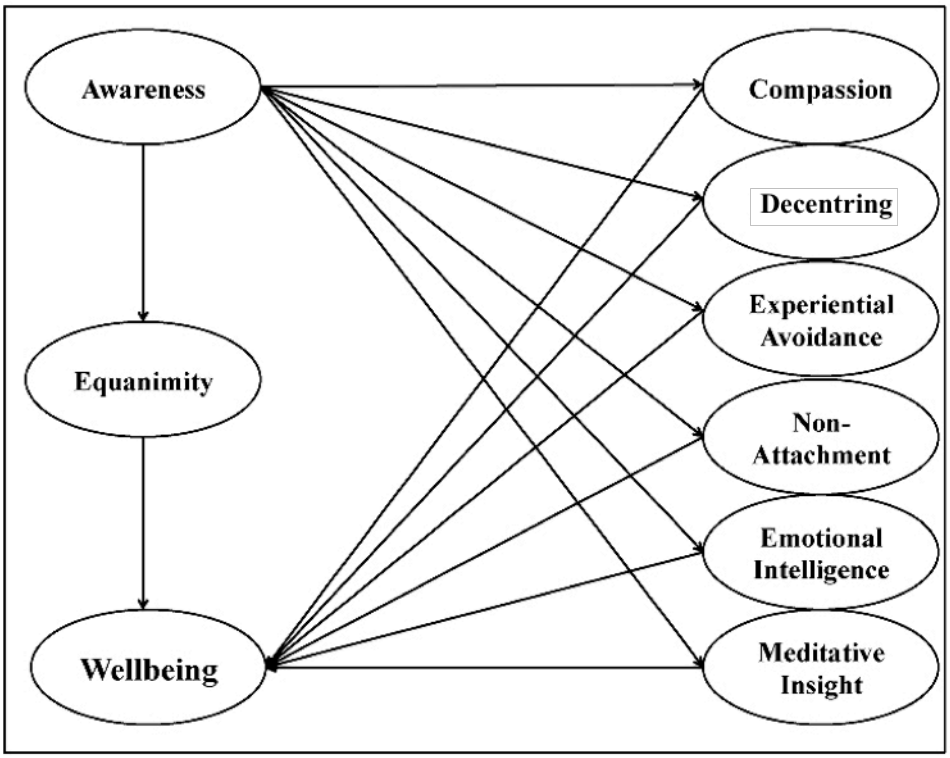


Figure 6.3.5. Parallel multiple mediation model examining the unique effect of Equanimity mediating the relationship between awareness and wellbeing

The results of the parallel mediation model indicated that when the mediators were combined, the relationship between awareness of present moment experience and wellbeing was fully mediated, with a total indirect effect of $\beta_{ab} = .890$, $p < .001$, 95% CI [.512, 1.274]. The direct effect of mindfulness on wellbeing, when accounting for the mediators, was now estimated to be non-significant, $\beta_{ab} = -.171$, $p > .05$, 95%

CI [-.468, .299]. When accounting for the effect of the other mediators, Equanimity still significantly partially mediated the relationship, $\beta_{ab} = .204$, $p < .001$, 95% CI [101 - .340], suggesting its unique influence and variance on the outcome. Each of the indirect effects, demonstrating the variance of the mediators in the relationship between awareness of present moment experience and wellbeing, is provided in Table 6.3.1.

The largely inflated regression coefficient of the indirect effect between the serial and parallel models is potentially due to the correlated nature of the variables in the latter model. Recall from the previous section the large canonical relationship between the variables decentring, experiential avoidance, and to a somewhat lesser degree, nonattachment. Moreover, compassion, emotional intelligence, and meditative insight, were no longer significant mediators within the parallel mediation analysis. However, Hayes (2013) argues that a non-significant indirect effect of a mediator within a parallel multiple mediator model does not necessarily contradict significant effects noted in previous research. Simple mediation determines the indirect effect for a single mediator whilst holding all other mediators constant. Through multiple mediation analysis, the indirect effect of a variable is determined within the context of the other mediators specified within the model, rather than holding all else constant. Thus, it may be that the now inferred non-significant mediator works in conjunction with other potential mediators that were not included within the initial model. Furthermore, considering that the indirect effect of Equanimity is still non-zero, even when further potential mediators were included, substantiates its distinctiveness from the comparison variables. According to Preacher and Hayes (2008), if potential mediators are highly correlated within a multiple mediator model, then all of the indirect effects may be non-significant even though a significant total indirect effect for all mediators is identified.

Table 6.3.1.

The Indirect Effects and Confidence Intervals of the Mediating Variables within the Parallel Mediation Model

Mediator		Lower		Estimator		Upper	
CI	.5%	2.5%	5%		5%	2.5%	.5%
Equanimity	**.56**	**.101**	**.125**	**.204**	**.323**	**.340**	**.360**
Compassion	-.057	-.044	-.037	-.013	.010	.015	.023
Decentring	**.046**	**.105**	**.140**	**.262**	**.407**	**.444**	**.519**
Experiential Avoidance	**-.023**	**.030**	**.071**	**.252**	**.438**	**.470**	**.600**
Non Attachment	**.005**	**.043**	**.067**	**.132**	**.237**	**.248**	**.313**
Emotional Intelligence	-.055	-.055	-.022	.116	.155	.181	.241
Meditative Insight	-.156	-.128	.166	-.063	-.010	.001	.029

Note. Bold indicates significant mediators according to the 95% CI.

Summary

Test-retest Reliability. Non-parametric analysis of each item individually suggested good consistency of responses by participants over an approximately one-month interval. Although two items were found to be less consistent across assessments, the remaining items, when analysing the scale as a whole, ultimately compensated for this lower degree of agreement over time. Additionally, the initial assessment of the measure strongly predicted subsequent responses according to the direct hierarchical model of the phenomenological experience of Equanimity. On a factorial level, Centring was found to be less stable than Resonating overtime.

Concurrent Validity. In terms of concurrent validity, the responses to the scale as a whole, conceptualised as the direct hierarchical model of Equanimity, moderately to strongly predicted responses to Sakairi's (2004) *Equanimity subscale*. Moreover, Centring, as opposed to Resonating, predicted a larger degree of variance in the comparison measure.

Predictive Validity. Predictive validity was analysed through the comparison of beginning meditators with individuals who did not meditate across a six-week period. Interestingly, observing the means in Table 6.1.3 suggests that the Mindfulness group scored substantially lower than the contrast group on each of the factors at T_1. However, by the end of the six-week beginner mindfulness course, the Mindfulness group appeared to score relatively equal to the contrast condition. ANCOVA assessments across the summation of scores for the scale, revealed that, whilst holding responses at T_1 constant, the Mindfulness group scored significantly greater on the factor Resonating when compared with the contrast group following the six-week mindfulness training. Although no significant difference was identified for responses to the factor Centring, whilst holding T_1 constant, this difference was trending towards significance.

Convergent Validity. AVE analyses indicated good convergent validity for the higher-order construct, Equanimity, and the underlying factor, Centring. However, Resonating was slightly below the threshold of good convergent validity, suggesting that its measurement contained a slightly greater degree of error as opposed to measuring the latent factor.

Discriminant Validity. Canonical Correlational Analysis demonstrated moderate to strong relationships with mindfulness, acceptance, wellbeing, psychological distress (negative association), authenticity, and self-actualisation, as well as a number of other variables that have previously been found to at least partially mediate the relationship between mindfulness and therapeutic outcomes. Comparisons of the AVE with the shared variance of other mediating variables indicated the measure's unique variance, suggesting that Equanimity, conceptualised as the direct hierarchical model, is indeed a separate construct to the comparison variables.

Simple Mediation Analysis. Simple mediation analysis, using bias-corrected bootstrapped confidence intervals within a SEM paradigm, demonstrated that the direct hierarchical model of Equanimity fully mediated the relationship between awareness of present moment experience and psychological distress within the population. However, the relationship between awareness and wellbeing was only partially mediated by Equanimity.

Multiple Mediation Analysis. A parallel multiple mediation analysis in the context of other variables that have previously been identified to partially mediate the relationship between awareness and therapeutic outcomes, demonstrated that, Equanimity had a significant and unique mediation variance.

7. Discussion

"Let the water settle,
You will see the moon and
stars mirrored in your being"
Rumi

The aim of the thesis was to develop and validate a measure of meditative equanimity. Within this aim, the main research question concerned exploring the phenomenological experience of equanimity according to experienced meditators. Moreover, an additional research question considered whether individuals practicing different techniques of meditation experienced equanimity in the same way. The purpose of this Chapter is to provide a discussion of these findings and situate the findings within the context of previous literature. Thus, how the qualitative accounts of equanimity relate to current ideas of mindfulness and equanimity within the literature are discussed. The construction and validation of the scale are then considered. Finally, a response to Desbordes et al. (2015) is provided, who suggested a series of recommendations in terms of assessing equanimity within the mindfulness literature.

The Phenomenological Experience of Meditative Equanimity

To achieve the overall aim of developing a set of items that could be used to assess the phenomenological experience of meditative equanimity, an inductive approach was employed. This was based on criticisms against mindfulness scales, which have typically used deductive approaches to generate a series of items. As noted by a number of authors (Chiesa, 2013; Grossman, 2008), deductive approaches result in mindfulness measures developed through a conceptual, rather than experiential, understanding. As a consequence, conceptualisations of mindfulness may be at risk of becoming further removed from the experience of mindfulness itself. These same authors advocate for qualitative designs to more closely capture the experience of the phenomena.

A series of focus groups, supplemented by in-depth interviews, were conducted with experienced meditators. To capture a deeper understanding of meditative equanimity, and to ensure that the items did not necessarily reflect only

one technique, two forms of meditation (Mindfulness and Stillness) were compared. Both forms of meditation were essentially chosen due to the fact that each comprises very different techniques, but are theorised to achieve the same state as a result of practicing the respective form. Thus, such a contrast in techniques allowed for the determination of similarities and differences between two disparate forms of meditation that suggest different techniques in order to cultivate equanimity.

An in-depth interview and focus group were carried out with experienced meditators from each of these two techniques. The study entailed documenting the experience of equanimity during meditation, as well as the meaning that the individuals derived from this experience. Although there is substantial divergence in how meditative equanimity was cultivated between the techniques, the focus of item generation was the actual experience of meditative equanimity, rather than how this state is developed.

An IPA was then performed across the separate transcripts for each of the meditative techniques, with the results across the two sets of analyses being subsequently compared. Three common superordinate themes were identified, including the process in developing meditative equanimity, an internal sense of 'being-ness', and finally the change in self-perception as a result of the experience. Although similar superordinate themes arose for each of the two techniques, differences were noted across the expression of these themes.

Process

Common conceptualisations of the first component of mindfulness, bringing one's attention into the present moment, overlapped with the process described by mindfulness meditators. However, where Brown and Ryan (2003) as well as Feldman et al.'s (2007) conceptualisation involved bringing awareness to mental states, this idea was not discussed by participants as an important component in the development of meditative equanimity. Rather, mindfulness meditators discussed the importance of "letting go" of one's attachment to thought and redirecting one's attention to the physical level of being. Similarly, Baer et al. (2004) and Walach et al. (2006) also conceptualised mindfulness as present moment awareness of mental states but additionally extend to this to a bodily awareness.

Mindfulness meditators also discussed how bringing attention into the body facilitates in an onpe-receptiveness to emotional sensations, which could ultimately be "looked at" and processed. This view is potentially inconsistent with the act of bringing attention to mental states that arise in response to emotions. Moreover, the idea of bringing attention into the body rather than the mind is consistent with Sangharakshita's (2004) commentary of the Satipatthāna Suttra, where attention of one's physicality provides an embodied sense of being. The importance of embodied mindfulness is further supported by Khoury et al. (2017), who argued that the latter represents a bottom-up process and is in contrast to a more cognitive top-down approach to mindfulness. As reported experiences were from experienced meditators, it may be that greater meditative experience is associated with developing a more embodied practice of mindfulness (Chiesa et al., 2013).

The bottom-up approach to mindfulness as developed by experienced meditators is further supported through a study conducted by Taylor et al. (2011). Using neuroimaging, the authors revealed that novice meditators perceived emotionally latent images with an attenuated emotional charge within a meditative state, when compared with a resting state. Such a shift was associated with increased prefrontal activation accompanied by decreased amygdala activity. This is in contrast to experienced Zen meditators, who in the same paradigm, also experienced decreased emotional charge within a meditative state. However, for the experienced Zen meditators, activity of the prefrontal areas and amygdala were not significantly different across both meditative and resting states. The difference between beginning and experienced meditators suggests that the decreased emotional charge experienced by experienced meditators through meditation was not the result of a top-down regulatory process, where prefrontal activity mediates the amygdala activation. According to Desbordes et al. (2015), extended experience in meditation means there may be shift in how emotions are processed, as in, the default mode network no longer plays a role in the regulation of emotions. Thus, by cultivating equanimity through expanded meditative practice, there is potentially no longer a need to cognitively 'down-regulate' emotional experience but rather to experience emotions for what they are.

Although the technique of stillness meditation substantially diverges from that of mindfulness meditation, the IPA analysis of experienced Stillness meditators'

accounts did not necessarily indicate that both stillness and mindfulness meditation were very different. Both the ideas of "letting go" of attachment to thoughts, as well as the theme of mental rest, further indicated the importance of directing one's attention away from contents of the mind. In terms of bringing one's attention into one's physicality, this is potentially the function of therapeutic touch, which is inherent to this form of meditation. The stillness meditation instructor providing therapeutic touch and non-specific suggestion, may facilitate the practitioner's ability to "let go" of attending to mental states, thereby bringing awareness into the body.

Being-ness

Interestingly, the 'being-ness' superordinate theme converged substantially across both Stillness and Mindfulness meditators. In fact, this was practically identical across the groups, with similar descriptions based on the felt-sense of the experience, a sense of clarity, and the non-conceptual nature of the experience. There were some slight differences, however, such as the Stillness meditators further discussing the experience of "lightness" and "just being" and the mindfulness meditator's description of "problems dissipating" through the experience of equanimity. Nonetheless, when determining the adequacy of such items derived from these specific subthemes, no significant quantitative differences were identified. These findings suggest that differences within this superordinate theme were due to the specific discussions that arose between the groups rather than having differential experiences of equanimity.

Whilst the process superordinate theme corresponded with the first component of mindfulness, the 'being-ness' superordinate theme described the attitudinal component. However, equanimity was not referred to as an acceptance of one's phenomenological experience by meditators of either technique. This finding is consistent with authors, such as Guanarama (2000), Rapgay and Bystrinsky (2009) as well as Zeng et al. (2015), who claim that acceptance is theoretically distinct from equanimity. This is especially important considering that the attitudinal component of mindfulness, what Desbordes et al. (2015), Olendzki (2011), and Zeng et al. (2015) identify as equanimity, is very often defined, by mindfulness and equanimity scales alike, as an accepting quality. Given that a number of themes came to represent the

attitudinal component of meditative equanimity, referring to this attitude as acceptance does not appear to capture the complexity of the internal experience.

Self-perception

A further self-perception superordinate theme was identified within the IPA as important to the phenomenological experience of meditative equanimity. This theme generally considered the change in one's self-perception, and by extension the way in which one related with the world, as a result of the experience. The superordinate theme described how, through the experience of meditative equanimity, one's self-perception generally shifted from a conceptual self to a self beyond concepts – self as the perceiver rather than the object of perception.

Unlike the description of 'being-ness', this was expressed differently across the two meditative traditions. Although both groups discussed the importance of emptiness, they each diverged in terms of what eventually filled this space. Where mindfulness meditators contextualised this emptiness as a dissolving self-concept and subsequent feeling of oneness with the world; the stillness meditators discussed emptiness in the context of dissolving non-authentic aspects of oneself in order to become more "whole". Both of these descriptions of oneself within meditative equanimity are supported by a number of religious and philosophical ideas and teachings, such as those within Taoism and Hinduism, and those by Descartes and Spinoza.

It appears that the changing self-perception as a result of experiencing meditative equanimity is only identified within each of the scales purporting to assess equanimity in a spiritual context. Moreover, this changing self-perception is an important element within religious and spiritual teachings. Therefore, a religious or spiritual context may be essential in making sense of the experience of equanimity. Recall that each of the meditation groups referred to the experience of equanimity as "ineffable", religion and spirituality may then provide a language to describe such experience.

Thus, the context surrounding practice itself may provide individuals with a way in which to interpret and ground the 'being-ness' component of meditative equanimity. Consequently, the common experience of heightened wellbeing may be thought of as due to the feeling of oneness or wholeness. This change in self-

perception may then consolidate and further the psychological benefits associated with mindfulness. However, this idea of the changing self-perception is not present within the mindfulness literature. Perhaps the attempt to describe mindfulness in a purely secular form may have resulted in the neglect of another important component of practice – the interpretation of the experience, which inadvertently occurs within the context of a particular spiritual, religious, or philosophical system of thought.

Shapiro, Schwartz, and Santerre's (2002) discussion regarding contemplative meditation as evolving from the dynamic model of meditation helps to situate the changing self-concept within the current conceptualisation of meditation. The authors suggested that concentration forms the foundation of meditation, with this expanded attentional capacity directed to all aspects of one's phenomenological experience through mindfulness meditation. The latter is then expanded and incorporated into contemplative meditation, where one surrenders to an experience of oneness with all things.

The discussion of self-perception within meditative equanimity furthermore brings into question the epistemological and ontological understanding in terms of what comprises the true self. Coinciding with the two approaches in conscious processing, the phenomenological reduction and the natural attitude, is the idea of two distinctly separate perceptions of the self (for instance, see: Gallagher, 2000 for a review). The *narrative self* entails the systematic implementation of cognition with the purpose of developing and preserving a narrative regarding oneself and one's relationship with the world. This narrative is situated in time, connected to both the past and future. However, this narrative is only a mental representation (as in, disembodied perception) of oneself and the world, which primarily acts to colour one's experience with their *natural attitude*. Dennett (1992) refers to this conceptualisation of oneself as the "centre of narrative gravity". Similarly, according to Spinelli (2007), the worldview must have at its centre a particular point of focus, such as the self, other, subject, or object.

The *minimal self* on the other hand is primarily the consciousness of the self as an "immediate subject of experience" (Gallagher, 2000, p.15), existing only in the present moment. For Manzotti (2006), within the experience of this *minimal self*, the perceiver is essentially inherently related to the perceived, the subject with the object,

and the self with others. No independent self can therefore be found except from that of the, “a priori interrelational grounding from which our unique sense of being arises” (Spinelli, 2007, p.14). This description of the minimal self underlies Heidegger's (2008) "Being-in-the-world”, whereby the self is inseparable from the world that is experienced. Finally, the Buddhist notion of “no-self” (Bhikkhu, 2011) potentially underlies the description of the minimal self.

Comparisons with Equanimity Measures

In terms of comparisons between identified themes and current measures of equanimity, substantial convergence with some measures is revealed but less convergence with others is observed. Primarily, the measures that defined equanimity as related to acceptance, such as *The Decoupling Model of Equanimity* (Hadash et al., 2016) and the SOFI (Kraus & Sears, 2009), no overt similarities were identified between the IPA themes and items comprising these scales. This is likely due to both of these measures being developed through an inductive approach based on the literature and defining equanimity in terms of an accepting attitude.

Nonetheless, many of the themes identified through the IPA of experienced meditators regarding the phenomenological experience of equanimity did overlap considerably with a number of other measures discussed in Chapter Two. For instance, the experience of heightened wellbeing was consistent amongst several measures. Within the *At Peace* factor of Boyd-Wilson and Walkey’s (2013) *Enlightenment Scale*, items referred to a sense of peacefulness, being centred, and a sense that one’s problems having dissipated. A sense of heightened wellbeing and centring was additionally referred to in the PEACE (Mack et al. 2008) and Tsui et al.’s (2016) two-item measure, which conceptualised equanimity as a peaceful acceptance, inner peace, calmness, and tranquillity, as well as an internal harmony, respectively.

Although Wagnild and Young’s (1990) equanimity factor was subsequently termed *Acceptance of Self and Other*, many of the items did converge with the IPA theme - clarity. Some of the items assessing an individual’s degree of adaptability, flexibility, and mental balance represented this factor. The representation of such items suggests that the *Acceptance of Self and Other* factor was assessing a different component of equanimity when compared with a number of the other measures. The

idea that several measures may in fact be assessing different components of the phenomenological experience of equanimity is further highlighted through Sakairi's (2004) *Cognitive Styles Modified by Meditation Scale*. The resulting *Receptiveness subscale*, referred to as synonymous with equanimity, contained items representative of the mental clarity subtheme, similar to Wagnild and Young's (1990) scale. These items were conceptualised as the ability to think objectively, seeing things from various angles, and seeing things from a distance. Although overlapping in terms of mental clarity, Sakairi's scale differs from Wagnild and Young's (1990) as it further assesses a heightened sense of wellbeing through items pertaining to being positive and thinking in an optimistic manner.

The fact that each of the measures of equanimity are attempting to measure this construct but from different or multiple angles is further illustrated through Astin and Keen's (2006) *Equanimity Scale*. The authors' conceptualisation of equanimity overlapped with the 'being-ness' components of heightened wellbeing and centring, as well as the changing self-perception inherent within the experience reported by the experienced meditators. This is supported by participants' identification of higher states of consciousness, authenticity, and self-transcendence as integral to the experience of equanimity. In the development of Astin and Keen's *Equanimity Scale*, however, only one item came to overlap with the identified themes. This particular item, *Felt at Peace/Centred*, represented only the 'being-ness' component, thereby excluding the changing self-perception as a result of experiencing equanimity. It was presumed that the authors implemented this change due to the scale itself being adapted for use within undergraduate students. Nonetheless, such a change does exclude a significant component of the experience of equanimity.

Although the *Equanimity subscale* of the *Aspects of Spirituality Scale* (Büssing et al., 2007) focused more on the process of attempting to achieve equanimity, one of the items did attempt to ascertain an individual's degree of *trying to practice spirit calm*. As well as identifying the importance of calmness within the phenomenological experience of equanimity, this item furthermore suggests that calmness is experienced in something that is perceived as greater than the self. This points to the idea of a changing self-perception as a result of experiencing equanimity. In fact, each of the scales that included some direct measure of equanimity within the context of spirituality included reference to this changing self-perception.

For instance, a changing self-perception was additionally noted within *The Integrated Spiritual Intelligence Scale* (Amram & Dryer, 2008). Equanimity in the context of spirituality was described as both a surrendering to something greater than oneself as well as a sense of inner-wholeness. Although the Mindfulness and Stillness meditators discussed either of these two aspects, respectively, the aforementioned scale suggests that both are not mutually occurring elements of the experience. As in, it is possible that a sense of inner wholeness arises due to experiencing a feeling of oneness with the world. If this is so, the experience of one's changing self-perception is not necessarily so different between the meditative traditions. Rather, it is language used to describe this experience that is different across the groups. Thus, the conceptualisation of one's changing self-perception is dependent on the teachings-as-context, which potentially provides a basis in which the individuals make sense of the experience.

Boyd-Wilson and Walkey's (2013) *Enlightenment Scale* defined the equanimous mind as the experience of the authentic self, a sense of oneness, and wholeness, and yet only the latter defining characteristic came to be represented within the items comprising the final scale. However, as a deductive approach was utilised in the construction of items, it is likely that only secular items were developed to either reflect Boyd-Wilson's understanding of enlightenment or provide a comprehensive measure of enlightenment existing apart from one's spiritual or religious orientation.

Possible Right Hemispheric Predominance

It is to some degree probable the phenomenological experience of meditative equanimity is right hemispheric predominate, as initially inferred by Earle (1981) and Ornstein (1975). The right hemispheric predominate theory is further substantiated from research by Khalsa et al. (2009), Lazar et al. (2005), Luders et al. (2009), and Moyer et al. (2011), who each identified a possible right hemispheric predominance within the meditative state. However, as indicated previously, the work by Davidson et al. (2003) and Kurth et al. (2010) demonstrates inconsistencies within the literature where any conclusions in this matter are tentative at best. Furthermore, it can be criticised that suggesting that one hemisphere plays a predominate role in meditative equanimity is overly simplistic and does not take into account the interconnected and

dynamic nature of how the brain works. Moreover, attempting to map the neurology of equanimity raises the metaphysical question as to whether equanimity is induced by the activation of particular brain regions or if particular brain regions are activated by an equanimous mind.

There are however a number of parallels between the themes identified within the phenomenological experience of meditative equanimity and right hemispheric activation. For instance, in terms of the experience of holding or nurturing within equanimity, Schore (2005) suggests that this may result from right hemispheric predominance or a sense of embodiment. This experience may be thought of as a re-experiencing of maternal reverie. As Shore (2005) suggests, the infant's capacity to process communication regarding attachment at a non-verbal level results from the interaction between both the mother's and the infant's right hemisphere. This is further elaborated by Brancucci, Lucci, Mazzatenta, and Tommasi, (2009, p.895), who stated that, "the neural substrates of the perception of voices, faces, gestures, smells, and pheromones, as evidenced by modern neuroimaging techniques, are characterised by a general pattern of right-hemispheric functional asymmetry". Schore (2010) therefore suggests a "model of right-brain-to-right-brain mother-infant communication" underlying the maternal-infant relationship. Therefore, the holding aspect of equanimity appears to be the result of right hemispheric activation or alternatively induces such activation.

In relation to the common experience of heightened wellbeing, a neuroimaging analysis by Gray, Braver, and Raichle's (2002) identified that the integration of both emotion and cognition occurs specifically within the right Brodman's area. Abbassi, Blanchette, Ansaldo, Ghassemzadeh, and Joanette (2015) argue that embodiment allows deeper processing of emotional information and additionally refer to this as being associated with right hemispheric activation. Moreover, according to Dillon and Pizzagalli (2007), the right pre-frontal cortex plays a crucial role in the inhibiting of immediate or conditioned responses, as in, non-reactivity.

The consistent experience of rejuvenation as a result of experiencing equanimity could in fact be describing what Robertson (2014) termed "cognitive reserve". Robertson initially theorised that cognitive reserve is a likely protective

factor from the expression of neurological damage due to degenerative conditions and may be primarily associated with strong right hemispheric activation, specifically, the right fronto-parietal regions. Robertson further identified an individual's cognitive reserve as interrelated with a sense of novelty and sustained attention. Gard, Hölzel, and Lazar, (2014) as well as Malinowski and Shalamanova (2017), provide further preliminary support for the association between meditation training and the enhancement of cognitive reserve.

Further extrapolating from Schore's (2014) suggestion that therapeutic practice is right hemispheric predominate, the *minimal self* or phenomenological attitude may actually facilitate in such a practice. For Tolle (2003), true listening can only occur within equanimity. The words themselves are secondary to the act of listening itself, where the spacious presence provides the capacity to hold the other completely in awareness. The 'other' is contained within equanimity without the constructed mental barriers, or narrative, that act to define oneself as separate from the other. Such a relationship is the essence of Buber's (2010) I-Thou, the 'boundlessness of being'. Silani, Lamm, Ruff, and Singer (2013), recently identified that the right supramarginal gyrus is crucial in empathetic identification, with the right hemisphere further essential in the Theory of Mind (for instance, see: Balaban, Friedmann, & Ziv, 2016).

Initial Scale Construction

Based on the IPA across the focus groups and in-depth interviews of experienced Mindfulness and Stillness meditators, several items were developed to assess the phenomenology of meditative equanimity. As the focus of the scale was primarily the experience of meditative equanimity, rather than the process of attaining such, items represented the 'being-ness' and self-perception superordinate themes identified through the IPA.

Consistent with Anastasi and Urbin's (1997) recommendation, a larger number of items were developed for substantially overlapping themes across the two groups, such as those comprising the superordinate theme 'being-ness', as opposed to those underlying self-perception. This ensured that the scale appropriately represented the most consistent aspect of meditative equanimity across traditions. Underrepresenting divergence between groups ultimately acts to limit the degree of

bias towards any one meditative tradition. The number of items constructed was based on the need to develop twice as many items as required for the final scale (see: Morgado, Meireles, Neves, Amaral, & Ferreira, 2017, for such a recommendation in initial item development). As Netemeyer, Bearden, and Sharma (2003) suggest, roughly ten items per factor is ideal, with less items limiting reliability, the item development phase was therefore expected to generate approximately 40 items; a total of 38 items were initially developed.

It was decided that none of the items would be reverse coded, as many problems with this technique in scale construction have been noted. As indicated by Netemeyer et al. (2003), negatively worded items routinely load onto their own factor, thereby confusing the factor structure of the underlying phenomena. The scales utilised within Chapter Six: Part Two substantiate this recommendation, where scales comprising some reverse-coded items had all of these such coded items loading on their own individual factor (see: PHLMS, Cardaciotto et al., 2008; SAS, Jones & Crandall, 1986; Authenticity Scale, Wood et al., 2008). Moreover, as indicated by Swain et al. (2008), it is likely that reverse-coded items are misinterpreted and thereby consequently limits interpretability of responses.

A seven-point scale was utilised as the response format of the Phenomenology of Meditative Equanimity Measure. A number of researchers suggest that a seven-point response format provides individuals with the opportunity to determine their true score on a particular item, therefore minimising interpolation between response-points. It was further recommended by Finstad (2010) that online surveys incorporate a seven-point scale, as there would be no opportunity for participants to interpolate between response-points, unlike paper-and-pencil surveys. This was especially pertinent considering recruitment for the EFA and CFA studies were conducted on-line.

Adequacy of Items

Subsequent to the development of items based on the IPA of experienced meditators' experience of equanimity, the adequacy of such items was determined. A total of 408 individuals comprising three groups of meditators and another group of non-meditators completed the 38-item measure. Based on Izquierdo et al.'s (2014) suggestion, preliminary analyses were performed in order to determine the quality of

items in assessing the construct of interest. This was especially pertinent where an inductive approach to scale development was implemented, as one of the limitations to this approach is incorporating items that do not truly reflect the actual construct under investigation (see: Smith, Fischer, & Fister, 2003). Comparisons between the different meditation groups and non-meditators resulted in the removal of seven items, which are provided in Table 7.1 along with the IPA subthemes from which the items were derived from.

With regards to the removal of item two, considering Maslow's (1943, 1954) hierarchy of needs, this is a basic need common to all individuals, and is arguably expressed in an equal measure regardless of whether or not one meditates. Being in-tune with oneself (item five), according to Maslow, is a defining feature of self-actualisation, and therefore likely reflects the overlapping nature of both equanimity and self-actualisation. The two items removed within the theme representing mental clarity/balance were potentially a result of item wording. As the items were quite straight forward, they had a substantial degree of face validity, and thereby may have been open to responses biased by expectations (for instance, see: Weiner & Craighead, 2010). Whereas the two remaining items assessing mental clarity/balance were quite similar to those excluded but diverged subtly in meaning, thereby were not as straight forward.

Table 7.1.

Removed Items as a Result of No Differences Between Meditators and Non-Meditators

IPA subtheme	Item
Holding/Nurturing	2. I feel safe within myself, knowing that no matter what happens, I'll be okay.
Grounded-ness/ Centring	5. I experience moments of being in-tune with myself.
Mental Clarity/Balance	19. I experience moments where my thinking is crystal clear.
	22. I experience being able to simultaneously hold a close-up view as well as a distant perspective of my life.
Unification	32. I experience myself as connected to something greater than myself, whatever that may be.
Authenticity	33. I experience an inner knowing that I am authentic within myself.
	34. I follow my own path, regardless of societal expectations.
Inner Strength	37. I experience moments of great inner strength.

Both items derived for authenticity also indicated non-significant differences between meditators and non-meditators. This may also be the result of identifying an overlapping construct not necessarily unique to the phenomenology of meditative equanimity. As discussed earlier, identifying overlapping constructs can be a limitation within the indicative approach to scale development. Similarly, the theme unification resembles belief in a general spirituality or religiosity rather than the purported defining feature of such an experience. Finally, the usage of inner strength is quite arbitrary, with potential interpretations covering resolution of one's will, personal integrity, or the capacity to persevere in the face of doubt. Such differential interpretations suggest a large degree of random error associated with responses to this item.

To further determine the adequacy of items in assessing the phenomenological experience of meditative equanimity, it was further purported that meditative experience would have a significant impact on an individual's response to the constructed items. Regression analyses indicated that only item eight, *I experience moments that feel like they are suspended in time*, was not predicted by one's cumulative hours of meditative experience. However, the item appears to lack grounding in context and thereby may have additionally been confounded by error variance.

Interestingly, the adequacy of item analysis revealed that themes discussed by a group of meditators were not necessarily exclusive to that group. Not only is this pertinent to the two additional themes discussed by Stillness meditators associated with the felt-sense of the experience, but also to the differential understanding of oneself in relation to the experience. This suggests that both Stillness and Mindfulness meditators have very similar experiences in terms of their changing perception of oneself and their relationship with the world, but the context of teaching may in fact determine the way in which this experience is interpreted or understood.

Exploring the Factor Structure

Following the removal of the aforementioned items, an EFA was then performed on the remaining 30 items. As recommended by Fabrigar et al. (1999), the factor structure underlying the items was analysed separately for the heterogeneous groups comprising either the meditation groups or non-meditators. However, due to

not meeting the robust sample size requirements ($n \geq 10$ for every item in the model) necessary for a valid factor structure to be identified, each of the meditating subsamples were combined for the analysis. Although such groups can be considered heterogeneous due to their meditative technique, thereby potentially limiting the validity of the resulting factor structure, the initial MANOVA comparisons did not reveal substantial differences across each of the items of interest for these different meditation groups.

Two factors were identified, one with nine loading items and the other with eleven. The former was retrospectively labelled Centring due to items referring to a sense of being centred within oneself, encompassing the phenomenological descriptions of wholeness, nurturing, grounded-ness, balance, stability, peacefulness, calmness, and 'at-home-ness'. Resonating was selected to define the latter factor due to the apparent experience of meditative equanimity resonating outwards into the world. Aspects of the experience included a sense of merging with the world, interconnectedness, reality being suspended, a sense of emptiness, heightened senses, and a sense of profoundness. The naming of factors was fundamentally based on the verb-like process reflecting the dynamic nature of "worlding". Interestingly, Centring predominantly represents the felt-sense IPA theme, whereas Resonating encompasses the remaining themes of the superordinate themes 'being-ness' (clarity & non-conceptual) and self-perception. Importantly, items derived from the same IPA subtheme did not load on separate factors, thereby providing some empirical support for the IPA itself.

The same analysis was then conducted across the sample of non-meditators. However, as the non-meditating group did not meet the sample size criterion, a bootstrapped EFA paradigm was implemented. Representing the current sample 5,000 times through re-sampling allowed the factor loadings of each of the items to estimate a larger population of non-meditators. This resulted in a factor structure consistent with the meditating sample. Although Resonating was identical in terms of item loading, Centring had two extra items to the nine already identified within the meditating sample (Items 15 and 23).

Items 15 and 23 were derived from the IPA subthemes 'just being' and 'non-reacting', respectively. It was presumed that such items were potentially interpreted

differently by meditators and non-meditators based on their meditative experience and the degree of their understanding of such terminology. Considering the linguistic importance within the meditation literature of such themes, this is quite likely the case. As in, meditators may have interpreted such themes as conceptually overarching the entire experience of Centring, whereas non-meditators may have perceived these as discrete experiences.

Following the removal of these two additional items, a Tucker's coefficient of Congruence then determined that the item loadings determining the factor structure of the phenomenology of meditative equanimity was consistent across both meditators as well as non-meditators. Thus suggesting that meditative equanimity is experienced in the same manner across the two groups, with intensity and frequency of equanimity a function of meditative experience. However, further research was required to determine if this finding was idiosyncratic to the current sample, or if the resulting factor structure could be generalised to further groups of meditators and non-meditators.

Confirming the Factor Structure

Recruitment of a completely new sample resulted in 669 respondents who had completed, at the very least, basic demographic questions and the now 20 items assessing the phenomenology of meditative equanimity. This sample was further broken down into five subgroups, including four groups of meditators: Samatha, Vipassanā, Stillness, and Non-specified, as well as a fifth group consisting of non-meditators.

Subsequent to confirming the adequacy of the remaining 20 items with this new sample, the feasibility of three models concerning the phenomenology of meditative equanimity were assessed in the context of MGCFA. The three models conceptualised the construct as a uni-dimensional, two-factorial, or a direct hierarchical (nested-factors) model. Although the EFA identified two factors underlying the scale, the aim of comparing both the uni-dimensional and two-factor solutions was to compare their feasibility, as in, whether the scale could be used as a summation of scores across all of the items for both factors combined. In terms of conducting the series of CFAs, only four of the five groups were assessed due to

meeting the required sample size of over 100, as recommended by several researchers (see: Kline, 2005; Tabachnick & Fidell, 2007).

Satorra-Bentler's (2001) correction for non-normality, which provides robust standard errors, indicated that the two-factor solution (Centring and Resonating) fit the data to a greater extent than when compared with a uni-factorial solution. However, neither model was acceptable according to the cut-off criteria of the respective fit indices. In terms of the direct hierarchical model, the groups with the lowest number of participants (Samatha and Stillness), Haywood cases, impossible solutions or negative factor loadings were identified. It was argued that this situation was a consequence of model complexity in combination with the smaller sample sizes. This appears to be a viable conclusion since Haywood cases were not present in the factor loadings of the two other groups with larger samples (n = 142 to n = 247). Whilst ensuring positive factor loadings for the first two groups, by constraining factor loadings above zero, the phenomenology of meditative equanimity conceptualised as the direct hierarchical model was found to substantially fit the data for each of the four groups. The absolute, the relative, and non-centrality fit indices supported the feasibility of the model, with each demonstrating favourable results.

Measurement Invariance

As discussed earlier, Measurement Invariance involves the two-fold comparison of nested models whilst simultaneously comparing a number of groups within a SEM paradigm. Each nested model specifically tests one aspect of the scale and the underlying construct, for instance, item loadings or intervals between response-points. Although the intra-variability of responses across groups is typically assessed as part of the Structural Invariance process, this was in fact identified by Kline (2013) to be an assumption for the reference-group method. Thus, this was therefore assessed prior to the analyses with any discrepancy held constant throughout the series of nested models.

Based on Chen's (2007) criteria, comparisons of the nested models across the groups revealed invariance in each aspect of the scale and the underlying construct, with the exception of latent means. Measurement Invariance itself only indicates if a discrepancy exists, without necessarily identifying where this discrepancy arose. Therefore, a post-hoc latent mean analysis demonstrated that, as expected, each of the

three meditation groups reported significantly greater frequency and intensity associated with the phenomenology of meditative equanimity in comparison with non-meditators. Such analyses additionally revealed that the difference in Resonating between meditators and non-meditators was considerably greater than that of Centring.

As differences were noted for the non-meditators in terms of latent means, this group of participants was excluded from the further Measurement Invariance analyses. The three meditation groups were then combined and separated again according to gender, marital status, and finally, whether the individual meditated in a Buddhist as opposed to a secular, context. The resulting analyses suggested that the groups were invariant across each of the models including latent mean comparisons.

Interestingly, in the latter analysis, the factor Resonating demonstrated a greater loading than Centring on meditative equanimity. This contrasts with the previous analyses, where Centring loaded more heavily. This could suggest the differential importance of Resonating, as opposed to Centring, when in the context of one's religious or spiritual foundation, which may act to provide meaning to the meditative practice. Therefore, in the context of spirituality, greater motivation may be placed on experiencing a connection with the world, or a sense of oneness, rather than having a sense of internal calmness or peacefulness. This interpretation is further supported by current measures of equanimity within a spiritual context, where a sense of one's changing self-perception receives adequate attention. On the other hand, measures not assessing equanimity within a spiritual context do not refer to a changing self-perception.

Validating the Measure

Initial validity analyses were used to determine if the basic demographic information provided by participants, such as age, education, and income, significantly predicated variance in the direct hierarchical model of meditative equanimity. Primarily, age was found to significantly predict the experience of meditative equanimity. However, this relationship was no longer substantial subsequent to factoring in an individual's meditative experience in years.

Both education and income were identified as non-significant predictors of meditative equanimity. Compared with previous measures of equanimity, the

relationship between education and equanimity has been inconsistent. For instance, Büssing et al.'s (2007) retrospectively labelled *Equanimity Subscale*, was not associated with an individual's education status. In contrast, Astin et al. (2011) and Keen (2010) found a greater proportion of final year college students scoring in the highest category within their *Equanimity Scale* when compared with the same student's response-set upon entering college. Nonetheless, the aforementioned analysis compared differences in proportions, with a four-percent increase in high equanimity following the completion, as opposed to the commencement, of college. Moreover, Astin et al.'s (2010) *Equanimity Scale* was specifically designed to assess the cultivation of equanimity through education and therefore may be more sensitive to equanimity within such a context.

Test-retest Reliability. Strong reliability, according to the multi-dimensional ω, was demonstrated within Chapters Four and Five (from .895 to .926 within a variety of different subsamples). Reliability was further analysed through test-retest assessments across a total of 140 participants who completed the measure as part of the MGCFA and Measurement Invariance analyses (see: Chapter Five). These individuals completed the additional questions addressing the comparison variables and indicated that they would like to be contacted for further research. This sample comprised both meditators and non-meditators, as the study aimed to determine the proportion of agreement over a one-month period, with the level of agreement expected to be relatively similar for both groups.

The parametric analysis, Proportion of Agreement, was implemented to determine the agreement concerning each individual's response over the one-month period. This analysis was primarily utilised as it was argued that test-retest reliability is not necessarily a question of association, but rather agreement over time. Although Nevil et al. (2001) suggested good reliability is indicated by 90% agreement of scores plus or minus one, agreement across individual items for the current study ranged between 72.41% and 85.52%. However, the recommendation of 90% was in consideration of a five-point scale; that being so, these proportions are quite robust in the context of a differential scale format. The criterion was thereafter modified to plus or minus two so as to accommodate for a seven-point Likert scale. This modification indicated strong reliability at an item level except for two items, which nonetheless reached at least 88% agreement.

Reliability was additionally assessed at a factorial level, which suggested that the phenomenological experience of meditative equanimity, expressed as the direct hierarchical model, at T_1 strongly predicted the latent variable at T_2 for the sample. It was further identified that the factor Centring was less stable than Resonating over this timeframe. Although it would be interesting to determine if the stability of these factors is expressed differently between meditators and non-meditators, the results suggest, according to Kline's criterion (2005), strong factorial reliability over time. Moreover, Kline's criterion concerns the measurement of reliability through Pearson's *r*, which is commonly implemented for this type of assessment. However, Pearson's *r* determines the degree of association between two sets of responses, whereas Path Analysis within a SEM paradigm determines the relationship between the latent variables across two such responses. Thus, indicating that the current assessment is considered more robust due to factoring in variability associated with measurement error when conducting the analysis.

Concurrent Validity refers to the degree to which a scale is associated with validated measures of the same or similar constructs. Initially it proved difficult to identify strongly validated measures of equanimity as only two scales have had their factor structures confirmed through CFA; the *Holistic Wellbeing Scale* (Chan et al., 2014) and the *Enlightenment Scale* (Boyd-Wilson & Walkey, 2013). Nonetheless, both scales were confirmed subsequent to post-hoc modifications or parcelling items. Additionally, the scales themselves were developed in a deductive manner, potentially only examining the explicit aspects of the phenomena. As an inductive alternative, Sakairi's (2004) *Receptiveness Subscale* from the *Cognitive Styles Mediated by Meditation Scale* was utilised for the concurrent comparison. Although retrospectively labelled, the subscale itself was developed in an inductive manner through examining statements provided by meditators in terms of their experience in cognitive shifts as a result of practicing meditation. Path analysis through SEM revealed that the direct hierarchical model of meditative equanimity strongly predicted variance in Sakairi's subscale, with Centring predicting greater variance than Resonating. Considering Sakairi's (2004) measure did not incorporate the changing self-perception from experiencing equanimity, this difference in prediction between the factors was to be expected.

Predictive Validity. To determine the capacity of the Phenomenological Experience of Meditative Equanimity Measure to predict future performance, a convenience treatment paradigm was implemented. Recruitment resulted in a sample of 20 individuals commencing a beginner's mindfulness meditation course, the responses of which were compared to a sample of 17 individuals with no prior meditation experience. The results of this pseudo-experimental context indicated that the six-week mindfulness course was predictive of the cultivation of meditative equanimity. However, the finding had a number of dimensions that need to be considered.

Primarily, the factors themselves had to be analysed separately as the resulting CFA of the uni-dimensional model suggested that responses to all items could not be summated in order to provide a total score of meditative equanimity. Thus, in terms of the treatment group, no difference between pre- and post-assessment was revealed for Centring, whereas a significant increase was identified in a similar assessment for Resonating. Interestingly, Centring for the contrast group significantly attenuated as a function of time, whilst Resonating remained relatively stable over the six-week period. Furthermore, ANCOVA comparisons, whilst holding the pre-treatment scores constant, revealed the mindfulness meditation group reported significantly more intensity and frequency of Resonating experiences, whereas Centring itself was trending towards significance.

The fact that Centring for both Mindfulness meditators and the contrast group were not significantly different following the treatment paradigm could in fact be explained by "bad" timing. The mindfulness training around Melbourne concluded mid-December (Christmas time), which is potentially a stressful period for most individuals, especially those low on religiousness (for instance, see: Mutz, 2016). The stressful period possibly explains why the contrast group decreased in Centring experiences over this time. If this is the case, it suggests that mindfulness meditation helped individuals remain centred in the context of a stressful period.

Convergent Validity is assumed as demonstrated by virtue of a particular scale's pattern of correlations with other scales purporting to measure theoretically similar and dissimilar constructs. However, as argued by Western and Rosenthal (2003), convergent validity is not so much determined by the measure's pattern of

strong correlations, but rather the degree that each of the items comprising the scale are all measuring the same construct. This can be examined through the AVE statistic, which provides a ratio signifying the degree of average variance extracted from the items comprising the scale that is then compared with random error.

The Fornell and Larcker (1981) criterion was adapted to accommodate for a nested-factor construct. The phenomenology of meditative equanimity, expressed as the direct hierarchical model, was found to have good construct validity, whereby items were measuring more of the construct in comparison to error. When determining the AVE of each factor separately, Centring was identified as having good construct validity, whereas Resonating was just below the threshold of what is considered a good ratio between the latent variable and random error. This might be explained by the differential IPA themes that this factor comprises. As well as tapping into the sense of clarity and non-conceptual aspects of the experience, Resonating additionally assesses the individuals changing self-perception as a result of meditative equanimity. Potentially, different interpretations by participants regarding their changing self-perception in the context of their meditative style may have contributed to this heightened degree of within-factor error.

Discriminant Validity is typically demonstrated through weak or non-significant correlations with theoretically dissimilar variables. Nonetheless, the degree of association is often arbitrary, with the researchers using their own discretion to identify uniqueness of the variable. Instead, Campbell et al. (2015) suggest uniqueness of the variable can be demonstrated by identifying its unique variance in comparison with similar variables. This can be achieved through comparing the factor's AVE with the squared (canonical) correlation between comparison variables, with a higher AVE in comparison to the shared variance indicating unique variance.

Based on the literature of equanimity, both self-actualisation and authenticity were a priori theorised as having some degree of overlap with the phenomenological experience of meditative equanimity. Furthermore, compassion, decentring, experiential avoidance, non-attachment, emotional intelligence, and meditative insight, have each been demonstrated to mediate the relationship between mindfulness and therapeutic outcomes. However, AVE comparisons of the direct hierarchical model, and each Centring and Resonating separately, suggested the unique variance

of meditative equanimity in relation to the aforementioned variables. Importantly, uniqueness was established between both acceptance and meditative equanimity, suggesting that they are indeed separate constructs.

Mediation. In validating the measure, it was further presumed that the phenomenology of meditative equanimity mediated the relationship between mindfulness, defined as present moment awareness, and the attenuation of psychological distress. Within a SEM paradigm using bias-corrected bootstrap confidence intervals, the analysis indicated that equanimity developed through meditation fully mediated the relationship between mindfulness and psychological distress. This finding is consistent with Buddhist philosophy, where *Sati* cultivates *Upekkhā*, which in turn attenuates *dukkha.*

A similar simple mediation was subsequently performed with wellbeing as the outcome variable. The resulting analysis indicated that the experience of equanimity within meditation accounted for half of the variance in wellbeing attributed to mindfulness. The fact that a significant portion of variance in the relationship between present moment awareness and wellbeing was attributed to equanimity supports the theoretical models proposed by Tang and Tang (2015) as well as Rapgay and Bystrisky (2009). However, both models further suggest the importance of cognitive regulation underling the development of psychological wellbeing, potentially explaining the remaining variance in the relationship between the variables of interest.

To explore the mechanism underlying the relationship between mindfulness and wellbeing further, a parallel multiple mediation paradigm was implemented. This ultimately compares each of the previously identified mediators of mindfulness in terms of their capacity to mediate the relationship between the latter and wellbeing. The parallel multiple mediation model revealed that, when accounting for the effect of such mediators, mindfulness by itself no longer influenced wellbeing. However, only meditative equanimity, decentring, experiential avoidance, and non-attachment remained significant mediators in the context of the model. It was noted within this model that the direct effect of mindfulness on wellbeing was substantially larger when compared with the simple mediation paradigm. Preacher and Hayes (2008) suggest that this is a consequence of the correlated nature of certain variables within the model, namely the cognitive mediators.

It was furthermore noted that compassion, emotional intelligence, and meditative insight were not significant mediators within the parallel multiple mediation analysis. This result is consistent with the view that such mediators were significant in previous literature by virtue of working through meditative equanimity in order to predict variance in the relationship between mindfulness and therapeutic outcomes. The finding that cognitive regulatory strategies and meditative equanimity combined, to fully mediate the relationship with present moment awareness and wellbeing, underscores the argument proposed by Chiesa et al. (2013), Hartelius (2015) and Khoury et al. (2017). This suggests that while the bottom-up approach to mindfulness is sufficient to attenuate psychological distress, both the top-down and bottom-up approaches work in combination to improve wellbeing.

In response to Desbordes et al. (2015)

Desbordes et al. (2015) indicated that any newly developed measure of equanimity is inevitably going to face the same problems inherent across mindfulness scales, which apply further to self-report measures in general. The authors argue that there is likely to be disagreement regarding the definition of the construct; researchers may also lack a good theoretical understanding of the variable; interpretation of items may differ according to one's experience of the phenomena; the degree of self-reporting may not reflect reality; biases may result on the part of mindfulness practitioners due to their investment in the practice; and finally, factorial validity may be limited as a consequence of utilising the wrong samples for these analyses.

The construction and validation phases of the Phenomenology of Meditative Equanimity Measure attempted to overcome such limitations, thereby strengthening the validity of the scale itself. By implementing an inductive approach, the various definitions and theoretical underpinnings of equanimity were not considered in the initial scale development. Rather, experienced meditators' phenomenological experience of equanimity within meditation informed the development of items for the scale. It was further noted that there was considerable overlap regarding the definition of equanimity within the literature. However, current definitions primarily concern the components associated with 'being-ness', with only scales developed in a spiritual context considering the philosophical interpretation of this experience.

In terms of Desbordes et al.'s (2015) concern regarding the differential interpretation of items between meditators and non-meditators, this can be determined through comparisons of such groups via the Metric model when assessing Measurement Invariance. This was revealed to not be the case for the Phenomenology of Meditative Equanimity Measure. Additionally, it was noted that an individual's response-set may not represent their true score on the variable, which is a problem for all self-report measures. The validation studies, as far as possible (except for the use of ANCOVA due to small sample sizes), took error into account when performing the analyses. This does not necessarily mean that each of the responses represented a realistic assessment of an individual's experience of meditative equanimity, but is a more accurate reflection than when utilising summated factor scores to estimate the construct.

Contrary to Chiesa (2013), who identified a "response shift", where experience in meditation may potentially translate to perceiving larger intervals between response-points, Desbordes et al. (2015) state that experience in meditation may result in the opposite direction due to expectancy bias. Regardless of the direction in response bias, Scalar model comparisons between meditators and non-meditators indicated that the intervals and zero-points of the current measure were consistent across these groups. Finally, by utilising members of the general population, those who meditate and others who do not, provides further validity for the factorial structure of the scale.

8. Conclusion

"There is nothing to save, now all is lost,
but a tiny core of stillness in the heart
like the eye of a violet."
T.S. Elliott

The following chapter discusses the significance and implications of the current thesis. Subsequently, methodological considerations and limitations of the thesis are documented, with attention on future directions in order strengthen the measure and further explore the phenomena that the scale purports to assess. Finally, before concluding the thesis, some recommendations in scale development are provided.

Significance and Implications

In terms of significant contributions to the field of psychology, the current thesis is the first to provide an in-depth account of the phenomenological experience of meditative equanimity. Although this was partly achieved through the development of a number of previous equanimity scales, most scales utilised a deductive approach where previous literature informed the understanding of the phenomena. Measures developed through inductive approaches defined equanimity retrospectively in the broader factor structure underling the items initially developed. However, this thesis prospectively documented the qualitative experience of equanimity according to experienced meditators. Such an approach provides greater focus on the construct under investigation and therefore multiple aspects of the experience can be examined.

The phenomenological experience of meditative equanimity was identified as comprising three superordinate themes. These included the process of developing equanimity, the 'being-ness' of the experience (including the internal felt-sense), and the perception of self as a consequence of experiencing meditative equanimity. It was furthermore identified that two groups of individuals, each practicing disparate techniques of meditation, reported similar internal 'being-ness' experiences of meditative equanimity. The similarity across groups suggests that the internal experience of equanimity may be unrelated to the process used to develop this state.

In terms of the process of meditative equanimity, which coincides with Kabat-Zinn's (1996) and Bishop et al.'s (2004) first component of mindfulness, the current thesis identified the importance of what has been referred to as embodied mindfulness. Through qualitative accounts from experienced meditators, it was identified that bringing one's present moment awareness into the body facilitates in "looking at" the sensations of emotions as they arise within the body. This has implications for the conceptualisation of mindfulness within the current literature. For instance, Brown and Ryan (2003) and Feldman et al. (2007) define this component exclusively in terms of being aware of mental states. In contrast, Baer et al.'s (2004) and Walach et al.'s (2006) conceptualisation, including bodily sensations, is more consistent with participant experiences from the present investigation. Moreover, the latter conceptualisation of the process coincides with the combination of top-down or cognitive and bottom-up or embodied approaches to developing equanimity.

As well as identifying similarities between meditative traditions regarding the internal experience of equanimity, the current thesis documented the multi-faceted nature of this very experience. Based on the ideas proposed by Desbordes et al. (2015), Olendzki (2011), and Zeng et al. (2015), it is argued that this multi-faceted internal experience of meditative equanimity is a closer representation of the 'attitudinal' component of mindfulness than that described within the literature. The attitudinal component is often defined by non-judgementalness, which is thought to be synonymous with acceptance. Kabat-Zinn (1996) suggested that this attitude is further conceptualised through seven qualities, with a further five added by Shapiro and Schwartz (2000). However, the current thesis suggests that these qualities representing the attitudinal component of mindfulness, or rather equanimity, do very little to encapsulate the internal qualities of the experience itself. More importantly, defining these qualities by an overarching sense of acceptance is conceptually at odds with the essence of the experience itself. This has been reflected by the sediments of several authors in the field (for example, see: Gnanarama, 2000; Rapgay & Bystrisky, 2009; Zeng et al., 2015) and has now been substantiated both qualitatively and quantitatively within the current thesis. Not only was meditative equanimity identified as having unique variance to acceptance, but also none of the experienced meditators discussed equanimity in reference to acceptance.

Therefore, if the attitudinal component for Western conceptualisations of mindfulness is not overarchingly defined by an attitude of acceptance, but rather an open and receptive attitude to one's phenomenological landscape, this consequently has implications for the construct's conceptualisation and how it is ultimately measured. The majority of mindfulness measures incorporate an attitudinal component, which may resemble equanimity, but rather may in fact be unintentionally measuring something overlapping with equanimity. Therefore, such measures are potentially assessing a 'hybrid' conceptualisation of mindfulness and equanimity rather than the Buddhist idea concerning these constructs.

The current thesis has also identified a third component, namely self-perception, beyond the process and attitudinal components of mindfulness. This changing self-perception as a result of experiencing meditative equanimity was identified as differing across meditative traditions from the qualitative accounts. It was discussed that this difference was attributed to teachings-in-context, where the teachings surrounding the particular meditative technique facilitated understanding or interpreting the experience of meditative equanimity. Thus, the actual internal experience associated with equanimity was further interpreted as broadly arising from either a sense of wholeness within the self or oneness with the world. Although both meditative traditions differed in terms of their qualitative accounts, no difference between these groups was identified in the quantitative comparisons of items representing these themes. Suggesting that both interpretations are potentially interrelated, in that, experiencing a sense of oneness with the world facilitates a sense of wholeness within the self and vice versa.

The finding that self-perception arose as an important component within the experience of meditative equanimity is in contrast to the scientific literature of mindfulness, which largely omits this experience. Moreover, the changing self-perception component is only mentioned in scales purporting to measure equanimity within a spiritual context, and largely neglected in the more secular measures of this construct. Such has implications for the debate regarding the de-contextualisation of mindfulness and whether something is lost when taking mindfulness out of its contemplative context. The findings of the current thesis suggests that by conceptualising mindfulness within a secular context there may be no longer a

language in order to use as a basis for interpreting one's changing self-concept as a result of experiencing equanimity.

Although secular mindfulness within Western psychology facilitates therapeutic outcomes, these outcomes may potentially be strengthened and perpetuated when interpreted within the context of spiritual teachings. There may be an interactive process between these two components, where the internal experience leads to an interpretation of feeling whole or an "at-oneness", with these interpretations perpetuating the internal experiences and by extension the therapeutic outcomes.

Nonetheless, no difference in latent means for equanimity was identified between meditators from Buddhist and secular contexts. However, this finding has been inconsistent in past research. Wachholtz and Pargament (2005) identified greater reductions in anxiety as well as enhanced mood for individuals meditating in a spiritual as opposed secular contexts. These inconsistencies may be due to the length of practice. Wachholtz and Pargament compared individuals just beginning meditation training; contrarily, the sample of the current thesis mostly comprised experienced meditators. The fact that both experienced meditators within a secular and Buddhist context did not differ in terms of Resonating may suggest that experienced meditators, not initially meditating within a religious or spiritual framework, begin to construct their own philosophical understanding of the internal experience of equanimity over time. It is possible that short-term meditators have simular Resonating experiences, however, religion and spirituality can provide a language to identify these experiences. Without such a language, these experiences might be dismissed as bizarre and unusual. Thus, potentially explaining why such a factor has not been identified in previous literature concerning mindfulness, considering most factor analyses were conducted in a secular context with undergraduate students.

The current thesis also adds meaningfully to the literature by developing a measure to assess the phenomenological experience of meditative equanimity. Although a number of measures of equanimity exist within the literature (for example, see: Hadash et al., 2016; Büssing et al., 2007; Astin & Keen, 2006) , the current thesis provides a measure of equanimity prospectively based on an inductive approach that

demonstrates very good confirmation of its factor structure across many subsamples of meditators as well as non-meditators. The equanimity measure furthermore demonstrated very good validity throughout a number of different paradigms.

In addition to confirming the factor structure of the phenomenological experience of meditative equanimity, the current thesis significantly contributes to the literature by performing Measurement Invariance on a nested-factor model. As the development of these two techniques is relatively new to the psychological literature, this is first such occurrence of combining both techniques. The thesis therefore provides a way forward when determining Measurement Invariance of multi-dimensional models, considering some authors have suggested that the assumption of uni-dimensional constructs within psychology is very difficult to satisfy.

Finally, the current thesis significantly contributes to the psychological literature by highlighting the number of assumptions that are inherent within self-report measures. For instance, the most pervasive assumption underlying comparisons between groups with self-report measures is the idea that heterogeneous groups perceive the measure in the same way. This is a complex problem with possible diverging interpretations occurring on multiple levels. Firstly, it is assumed that the groups conceptualise the construct in the same manner, which ultimately has implications for the operationalisation of the phenomena. This is interrelated with the assumption that items purported to assess the construct are additionally interpreted and responded to in the same manner across the heterogeneous groups.

Furthermore, it is assumed that the intervals between response-points are the same across each group of respondents. This is problematic to the extent that some researchers suggest that experience with a particular construct may result in a 'response shift' or expectancy bias, where intervals of the scale are therefore perceived differently across such groups. Related to this is the issue of zero-points in the response format of the scale; in-depth understanding of the construct may be associated with identifying where true zero is on the scale. It is additionally presumed that systematic error is relatively identical across groups, which according to some authors, is essential for any meaningful differences to be identified.

Finally, when responses to items are summated to create factor scores, this assumes that each of the items predict the latent variable to the same degree. Instead,

each item must receive its own regression weights according to how well it predicts variability in the construct. This should ultimately occur within the context of conceptualising the variable as multi-dimensional, with interrelated factors, as stipulated within a nested-factors approach.

Methodological Considerations

Although the current thesis provides several significant contributions to the psychological literature, there are a number of methodological considerations that need to be examined in light of the results. The first and potentially the most important point is the use of an inductive approach in the measure's construction.

Inductive Approach to Scale Construction

According to Smith, Fischer, and Fister (2003), an inductive approach to scale construction has the capacity to describe the phenomena to a greater extent than pre-existing theoretical conceptualisations. This method allows for greater understanding in terms of the construct's structure, especially the relationship between the themes and subthemes identified. In contrast, by primarily utilising a deductive approach in item generation, any previously unidentified aspects of the phenomena are ignored. Additionally, deductive approaches potentially only tap into the most frequently expressed, as opposed to the most commonly experienced, aspects of a phenomena. This is possibly a consequence of the capacity to express certain aspects of the experience more clearly than others.

However, an inductive approach to scale development is not without its own limitations. By generating items based on a small subset of the population of meditators, practicing either mindfulness of stillness meditation, there is the potential for the items to only reflect the idiosyncratic experience of these individuals. As subthemes were identified based on their endorsement of half the participants within a particular group, the phenomenology of meditative equanimity was conceptualised according to the common experiences within that group. For instance, the idea of feeling more creative as a result of experiencing equanimity was discussed by two participants in the stillness meditation focus group. It may be that such an experience is strongly linked with the phenomenology of meditative equanimity, but only two participants incorporated, or were deeply aware of, this aspect within their lives by virtue of their pastime or occupation.

The interrelationships amongst the themes and subthemes underlying the construct, and by extension the items generated therefrom, are fundamentally determined within an intersubjectivist paradigm. Therefore, regardless of the degree of the researcher's objectivity, there is always a certain amount of researcher bias. Finally, through the inductive approach, without having a specific reference point to determine if the items are assessing the construct under investigation, it is possible to include items that may not necessarily be predictive of the construct. As already noted, it is conversely possible that items were not included, such as those pertaining to creativity, which might also demonstrate strong predictive validity in terms of quantifying the construct.

For the development of items comprising the Phenomenology of Meditative Equanimity Measure, the limitations of such an inductive approach were acknowledged from the outset and were, at least in part, controlled for. The use of a small subset of meditators within the focus groups and in-depth interviews limits the generalisability of the identified themes. Nonetheless, greater sample sizes, according Smith et al. (2009) have the associated consequence where data is not as rich and in-depth as when compared to IPA conducted with smaller groups. In any case, common and overlapping themes identified within the two different techniques of meditation have much wider implications in understanding the phenomenology of equanimity within meditation in general.

The interpretive aspect of the phenomenological analysis can be subjective and impressionistic, which according to Smith et al. (2009) can result in difficulty determining which themes are most important in understanding the phenomena. To overcome this limitation, it was decided that the predictive validity of items would essentially necessitate their inclusion. This was achieved through determining the adequacy of items, whereby meditators were expected to respond significantly greater on each item compared with non-meditators, with meditative experience additionally expected to predict responses.

The alternative method for scale construction is the deductive approach. This method initially comprises developing a theory regarding the construct of interest, or alternatively identifying a pre-existing theoretical underpinning. Items are then generated to represent aspects of the theorised construct, with items initially retained

from demonstrating strong internal validity. This process then provides good face validity for each item, with such items more generalisable across different populations. However, as individuals may potentially identify what such items are attempting to assess, preventing faked responses may prove to be difficult (see: Weiner & Craighead, 2010). It is furthermore necessary that a strong theoretical understanding regarding the construct underlie item development, which was not necessarily present in the literature in terms of equanimity.

Mixed Methods Approach

The fact that quantitative data was utilised to explore and confirm the factor structure of items derived from a primarily qualitative approach could potentially be criticised by post-modernists due the incompatibility thesis (see for instance: Symonds & Gorard, 2008). This argument presumes that combining both qualitative and quantitative research methods is inconsistent considering each approach is founded in its own unique scientific paradigm, namely, interpretivist and positivist paradigms, respectively.

Nonetheless, arguing against the compatibility thesis, the critical realist scientific paradigm (see: Angen, 2000) provides a synthesis of both qualitative and quantitative approaches. This paradigm includes a realist ontology, where an independent reality is presumed to exist but is intersubjectively constructed – where truth emerges through dialogue. The critical theorist furthermore presumes that knowledge of reality is always imperfect and this independent reality can only be understood according to one's perspective. Thus, the epistemology is modified transactional or subjectivist, in which the object of research and the subject researching are interwoven to the extent that the way one understands the world ultimately informs how one understands oneself.

Adequacy of items

In terms of determining predictive validity for each of the items, the current thesis cannot definitively demonstrate that meditators and non-meditators did not differ on the seven items excluded due to non-significant differences. Rather, it is possible that meditators could have reported significantly lower on these items prior to commencing meditation. Therefore, as a result of practicing meditation, the meditator may have developed an equal expression to these items similar to that of

non-meditators. Considering that meditators were sampled from the general population of meditators however, who were once non-meditators, this is unlikely to be the case.

Conducting Measurement Invariance across these seven items could have further identified if non-significant differences were a consequence of a differential understanding of these excluded items; such as if there were different intervals or zero-points for these items, or if this was the result of different degrees of systematic error across the two groups. Although such items could have been just as easily included for the EFA, sensitivity of the final scale may have been compromised in terms of determining differences between meditators and non-meditators with regards to the phenomenological experience of meditative equanimity.

Possible Confounding Demographics

In terms of the demographic comparisons pertaining to the EFA data, comparisons revealed that a significant difference in age existed between the Vipassanā and Non-meditating groups. It is assumed that age did not have a substantial impact on the outcome of the associated analyses. Firstly, the remaining meditation groups were not significantly different in age and yet still reported greater intensity and frequency of equanimity when compared with non-meditators. Moreover, further analyses demonstrated that when controlling for meditative experience in years, age no longer significantly predicted the phenomenology of meditative equanimity according to the direct hierarchical modelling of this construct.

For demographic data pertaining to the MGCFA and Measurement Invariance analyses, comparisons revealed that individuals comprising the Stillness meditation group were significantly older than the remaining four groups. However, as indicated earlier, this difference in age is unlikely to have had a significant influence on the overall results. Moreover, in comparison with the other groups of meditators, individuals within the Stillness group reported significantly less meditative experience. Additionally, the Stillness group collectively responded to a number of items at a consistently higher response-point than the remaining meditation groups.

The higher response rate of Stillness meditators for a number of items was overlooked in the current analyses as such differences were marginal in the context of the differences noted between each of the meditation groups with the Non-meditating

group. However, a possible explanation for this interesting outcome is the phenomenon of 'response shift', whereby individuals who have more experiences of a particular phenomenon can perceive the zero-points and intervals of the scale differently than those with much less experience. Nonetheless, as this was not identified within the Scalar model, which tested invariance of the zero-points and intervals of the scale, 'response shift' is unlikely to explain such an anomaly.

A further possible explanation is that these specific items were endorsed to a higher extent due to arising from the unique themes of the phenomenology of meditative equanimity associated with Stillness meditation as identified through the IPA. However, only two items, C1 and R9, were specifically unique to the superordinate theme of self-perception as initially discussed by Stillness meditators, both of which were only disparate between the aforementioned group and those within the Vipassanā group.

Some variance could potentially be explained through the implementation of therapeutic touch within Stillness meditation, which may facilitate the practitioner in experiencing a sense of embodiment, and therefore possibly fostering a felt-sense of centred-ness. A further variable that could account for a degree of the variance is the perceived relationship with the meditation instructor; with a stronger therapeutic relationship potentially facilitating greater depths of the phenomenology of meditative equanimity. The Stillness meditators may establish a strong therapeutic relationship with the Stillness meditation instructor as indicated by the use of therapeutic touch. For therapeutic touch to occur, within the context of informed consent, there is presumed to be a sense of safety developed in the relationship accompanied by a large degree of trust for the instructor.

Regardless of the reason for such differences, latent mean analysis across each Centring and Resonating separately, as well as the direct hierarchical model, indicated that each of the meditation groups was not significantly different in terms of their experience in the phenomenology of meditative equanimity. Therefore suggesting that differences at the item level across the meditation groups did not substantially impact differences in the factorial expression of the construct.

Recruitment Strategy

A similar procedure in advertising for participants was followed for both the EFA and CFA data collection. Although the latter extended this by advertising to a number of Buddhist temples across Australia and having the link to the survey included in the blog of a famous advocate for meditation, it is likely that some overlap in advertising may have recruited some of the same participants across the two studies. Nonetheless, the new data for the CFA comprised a new response-set from these potentially overlapping participants, thereby minimising the study's 'capitalisation of chance' in terms of confirming the factor structure.

The Direct Hierarchical Model

The conceptualisation of meditative equanimity as a nested-factor model was based primarily on Gignac's (2008) recommendation regarding a hypothetically more valid representation of a psychological construct. In which, the higher-order factor is considered not only predicted by the lower-order factors, but also additionally inter-related with them. The justification in conceptualising the phenomenology of meditative equanimity by a direct hierarchical model was based on Widhiarso and Ravand's (2014) suggestion that the assumption inherent within psychology in terms of uni-dimensional constructs is very difficult to satisfy. Therefore there is a need to push beyond the status quo and consider constructs in nested-factor designs. Moreover, a number of Buddhist scholars argue that the idea of measuring constructs in isolation is inconsistent with Buddhist philosophy, therefore the interconnected nature of the factors comprising a construct must be considered.

Although research exploring direct hierarchical models is still emerging, it is theoretically more robust than the typical higher-order models due to the assumption pertaining to the latter as opposed to the former. Primarily, Yung, Thissen, and McLeod (1999) demonstrated analytically that higher-order models imply full mediation of the higher-order factor by the subordinate factors. However, the first-order factor loadings within the higher-order model are in fact represented by a combination of both the variability of the higher-order factor as well as the residual. This essentially means, according to the authors, that any interpretation of the higher-order factor itself is biased due to not taking into account measurement error.

In the context of Measurement Invariance, some researchers suggest testing each factor independently for the sake of clarity; such a recommendation has been proposed within a hierarchical, as opposed to a direct hierarchical or nested-factor, design. Thus, assessing each factor independently would entail not necessarily assessing the proposed conceptualisation of the construct, but rather aspects of the scale itself. This would ultimately imply the loss of valuable information in terms of assessing the dynamic nature of the phenomenology of meditative equanimity. This argument is substantiated by Brown (2013), who suggests that due to the complexity of residual variances within a bi-factor hierarchical model (a nested-factor model), Measurement Invariance cannot be performed on independent aspects of such a model, but rather all aspects of the model must be tested simultaneously.

Interestingly, when at the scalar level, however, which assesses invariance of intervals and zero-points for items simultaneously loading on two factors, ultimately implies the existence of two sets of zero-points and interval widths for each item. However, the response format for a nested-factor model needs to be considered on orthogonal coordinates, with each response having a proportion associated with the individual factor and another portion of the response associated to how this factor interrelates with the overall construct.

The Use of Developing Statistics

Considering both nested-factor models and Measurement Invariance are only beginning to receive adequate attention within the psychological literature, further exploratory research aimed at understanding the complexity inherent within the combination of these two methods is obviously warranted. Moreover, the recommendations proposed by Chen (2007), were based on Monte Carlo simulations of two groups whilst alternating sample sizes, the number of indicators, and the degree of invariance across the groups. It is therefore necessary to determine if the same cut-off criteria applies for comparisons involving more than two groups. Furthermore, as already mentioned by Hortensius (2012), potentially a consequence of the technique still emerging, the proposed criteria for establishing non-invariance does not yet account for the probability of a Type I error when comparing the related nested models. Further Monte Carlo simulations would thus be needed in order to determine if more stringent criteria minimise this probability of error.

Duality Inherent within Items

By beginning each individual item with, *I experience*, suggests a dualistic nature of oneself and one's experience. This is counter-intuitive in terms of the construct the scale purports to measure, which is partly described by a dissipation of oneself in order to become 'one' with the experience. Thus, future implementation of the scale could potentially remove these beginning few words, with the instructions on how to respond adapted to incorporate asking participants to what degree they view their experience. However, any modification would further require a new MGCFA and Measurement Invariance to ensure that the factor structure and format of the scale are still consistent. Additionally, it can be difficult to quantify experiences in general, so instruction in responding to the scale could instead focus on determining how much the participants actually value these experiences.

Methodological Considerations within Specific Paradigms

Beyond the general methodological issues thus stated, there are additionally methodological considerations that relate more specifically to a particular analysis within the validity paradigms. These issues are discussed in turn in association with recommendations for overcoming such problems in future research.

Test-retest Reliability

In order to approximate a one-month interval between survey responses, the follow-up assessment was sent to participants two-weeks subsequent to the closure of the MGCFA and Measurement Invariance assessment. As the median response to the latter was identified as two weeks prior to its closure, it was presumed that the current respondents would have at least formed a kurtosis distribution around this timeframe. However, this did not guarantee a one-month interval for each of the participants. In fact, it is quite likely that a minority of individuals would have responded to the survey either as a two-week or six-week interval. Moreover, there was no controlling for the amount of meditative practice between assessments, suggesting that if both meditators and non-meditators were analysed separately, the latter would have indicated stronger agreement across assessments than the former. This comparison however was not possible considering the already low sample size (n = 145), where it is recommended for each group to comprise 100 participants for robust results.

Predictive Validity

In consideration of the substantially lower scores associated with the factors comprising meditative equanimity for beginning meditators, it is likely that individuals low on wellbeing and life satisfaction, and by extension meditative equanimity, search for alternate ways to cultivate these attributes, such as mindfulness meditation. Nonetheless, it was noted that there was a mean age gap of 10 years between the groups, which could have explained some of the variance between groups at the pre-treatment assessment. Therefore, in order to control for possible extraneous variables, a more powerful study would have entailed random allocation into either the contrast or treatment groups. However, this would have been difficult to manage given the time constraints and limited resources of the study, considering each of the participants within the treatment group paid for their own attendance in the six-week mindfulness course.

Moreover, the direct hierarchical model of meditative equanimity could not be analysed within this particular research paradigm due to the small sample size of each group. As indicated previously, summating factor scores is intertwined with the assumption of tau-equivalence, all items predicting the latent variable to an equal extent, and additionally does not take into account measurement error. Further analyses could utilise longitudinal multi-level modelling within a SEM paradigm, but it would be necessary to obtain a sample of at least 100 participants per group. Moreover, as demonstrated by the Haywood cases in the CFA analyses, the complexity of the nested-factor model requires slightly more than 100 participants per group, 140 would be a good estimate. Given the retention rate of the meditation group, this would require a large amount of work within the recruitment stage. A potential benefit of such a large sample in longitudinal modelling is the capacity to additionally perform a Measurement Invariance analysis across the pre- and post- data for the mindfulness meditation group. This will ensure that the conceptualisation of the construct did not change as a result of practicing meditation, thereby providing greater validity in terms of reported differences over time.

Only a chance to win one in three vouchers was provided as incentive for participation in this particular study, suggesting that the retention rate would have been much higher given that participants would have been guaranteed at least some

compensation for their time. This would need further consideration going forward, but additionally depends on the study's resources. However, it is also possible that some individuals discontinued the study due to dropping out of the beginner's mindfulness course during the six-week period or alternatively did not respond at post-treatment as a result of believing they found no benefit from the mindfulness training. This then further emphasises the importance of controlled trails involving random allocation.

Discriminant Validity

Interestingly, compassion was identified as having only a weak association with meditative equanimity. This finding is contrary to Buddhist philosophy where the latter is thought to underlie the cultivation of the former. Although limited in its capacity to assess the experience of equanimity, Büssing et al. (2007) additionally identified a similar relationship. Nonetheless, a similar pattern was consistently identified between compassion and the comparison variables. This consistent finding potentially suggests that the weak association is a problem relating to the compassion measure itself, rather than the construct the scale was designed to assess and its relationship with the comparison variables. Further validity analyses should determine if such a scale is more reflective of sympathy or pity rather than a compassionate attitude.

As was not unexpected in the context regarding the discussion of cognitive mediators, decentring, experiential avoidance, and non-attachment were each very strongly correlated. A further research paradigm could determine each variable's uniqueness by virtue of comparing the AVE derived from each of these variables with the common variance they share. This however was not determined within the current study considering the focus was solely on meditative equanimity and how it relates to potentially similar constructs.

Multiple Mediation

The multiple mediation paradigm was limited to the degree that it potentially contained a number of redundant constructs and therefore cannot provide an indication as to the actual mechanism by which present moment awareness underlies wellbeing. To explore this further, the results of the aforementioned AVE analysis should inform the cognitive mediator to be used in the model in conjunction with meditative equanimity. Although meaningful within the current thesis, this post-hoc

modification was not tested as an extension of the mediation paradigm due to the consequence of increasing the Type I error, and thereby undermining the validity of the results.

Additionally, the focus of the mediation paradigms was the relationship between variables, rather than the comparison between groups. Mediation analyses therefore comparing separate samples of meditators with non-meditators, as well as novice and experienced meditators, would further extrapolate whether or not meditative equanimity works in the same way to mediate the variance of the outcome variables for each of these different groups.

The validity of the mediation results are additionally based on the validity of the content analysis conducted by Zeng et al. (2015) in determining a clear measure for present moment awareness. In order to explore this issue further, it is recommended to conduct an Average Variance Extracted analysis, not only on the mindfulness measure utilised within the current thesis, but on all such mindfulness measures. Therefore, a low AVE would ultimately suggest that a particular mindfulness measure is actually conflating constructs in the process of measuring mindfulness.

General Limitations

Along with the methodological considerations mentioned, there are a number of further general limitations pertaining to the results. These entail not using a measure to determine social desirability responding, the use of self-report measures within an Internet-based format, the inability to ensure data quality, and the possible mindfulness required to complete the surveys. Each of these has an impact on the generalisability of the results of the current thesis.

Social desirability responding

Response-sets could have been excluded due to identifying possible desirability in responding, however potential problems have been noted in terms of the actual construct of responding in a social desirable manner (Uziel, 2010). Initially indicated by McCrae and Costa (1983), respondents who are high on conscientiousness, and are therefore cooperative, will essentially respond in such a way to items assessing this construct that suggest social desirability responding. This

is primarily because such responding accurately reflects how they perceive themselves. The authors indicated that individuals who score higher on social desirability are in actuality friendlier, well-adjusted, and additionally demonstrate greater openness to experience, when compared with those who are generally lower on social desirability. Instead, McCrae and Costa argue that such a response style should in fact be referred to as "social adjustment" (p.886). It is therefore likely that there would be an association between meditative equanimity, defined by an open-receptiveness to one's phenomenological world, and 'social adjustment'. As the current research utilised an anonymous format in responding to both the EFA and CFA studies, it is presumed there would be little reason or perceived social pressure to 'fake' responses. As already reported, responses that were inconsistent were removed as multivariate outliers. Thus, it is likely that any responding in a misleading way was minimal, if at all, and therefore unlikely to have any substantial bearing on the overall results.

The Use of Self-Report Measures

The implementation of self-report measures for any variable requires self-knowledge and the capacity for self-reflection on the part of the respondent. In substantiating research on meditative equanimity, Desbordes et al. (2015) further recommend physiological, such as autonomic, endocrine, and inflammatory measures in order to support such self-report measures. The authors argue that an individual having a transient emotional experience may not necessarily be aware of its occurrence. However, meditative equanimity is not so much an emotional experience but rather a way of being-in-the-world. Thus, such physiological measures may prove difficult to substantiate the cultivation of meditative equanimity.

Rather, if meditative equanimity is indeed right hemispheric predominate, further neuroimaging studies could explore this avenue. Moreover, the neuroimaging of meditation primarily focuses on comparing neural activity between non-meditators, novice meditators, and experienced meditators, or additionally resting and meditative states within the latter group of meditators, often with paradoxical and inconsistent results (for a review see: Nakata, Sakamoto, & Kakigi, 2014). However, little attention is directed to the intensity of this neural activity. Further neuroimaging studies would therefore need to incorporate hemispheric comparisons regarding the

intensity of activation of particular neural substrates purported to be associated with meditative practice.

Internet-based surveys

The questionnaires pertaining to the exploratory, confirmatory, and validity studies were completed over the Internet at the participant's convenience. This cost-effective design is unobtrusive in collecting data and provides automated response coding, thereby limiting data entry errors. However, as discussed by Morgado et al. (2017), there is potential for an Internet-literate sample to vary from an Internet-illustrate sample on important demographic, social, and psychological characteristics.

Data Quality

A final point in terms of utilisation of Internet-based surveys for the EFA, CFA, and validity analyses concerns quality of the data. Although Internet-based surveys are increasingly popular in terms of collecting data within the psychological discipline (Lonsdale, Hodge, & Rose, 2006), there is essentially no communication with participants, meaning there is no way to determine if the instructions were sufficiently understood. The same argument might also be posed in terms of whether the demographic information and meditative experience (if relevant) was accurate.

Mindfulness Required in Completing Survey

Responses to Internet surveys may in fact be biased towards those with at least sufficient mindfulness to complete the entire length of the survey itself. Individuals presumably low on mindfulness, and by extension low on associated variables, such as wellbeing, are more likely to discontinue the study, thereby potentially explaining the common non-normal, positively skewed, responses (for instance, see: Liu & Rice, 2017). It had been previously demonstrated that paper-and-pencil as well as telephone surveys have a greater response rate than that of Internet surveys (for instance, see Nulty, 2008). Thus, a potential avenue of exploration for the Phenomenology of Meditative Equanimity Measure is the comparison of both Internet-based and paper-and-pencil based surveys, or rather alternate forms reliability, in the context of Measurement Invariance across the two data collection methodologies.

General Recommendations in Scale Development

In terms of scale development more generally, it is recommended that the Monte Carlo Parallel Analysis determine the number of factors underlying a collection of items, as the more popular methods, the scree test and eigenvalues greater than one rule, are less robust. Implementing the latter two methods may increase the proportion of error variance within the scale, thereby limiting the capacity to ascertain a response on the variable that reflects the participant's true score on the variable of interest.

Furthermore, Varimax is the most common method in rotating the factor loadings of items, yet this method assumes the factors are in fact unrelated. This assumption is very difficult to fulfil for psychological measures, and it is therefore recommended that oblique rotational methods be the default when exploring the factor structure underlying a particular measure. Furthermore, throughout the scale construction literature, EFAs are typically performed on cross-sectional data. Therefore, future scale construction could potentially investigate running EFAs on the same group but at different time-points, followed by Procrustes rotation whilst comparing the factor structures in order to ensure robustness overtime.

The establishment of Measurement Invariance is a necessary component for the validity of any comparison between heterogeneous groups across a self-report measure within psychology. Only through Measurement Invariance can meaningful and valid conclusions be derived from identified similarities or differences between groups. This ensures that any identified differences are fundamentally a result of between-group variance on the construct, as opposed to different conceptualisations, interpretation of items, width of intervals or position of zero-points, or systematic error. An added benefit of testing the scale's invariance within a SEM paradigm entails not assuming tau-equivalence, whereby each item predicts differing variance of the underlying construct.

Additionally, it is necessary to determine to what degree the scale itself measures the construct as opposed to error, which can be analysed through the Average Variance Extracted statistic. Finally, conceptualising constructs as uni-dimensional is the default within the psychological literature. However, as argued by Widhiarso and Ravand (2014), such an assumption is very difficult to satisfy. It would

therefore be worthwhile to begin perceiving psychological constructs as nested-factor models, where each factor is considered separate yet interrelated with the other factors.

Conclusion

Meditative equanimity is defined by an openness and receptiveness to one's phenomenological landscape. The current thesis described the construction and initial validation of a comprehensive scale designed to assess meditative equanimity, The Phenomenology of Meditative Equanimity Measure. Current definitions of mindfulness, and by extension mindfulness scales, possibly confuse both the process of attending to one's present moment awareness and equanimity, treating them as a single unifying concept. As such, the scale developed in this thesis was designed to capture meditative equanimity as opposed to the process of cultivating this state. The items for the scale were developed according to the experiences of equanimity by experienced meditators. Factor analysis identified two factors, Centring and Resonating; which was further confirmed within a number of subsamples comprising meditators and non-meditators. Measurement Invariance furthermore demonstrated the measure, represented as the direct hierarchical model, could be used to validly compare several different meditative techniques with non-meditators. The Phenomenological Experience of Meditative Equanimity Measure can therefore be used validly in order to assess equanimity as an outcome of meditative training.

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Appendices

3.1. Ethics Certificate of Approval for Focus Groups & Interviews

MONASH University
Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number:	CF15/4207 - 2015001781	
Project Title:	Equanimity and the Cultivation of Wellbeing	
Chief Investigator:	Dr Janette Simmonds	
Approved:	**From:** 20 November 2015	**To:** 20 November 2020

Terms of approval - *Failure to comply with the terms below is in breach of your approval and the Australian Code for the Responsible Conduct of Research.*

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data collection can occur at the specified organisation.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must include your project number.
6. **Amendments to the approved project (including changes in personnel):** Require the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

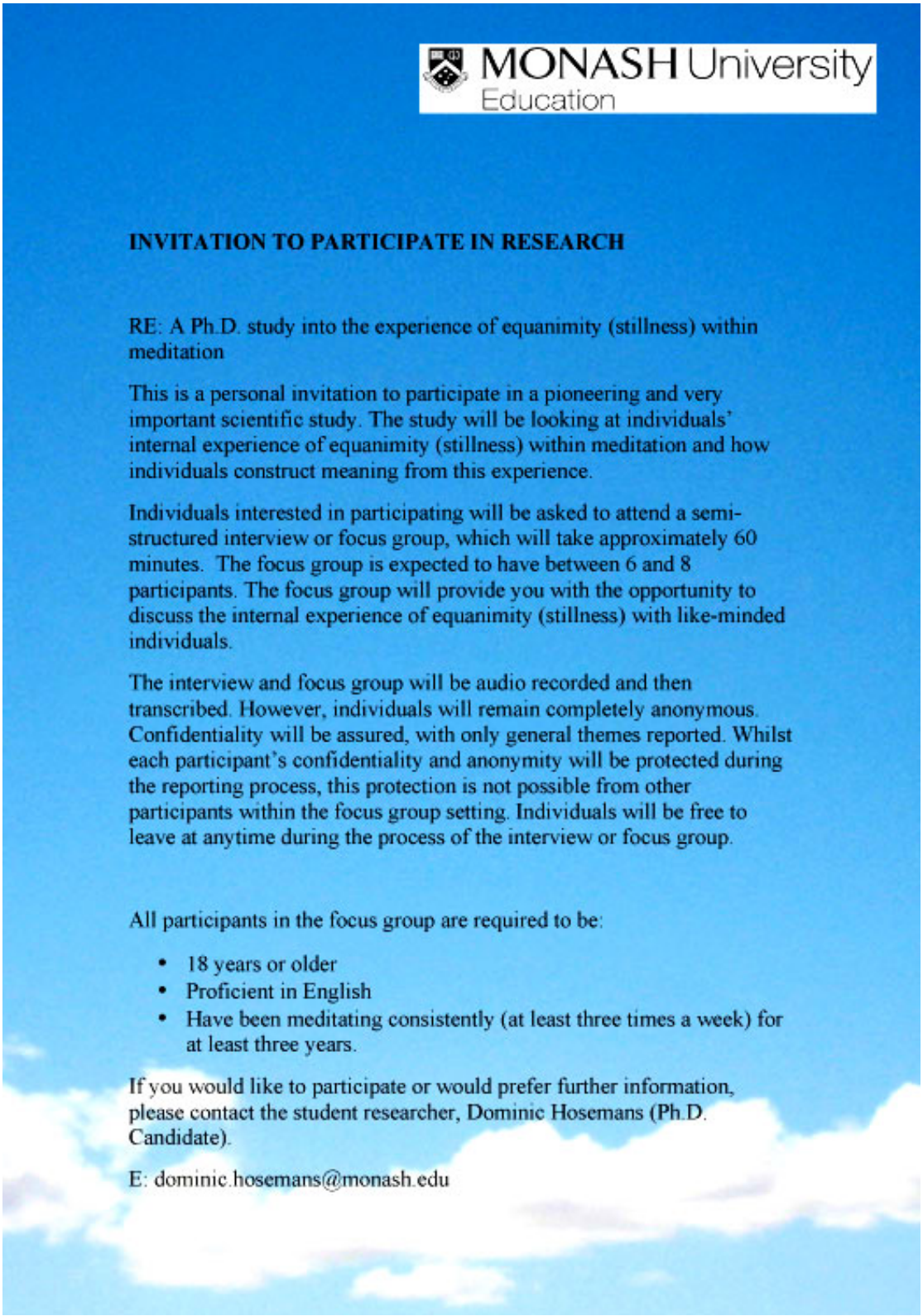
[redacted]

Professor Nip Thomson
Chair, MUHREC

cc: Mr Dominic Hosemans, Dr Tristan Snell, Assoc Prof Craig Hassed

Monash University, Room 111, Chancellery Building E
24 Sports Walk, Clayton Campus, Wellington Rd
Clayton VIC 3800, Australia
Telephone: +61 3 9905 5490 Facsimile: +61 3 9905 3831
Email: muhrec@monash.edu http://intranet.monash.edu.au/researchadmin/human/index.php
ABN 12 377 614 012 CRICOS Provider #00008C

3.2. Advertisement for Focus Groups and In-Depth Interviews



MONASH University
Education

INVITATION TO PARTICIPATE IN RESEARCH

RE: A Ph.D. study into the experience of equanimity (stillness) within meditation

This is a personal invitation to participate in a pioneering and very important scientific study. The study will be looking at individuals' internal experience of equanimity (stillness) within meditation and how individuals construct meaning from this experience.

Individuals interested in participating will be asked to attend a semi-structured interview or focus group, which will take approximately 60 minutes. The focus group is expected to have between 6 and 8 participants. The focus group will provide you with the opportunity to discuss the internal experience of equanimity (stillness) with like-minded individuals.

The interview and focus group will be audio recorded and then transcribed. However, individuals will remain completely anonymous. Confidentiality will be assured, with only general themes reported. Whilst each participant's confidentiality and anonymity will be protected during the reporting process, this protection is not possible from other participants within the focus group setting. Individuals will be free to leave at anytime during the process of the interview or focus group.

All participants in the focus group are required to be:

- 18 years or older
- Proficient in English
- Have been meditating consistently (at least three times a week) for at least three years.

If you would like to participate or would prefer further information, please contact the student researcher, Dominic Hosemans (Ph.D. Candidate).

E: dominic.hosemans@monash.edu

3.3. Consent Form for Focus Groups and In-Depth Interviews

MONASH University

CONSENT FORM

(Experienced Meditation Practitioners)

Project: 'Equanimity and the Cultivation of Wellbeing'

Chief Investigator: Dr. Janette Simmonds
Student Researcher: Dominic Hosemans

I have been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and I hereby consent to participate in this project.

I consent to the following:	Yes	No
Taking part in the interview or focus group of around to 8 people	☐	☐
Audio recording of the interview or focus group	☐	☐
Having the general trends of the discussion reported in research	☐	☐
Being contacted for future research participation	☐	☐

Name of Participant

Participant Signature Date

3.4. Explanatory Statement for Focus Groups & Interviews

Project Title: 'Equanimity and the Cultivation of Wellbeing'

Project Number: CF15/4207 - 2015001781

Dr. Janette Simmonds
Department of Education
Phone: 9905 2902
email: janette.simmonds@monash.edu

Student's name: Dominic Hosemans
[redacted]

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?
The study will involve participating in an Interview or a Focus Group for up to 45 minutes. The Focus Group will involve discussion with up to eight other individuals. Discussion will be primarily based on individual's internal experience of equanimity (stillness) and how individuals construct meaning from this experience. The aim of the study involves developing a scale of the phenomenological experience of equanimity from the general trends discussed within the interviews and focus groups.

Why were you chosen for this research?
You have been chosen to participate in this study as you are an experienced meditation practitioner and have expressed your interest to the student researcher, Dominic Hosemans. You have also met the requirements of being over 18 years old, proficient in English, and have constantly (at least three times a week) meditated for at least three years.

Consenting to participate in the project and withdrawing from the research
Prior to participating in the Interview or Focus group, it is expected that you sign and return a consent form to the student researcher. Participation in the study is completely voluntary; with participants free to change their mind leading up to the interview/focus group or leave at any time during the process of the interview/focus group itself. The interview/focus group will be audio recorded and transcribed, with each participant remaining completely anonymous. Individuals participating in the one-on-one interview can request to withdraw any data provided prior to publication of the results. However, as it will not be possible to specifically identify which participant contributed to the discussion at which time, It will not be possible to withdraw an individual's participation within the focus group once it has been audio recoded and transcribed.

Possible benefits and risks to participants
The focus group will provide you the opportunity to discuss your internal experience of equanimity (stillness) within meditation with other like-minded individuals. No risks are anticipated with regards to participating in the interview/focus group. Although there may be a small potential risk that discussing one's experience of

meditation may bring to light some uncomfortable feelings, the focus itself will be on the experience of equanimity and not those uncomfortable feelings.

Confidentiality
The audio recording and subsequent transcribing of the interview/focus group will not include any participant's details. Although participants will provide their names on the consent form, this will not be used within the study and will be securely stored. Discussions within the interviews/focus groups will be reported in a thesis, publication, and conference. However, only general trends within the discussions of both interviews and focus groups will be reported. Whilst each participant's confidentiality and anonymity will be protected during the reporting process, this protection is not possible from other participants within the focus group setting.

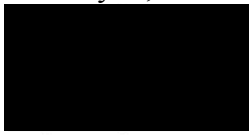
Storage of data
The data collected, audio recording of the interviews/focus groups and the subsequent transcriptions, will be securely stored in password protected files on the student researcher's password protected computer. Only the student researcher and his Ph.D. supervisors will have access to the data. The data will be deleted permanently from the student researcher's password protected computer subsequent to completing his Ph.D. thesis, at the end of 2017.

Results
Participants interested in obtaining a brief summary of the trends across the interviews and focus groups can contact the student researcher at dominic.hosemans@monash.edu.

Complaints
Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800
Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,



Dominic Hosemans
dominic.hosemans@monash.edu

3.5. Emergent Themes within Focus Groups and Interviews

Mindfulness Meditators: Focus Group (Transcript a)

Participant	Alexander	Bennett	Celeste	Dorian
Age	73	61	62	57
Gender	M	M	F	M
Years Meditating	50	28	30	25
Frequency	7	7	7	3-4
Session Duration	31-45	21-30	31-45	10-20
Emergent Themes	Not bodily stillness. Flowing energy. Importance of movement in meditation. Opening up. The release of feelings. Grounded. Be in the world. Open and available. Being present. Nothing to do. Similar to abreaction. Allowing experience of emotions. Grounding experience. Focus on body sensations. Sensory awareness. Openness of experience. Aware of physical dimension.	Physicality. Not a meditative experience. Set of habits. Attention to physical. Focus on present. Focus on sensations. No thought of past or future. Vipassanā meditation. Samadhi – single-pointed concentration. Narrows focus. Loss of reactive patterns. Profound Stillness. Stillness as habit of mind. Focus on physicality. Mentality as reactive loops. Conditioning. Present with just sensations.	Physicality. Karma Yogi - meditating in activity. Being the witness. Going home. Deep, profound experience. Depth of stillness. Practice. Witness as the soul. Self as separate from body. Tapping into the soul. Deeper sense of self. Soul as eternal point. Point of light. Going into self. Sense of going home. Dimension of creation. Ultimate stillness. Home of the soul. Brahman or Nirvana.	Letting go. Stillness occurs when you let go. Pure awareness. No narrative within mind. Not elaborating thoughts. Experience of flow. An 'issness'. Cannot conceptualise. Nothing to do. Releasing expectations. Mindfulness associated with calmness. Being with how you are right now. Practicing settles self. Tuning into self. Experiencing stillness

Transparency.
Awareness of density.
Something holding.
Dissolving.
Transparent as the air.
Stillness in motion.
Connecting internal with external.
Flowing.
Space to digest experience.
Grounded.
Energy of emptiness.
Insights and understanding.
Be aware of what's happening.
Very beautiful experience.
Build up of power.
Blending of consciousness.
Energy Flowing.
Flow as expanding consciousness.
Collected and present.
Dissolving space between self and other.
Be available to what's happening.
Facilitating presence in the other.
No boundaries.
Changing presence.
Letting go.
A process.
Start with Samadhi.
Focusing attention.
Letting go of mentality.
A skill.
Stability.
Watching is stillness.
Observer.
Awareness of being aware.
Trick of mind.
Related to mindfulness.
Placing no value on it.
A growing resonance/ Harmonic
Evenness.
Gradually permeates actions.
Extraordinary absorption.
Peace.
Creates set of expectations.
Set of practices.
A process of discovery.
Experiential as opposed to conceptual.
Moment of knowing.
Still in the moment.
Conceptualising detaches from experience.
Absolutely exquisite.
Silence.
Dimension of light.
One with supreme soul.
Unlimited, eternal.
Fixing mind on supreme light.
Physical-ness.
Experience as transferable.
Dipping back.
Flicking a switch.
Absorbing from light.
Ocean of stillness.
Peace.
Everything disappears.
State of absorbing.
Momentary.
Drawing current.
Lasts throughout day.
Influences relationships with others.
Responding as opposed to reacting.
Power from stillness.
Clarity of mind.
Make better choices.
Surrendering.
Ultimate ocean of stillness.
Home of light.
Letting go of expectations outside meditation.
Stillness within therapeutic practice.
Self disappeared.
Sense of flow.
Being present.
Being a vessel.
Difficult to quantify.

Void.
Noting and letting go.
Mental noting.
Sensations losing classification.
Self disappearing.
Sound of the wind.
Ubiquitous, omnipresent, infinite, eternal.
One eternal moment.
Inevitability of reaching stillness.
Depression as loss of stillness.
Developing relationship with emptiness.
End point of stillness is Nirvana.
Momentary glimpse.
A choice.

in meditation.
Sense of flow.
Letting everything just be.
Stabilizing.
Mind as separate to self.
Force of stillness and peace.
Presence.
Available.
Hard to describe.
Thoughts disappeared.
Incredible source of peace.
Soul filled up with stillness.
Problems just melted.
Changing perspective.
Absorption.
Self disappearing.
Experience staying after meditation.
Affects connections with others.
Going inward.
Very beautiful, peaceful soul.
In that place of being.
Drawing on that current.
Self disappearing.
Beacon of light.
Stability.
Peace.
Vessel, conduit.

Participant	Evelyn	Frieda	Gabriel
Age	44	49	65
Gender	F	F	F
Years Meditating	15	10	30
Frequency	5-6	3-4	7
Session Duration	21-30	46-60	46-60
Emergent Themes	Soft space. Sort of emptiness. Fleeting, profound, and beautiful. Result of practice. Sense of nothingness. Place known as home. Sacredness. Going with one's heart. Cannot be conceptualised. Safe place. Being grounded. Being available. Opening one's heart. Not reacting. Truly listening. Place of holding. Absorption. Sit and do nothing. Lovely place. A skill. Hard to hold onto in today's world.	Pure awareness. Not cognitive. Resting in that place. Active process. Behind mental activity. Physicality. Inward place. Profound experience. Place of witnessing. Letting go. Being still whilst thinking. Making the choice. Changing mode you're in. Making the choice again And again. Not an idea. Writers away over time. Act of choosing. Choosing to step into a different mode. Being with self. Being with what's there.	Stillness in motion. Complete availability to everything. Amazing stillness. Active process. Being open. Beautiful to be in. Part of something Greater than oneself. Being totally present. Aware of physicality. Great stillness. Incredible peace. Indescribable. Changes perception. A goalless goal. Vastness beyond self. Stays after experience. Makes life flow. Experienced beyond meditation. Anchored in world.

Sense of being grounded. Has impact on self and others. Not separate.	Letting go. Facing what's there. Stepping out of what's going on. Physical-ness. Facing resistance. Habit.

One-on-one Interview with Mindfulness Meditator – Henrick (Transcript b)

Emergent themes:	Absorption	Heightened senses.	Not conceptualising.	Natural goodness.
	Quite state of mind.	Positive feedback between	Stillness as experience.	Decreasing stress,
Age: 47	Peace, serenity.	senses and stillness.	Attaching own philosophy	anxiety & depression.
Gender: M	Not engaging.	Contrast between thinking	to experience.	Deep relaxation.
Years meditating: 25	Different degrees of	and being.	Experience stillness	Distressing states not
Frequency: 3-4	stillness.	Self disappeared.	spontaneously in activity.	permanent..
Session Duration: 31-45	Experience stillness in	Loss of Self-concept.	Distinction between small	Noticing arising and
	activity.	Not identifying with	and larger sense of self.	falling away of states.
	Observing.	thoughts.	Egoic self.	Capacity to see clearly.
	Gaps or pauses.	Sense of being alive.	Losing sense of self.	Tapping into a resource.
	Paying attention to breath.	Sense of body disappearing.	Self vanishes.	Drawing upon stillness.
	Deeper levels of stillness.	Aware of awareness.	Different perceptions of	Optimism & confidence.
	Right conditions.	Experience of stillness	self.	Samadhi & Vipassanā.
	Deeply relaxed.	arrives.	Relative and absolute.	Embodied mindfulness.
	Conditioned body.	Experience of stillness	Stillness as absolute.	Mindfulness not
	Allowing.	to inform way of living.	Self as relative.	cognitive function.
	Body settles.	Changing perception.	Inseparable.	Foundation of
	Quieter mind.	Detail vs. Context.	Developing balance	relaxation.
	Joy.	Ability to step back.	between selves.	Felt experience.
	Pleasure.	Responding differently.	Not placing higher value	Experiential.
	Releasing expectations.	Disentangled.	on absolute	Body as starting point.
	Letting go of attachments.	Examining internal	Ego as equally valid.	Body informing
	Softness in body.	experience of situation.	Holding two ideas of	experience.
	Ease in breath.	Absorbed in what doing.	self simultaneously.	Body responds to
	Not dependent on external	Losing sense of observation.	Perception of time shifts.	emotions.
	world.	Greater sensory awareness.	Perception of time related	Observing body.
	Less mental activity.	Absorbed by experience.	to quality of focus.	Seeing clearly.
	Continues beyond	Experience of oneness.	Absorbed and engaged.	Space to make a choice.

	meditation. Presence.	Fully engaged. Not witnessing.	Participating fully. Internal sense of joy.	Reaction vs. response.

Stillness Meditators: Focus Group (Transcript c)

Participant	Iris	Jeremiah	Kayla	Lucille
Age	68	57	52	64
Gender	F	M	F	F
Years Meditating	15	20	6	40
Frequency	5-6	7	3-4	3-4
Session Duration	10-20	10-20	21-30	31-45
Emergent Themes:	Focus.	Natural Homeostatic.	Sense of joy & peace.	Stronger self.
	Direction.	Mechanism.	Pleasurable.	Elusive.
	Concentration.	Quite within.	Indescribable.	Real self.
	Sense of ease.	No disturbance.	Stillness is everywhere.	Path.
	Naturalness.	Loss of self-awareness.	Sense of clarity.	Sense of bliss.
	Regulating Mechanism.	Indescribable.	Senses become alive.	Calmness.
	Not meditation,	Calm.	Difficult to interpret.	Joy.
	Just stillness.	Easy.	Beautiful.	Ease.
	Brain's ability to rest.	Natural.	Longing for stillness.	Sense of emptiness.
	Touch calm.	Simple.	Senses switch off.	Non-awareness of
	Contentment.	Timelessness.	Undistracted.	body.
	At-oneness.	Lightness.	Being self.	Letting go.
	Touch as comforting.	Heightened senses.	Temperance.	Lightness.
	Touch as powerful.	Letting go.	Openness.	Fleeting.
	Beyond discomfort.	Process.	Authenticity.	Emptiness.
	Quiet.	Practice.	Contained.	Energy.
	Ease.	Touch as powerful.	Peace.	Purity.
	Extending to daily life.	Undistracted.	Being present.	Life energy.
	Peaceful.	Letting go.	Not disturbed.	Being-ness.
	Retraining the mind.	Rejuvenation.	Clarity.	Stillness in everyday.
	Energy.	Deeper sense of self.	In relationship.	Spontaneous.
	Strengthening self.	Centring.	Listening.	Absence of thought.

Just being. Mysterious. Difficult to describe. Non-judgmental. In tune. Letting. No effort. Present. Touch as reassuring. Being-ness. Not absence. Indescribable. Heightened awareness. Inner strength. Empowered. Life easier. Non-reacting. Integrative calm. Trust. Untainted.	Rediscovering true self. No conditioning. In tune. Indescribable	Resource. Draw from stillness. Experiential. Containing own reactions. Non-conditioned. Purity. Self-knowing. Authenticity. Balance. Paring away things. Purity. Homeostatic. Rejuvenated.	Present. Centred-ness. Rest. Growth. Confidence in life. Just trusting. Will be okay. Inner knowing. Indescribable. Challenging to describe. Not rational. Switching off. In tune. Inner wisdom.

Participant	Makayla	Neela	Odelia	Padraic
Age	60	55	55	60
Gender	F	F	F	M
Years Meditating	3	10	6	20
Frequency	3-4	5-6	3-4	5-6
Session Duration	21-30	21-30	46-60	10-20
Emergent Themes:	Fleeting. Indescribable. Immeasurable. Touch facilitates. More energy. Creativity. Think clearly. Calm. Energized. Clarity of thought. Ability to resource. Inner strength. Filling up. Non-cognitive. Freeing. Non-conceptual. Purity. Wholeness. Unity. Protecting. Sense of calm. Sense of relief. In control.	Sense of calm. Simplicity. Touch as healing. Lightness of being. Purity. Stillness as sensation. Sensory experience. Pure. Letting go. Experiencing. Without attachment. Non-judgmental. Absence of feeling. Trouble describing. Creativity. Extraordinary resource. Centring. Calmness. Growth. Switched on.	Calmness. Touch calm. Easiness. Profound. No physicality. Not aware of body. Mind resting. Calm. Sense of filling. Just being. Kindness to self. Just flows. Letting go. Rejuvenating. Less reactive. Calm. Measured. Tempered. Responding. Inner strength. Space to let things in.	Not logical. Ease. Sense of balance. Loss of problems. Centring. Authenticity. Emptying. Transitory. Experiential. Awareness disrupts. ‘At’ stillness. False self. Growing towards. Back to self. Develop resource. Practice. Accumulating stillness. Inner strength. Indescribable.

Inner strength.
Practice.
Draw on stillness.
Resource.
View of self.
Relating with world.
Core changes.
Mystery.

One-on-One Interview with Stillness Meditator – Qiana (Transcript d)

Emergent Themes:	Mental rest.	Mental Ataraxis.	Absence of disturbance.	Assimilate into daily life.
	Naturalness.	Mental rest.	Natural faculty.	Cultivating.
Age: 67	Absence.	Intermittent.	Calm & undisturbed.	Profound depth.
Gender: F	Awareness.	Allowing.	Mental disturbance.	Practicing.
Years Meditating: 40	Process takes time.	Natural.	Lost touch with stillness.	Forgotten art.
Frequency: 7	Natural mechanism.	Homeostasis.	Profound global rest.	Whole being.
Duration: 31-45	Vital for living.	Energizing/rejuvenating.	Recharging.	Natural mechanism.
	Internal power.	Control over wellbeing.	Powerful natural faculty.	Difficult to explain.
	Calm wellbeing.	Inner strength & power.	Self-empowering.	Calm control.
	Beneficial.	Sustains oneself.	Not esoteric experience.	Empowerment.
	Integrity.	Nebulous experience.	Profound.	Time dependent.
	Feeling of lightness.	Living it.	Time of care.	Importance of practice.
	Flowing.	Calm responding.	Challenging at first.	Regularity of practice.
	Pleasant experience.	Life easier.	Stressful events.	Coping skill.
	Learning process.	Support in teacher.	Understanding.	Internal change.
	Different person.	Responding differently.	PTSD.	Hypnosis.
	Atavistic Regression.	Balance.	Homeostatic mechanism.	Provide circumstances.
	Meditation.	Yogi.	Mirror neurons.	Importance of rapport.
	Not losing self.	Self remains intact.	Calm & resting.	Experiential, not conceptual.
	Self Integrity.	Powerful, strong.	Infinite point of stillness.	Words are limited.
	Indescribable.	Beyond description.	Natural ability.	Timelessness.
	Awareness.	Just being.	Not everyday consciousness.	Let go of identity.
	The ‘I’ resting.	Fosters love.	Compassion.	Beyond words.
	Tolerance.	Flick the switch.	Relating better.	Stronger self.
	Clarity.	Heightened senses.	Wholeness.	Centring.
	Integrity.	Emptiness.	Nurturing.	Feels safe.
	Emptying.	Letting go of everything.	Doing nothing.	

3.6. Quotations Constituting Each of the IPA Subthemes

Mindfulness Meditators

Quotations:	1.	2.	3.	4.	5.
SAMATHA					
Embodying Mindfulness					
Focus on Physicality	*A: To always to with the bodily sensations to what you're experiencing, plus the sensory awareness of what's going on around.*	B: *Bring the attention down to the physicality, real-time physicality of what's happening right now, what you do, what do you feel body, hearing, seeing… when you bring your attention there, you are still essentially , because sensations are real time.*	G: *Invariably want to bring that stillness into your physicality.*	H: *And the way that I think mindfulness should be practiced and taught is as embodied mindfulness. And I think one of the dangers of psychological mindfulness is that mindfulness will be reduced to a cognitive function.*	F: *The physicality of it, that's that constant bringing yourself back into the moment by being aware of the physicality of it in a sense.*
Letting go	B: *The first event that occurred was that all the sensations in my body, which had previously had, were denoted as this is pain, that's thinking, that's hearing, that's seeing, they all lost their classification*	D: *Just let it go, and that's when it all occurs, so to speak, with no conversation or narrative, thoughts are still raging, you're feeling things, but you're not actually thinking about it.*	F: *I'm choosing to relinquish, to let go of everything else but I'm also choosing to just face and be with what's there so in order to do that, I have to get still to some degree.*	G: *Surrender is coming up for me just now, and it is a measure of just surrendering thoughts in the mind.*	H: *Allow your mind to become quieter and quieter over time and for your body to settle and become more peaceful over time.*

	and they all joined up and became one kind of floating, my whole body became a floating field of sensations.				
Observing emotions	H: *Observe these emotions starting to form and also observe what happens when these emotions dissipate.*	A: *What is being released as they're opening up which is usually, a whole, feelings and that sort of thing.*	B: *So if we let go of the very idea of depression or sadness or anger, and focus on just the physicality, this looping ceases. And we are present with just the sensations.*	D: *Its actually a barometer of how you are right now. If I haven't practiced for a while and I go and sit, I know I'm very scattered, I'm fidgety, I'm irritable, I go, 'yep, okay, that's what I am right now'.*	
Open					
Available	*A: Open and available to whatever is happening, is just being present with it, and there's nothing for them to try and do to manage it or anything.*	C: *Complete availability to everything and very much at the physical level.*	F: *Being with myself or what's around me in a different way and actually choosing to be with what's really there.*		
Awareness	D: *Pure awareness of whatever is going on around you… For me, that's a sense of just*	E: *Pure awareness hits the mark foe m, that awareness of being aware.*	B: *Whenever you are watching, you are essentially still, when you are watching,*	G: *And in my, that I experience is going into that self, or the soul, which is like the witness.*	H: *I am aware that I am aware*

	is. There's an isness in that.				
Presence	H: *Less thoughts about things that have just happened or things that are just about to happen*	B: *There's no memory, there's no anticipation, there's only what's happening now.*	C: *Coming very completely into the present in all ways.*	E: *For me the, the very strong, being present with myself and the world and I, and I do that a lot because that keeps me o track.*	D: *I'm just being present, listening, I'm not even pre-judging, or pre-thinking anything what is going to happen.*
Practice					
Habit of mind	B: *But when the meditation finishes, that profound, often profound stillness disappears because you actually haven't trained the mind in any constructive habits of how to deal with situations.*	F: *When meditating, that choice you make to just stop. To step out of what you're doing. To change tract. To change the mode that you're in. You got to keep making that choice again and again and again.*	H: *Where whatever experiences I've had in meditation, whatever understanding that I've developed from my meditation practice, I'm then relying on my memory of that experience and that understanding to inform the way that I live.*	G: *Keeping them within context of trying to be able to bring them back into that physical-ness and make them useable… transferable.*	D: *The meditation is a tool, it's a system in order to train you to become present or still for whatever or wherever you are.*
Permeates experience	C: *And I can experience that when I'm cooking, or when I'm doing something equally pragmatic or just day to day.*	D: *I think more of my practice, my therapeutic practice and I have a lot of stillness experiences within that.*	F: *I think that stillness is able to be observed and experienced in the mix of activity.*	G: *And that really stayed with me for a long period of time and it really did effect everything around me, my connections with others, and you know, the whole atmosphere*	B: *It sort of gradually comes up and permeates everything you do and everything that happens.*

				up here.	
BEING-NESS					
Felt-sense					
Sense of holding	B: *As a kind of stability within the storm of life.*	A: *Aware of density and something holding.*	E: *Going to that place known as home… its very, safe place.*	F: *Being able to rest a bit in that place… a place that you can access that's sitting behind all the mental activity.*	G: *So I try and dip into this place of, which is a home, as you know, it's the home of the soul.*
Grounded-ness	E: *That sense of being grounded is really lovely, it has such a huge impact on yourself as well as people around you.*	C: *Fully anchored in the world.*	A: *Getting people to sit and just be aware of what is happening, is to sit and just be aware of what's happening on the inside and the outside, so that grounded-ness can be completed.*	D: *You tune into your self.*	B: *… So I shifted back into myself.*
Timelessness	B: *…it was only that eternal moment.*	G: *Sometimes these things don't take long, they'll only be for half a minute or whatever, but it could have been, you know, eternity.*	H: *Our sense of time shifts when we're meditating and a long time can feel like a short time.*		
Heightened wellbeing	C: *Incredible peace*	B: *You will come back again. It's inevitable. You're just depressed because you're missing this.*	G: *Incredible source of peace and light and love.*	H: *One of the things that I can notice when I'm still is that I am able to experience a degree of joy without any external*	

				stimulation. So what I'm experiencing there is in some sense a joy of being alive.	
Rejuvenating	G: *You pull that current into you in such a way that it, the residue of that, throughout the day throughout, however, it lasts for quite a considerable amount of time.*	H: *Joy is a very important product, by-product, of stillness that provides me with a kind of resource.*	F: *Yeah, you can't just think, 'Oh yeah, I'll, you know, I've done a bit of that, so I'll just be able to keep accessing that when I need it, well that kind of writhers away a little bit.*		
Clarity					
Heightened Senses	H: *My meditation practice allows me to observe finer details of that sensory experience.*	C: *At the same time I was acutely aware of the very warm breeze and light shining through the windows and the blue towel, totally aware of the physical experience I was having with the wind on my body and sounds and I was in that moment of great stillness.*	B: *And it was the sound of the wind…*		
Problems dissipate	A: *Its as if all of that dissolved away. It*	C: *Ways of expressing things and everything*	G: *Whatever was upsetting my mind at*	B: *The mind tends to overtime, it forgets all*	F: *A place you can go where you are*

	ended up being as transparent as the air we're looking through.	*that I have been dealing with, thinking about, dropped away, and I didn't come back to them in the same way.*	*that point had just melted, it was of no significance anymore. And the, and remained that way, it never came back.*	*extraneous things that have concerned in the past and created hormonal loops and reactive problems, they all evaporate.*	*dropping behind everything else.*
Non-reacting	G: *The power that you can get in that moment of stillness is such that it clarifies the mind so that you make much better reactions and choices.*	H: *There's a moment of stillness where you see clearly, 'okay, this is what's happening', and there's enough space for you to make a choice. So its that difference between a reaction and a response. A reaction is kind of blind and impulsive, a response, there's a certain amount of consideration.*	E: *But I was so pleased with myself that I would just, that I didn't react and I could just sort of hold it.*		
Mental balance	B: *Sort of growing resonance or growing harmonic, you know developing an evenness in a harmonic.*	H: *'Am I going to take the, if you like, close up view or the longer view', and I think that an experience of stillness probably helps me do both those things.*	D: *This is the tricky balance being present and presence, between I and not-I.*		

Non-conceptual					
Ineffable	E: *It's fleeting and, and profound and beautiful.*	B: *Every description I've ever heard, seems to match up, it was ubiquitous, omnipresent, infinite, eternal, and all of that stuff.*	C: *...words are very limited.*	G: *And it was like in that moment, it was like hard to describe.*	D: *It's just something, it's very hard to quantify.*
Experiential	A: *As soon as I think about it, its gone. It's fleeting.*	E: *The moment you've tuned in to something cognitively about that, you've lost that sense of pure awareness.*	C: *But its kind of a goalless goal because if you try to put a goal on it in a way it slips through your fingers but yeah, it's a nice experience to have.*	B: *It's a process of discovery, it has to be a process of discovery.*	H: *Stillness for me is more about an experience rather than a philosophy.*
SELF-PERCEPTION					
Loss of Self-Concept					
Dissolving Self	A: *And thoughts were still rising and passing away and gradually attention fell back into this field and I disappeared.*	E: *So its like, I sort of have that where I'm teaching people I sort of describe it, that image that its sort of just, own sense of nothing else survives*.	C: *State of total availability to everything that is beyond who I am.*	D: *But when it arises, you know, then there's no you, and to me that's stillness. I, whoever I am, doesn't exist at that time.*	H: *And I don't think that our self, when we meditate, our self-concept when we meditate, if we're experiencing stillness, or that kind of sense of the body disappearing, the identity disappearing.*
Emptiness	D: *And its something's about, as*	B: *The point is to develop a relationship*	H: *I'm aware that I'm aware, but there's not*	G: *I think, you know, as vessels and conduits*	

	if you're just the vessel.	*with that emptiness.*	*much left to be aware of.*	*that we are, we're doing more than what we imagine, you know, what we bring into our places, our homes and our workplaces.*	
Oneness					
Absorption	A: *For me, it's a connection of the inside and the outside, so that it's seamless, and its sort of, there's no sense of what's inside the skin and no sense of what's outside the skin.*	H: *That experience of oneness means that I'm fully engaged with whatever that experience is.*	E: *Just seeing them really absorbing the beach and nature and being able to sit and do nothing, I sort of think, 'yeah this is such a lovely place to be'.*	B: *Extraordinary absorption.*	
Flowing	*A: The experience that happens is that frequently the energy starts to flow.*	C: *Makes life flow more easily.*	G: *But just the sense of flow.*	B: *It's not whether stillness occurs within the meditation experience as I said, but whether, but just how you use that time to create the habits you need for it to appear in the flow of life.*	D: *And it's always, for me that's about, I'm not there again, so to speak, its just flowing.*
Unification	H: *There's an idea in some yogic philosophy that*	C: *I feel part of something, part of something much, much*	G: *I had this sense of this ultimate ocean of stillness that exists,*		

	stillness is the ultimate goal, that you know, one should still one's mind and that's equivalent to enlightenment, or union with god.	*vaster than just the individual being that I am...*	*this home of light as well as this supreme being of light.*		

Stillness Meditators

Quotations:	1.	2.	3.	4.	5.
PROCESS					
Cultivating Stillness					
Naturalness	I. *Allowing the body's own regulating mechanism to come into play.*	K. *The brain actually coming itself back into its own balance*	O. *And it's a natural thing. That our bodies just do anyway.*	Q. *It's a very natural faculty being accessed and being developed.*	J. *Natural homeostatic mechanism*
Physiological Rest	I. *The brain has the ability to rest.*	O. *But the thing that's happened for me is for me to be aware of my brain and my brain resting.*	J. *It has a rest. Only you're still conscious, you're not drowsy, you're not asleep.*	L. *In stillness there is rest.*	Q. *I think it is a state of profound global rest. Global physiologically and mentally, you're whole being.*
Absence of Disturbance	J. *You don't feel disturbed by externals.*	N. *It's an absence of feeling.*	I. *That's what I experience, like an absence of disturbance, absence of the senses.*	L. *In absence of the senses or thought processes or all those kinds of things.*	Q. *Absence of disturbance in the mind.*
Therapeutic touch	N. *I found the touch experience of stillness after I was involved in some traumatic experiences to be extraordinarily powerful… I didn't expect that to be the case but I found it very healing*	M. *I think touch does it. It helps with the letting go*	I. *The touch seems to have a profound effect on the process, for lack of a better word.*	J. *We had touch before we had language, so it's a very, very old simple form of communication, very powerful.*	

Letting go	O. *Just get your head out of the way and the rest just flows.*	I. *And the letting go is a doing thing, so for me and what we try to teach is that is, is about letting. So we're not making the effort at all to capture that being.*	P. *So when you become aware… I let it go and its all of a sudden I'm at stillness, if I can describe it as an 'at'.*	J. *There's a part of your mind that you just let go of.*	Q. *But you're not, you're not conscious of that during the stillness because you've moved into that, you've let go of that, for that period of time.*
Open					
(Non) Awareness	O. *It's the weirdest thing to be so still and you know that you're in your body but you can't feel your body. You're not aware of it.*	J. *And it's only afterwards that you realize that that's where you were.*	L. *You know your body's there, but you can't feel it.*	P. *So when you become aware, I let go and its, all of a sudden I'm at stillness. If I can describe it as an 'at'.*	Q. *You'll get that calm and undisturbed state that might go to a point of very profound depth but then awareness comes back in again and you just ignore the awareness and you slip back into that.*
Presence	L. *You're just there, quite present.*	K. *Being able to really be there.*	Q. *But it's a bit like that where essentially, you're there and there's kind of a, affinity with that.*	J. *Just you're there, you're in each infetestimal moment as it happens.*	I. *So you're just in that moment.*
Practice					
Habit of Mind	J. *I tend to think about, I focus on the process, on the*	I. *Because we have such logically trained brains, and people,*	P. *It's almost as if you, over time, you can develop it, an inner*	Q. *You introduce it into your life, you practice it, you become proficient at*	K. *I would regularly do a practice on a Friday morning, I'm*

	process that I gotta have a regular practice session and just everything else comes second to that… then the outcome takes care of themselves.	*they'll wriggle around in the chair and they'll have itches and they'll be distracted by the traffic and all kinds of things for maybe quite a few sessions. But then something changes, its like a barrier is broken through.*	*well, I'll put it that way, and practicing helps to fill it up.*	*it, you live it, and then it flows into everything that you are and everything that you do, and makes life a lot easier.*	*a psychologist, and I see clients, and Friday's are defintally the best day to come and see me.*
Permeates experience	J. *You can be still but still lots of things happening that you feel quiet within.*	I. *Going beyond discomfort to that place of quiet or ease or whatever it might have to be and then to be able to translate that into the larger or wider world.*	L. *And I think it's interesting you can actually also experience that stillness when you're not in meditation.*	Q. *Well, I think it comes out of the practice, you know, if we practice it and start to live it… That it flows into our life.*	O. *The most profound thing for me is how calm I am and I've never experienced that in my life. My life has been so crazy hectic mad non-stop. To be able to, to almost feel like I can touch calm.*
BEING-NESS					
Felt-Sense					
Nurturing	M. *And I would say too there's nothing that penetrates it. So it's not only that I'm not taken away, noting actually*	O. *To me, it feels like the kindest thing I can do for myself. I feel like it's a way of caring for myself, that you know, I've never*	I. *It's something you can rely on. You know it's there, and it's going to support you come what may.*	Q. *But calm control is really important because its sort of, for me it generates that sense of there's something really*	

	penetrates that sense of calm.	*done. Yeah, but its one of the kindest things is just to give myself space to let things in.*		*beneficial happening here and it will sustain me and it will sustain the people around me and hopefully move on to sustain the people I work with and teach this to.*	
Centring	P. A sense of centring, coming back to you.	J. It's like a sense of centred-ness. But you're not really necessarily taken away by anything that's occurring, when you are centred.	N. But I certainly feel that the capacity to use stillness as an extraordinary resource and a way to develop that sense of centring.	L. Its like a sense of centeredness. But you're not necessarily taken away by anything that's occurring, when you're centred.	Q. *Centring. Probably centring is a bit of a logical sort of a word isn't it? Its, it kinda implies doing something, but I think it means integrity, that wholeness.*
Fleeting	L. *And it doesn't last very long, its just literally glimpses of it that come and go.*	M. *And as soon as, it's almost fleeting, it's really hard to describe.*	P. *It is transitory.*	Q. *Its not absence of disturbance for necessarily a prolonged period of time, its intermittent.*	
Heightened Wellbeing	K. *A sense of joy and peace*	N. *I think my experience is just a calming.*	O. *The most profound thing for me is how calm I am and I've never experienced that in my life.*	L. *It's a sense of bliss and I think it encompasses a whole lot of calmness and joy.*	Q. *I think it is a state of profound global rest. Global, physically and mentally, your whole being, global*
Rejuvenating	K. *That you can go and resource it. You*	O. *Somehow gives you more energy.*	J. *And you feel rejuvenated*	I. *And sometimes it's more rejuvenating than*	P. *It's almost as if over time you can*

	can get what you need from it.		*afterwards.*	*in sleep. Because sleep can be disturbed.*	*develop it, an inner well, and practicing helps to fill it up with a bit more water.*
Lightness	L. *It's like I'm not carrying anything, like within my mind or within my body, its just lightness.*	N. *But that lightness of being. I think that's probably quite accurate.*	J. *I get the sense of lightness sometimes*.	Q. *Lighter state of, lighter meditative state.*	
Just Being	O. *I'm just being with me.*	I. *It's not really an absence, it's a being.*	L. *Its not an act for me or a thing for me, it's a being.*	Q. *But this is like being aware of 'just being'.*	K. *Just being yourself.*
Clarity					
Heightened Senses	K. *I find clarity afterwards for a long time, more open clarity of seeing, of hearing, like the senses become more alive.*	N. *And I experience the ordinary things, like the sound of traffic, I remember in this room the sound of the traffic is really quite differently experienced from if you go outside or from when you come in.*	M. *And I also, my sense of touch, the sense of touch in the hands and the face seems to be magnified.*	Q. *Like the senses become more alive.*	
Mental Clarity	K. *And a real sense of clarity and an ability to be fully in relationship with.*	M. *And yeah, just clearer, it crystalizes thinking and the capacity to think.*	P. *Regardless of whatever day I've had or issues I'm dealing with, there's a sense of balance and ease.*	Q. *Clarity lingers.*	
Non-reacting	I. *Control. People can*	K. *I think it gives me*	O. *I feel like my*	Q. *But that the calmness*	

	feel empowered in that stillness. And then it makes the rest of the day or the rest of your life easier through that.	*temperance, if that's the right word.*	*reactions are much more measured. I'm much more able to not react up here, I'm just much more able to be calm and measured and its much more tempered.*	*just becomes a much more natural response.*	
Non-Conceptual					
Ineffable	L. *Very elusive, in that trying to put it into words.*	K. *It doesn't lend itself terribly to words.*	I. *I can't really put words around it.*	M. *It's really hard to describe.*	Q. *That nebulus kind of difficult to explain experience.*
Non-logical	P. *Trying to describe something logically that isn't that part of the brain.*	K. *It's not easy for all people because we have such logically trained brains.*	L. *It's that not being of the rational logical world.*	J. *The ineffable nature of it.*	M. *It's also the mystery.*
SELF-PERCEPTION					
True Self					
Emptying	P. *You're moving away from all the stuff basically, that makes you less of who you are.*	L. *Sense of emptiness, and its just, but there is a physical sensation with that, in which I can't describe.*	O. *It's a combination of letting things empty and then somehow that gives you more, well, I don't know, energy.*	Q. *Well, it feels very safe. It's not like a scary emptiness or a lonely emptiness. It's a safe, it might be more of an emptying, than an emptiness actually.*	
Purity	M. *For me the experience, it has purity about it.*	N. *I think there's such purity in this sensation of being really still, that's like nothing else.*	K. *And this purity, or a sense of life that it has of its own.*	I. *Sort of untainted self.*	J. *Rediscovering the true self without all the conditioning that we receive.*

Authenticity	L. *A way to the self, but that implies a sort of directional, a sense of the real self.*	P. *Authentic person, authentic being, without all the pushing and pulling that goes on with all the pressures of life.*	J. *Its almost like people identify with this false sense of self, and the true self that we're growing towards is this sense of stillness. And so it brings us back to ourselves.*	K. *It's authenticity, I think.*	
Relational Depth					
Inner Strength	L. *I would use the word self. A stronger sense of self.*	I. *I think strength, inner strength is a word we haven't perhaps covered and I think that comes out of that sense of calm.*	M. *I felt that I developed a core of strength that I've never lost.*	J. *It certainly helps you to be able to take your own path.*	Q. *It's a state of undisturbed rest, it's a state of inner strength and power, not power in the negative sense, but self-empowering, calm control.*
Wholeness	I. *A sensation of contentment and at-oneness within that whole experience of simply being still.*	M. *I'm just thinking of the word wholeness or unity, sort of a time, because we get so fragmented in all our tasks and duties and responsibilities, yeah.*	J. *Yeah, I like that word tune, to tune in. It's like you get your whole being tuning the way it should.*	Q. *I think you do feel very whole, very intact.*	

4.1. Participant Recruitment Advertisement for EFA Study

We are a team of researchers at Monash University. We are currently undertaking a research project exploring the experience of equanimity within meditation and its relationship with mindfulness and wellbeing. Our research project received approval from the Monash University Human Research Ethics Committee (CF16/136 - 2016000696).

We are seeking participants to assist by (i) participating in the study and (ii) forwarding this email/survey link among their networks in order to invite others to participate in the project. We hope that you will be able to help. Your assistance is of course voluntary and anonymous.

The study is for research purposes only. It forms part of Dominic Hosemans' Ph.D. thesis and is being conducted under the supervision of Dr. Janette Simmons, Dr. Tristan Snell, and Associate Professor Craig Hassed. The study involves completing an online survey, which will take approximately 15 minutes to complete.

If you agree to participate in the study, you will remain free to withdraw at any time and to withdraw any unprocessed data.

For more information on the study, or to access the online survey, please go to:

http://monasheducation.az1.qualtrics.com/SE/?SID=SV_eP6nRlaPdk4E1BX

Thank you in anticipation of your assistance.

Yours sincerely,

Dominic Hosemans

Dominic.hosemans@monash.edu

4.2. Ethics Certificate of Approval of EFA, Measurement Invariance, & Construct Validity Studies

MONASH University
Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number:	CF16/1316 - 2016000696	
Project Title:	Equanimity and the Cultivation of Wellbeing	
Chief Investigator:	Dr Janette Simmonds	
Approved:	**From:** 29 April 2016	**To:** 29 April 2021

Terms of approval - *Failure to comply with the terms below is in breach of your approval and the Australian Code for the Responsible Conduct of Research.*

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data collection can occur at the specified organisation.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must include your project number.
6. **Amendments to the approved project (including changes in personnel):** Require the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

[redacted]

Professor Nip Thomson
Chair, MUHREC

cc: Mr Dominic Hosemans, Dr Tristan Snell, Assoc Prof Craig Hassed

Monash University, Room 111, Chancellery Building E
24 Sports Walk, Clayton Campus, Wellington Rd
Clayton VIC 3800, Australia
Telephone: +61 3 9905 5490 Facsimile: +61 3 9905 3831
Email: muhrec@monash.edu http://intranet.monash.edu.au/researchadmin/human/index.php
ABN 12 377 614 012 CRICOS Provider #00008C

4.3. Explanatory Statement for EFA Study

Project Title: 'Equanimity and the Cultivation of Wellbeing'

Project Number: CF16/136 - 2016000696

Dr. Janette Simmonds
Department of Education
Ph: 9905 2902
E: janette.simmonds@monash.edu

Dominic Hosemans
[redacted]

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?
The study aims to explore the experience of equanimity (stillness) within meditation. Initially, focus groups and in-depth interviews were carried out with experienced meditators regarding their understanding of stillness in meditation. This resulted in the creation of a number of statements encompassing the following survey. Individuals are asked to state if they meditate, and if so their experience with meditation (i.e., years, average sessions per week, time for each session). Subsequent to this, all individuals (meditators and non-meditators) will be asked to respond to a series of statements regarding the experience of stillness as a psychological quality. Total time requirement for this is not expected to exceed 15 minutes.

Why were you chosen for this research?
It is a requirement for this research that you must be over 18 years of age as well as proficient in English. The research aims to recruit individuals who practice meditation (either mindfulness or stillness) as well as non-meditators. You have likely been chosen to participate in this research as you have previously identified that you would like to be contacted to participate in research regarding the effects of meditation or individuals in your network believed that you may be interested in participating and have subsequently forwarded this survey to you.

Consenting to participate in the project and withdrawing from the research
Participation in the study is completely voluntary; with participants free to change their mind at any point during the process of completing the survey as well as withdrawing any unprocessed data. Each participant will remain completely anonymous, with only the general trends of the results reported.

Possible benefits and risks to participants
No risks are anticipated with regards to participating in the survey. Although there may be a small potential risk that reflecting on your experience in order to respond to particular items within the survey may bring to light some uncomfortable feelings, this is expected to be very minimal, if at all.

Confidentiality

Participation in the study will be completely confidential. Data provided will not be identifiable and will be securely stored. Only the general trends of the results reported. Only the general trends will be reported in the form of a Ph.D. thesis, journal article, and conference presentation.

Storage of data
The data collected will be securely stored in password protected files on the student researcher's password protected computer. Only the student researcher and his Ph.D. supervisors will have access to the data. The data will be deleted permanently from the student researcher's password protected computer subsequent to completing his Ph.D. thesis, at the end of 2017.

Results
Participants interested in obtaining a brief summary of the trends across the interviews and focus groups can contact the student researcher at dominic.hosemans@monash.edu.

Complaints
Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

Dominic Hosemans

dominic.hosemans@monash.edu

4.4. DeCarlo's (1997) SPSS Syntax for Small's (1980) Omnibus Test of Multivariate Normality

```
preserve.
set printback=none.
************************************************************************
* Univariate and multivariate tests of skew and kurtosis, a list of the
* 5 cases with the largest Mahalanobis distances, a plot of the
* squared distances, critical values for a single multivariate outlier.
*
* from: DeCarlo, L. T. (1997). On the meaning and use of kurtosis.
*       Psychological Methods, 2, 292-307.
*
* To use the macro, one needs two lines, one to include the macro
* in the program, and the other to execute it. Open the data file, then
* type the commands in a syntax window as follows:
*
* include 'c:\spsswin\normtest.sps'.
* normtest vars=x1,x2,x3,x4 /.
*
* The first line includes the macro, which in this case is named
* normtest.sps and is located in the spsswin directory, and the
* second line invokes the macro for variables x1 to x4, for example.
* (variable names can be separated by spaces or commas)
*
* Updated 2002: the plot command of SPSS is replaced by graph
*
* Updated 11/97:
* This version uses a corrected two-pass algorithm to compute
* the variance, from Chan, T. F., Golub, G. H., & LeVeque, R. J.
* (1983). Algorithms for computing the sample variance: Analysis
* and recommendations. American Statistician, 37, 242-247.
* Fisher's g statistics are given.
* Mardia's p-value fixed (multiplied by 2), and the statistic is
* computed using the biased variance estimator, as in SAS & EQS
************************************************************************
define normtest (vars=!charend('/')).
matrix.
get x /variables=!vars /names=varnames /missing=omit.
compute n=nrow(x).
compute p=ncol(x).
compute s1=csum(x).
compute xbar=s1/n.
compute j=make(n,1,1).
compute xdev=x-j*xbar.
release x.
compute dev=csum(xdev).
compute devsq=(dev&*dev)/n.
compute ss=csum(xdev&*xdev).
* corrected two-pass algorithm.
compute m2=(ss-devsq)/n.
compute sdev=sqrt(m2).
compute m3=csum(xdev&**3)/n.
compute m4=csum(xdev&**4)/n.
compute sqrtb1=t(m3/(m2&*sdev)).
compute b2=t(m4/(m2&**2)).
compute g1=((sqrt(n*(n-1)))*sqrtb1)/(n-2).
compute g2=(b2-((3*(n-1))/(n+1)))*((n**2-1)/((n-2)*(n-3))).
******** quantities needed for multivariate statistics ********
```

```
compute s=sscp(xdev)/(n-1).
compute sb=s*(n-1)/n.
compute sinv=inv(s).
compute d=diag(s).
compute dmat=make(p,p,0).
call setdiag(dmat,d).
compute sqrtdinv=inv(sqrt(dmat)).
compute corr=sqrtdinv*s*sqrtdinv.
*** principal components for Srivastava's tests ***
call svd(s,u,q,v).
compute pc=xdev*v.
call svd(sb,aa,bb,cc).
compute pcb=(xdev*cc).
release xdev.
*** Mahalanobis distances ***
compute sqrtqinv=inv(sqrt(q)).
compute stdpc=pc*sqrtqinv.
compute dsq=rssq(stdpc).
release stdpc.
compute sqrtbbi=inv(sqrt(bb)).
compute stdpcb=pcb*sqrtbbi.
compute dsqb=rssq(stdpcb).
release stdpcb.
**************** univariate skew and kurtosis *****************
*** approximate Johnson's SU transformation for skew ***
compute y=sqrtb1*sqrt((n+1)*(n+3)/(6*(n-2))).
compute beta2=3*(n**2+27*n-70)*(n+1)*(n+3)/((n-2)*(n+5)*(n+7)*
          (n+9)).
compute w=sqrt(-1+sqrt(2*(beta2-1))).
compute delta=1/sqrt(ln(w)).
compute alpha=sqrt(2/(w*w-1)).
compute sub1=delta*ln(y/alpha+sqrt((y/alpha)&**2+1)).
compute psub1=2*(1-cdfnorm(abs(sub1))).
print {n}/title"Number of observations:" /format=f5.
print {p}/title"Number of variables:" /format=f5.
print {g1,sqrtb1,sub1,psub1}
 /title"Measures and tests of skew:"
 /clabels="g1","sqrt(b1)","z(b1)","p-value"
 /rnames=varnames /format=f10.4.
*** Anscombe & Glynn's transformation for kurtosis
compute eb2=3*(n-1)/(n+1).
compute vb2=24*n*(n-2)*(n-3)/(((n+1)**2)*(n+3)*(n+5)).
compute stm3b2=(b2-eb2)/sqrt(vb2).
compute beta1=6*(n*n-5*n+2)/((n+7)*(n+9))*sqrt(6*(n+3)*(n+5)/
          (n*(n-2)*(n-3))).
compute a=6+(8/beta1)*(2/beta1+sqrt(1+4/(beta1**2))).
compute zb2=(1-2/(9*a)-((1-2/a)/(1+stm3b2*sqrt(2/(a-4))))
        &**(1/3))/sqrt(2/(9*a)).
compute pzb2=2*(1-cdfnorm(abs(zb2))).
compute b2minus3=b2-3.
print {g2,b2minus3,zb2,pzb2}
 /title"Measures and tests of kurtosis:"
 /clabels="g2","b2-3","z(b2)","p-value"
 /rnames=varnames /format=f10.4.
compute ksq=sub1&**2+zb2&**2.
compute pksq=1-chicdf(ksq,2).
compute lm=n*((sqrtb1&**2/6)+(b2minus3&**2/24)).
compute plm=1-chicdf(lm,2).
print
 /title"Omnibus tests of normality (both chisq, 2 df):".
```

```
print {ksq,pksq,lm,plm}
 /title"  D'Agostino & Pearson K sq    Jarque & Bera LM test"
 /clabels="K sq","p-value","LM","p-value"
 /rnames=varnames /format=f10.4.
do if p>1
print
 /title"*************** Multivariate Statistics ***************".
*** Small's multivariate tests ***
compute uinv=inv(corr&**3).
compute uinv2=inv(corr&**4).
compute q1=t(sub1)*uinv*sub1.
* note: the variant of Small's kurtosis uses Anscombe & Glynn's
* transformation in lieu of SU (A & G is simpler to program)
compute q2=t(zb2)*uinv2*zb2.
compute pq1=1-chicdf(q1,p).
compute pq2=1-chicdf(q2,p).
print /title"Tests of multivariate skew:".
print {q1,p,pq1}/title"  Small's test (chisq)"
 /clabels="Q1","df","p-value"/format=f10.4.
*** Srivastava's multivariate tests ***
compute pcs1=csum(pc).
compute pcs2=csum(pc&**2).
compute pcs3=csum(pc&**3).
compute pcs4=csum(pc&**4).
release pc.
compute mpc2=(pcs2-(pcs1&**2/n))/n.
compute mpc3=(pcs3-(3/n*pcs1&*pcs2)+(2/(n**2)*(pcs1&**3)))/n.
compute mpc4=(pcs4-(4/n*pcs1&*pcs3)+(6/(n**2)*(pcs2&*(pcs1&**2)))
          -(3/(n**3)*(pcs1&**4)))/n.
compute pcb1=mpc3/(mpc2&**1.5).
compute pcb2=mpc4/(mpc2&**2).
compute sqb1p=rsum(pcb1&**2)/p.
compute b2p=rsum(pcb2)/p.
compute chib1=sqb1p*n*p/6.
compute normb2=(b2p-3)*sqrt(n*p/24).
compute pchib1=1-chicdf(chib1,p).
compute pnormb2=2*(1-cdfnorm(abs(normb2))).
print {chib1,p,pchib1}
 /title"  Srivastava's test"
 /clabels="chi(b1p)","df","p-value"/format=f10.4.
print /title"Tests of multivariate kurtosis:".
print {q2,p,pq2}
 /title"  A variant of Small's test (chisq)"
 /clabels="VQ2","df","p-value"/format=f10.4.
print {b2p,normb2,pnormb2}
 /title"  Srivastava's test"
 /clabels="b2p","N(b2p)","p-value"/format=f10.4.
*** Mardia's multivariate kurtosis ***
compute b2pm=csum(dsqb&**2)/n.
compute nb2pm=(b2pm-p*(p+2))/sqrt(8*p*(p+2)/n).
compute pnb2pm=2*(1-cdfnorm(abs(nb2pm))).
print {b2pm,nb2pm,pnb2pm}
 /title"  Mardia's test"
 /clabels="b2p","N(b2p)","p-value"/format=f10.4.
compute q3=q1+q2.
compute q3df=2*p.
compute pq3=1-chicdf(q3,q3df).
print /title"Omnibus test of multivariate normality:".
print {q3,q3df,pq3}
 /title"  (based on Small's test, chisq)"
```

```
 /clabels="VQ3","df","p-value"/format=f10.4.
end if.
compute cse={1:n}.
compute case=t(cse).
compute rnk=rnkorder(dsq).
compute top=(n+1)-rnk.
compute pvar=make(n,1,p).
compute ddf=make(n,1,(n-p-1)).
compute ncase=make(n,1,n).
compute a01=make(n,1,(1-.01/n)).
compute a05=make(n,1,(1-.05/n)).
compute mahal={case,rnk,top,dsq,pvar,ddf,ncase,a01,a05}.
save mahal /outfile=temp
 /variables=case,rnk,top,dsq,pvar,ddf,ncase,a01,a05.
end matrix.
get file=temp.
sort cases by top (a).
do if case=1.
compute f01=idf.f(a01,pvar,ddf).
compute f05=idf.f(a05,pvar,ddf).
compute fc01=(f01*pvar*(ncase-1)**2)/(ncase*(ddf+pvar*f01)).
compute fc05=(f05*pvar*(ncase-1)**2)/(ncase*(ddf+pvar*f05)).
print space.
print
 /'Critical values (Bonferroni) for a single multivar. outlier:'.
print space.
print
 /'  critical F(.05/n) ='fc05 (f5.2)'  df ='pvar (f3)','ddf (f4).
print
 /'  critical F(.01/n) ='fc01 (f5.2)'  df ='pvar (f3)','ddf (f4).
print space.
print /'5 observations with largest Mahalanobis distances:'.
end if.
execute.
do if top < 6.
print
 /'  rank ='top (f2)'  case# ='case (f4)'  Mahal D sq ='dsq (f10.2).
end if.
execute.
compute chisq=idf.chisq((rnk-.5)/ncase,pvar).
graph
 /title="Plot of ordered squared distances"
 /scatterplot (overlay)=dsq with chisq.
execute.
!enddefine.
restore.
```

4.5. O'Connor's (2000) SPSS Syntax for Eigenvalue Monte Carlo Simulation

```
* Parallel Analysis Program For Raw Data and Data Permutations.

* To run this program you need to first specify the data
  for analysis and then RUN, all at once, the commands
  from the MATRIX statement to the END MATRIX statement.

* This program conducts parallel analyses on data files in which
  the rows of the data matrix are cases/individuals and the
  columns are variables;  Data are read/entered into the program
  using the GET command (see the GET command below);  The GET
  command reads an SPSS data file, which can be either the
  current, active SPSS data file or a previously saved data file;
  A valid filename/location must be specified on the GET command;
  A subset of variables for the analyses can be specified by using
  the "/ VAR =" subcommand with the GET statement;  There can be
  no missing values.

* You must also specify:
  -- the # of parallel data sets for the analyses;
  -- the desired percentile of the distribution and random
     data eigenvalues;
  -- whether principal components analyses or principal axis/common
     factor analysis are to be conducted, and
  -- whether normally distributed random data generation or
     permutations of the raw data set are to be used in the
     parallel analyses.

* Permutations of the raw data set can be time consuming;
  Each parallel data set is based on column-wise random shufflings
  of the values in the raw data matrix using Castellan's (1992,
  BRMIC, 24, 72-77) algorithm; The distributions of the original
  raw variables are exactly preserved in the shuffled versions used
  in the parallel analyses; Permutations of the raw data set are
  thus highly accurate and most relevant, especially in cases where
  the raw data are not normally distributed or when they do not meet
  the assumption of multivariate normality (see Longman & Holden,
  1992, BRMIC, 24, 493, for a Fortran version); If you would
  like to go this route, it is perhaps best to (1) first run a
  normally distributed random data generation parallel analysis to
  familiarize yourself with the program and to get a ballpark
  reference point for the number of factors/components;
  (2) then run a permutations of the raw data parallel analysis
  using a small number of datasets (e.g., 100), just to see how long
  the program takes to run; then (3) run a permutations of the raw
  data parallel analysis using the number of parallel data sets that
  you would like use for your final analyses; 1000 datasets are
  usually sufficient, although more datasets should be used if
  there are close calls.

* These next commands generate artificial raw data
  (500 cases) that can be used for a trial-run of
  the program, instead of using your own raw data;
  Just select and run this whole file; However, make sure to
  delete the artificial data commands before attempting to
  run your own data.

set mxloops=9000 printback=off width=80  seed = 1953125.
```

```
matrix.

* Enter the name/location of the data file for analyses after "FILE =";
  If you specify "FILE = *", then the program will read the current,
  active SPSS data file; Alternatively, enter the name/location
  of a previously saved SPSS data file instead of "*";
  you can use the "/ VAR =" subcommand after "/ missing=omit"
  subcommand to select variables for the analyses.
GET raw / FILE = * / missing=omit / VAR = Q1_9 to Q12_8.

* Enter the desired number of parallel data sets here.
compute ndatsets = 1000.

* Enter the desired percentile here.
compute percent  = 95.

* Enter either
  1 for principal components analysis, or
  2 for principal axis/common factor analysis.
compute kind = 1 .

* Enter either
  1 for normally distributed random data generation parallel analysis, or
  2 for permutations of the raw data set.
compute randtype = 1.

****************** End of user specifications. ******************
compute ncases   = nrow(raw).
compute nvars    = ncol(raw).

* principal components analysis & random normal data generation.
do if (kind = 1 and randtype = 1).
compute nm1 = 1 / (ncases-1).
compute vcv = nm1 * (sscp(raw) - ((t(csum(raw))*csum(raw))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute realeval = eval(d * vcv * d).
compute evals = make(nvars,ndatsets,-9999).
loop #nds = 1 to ndatsets.
compute x = sqrt(2 * (ln(uniform(ncases,nvars)) * -1) ) &*
          cos(6.283185 * uniform(ncases,nvars) ).
compute vcv = nm1 * (sscp(x) - ((t(csum(x))*csum(x))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute evals(:,#nds) = eval(d * vcv * d).
end loop.
end if.

* principal components analysis & raw data permutation.
do if (kind = 1 and randtype = 2).
compute nm1 = 1 / (ncases-1).
compute vcv = nm1 * (sscp(raw) - ((t(csum(raw))*csum(raw))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute realeval = eval(d * vcv * d).
compute evals = make(nvars,ndatsets,-9999).
loop #nds = 1 to ndatsets.
compute x = raw.
loop #c = 1 to nvars.
loop #r = 1 to (ncases -1).
compute k = trunc( (ncases - #r + 1) * uniform(1,1) + 1 )  + #r - 1.
compute d = x(#r,#c).
compute x(#r,#c) = x(k,#c).
```

```
compute x(k,#c) = d.
end loop.
end loop.
compute vcv = nm1 * (sscp(x) - ((t(csum(x))*csum(x))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute evals(:,#nds) = eval(d * vcv * d).
end loop.
end if.

* PAF/common factor analysis & random normal data generation.
do if (kind = 2 and randtype = 1).
compute nm1 = 1 / (ncases-1).
compute vcv = nm1 * (sscp(raw) - ((t(csum(raw))*csum(raw))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute cr = (d * vcv * d).
compute smc = 1 - (1 &/ diag(inv(cr)) ).
call setdiag(cr,smc).
compute realeval = eval(cr).
compute evals = make(nvars,ndatsets,-9999).
compute nm1 = 1 / (ncases-1).
loop #nds = 1 to ndatsets.
compute x = sqrt(2 * (ln(uniform(ncases,nvars)) * -1) ) &*
        cos(6.283185 * uniform(ncases,nvars) ).
compute vcv = nm1 * (sscp(x) - ((t(csum(x))*csum(x))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute r = d * vcv * d.
compute smc = 1 - (1 &/ diag(inv(r)) ).
call setdiag(r,smc).
compute evals(:,#nds) = eval(r).
end loop.
end if.

* PAF/common factor analysis & raw data permutation.
do if (kind = 2 and randtype = 2).
compute nm1 = 1 / (ncases-1).
compute vcv = nm1 * (sscp(raw) - ((t(csum(raw))*csum(raw))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute cr = (d * vcv * d).
compute smc = 1 - (1 &/ diag(inv(cr)) ).
call setdiag(cr,smc).
compute realeval = eval(cr).
compute evals = make(nvars,ndatsets,-9999).
compute nm1 = 1 / (ncases-1).
loop #nds = 1 to ndatsets.
compute x = raw.
loop #c = 1 to nvars.
loop #r = 1 to (ncases -1).
compute k = trunc( (ncases - #r + 1) * uniform(1,1) + 1 )  + #r - 1.
compute d = x(#r,#c).
compute x(#r,#c) = x(k,#c).
compute x(k,#c) = d.
end loop.
end loop.
compute vcv = nm1 * (sscp(x) - ((t(csum(x))*csum(x))/ncases)).
compute d = inv(mdiag(sqrt(diag(vcv)))).
compute r = d * vcv * d.
compute smc = 1 - (1 &/ diag(inv(r)) ).
call setdiag(r,smc).
compute evals(:,#nds) = eval(r).
end loop.
```

```
end if.

* identifying the eigenvalues corresponding to the desired percentile.
compute num = rnd((percent*ndatsets)/100).
compute results = { t(1:nvars), realeval, t(1:nvars), t(1:nvars) }.
loop #root = 1 to nvars.
compute ranks = rnkorder(evals(#root,:)).
loop #col = 1 to ndatsets.
do if (ranks(1,#col) = num).
compute results(#root,4) = evals(#root,#col).
break.
end if.
end loop.
end loop.
compute results(:,3) = rsum(evals) / ndatsets.

print /title="PARALLEL ANALYSIS:".
do if (kind = 1 and randtype = 1).
print /title="Principal Components & Random Normal Data Generation".
else if (kind = 1 and randtype = 2).
print /title="Principal Components & Raw Data Permutation".
else if (kind = 2 and randtype = 1).
print /title="PAF/Common Factor Analysis & Random Normal Data Generation".
else if (kind = 2 and randtype = 2).
print /title="PAF/Common Factor Analysis & Raw Data Permutation".
end if.
compute specifs = {ncases; nvars; ndatsets; percent}.
print specifs /title="Specifications for this Run:"
 /rlabels="Ncases" "Nvars" "Ndatsets" "Percent".
print results
 /title="Raw Data Eigenvalues, & Mean & Percentile Random Data Eigenvalues"
 /clabels="Root" "Raw Data" "Means" "Prcntyle"  /format "f12.6".

do if   (kind = 2).
print / space = 1.
print /title="Warning: Parallel analyses of adjusted correlation matrices".
print /title="eg, with SMCs on the diagonal, tend to indicate more factors".
print /title="than warranted (Buja, A., & Eyuboglu, N., 1992, Remarks on parallel".
print /title="analysis. Multivariate Behavioral Research, 27, 509-540.).".
print /title="The eigenvalues for trivial, negligible factors in the real".
print /title="data commonly surpass corresponding random data eigenvalues".
print /title="for the same roots. The eigenvalues from parallel analyses".
print /title="can be used to determine the real data eigenvalues that are".
print /title="beyond chance, but additional procedures should then be used".
print /title="to trim trivial factors.".
print / space = 2.
print /title="Principal components eigenvalues are often used to determine".
print /title="the number of common factors. This is the default in most".
print /title="statistical software packages, and it is the primary practice".
print /title="in the literature. It is also the method used by many factor".
print /title="analysis experts, including Cattell, who often examined".
print /title="principal components eigenvalues in his scree plots to determine".
print /title="the number of common factors. But others believe this common".
print /title="practice is wrong. Principal components eigenvalues are based".
print /title="on all of the variance in correlation matrices, including both".
print /title="the variance that is shared among variables and the variances".
print /title="that are unique to the variables. In contrast, principal".
print /title="axis eigenvalues are based solely on the shared variance".
print /title="among the variables. The two procedures are qualitatively".
print /title="different. Some therefore claim that the eigenvalues from one".
```

```
print /title="extraction method should not be used to determine".
print /title="the number of factors for the other extraction method.".
print /title="The issue remains neglected and unsettled.".
end if.

compute root      = results(:,1).
compute rawdata = results(:,2).
compute percntyl = results(:,4).

save results /outfile= 'screedata.sav' / var=root rawdata means percntyl .

end matrix.

* plots the eigenvalues, by root, for the real/raw data and for the random data.
GET file= 'screedata.sav'.
TSPLOT VARIABLES= rawdata means percntyl /ID= root /NOLOG.
```

4.6. Step-wise Deletion of Items for Meditating Sample

Pattern Matrix: Item 9 Deleted

	Factor 1	Factor 2
1.	**.824**	-.096
3.	**.639**	.039
4.	**.750**	-.018
6.	**.568**	-.006
7.	**.733**	-.023
10.	**.790**	-.052
11.	**.854**	-.097
12.	.441	.296
13.	.391	.332
14.	.373	.421
15.	.430	.311
16.	.094	**.607**
17.	.078	**.630**
18.	-.001	**.741**
20.	**.715**	.100
21.	.461	.240
23.	.391	.206
24.	.325	.458
25.	.002	**.843**
26.	-.039	**.793**
27.	-.075	**.749**
28.	.192	**.601**
29.	.191	**.623**
30.	-.192	**.917**
31.	.229	.534
35.	-.036	**.661**
36.	.124	**.657**
38.	**.588**	.207

Pattern Matrix: Item 12 Deleted

	Factor 1	Factor 2
1.	**.825**	-.091
2.	**.628**	.048
4.	**.749**	-.012
6.	**.568**	-.001
7.	**.731**	-.017
10.	**.783**	-.043
11.	**.852**	-.090
13.	.376	.340
14.	.355	.430
15.	.425	.317
16.	.094	**.610**
17.	.070	**.634**
18.	-.013	**.745**
20.	**.712**	.106
21.	.464	.252
23.	.392	.208
24.	.314	.464
25.	-.003	**.845**
26.	-.040	**.795**
27.	-.073	**.749**
28.	.189	**.604**
29.	.195	**.624**
30.	-.191	**.917**
31.	.228	.538
35.	-.036	**.662**
36.	.114	**.661**
38.	**.581**	.214

Pattern Matrix: Item 13 Deleted

	Factor 1	Factor 2
1.	**.826**	-.089
3.	**.623**	.050
4.	**.747**	-.008
6.	**.563**	.002
7.	**.721**	-.012
10.	**.785**	-.041
11.	**.849**	-.086
14.	.346	.430
15.	.421	.319
16.	.093	**.611**
17.	.065	**.634**
18.	-.016	**.745**
20.	.**713**	.108
21.	.466	.254
23.	.396	.210
24.	.310	.465
25.	-.001	**.846**
26.	-.039	**.795**
27.	-.071	**.748**
28.	.194	**.606**
29.	.195	**.625**
30.	-.190	**.915**
31.	.228	.538
35.	-.031	**.663**
36.	.113	**.662**
38.	**.586**	.216

Pattern Matrix: Item 14 Deleted

	Factor 1	Factor 2
1.	**.824**	-.088
2.	**.625**	.051
4.	**.749**	-.008
6.	**.566**	.004
7.	**.724**	-.010
10.	**.780**	-.042
11.	**.844**	-.087
15.	.421	.316
16.	.095	**.605**
17.	.068	**.630**
18.	-.012	**.739**
20.	**.711**	.108
21.	.470	.257
23.	.399	.212
24.	.309	.459
25.	.003	**.842**
26.	-.035	**.792**
27.	-.067	**.746**
28.	.197	**.605**
29.	.200	**.629**
30.	-.186	**.915**
31.	.231	.537
35.	-.028	**.662**
36.	.117	**.660**
38.	**.588**	.216

Pattern Matrix: Item 15 Deleted

	Factor 1	Factor 2
1.	**.819**	-.082
3.	**.630**	.052
4.	**.746**	-.004
6.	**.572**	.006
7.	**.712**	-.003
10.	**.775**	-.036
11.	**.834**	-.079
16.	.085	**.607**
17.	.061	**.631**
18.	-.014	**.739**
20.	.**709**	.112
21.	.471	.259
23.	.398	.214
24.	.306	.461
25.	.004	**.843**
26.	-.034	**.792**
27.	-.062	**.746**
28.	.194	**.606**
29.	.198	**.630**
30.	-.188	**.914**
31.	.236	.538
35.	-.024	**.662**
36.	.118	**.660**
38.	**.594**	.217

Pattern Matrix: Item 21 Deleted

	Factor 1	Factor 2
1.	**.813**	-.071
2.	**.622**	.062
4.	**.732**	.010
6.	**.581**	.008
7.	**.707**	.006
10.	**.776**	-.028
11.	**.830**	-.069
16.	.086	**.608**
17.	.067	**.630**
18.	-.009	**.738**
20.	**.699**	.124
23.	.368	.230
24.	.297	.468
25.	.000	**.846**
26.	-.041	**.795**
27.	-.072	**.750**
28.	.191	**.611**
29.	.188	**.636**
30.	-.188	**.913**
31.	.222	.546
35.	-.029	**.664**
36.	.120	**.662**
38.	**.590**	.226

Pattern Matrix: Item 23 Deleted

	Factor 1	Factor 2
1.	**.803**	-.060
3.	**.625**	.066
4.	**.733**	.015
6.	**.585**	.011
7.	**.702**	.014
10.	**.769**	-.019
11.	**.827**	-.061
16.	.081	**.610**
17.	.071	**.630**
18.	-.006	**.738**
20.	**.682**	.138
24.	.283	.475
25.	-.003	**.848**
26.	-.043	**.796**
27.	-.073	**.750**
28.	.181	**.616**
29.	.186	**.639**
30.	-.187	**.912**
31.	.214	.551
35.	-.036	**.667**
36.	.121	**.664**
38.	**.588**	.232

Pattern Matrix: Item 24 Deleted

	Factor 1	Factor 2
1.	**.803**	-.061
2.	**.627**	.065
4.	**.736**	.017
6.	**.584**	.009
7.	**.702**	.012
10.	**.771**	-.019
11.	**.827**	-.063
16.	.086	**.606**
17.	.076	**.631**
18.	.000	**.733**
20.	**.682**	.134
25.	.005	**.838**
26.	-.035	**.788**
27.	-.067	**.751**
28.	.186	**.631**
29.	.191	**.642**
30.	-.182	**.915**
31.	.218	.542
35.	-.030	**.661**
36.	.127	**.667**
38.	**.591**	.230

4.7. Loading and Unique Variance for the Calculation of the Nested-Factors Omega Reliability Coefficient

	Meditating Sample				Non-Meditating Sample			
Item	Loading (Standard Error)			Residual	Loading (Standard Error)			Residual
	Centring	*Resonating*	*Equanimity*	Variance	*Centring*	*Resonating*	*Equanimity*	Variance
C1.	.432 (.102)		.319 (.048)	.507 (.050)	.591 (.100)		.306 (.058)	.370 (.033)
C2.	.414 (.204)		.303 (.200)	.552 (.049)	.594 (.131)		.298 (.124)	.374 (.051)
C3.	.426 (.252)		.316 (.245)	.520 (.060)	.586 (.111)		.274 (.117)	.416 (.059)
C4.	.473 (.203)		.353 (.194)	.406 (.046)	.602 (.172)		.313 (.151)	.346 (.045)
C5.	.495 (.201)		.316 (.232)	.360 (.052)	.650 (.099)		.309 (.117)	.274 (.035)
C6.	.474 (.195)		.350 (.207)	.408 (.046)	.547 (.137)		.288 (.127)	.454 (.084)
C7.	.454 (.233)		.335 (.247)	.458 (.055)	.598 (.166)		.305 (.148)	.361 (.049)
C8.	.487(.192)		.359 (.219)	.375 (.050)	.628 (.144)		.327 (.133)	.290 (.042)
C9.	.499 (.206)		.368(.235)	.343 (.051)	.585 (.109)		.272 (.125)	.419 (.058)
R1.		.483 (.058)	.245 (.101)	.589 (.039)		.570 (.175)	.281 (.186)	.434 (.045)
R2.		.554 (.123)	.288 (.137)	.452 (.048)		.514 (.244)	.306 (.234)	.484 (.067)
R3.		.492 (.079)	.243 (.096)	.579 (.056)		.486 (.180)	.268 (.202)	.560 (.063)
R4.		.533 (.090)	.268 (.103)	.502 (.046)		.580 (.209)	.298 (.219)	.400 (.044)
R5.		.517 (.071)	.249 (.113)	.543 (.047)		.598 (.162)	.277 (.188)	.398 (.029)
R6.		.539 (.093)	.279 (.109)	.481 (.051)		.569 (.192)	.283 (.231)	.434 (.044)
R7.		.516 (.070)	.251 (.103)	.541 (.049)		.561 (.160)	.255 (.185)	.476 (.045)
R8.		.526 (.127)	.264 (.126)	.516 (.046)		.574 (.216)	.291 (.217)	.417 (.048)
R9.		.506 (.105)	.248 (.117)	.557 (.050)		.595 (.180)	.280 (.185)	.396 (.043)
R10.		.522 (.082)	.253 (.112)	.533 (.049)		.612 (.141)	.278 (.180)	.377 (.031)
R11.		.526 (.079)	.251 (.118)	.529 (.030)		.614 (.135)	.268 (.186)	.385 (.035)

4.8. Zientek & Thompson's (2007) SPSS Syntax for Bootstrap EFA

```
COMMENT Bootstrap Factor Analysis Program I.
COMMENT by Linda Reichwein Zientek and Bruce Thompson
COMMENT The assistance of Raynald Levesque with the algorithm for adding the bootstrapped files
is.
COMMENT gratefully appreciated.
COMMENT Highlighted portions of the program will need to be changed according to the data set,.
COMMENT number of factors, and variables. The color coding scheme is listed below. Once the.
COMMENT changes have been made, copy and paste the program into SPSS and run. This program is
set.
COMMENT up to run 3 factors and calls a second program.
COMMENT Call Data Set.
COMMENT Variables.
COMMENT Number of loops.
COMMENT Corresponds to the number of factors. If more or less than 4 factors then add or subtract.
COMMENT variables to the target matrix and means and standard deviations.
COMMENT Calling Program II ('BFA_2.SPS').
COMMENT If you are running MORE THAN 2000 loops, ADD SET MITERATE = # of loops.
after SET MPRINT=yes. !boot nb=# of loops. SET MPRINT=no. This is highlighted in red in the
document.
COMMENT First save the data as a data file with the extension "sav". This is important because
otherwise
COMMENT there will be 2 active data files.
set mxloop=50000 results=none highres=off  cache 100000 mprint=off.
 set workspace= 100000 compressed=on printback=none.
get file='c:\holzinger.sav'
/keep=  T6 T7 T9 T10 T12 T13 T14 T15 T17      .
save outfile='c:\holz.sav'.
get file='s:\holz.sav'.
dataset name active1 .
FACTOR
 /MATRIX=OUT (FAC='c:\bootfac.sav')
 /VARIABLES T6 T7 T9 T10 T12 T13 T14 T15 T17
 /MISSING listwise
 /ANALYSIS  T6 T7 T9 T10 T12 T13 T14 T15 T17
 /Print UNIVARIATE CORRELATION EXTRACTION ROTATION
 /plot eigen
 /FORMAT Sort /CRITERIA FACTORS 3 ITERATE(25)
 /EXTRACTION PC /CRITERIA ITERATE(25)
 /ROTATION VARIMAX
 /METHOD=CORRELATION
 /PRINT=extraction rotation.
dataset close active1 .
execute .

get file='c:\holz.sav'.
dataset name active2 .
numeric seqnum(f1)  .
leave seqnum.
compute seqnum=sum(seqnum,1).
leave seqnum.
execute.
dataset close active2.
save outfile='c:\holz.sav'.

COMMENT CREATE TARGET MATRIX.
COMMENT bs and var001 etc correspond to the factor .
COMMENT Be sure to Add Commas between Abs(var00n)
```

```
get file='c:\bootfac.sav'.
dataset name active3.
FLIP
  VARIABLES=  T6 T7 T9 T10 T12 T13 T14 T15 T17     .

compute b1=0.
IF (ABS(var001)=max (ABS(var001), abs(var002)  , abs(var003) ) ) b1 = 1 .
IF (b1=1 and var001<0) b1=-1.

compute b2=0.
IF (ABS(var002)=max (ABS(var001), abs(var002)   , abs(var003)  ) ) b2 = 1.
IF (b2=1 and var002<0) b2=-1.

compute b3=0.
IF (ABS(var003)=max (abs(var001), abs(var002)  , abs(var003) ) ) b3 = 1.
IF (b3=1 and var003<0) b3=-1.

COMMENT IF four factors, make the following adjustments:
COMMENT. compute b4=0.
COMMENT IF (ABS(var004)=max (abs(var001), abs(var002)  , abs(var003) , abs(var004) ) ) b4 = 1.
COMMENT IF (b4=1 and var004<0) b4=-1.
EXECUTE .
numeric seqnum(f1)  .
leave seqnum.
compute seqnum=sum(seqnum,1).
leave seqnum.
execute.
save /outfile='c:\b1.sav'.
dataset close active3.
execute.

COMMENT Be sure to save the Program II to the correct drive.
COMMENT Following algorithm concatenating bootstrap results contributed by Raynald
Levesque.
*//////////////////.
DEFINE !boot (nb=!TOKENS(1))

!DO !cnt=1 !TO !nb
INCLUDE 'c:\BFA_2.sps'.

!IF (!cnt=1) !THEN
GET FILE='C:\brotorig.SAV'.
!ELSE
ADD FILES FILE='c:\Tbrotorig.SAV'
          /FILE='C:\brotorig.SAV'.
!IFEND
SAVE OUTFILE='c:\Tbrotorig.SAV'.
!IF (!cnt=1) !THEN
GET FILE='C:\eigenvorig.SAV'.
!ELSE
ADD FILES FILE='c:\Teigenvorig.SAV'
          /FILE='C:\eigenvorig.SAV'.
!IFEND
SAVE OUTFILE='c:\Teigenvorig.SAV'.
!DOEND
!ENDDEFINE.
*//////////////////.
*The following macro call will do nb number of resampling. Add ADD SET MITERATE = # of
loops. after set mprint=no if you are running more than 1000 loops.
SET MPRINT=yes.
```

```
!boot nb=1000   .
SET MPRINT=no.
COMMENT Mean Bootstrap Results for Factor I.
COMMENT If var1000 corresponds to 1000 loops. If for example 10 loops are run.
COMMENT then change var1000 to var010.
get file='c:\Tbrotorig.sav'.
select if (seqnum=1).
rename variables  col1=col01 col2=col02 col3=col03 col4=col04 col5=col05 col6=col06 col7=col07
col8=col08 col9=col09.
flip variables=col01 to col09.
compute mfac1=mean(var001 to var1000).
compute sdfac1=sd(var001 to var1000).
compute t_fac1=mfac1/sdfac1.
execute.
save outfile='c:\mfac1.sav'.

COMMENT Mean Bootstrap Results for Factor II.
get file='c:\Tbrotorig.sav'.
select if (seqnum=2).
rename variables  col1=col01 col2=col02 col3=col03 col4=col04 col5=col05 col6=col06 col7=col07
col8=col08 col9=col09.
flip variables=col01 to col09.
compute mfac2=mean(var001 to var1000).
compute sdfac2=sd(var001 to var1000).
compute t_fac2=mfac2/sdfac2.
execute.
save outfile='c:\mfac2.sav'.

COMMENT Mean Bootstrap Results for Factor III.
COMMENT If more than three factors add the highlighted section and change seqnum to the.
COMMENT corresponding factor.
get file='c:\Tbrotorig.sav'.
dataset name active6.
select if (seqnum=3).
rename variables  col1=col01 col2=col02 col3=col03 col4=col04 col5=col05 col6=col06 col7=col07
col8=col08 col9=col09.
flip variables=col01 to col09.
compute mfac3=mean(var001 to var1000).
compute sdfac3=sd(var001 to var1000).
compute t_fac3=mfac3/sdfac3.
execute.
dataset close active6.
save outfile='c:\mfac3.sav'.

COMMENT Mean Bootstrap Results for Eigenvalues.
get file='c:\Teigenvorig.sav'.
rename variables  col1=col01 col2=col02 col3=col03 col4=col04 col5=col05 col6=col06 col7=col07
col8=col08 col9=col09.
flip variables=col01 to col09  .
compute meigenv=mean(var001 to var1000).
compute sdeigenv=sd(var001 to var1000).
compute t_eigen=meigenv/sdeigenv.
execute.
save outfile='c:\eigenv.sav'.


COMMENT If more than three factors then for each additional factor add
(file='c:\mfacnumber.sav') .
COMMENT between file mfac3 and c:eigenv.
COMMENT Then add the corresponding mean sd and t_scores for each factor after t_fac3.
```

```
sort cases by case_lbl.
match files
file='c:\mfac1.sav'  /
file='c:\mfac2.sav' /
file='c:\mfac3.sav' /
file='c:\eigenv.sav' /
by case_lbl /
keep=mfac1 sdfac1 t_fac1 mfac2 sdfac2 t_fac2 mfac3 sdfac3 t_fac3 meigenv sdeigenv t_eigen.
execute.

COMMENT This program will be called by Program I.
COMMENT Save as the calling name (indicated in purple) in program I Proceed with the COMMENT indicated changes.
COMMENT Highlighted portions of the program will need to be changed accordingly.
COMMENT Variable Set  Number of Cases  Number of Variables.
COMMENT Variables correspond to the number of factors.
COMMENT Change these according to the given format.
COMMENT NOTE Commas exist between Fact_n
set mxloop=50000 results=none highres=off  cache 100000 compression = on mprint=off .
set printback=none workspace=40000.
get file='c:\holz.sav'.

COMMENT Resample with Replacement.
input program.
loop #i=1 to  301   .
compute seqnum=trunc(uniform(  301  ))+1.
end case.
end loop.
end file.
end input program.
sort cases by seqnum.
match files file=* /tables='c:\holz.sav'/by seqnum.
execute.
save outfile='c:\fact.sav'.

FACTOR
 /MATRIX=OUT (FAC='c:\bootfac10.sav')
 /VARIABLES T6 T7 T9 T10 T12 T13 T14 T15 T17
 /MISSING listwise
 /ANALYSIS T6 T7 T9 T10 T12 T13 T14 T15 T17
  /PRINT INITIAL EXTRACTION ROTATION
  /CRITERIA FACTORS(3) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION .

get file='c:\fact.sav'.
correlations variables= T6 T7 T9 T10 T12 T13 T14 T15 T17     /matrix=out('c:\corr2.sav').
get file='c:\corr2.sav'.
SORT CASES BY rowtype_ (A) .
FILTER OFF.
use 1 thru 9 .
EXECUTE .
flip variables= T6 T7 T9 T10 T12 T13 T14 T15 T17     .

MATRIX.
get m /variables=var001 to var009 .
print m.
CALL EIGEN(m,A,B).
```

```
print B.
COMPUTE B_T=TRANSPOS(B) .
save B_T /outfile='c:\eigenvorig.sav'.
END MATRIX.

get file='c:\b1.sav'.
get file='c:\bootfac10.sav'.
FLIP
  VARIABLES= T6 T7 T9 T10 T12 T13 T14 T15 T17    .
RENAME VARIABLES var001=FACT_1 var002=FACT_2  var003=FACT_3    .
numeric seqnum(f1)  .
leave seqnum.
compute seqnum=sum(seqnum,1).
leave seqnum.
execute.
sort cases by seqnum.
match files file=* /tables='c:\b1.sav'/by seqnum.
execute.

MATRIX .
GET A/VARIABLES=b1 b2   b3.
GET B/variables= FACT_1 FACT_2   FACT_3.
print B.
print A.

COMMENT PROCRUSTEAN ROTATION BY BRUCE THOMPSON.
COMPUTE N_A =make(9,1,0).
print N_A.
COMPUTE DIAG_M =make(3,3,0).
PRINT DIAG_M.
COMPUTE N_B=N_A .
PRINT A /
  FORMAT='F8.2' /
  TITLE='First Pattern Matrix (Target)' /
  SPACE=4/
  RLABELS= T6 T7 T9 T10 T12 T13 T14 T15 T17       /
  CLABELS=Fact_I, Fact_II    , Fact_III / .
COMPUTE A_N=A .
- LOOP #I=1 TO NROW(A) .
-   LOOP #J=1 TO NCOL(A) .
-      COMPUTE A_N(#I,#J)=A(#I,#J) ** 2 .
-   END LOOP .
-END LOOP .

PRINT A_N /
 FORMAT='F8.4' /
 TITLE='First Pattern Matrix (Target) Squared' /
 SPACE=4 /
 RLABELS= T6 T7 T9 T10 T12 T13 T14 T15 T17     /
 CLABELS=Fact_I, Fact_II   , Fact_III / .
-LOOP #J=1 TO NCOL(A) .
+ LOOP #I=1 TO NROW(A) .
COMPUTE N_A(#I)=A_N(#I,#J) + N_A(#I) .
+ END LOOP .
-END LOOP .
PRINT N_A /
 FORMAT='F8.3' /
 TITLE='Row Sum of Squares for First Pattern Matrix' /
 SPACE=4 /
 RLABELS= T6 T7 T9 T10 T12 T13 T14 T15 T17     / .
```

```
LOOP #I=1 TO NROW(A) .
- COMPUTE N_A(#I) = 1.0 / (N_A(#I) ** .5) .
END LOOP .
PRINT N_A /
 FORMAT='F8.3' /
 TITLE='Normalization Factor for Rows' /
 SPACE=4 /
 RLABELS= T6 T7 T9 T10 T12 T13 T14 T15 T17    / .
LOOP #J=1 TO NCOL(A) .
+ LOOP #I=1 TO NROW(A) .
COMPUTE A_N(#I,#J)=A(#I,#J) * N_A(#I) .
+ END LOOP .
END LOOP .

PRINT A_N /
 FORMAT='F8.4' /
 TITLE='First Pattern Matrix (Target) Normalized' /
 SPACE=4 /
 RLABELS= T6 T7 T9 T10 T12 T13 T14 T15 T17      /
 CLABELS=Fact_I, Fact_II   , Fact_III / .
PRINT B /
 FORMAT='F8.2' /
 TITLE='Second Pattern Matrix' /
 SPACE=4 /
 RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17      /
 CLABELS=Fact_I, Fact_II   , Fact_III / .
COMPUTE B_N=B .
-LOOP #I=1 TO NROW(B) .
+ LOOP #J=1 TO NCOL(B) .
COMPUTE B_N(#I,#J)=B(#I,#J) ** 2 .
+ END LOOP .
-END LOOP .

PRINT B_N /
 FORMAT='F8.4' /
 TITLE='Second Pattern Matrix Squared' /
 SPACE=4 /
 RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17    /
 CLABELS=Fact_I, Fact_II   , Fact_III / .
-LOOP #J=1 TO NCOL(B) .
+ LOOP #I=1 TO NROW(B) .
COMPUTE N_B(#I)=B_N(#I,#J) + N_B(#I) .
+ END LOOP .
-END LOOP .
PRINT N_B /
 FORMAT='F8.3' /
 TITLE='Row Sum of Squares for Second Pattern Matrix' /
 SPACE=4 /
 RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   / .

LOOP #I=1 TO NROW(B) .
- COMPUTE N_B(#I) = 1.0 / (N_B(#I) ** .5) .
END LOOP .
PRINT N_B / FORMAT='F8.3' /
 TITLE='Normalization Factor for Rows' /
 SPACE=4 /
 RLABELS=   T6 T7 T9 T10 T12 T13 T14 T15 T17  / .

LOOP #J=1 TO NCOL(B) .
```

```
+ LOOP #I=1 TO NROW(B) .
COMPUTE B_N(#I,#J)=B(#I,#J) * N_B(#I) .
+ END LOOP .
END LOOP .

PRINT B_N / FORMAT='F8.4' /
 TITLE='Second Pattern Matrix Normalized' /
 SPACE=4 /
 RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   /
 CLABELS=Fact_I, Fact_II  , Fact_III / .

COMPUTE A_T=TRANSPOS(A_N) .
PRINT A_T / FORMAT='F8.2' /
 TITLE='A_N Transpose' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   / .

COMPUTE B_T=TRANSPOS(B_N) .
PRINT B_T / FORMAT='F8.2' /
 TITLE='B_N Transpose' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   / .

COMPUTE RI=A_T * B_N .
PRINT RI / FORMAT='F8.3' /
 TITLE='A_N Transpose times B_N' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=Fact_I, Fact_II  , Fact_III / .
COMPUTE RI_T=TRANSPOS(RI) .
PRINT RI_T / FORMAT='F8.3' /
 TITLE='Transpose of (A_N Transpose times B_N)' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=Fact_I, Fact_II  , Fact_III / .

COMPUTE QUAD=RI * RI_T .
PRINT QUAD / FORMAT='F8.3' /
 TITLE='A_N Trans * B_N * Trans of (A_N Trans * B_N)' /
 SPACE=2 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=Fact_I, Fact_II  , Fact_III / .
CALL EIGEN(QUAD, EIGVEC, EIG) .
PRINT EIG / FORMAT='F8.3' /
 TITLE='Eigenvalues of QUAD' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III / .

PRINT EIGVEC / FORMAT='F8.3' /
 TITLE='Eigenvectors of QUAD' /
 SPACE=4 /
 RLABELS=ONE, TWO  , THREE /
 CLABELS=Fact_I, Fact_II  , Fact_III / .
-LOOP #I=1 TO NROW(QUAD) .
+ LOOP #J=1 TO NROW(QUAD) .
COMPUTE EIGVEC(#I,#J)=EIGVEC(#I,#J) * (EIG(#J) ** .5) .
+ END LOOP .
-END LOOP .
```

```
PRINT EIGVEC / FORMAT='F8.3' /
 TITLE='Pattern Coefficients of QUAD' /
 SPACE=4 /
 RLABELS=ONE, TWO  , THREE/
 CLABELS=Fact_I, Fact_II    , Fact_III / .

LOOP I=1 TO NROW(EIG) .
- COMPUTE EIG(I)=EIG(I) ** -1.5 .
END LOOP .
PRINT EIG / FORMAT='F8.3' /
 TITLE='Eigenvalues raised to -1.5' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II   , Fact_III / .

CALL SETDIAG(DIAG_M,EIG) .
PRINT DIAG_M / FORMAT='F8.3' /
 TITLE='Diagonal Matrix (Eigenvalues raised to -1.5)' /
 SPACE=4 /
 CLABELS=Fact_I, Fact_II    , Fact_III /
 RLABELS=Fact_I, Fact_II   , Fact_III / .

COMPUTE VEC_T=TRANSPOS(EIGVEC) .
PRINT VEC_T / FORMAT='F8.3' /
 TITLE='Transpose of Eigenvectors' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II   , Fact_III /
 CLABELS=ONE, TWO  , THREE / .

COMPUTE D=RI_T * EIGVEC .
PRINT D / FORMAT='F9.3' /
 TITLE='D= trans (trans A times B) times Eigenvectors' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II   , Fact_III /
 CLABELS=Fact_I, Fact_I    , Fact_III / .

LOOP J=1 TO NCOL(A) .
- COMPUTE EE=EIG(J) .
- LOOP I=1 TO NCOL(A) .
-   COMPUTE D(I,J)=D(I,J) * EE .
- END LOOP .
END LOOP .
PRINT D / FORMAT='F9.3' /
 TITLE='D = D times Eigenvalues ** -1.5' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=Fact_I, Fact_II  , Fact_III / .

COMPUTE D_T=TRANSPOS(D) .
PRINT D_T / FORMAT='F9.3' /
 TITLE='D transposed' /
 SPACE=4 /
 RLABELS=Fact_I, Fact_II  , Fact_III /
 CLABELS=Fact_I, Fact_II   , Fact_III / .

COMPUTE C=EIGVEC * D_T .
PRINT C / FORMAT='F9.3' /
 TITLE='Factor Correlations (Cosines)' /
 SPACE=4 / RLABELS=Fact_Ia, Fact_IIa  , Fact_IIIa/
 CLABELS=Fact_Ib, Fact_IIb  , Fact_IIIb/ .
```

```
COMPUTE C=D * VEC_T .
COMPUTE B_ROT=B * C .
PRINT B_ROT / FORMAT='F8.3' /
 TITLE='B rotated to Best-Fit with A' /
 SPACE=2 / RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   /
 CLABELS=Fact_I, Fact_II   , Fact_III / .

COMPUTE BROT_N=B_ROT .
LOOP #I=1 TO NROW(A) .
-  LOOP #J=1 TO NCOL(A) .
-     COMPUTE BROT_N(#I,#J)=B_ROT(#I,#J) ** 2 .
-  END LOOP .
COMPUTE N_A(#I)= .0 .
END LOOP .

PRINT BROT_N / FORMAT='F8.4' /
 TITLE='Best Fit Pattern Matrix (Target) Squared' /
 SPACE=4 / RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17   /
 CLABELS=Fact_I, Fact_II   , Fact_III .
-LOOP #J=1 TO NCOL(A) .
+ LOOP #I=1 TO NROW(A) .
COMPUTE N_A(#I)=BROT_N(#I,#J) + N_A(#I) .
+ END LOOP .
-END LOOP .


PRINT N_A / FORMAT='F8.3' /
 TITLE='Row Sum of Squares for Best Fit Matrix' /
 SPACE=4 / RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17     / .
LOOP #I=1 TO NROW(A) .
- COMPUTE N_A(#I) = 1.0 / (N_A(#I) ** .5) .
END LOOP .
PRINT N_A / FORMAT='F8.3' /
 TITLE='Normalization Factor for Rows' /
 SPACE=4 / RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17       / .
-LOOP #J=1 TO NCOL(A) .
+ LOOP #I=1 TO NROW(A) .
COMPUTE BROT_N(#I,#J)=B_ROT(#I,#J) * N_A(#I) .
+ END LOOP .
-END LOOP .
PRINT BROT_N / FORMAT='F8.4' /
 TITLE='Best Fit Pattern Matrix (Target) Normalized' /
 SPACE=4 /  RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17     /
 CLABELS=Fact_I, Fact_II   , Fact_III/ .

COMPUTE BROTN_T=TRANSPOS(BROT_N) .
COMPUTE T_M=A_N * BROTN_T .
COMPUTE TEST=DIAG(T_M) .
PRINT TEST / FORMAT='F8.3' /
 TITLE='Test Vector Cosines for Variables' /
 SPACE=4 /  RLABELS=  T6 T7 T9 T10 T12 T13 T14 T15 T17    / .
SAVE BROTN_T /OUTFILE='C:\brotorig.SAV'.
END MATRIX .

get file='c:\brotorig.sav'.
dataset name active5 .
numeric seqnum(f1)  .
leave seqnum.
compute seqnum=sum(seqnum,1).
leave seqnum.
```

```
execute.
dataset close active5 .
save outfile='c:\brotorig.sav'.
```

4.9. Step-wise Deletion of Items for Non-meditating Sample

Pattern Matrix: Item 9 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.799**	**.988**	**.014**	**70.678**	-.133	.121	.100	1.208
3.	**.771**	**.953**	**.029**	**32.600**	.021	.289	.091	3.192
4.	**.733**	**.956**	**.031**	**30.640**	-.001	.272	.110	2.475
6.	**.852**	**.989**	**.013**	**74.579**	-.168	.086	.119	.719
7.	**.775**	**.935**	**.030**	**30.923**	.063	.343	.080	4.304
10.	**.809**	**.935**	**.033**	**28.207**	.047	.341	.090	3.801
11.	**.931**	**.974**	**.018**	**53.629**	-.100	.210	.081	2.584
12.	.317	.604	.096	6.278	.506	.788	.074	10.683
13.	.598	.836	.055	15.085	.253	.539	.085	6.333
14.	.341	.611	.093	6.568	.536	.782	.081	9.620
15.	**.710**	**.939**	**.040**	**23.748**	.043	.322	.115	2.809
16.	.120	.402	.107	3.744	**.675**	**.908**	**.049**	**18.573**
17.	.148	.427	.092	4.641	**.684**	**.898**	**.045**	**19.968**
18.	-.104	.171	.108	1.577	**.854**	**.979**	**.021**	**46.971**
20.	**.754**	**.904**	**.039**	**23.336**	.125	.417	.086	4.826
21.	.470	.808	.098	8.199	.228	.564	.142	3.973
23.	**.570**	**.889**	**.067**	**13.226**	.137	.436	.126	3.460
24.	.304	.594	.103	5.751	.506	.794	.080	9.930
25.	-.151	.137	.093	1.481	**.915**	**.986**	**.014**	**72.242**
26.	-.028	.236	.084	2.808	**.822**	**.968**	**.024**	**40.946**
27.	-.060	.207	.108	1.916	**.774**	**.972**	**.025**	**38.380**
28.	.076	.359	.098	3.674	**.702**	**.927**	**.042**	**21.866**
29.	.288	.575	.120	4.788	**.506**	**.805**	**.092**	**8.762**
30.	-.023	.234	.128	1.833	**.754**	**.963**	**.032**	**29.653**
31.	.486	.714	.084	8.488	.443	.690	.084	8.248
35.	-.005	.233	.145	1.608	**.649**	**.961**	**.037**	**26.297**
36.	.030	.294	.094	3.134	**.755**	**.951**	**.029**	**33.127**
38.	**.792**	**.890**	**.031**	**29.080**	.171	.452	.061	7.422

Pattern Matrix: Item 12 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.799**	**.990**	**.012**	**81.422**	-.134	.099	.102	.972
3.	**.773**	**.959**	**.027**	**35.978**	.019	.268	.090	2.982
4.	**.734**	**.962**	**.029**	**33.569**	-.003	.251	.110	2.282
6.	**.852**	**.991**	**.011**	**88.314**	-.166	.068	.115	.596
7.	**.778**	**.945**	**.028**	**33.474**	.056	.317	.080	3.968
10.	**.812**	**.943**	**.030**	**30.928**	.046	.321	.088	3.649
11.	**.932**	**.979**	**.016**	**60.961**	-.104	.185	.081	2.289
13.	.603	.854	.052	16.302	.239	.510	.087	5.859
14.	.350	.636	.091	7.017	.517	.762	.084	9.074
15.	**.712**	**.947**	**.036**	**26.343**	.038	.298	.114	2.618
16.	.128	.424	.106	3.994	**.669**	**.898**	**.051**	**17.600**
17.	.155	.449	.091	4.944	**.679**	**.888**	**.047**	**18.921**
18.	-.097	.194	.107	1.817	**.855**	**.975**	**.023**	**42.685**
20.	**.757**	**.913**	**.036**	**25.550**	.123	.397	.085	4.689
21.	.474	.822	.095	8.647	.224	.544	.144	3.775
23.	**.573**	**.900**	**.064**	**14.076**	.133	.413	.127	3.253
24.	.310	.614	.102	6.041	.498	.778	.083	9.404
25.	-.142	.161	.093	1.738	**.911**	**.982**	**.016**	**61.062**
26.	-.021	.259	.082	3.167	**.822**	**.962**	**.025**	**38.512**
27.	-.053	.230	.108	2.132	**.772**	**.967**	**.028**	**34.281**
28.	.083	.382	.098	3.883	**.700**	**.918**	**.046**	**20.095**
29.	.294	.592	.115	5.138	**.505**	**.792**	**.091**	**8.665**
30.	-.014	.258	.128	2.014	**.745**	**.957**	**.036**	**26.707**
31.	.492	.731	.081	8.975	.438	.672	.085	7.907
35.	.000	.257	.143	1.796	**.646**	**.955**	**.040**	**23.971**
36.	.037	.318	.093	3.413	**.753**	**.943**	**.031**	**30.551**
38.	**.796**	**.900**	**.028**	**31.780**	.167	.431	.060	7.234

Pattern Matrix: Item 13 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.802**	**.987**	**.014**	**72.557**	-.128	.126	.100	1.260
3.	**.777**	**.951**	**.026**	**36.001**	.025	.296	.084	3.516
4.	**.729**	**.954**	**.034**	**28.330**	.007	.275	.113	2.430
6.	**.842**	**.988**	**.014**	**68.296**	-.152	.095	.122	.775
7.	**.764**	**.942**	**.028**	**33.478**	.070	.324	.080	4.053
10.	**.817**	**.940**	**.030**	**31.201**	.052	.328	.088	3.717
11.	**.933**	**.976**	**.016**	**60.335**	-.095	.200	.085	2.355
14.	.340	.637	.081	7.840	.524	.763	.076	10.063
15.	.697	.937	.039	23.763	.051	.333	.106	3.145
16.	.120	.403	.087	4.617	**.674**	**.911**	**.036**	**25.117**
17.	.149	.423	.088	4.835	**.683**	**.901**	**.043**	**21.029**
18.	-.102	.184	.095	1.929	**.857**	**.978**	**.021**	**46.161**
20.	**.748**	**.906**	**.038**	**24.034**	.134	.412	.086	4.777
21.	**.463**	**.791**	**.095**	**8.344**	.233	.589	.140	4.205
23.	**.572**	**.897**	**.067**	**13.343**	.140	.417	.131	3.181
24.	.305	.608	.100	6.064	.504	.784	.079	9.865
25.	-.146	.149	.093	1.595	**.912**	**.984**	**.015**	**66.312**
26.	-.019	.262	.080	3.269	**.822**	**.962**	**.025**	**38.808**
27.	-.056	.222	.095	2.332	**.774**	**.970**	**.025**	**39.053**
28.	.081	.365	.099	3.671	**.703**	**.925**	**.044**	**20.789**
29.	.289	.579	.104	5.541	**.510**	**.805**	**.085**	**9.472**
30.	-.015	.238	.142	1.683	**.746**	**.960**	**.036**	**26.446**
31.	.482	.702	.078	8.965	.447	.704	.074	9.568
35.	-.003	.213	.141	1.504	**.648**	**.967**	**.030**	**32.528**
36.	.029	.278	.104	2.675	**.757**	**.955**	**.031**	**30.563**
38.	**.782**	**.884**	**.032**	**27.648**	.181	.462	.063	7.333

Pattern Matrix: Item 14 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.801**	**.990**	**.011**	**88.451**	-.129	.098	.100	.975
3.	**.778**	**.959**	**.024**	**40.198**	.024	.269	.084	3.195
4.	**.729**	**.961**	**.031**	**30.730**	.009	.251	.115	2.188
6.	**.841**	**.991**	**.012**	**84.774**	-.152	.068	.119	.574
7.	**.765**	**.952**	**.025**	**37.382**	.065	.295	.080	3.685
10.	**.818**	**.949**	**.028**	**34.458**	.052	.302	.088	3.422
11.	**.932**	**.981**	**.014**	**70.906**	-.096	.172	.086	2.014
15.	.697	.946	.036	26.521	.046	.304	.106	2.875
16.	.125	.427	.085	5.004	**.672**	**.900**	**.038**	**23.859**
17.	.154	.447	.086	5.183	**.685**	**.889**	**.045**	**19.754**
18.	-.095	.211	.094	2.238	**.855**	**.973**	**.023**	**41.447**
20.	**.750**	**.917**	**.035**	**26.520**	.135	.389	.085	4.564
21.	**.465**	**.804**	**.092**	**8.759**	.237	.571	.141	4.037
23.	**.573**	**.908**	**.064**	**14.210**	.138	.392	.134	2.935
24.	.310	.631	.099	6.390	.495	.765	.083	9.214
25.	-.138	.175	.094	1.872	**.907**	**.980**	**.017**	**56.395**
26.	-.012	.289	.080	3.626	**.822**	**.954**	**.027**	**35.317**
27.	-.049	.248	.095	2.611	**.767**	**.964**	**.027**	**35.414**
28.	.088	.392	.101	3.894	**.679**	**.914**	**.049**	**18.600**
29.	.294	.601	.100	6.003	**.509**	**.789**	**.085**	**9.261**
30.	-.006	.266	.142	1.872	**.736**	**.953**	**.041**	**23.424**
31.	.486	.722	.074	9.710	.446	.684	.074	9.217
35.	.002	.241	.140	1.722	**.648**	**.960**	**.033**	**28.822**
36.	.036	.306	.103	2.980	**.751**	**.946**	**.034**	**27.853**
38.	**.784**	**.896**	**.030**	**29.906**	.181	.438	.063	6.934

Pattern Matrix: Item 15 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.828**	**.991**	**.010**	**98.314**	-.143	.098	.091	1.079
3.	**.778**	**.956**	**.025**	**37.651**	.027	.280	.084	3.322
4.	**.714**	**.955**	**.036**	**26.691**	.021	.270	.121	2.230
6.	**.815**	**.989**	**.013**	**74.662**	-.132	.090	.119	.756
7.	**.757**	**.947**	**.027**	**35.331**	.073	.310	.079	3.908
10.	**.822**	**.945**	**.029**	**32.350**	.053	.312	.091	3.447
11.	**.930**	**.978**	**.016**	**62.684**	-.092	.187	.088	2.117
16.	.094	.381	.086	4.447	**.691**	**.920**	**.033**	**27.761**
17.	.149	.431	.091	4.751	**.689**	**.897**	**.045**	**19.862**
18.	-.107	.186	.091	2.036	**.862**	**.978**	**.020**	**48.135**
20.	**.757**	**.914**	**.035**	**26.321**	.133	.396	.083	4.760
21.	**.468**	**.800**	**.092**	**8.682**	.237	.577	.140	4.123
23.	**.568**	**.901**	**.071**	**12.698**	.144	.405	.142	2.857
24.	.321	.631	.096	6.573	.489	.766	.081	9.484
25.	-.135	.163	.095	1.725	**.905**	**.982**	**.016**	**61.131**
26.	-.007	.281	.081	3.463	**.818**	**.956**	**.026**	**36.679**
27.	-.044	.238	.092	2.580	**.763**	**.967**	**.026**	**37.534**
28.	.093	.383	.103	3.716	**.694**	**.917**	**.049**	**18.526**
29.	.291	.591	.102	5.815	**.511**	**.796**	**.084**	**9.503**
30.	.001	.258	.147	1.755	**.732**	**.955**	**.041**	**23.075**
31.	.488	.716	.076	9.429	.447	.691	.074	9.385
35.	-.001	.228	.138	1.657	**.649**	**.964**	**.031**	**31.535**
36.	.040	.300	.103	2.919	**.748**	**.948**	**.034**	**28.233**
38.	**.772**	**.887**	**.032**	**27.742**	.190	.456	.064	7.149

Pattern Matrix: Item 21 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.825**	**.988**	**.013**	**78.784**	-.133	.126	.090	1.399
3.	**.776**	**.948**	**.027**	**34.885**	.036	.305	.084	3.635
4.	**.701**	**.947**	**.040**	**23.749**	.033	.297	.121	2.456
6.	**.821**	**.987**	**.014**	**68.259**	-.125	.117	.113	1.038
7.	**.756**	**.938**	**.028**	**33.411**	.081	.336	.077	4.373
10.	**.818**	**.937**	**.030**	**30.977**	.063	.338	.087	3.898
11.	**.923**	**.973**	**.018**	**54.822**	-.079	.213	.087	2.455
16.	.084	.349	.088	3.965	**.695**	**.933**	**.031**	**30.494**
17.	.138	.401	.095	4.217	**.694**	**.910**	**.044**	**20.899**
18.	-.105	.161	.089	1.816	**.862**	**.983**	**.017**	**57.300**
20.	**.749**	**.902**	**.037**	**24.238**	.144	.422	.082	5.141
23.	**.554**	**.889**	**.076**	**11.708**	.154	.431	.141	3.061
24.	.316	.609	.100	6.107	.494	.783	.079	9.913
25.	-.145	.129	.095	1.353	**.907**	**.987**	**.013**	**75.118**
26.	-.007	.257	.078	3.281	**.820**	**.963**	**.023**	**42.396**
27.	-.051	.206	.093	2.226	**.765**	**.974**	**.023**	**42.974**
28.	.100	.370	.104	3.572	**.695**	**.922**	**.047**	**19.582**
29.	.286	.570	.103	5.510	**.519**	**.812**	**.082**	**9.940**
30.	.009	.245	.143	1.717	**.732**	**.959**	**.037**	**25.604**
31.	.477	.695	.081	8.616	.455	.711	.074	9.621
35.	-.005	.199	.140	1.424	**.650**	**.970**	**.027**	**36.182**
36.	.044	.281	.101	2.785	**.749**	**.954**	**.031**	**31.225**
38.	**.764**	**.875**	**.034**	**25.472**	.202	.479	.064	7.494

Pattern Matrix: Item 23 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.827**	**.973**	**.020**	**49.648**	-.125	.213	.084	2.523
3.	**.769**	**.917**	**.036**	**25.180**	.049	.389	.085	4.594
4.	**.671**	**.911**	**.054**	**16.936**	.056	.390	.123	3.186
6.	**.824**	**.973**	**.023**	**41.996**	-.118	.202	.109	1.854
7.	**.758**	**.907**	**.034**	**26.596**	.089	.415	.072	5.731
10.	**.806**	**.902**	**.038**	**23.500**	.079	.423	.085	4.954
11.	**.913**	**.950**	**.027**	**35.529**	-.062	.300	.089	3.385
16.	.074	.254	.093	2.729	**.701**	**.962**	**.023**	**42.003**
17.	.129	.312	.104	2.999	**.701**	**.944**	**.036**	**26.079**
18.	-.100	.078	.087	.890	**.859**	**.993**	**.010**	**103.618**
20.	**.735**	**.859**	**.045**	**18.994**	.159	.504	.079	6.366
24.	.316	.538	.108	4.965	.498	.833	.072	11.539
25.	-.162	.022	.100	.225	**.913**	**.995**	**.006**	**165.799**
26.	-.005	.172	.081	2.132	**.820**	**.982**	**.016**	**61.161**
27.	-.063	.106	.096	1.103	**.770**	**.990**	**.014**	**72.555**
28.	.101	.291	.106	2.737	**.696**	**.950**	**.038**	**24.936**
29.	.279	.493	.110	4.463	**.522**	**.860**	**.072**	**11.941**
30.	.022	.173	.141	1.228	**.726**	**.975**	**.026**	**38.002**
31.	.463	.624	.090	6.941	.467	.774	.068	11.399
35.	-.004	.117	.143	.821	**.650**	**.983**	**.017**	**57.734**
36.	.050	.206	.099	2.073	**.748**	**.973**	**.022**	**44.402**
38.	**.764**	**.830**	**.040**	**20.691**	.212	.552	.062	8.939

Pattern Matrix: Item 24 Deleted

	Centring				*Resonating*			
Item	Sample	BR	*SE*	M(BR)/SE	Sample	BR	*SE*	M(BR)/SE
1.	**.823**	**.980**	**.017**	**57.380**	-.130	.179	.087	2.069
3.	**.770**	**.927**	**.034**	**27.593**	.050	.364	.085	4.289
4.	**.674**	**.919**	**.050**	**18.202**	.063	.372	.123	3.038
6.	**.824**	**.978**	**.020**	**49.479**	-.114	.179	.106	1.686
7.	**.757**	**.919**	**.032**	**28.647**	.084	.386	.074	5.223
10.	**.806**	**.914**	**.036**	**25.220**	.077	.395	.087	4.540
11.	**.912**	**.958**	**.024**	**40.234**	-.062	.273	.088	3.106
16.	.080	.282	.092	3.066	**.704**	**.955**	**.025**	**37.989**
17.	.135	.339	.098	3.465	**.708**	**.935**	**.037**	**25.386**
18.	-091	.104	.088	1.183	**.849**	**.991**	**.012**	**82.977**
20.	**.735**	**.874**	**.043**	**20.302**	.154	.477	.081	5.881
25.	-.152	.049	.100	.490	**.903**	**.994**	**.007**	**134.184**
26.	.004	.198	.081	2.433	**.805**	**.977**	**.019**	**52.734**
27.	-.055	.133	.097	1.377	**.763**	**.986**	**.016**	**60.794**
28.	.108	.316	.105	2.997	**.688**	**.942**	**.040**	**23.635**
29.	.285	.513	.101	5.101	**.531**	**.850**	**.068**	**12.477**
30.	.028	.199	.141	1.414	**.718**	**.970**	**.029**	**33.030**
31.	.467	.644	.087	7.383	**.469**	**.757**	**.070**	**10.851**
35.	.001	.144	.145	.996	**.646**	**.979**	**.020**	**48.435**
36.	.056	.233	.096	2.420	**.751**	**.967**	**.024**	**39.853**
38.	**.766**	**.845**	**.037**	**22.546**	.213	.531	.061	8.726

4.10. Wuensch's (2016) SPSS Syntax for Procrustes Rotation

```
******target rotation
matrix.
compute LOADINGS={
.805,      -.062;
.630,      .057;
.738,      .017;
.585,      .013;
.703,      .011;
.774,      -.024;
.829,      -.067;
.088,      .612;
.080,      .632;
.003,      .740;
.686,      .125;
.016,      .828;
-.023,     .775;
-.058,     .745;
.193,      .611;
.198,      .638;
-.172,     .910;
-.019,     .647;
.136,    .645;
.597,    .222}.


compute  NORMs = {
.825,      .125;
.769,      -.054;
.669,      -.065;
.821,      .109;
.759,      -.089;
.807,      -.082;
.908,      .058;
-.083,     .703;
-.136,     .705;
.086,      .850;
.733,      -.158;
.148,      .901;
-.009,     .807;
.050,      .765;
-.111,     .688;
-.282,     .527;
-.031,     .717;
-.001,     .640;
-.057,   .748;
.764,   -.216}.
compute s=t(loadings)*norms.
compute w1=s*t(s).
compute v1=t(s)*s.
call eigen (w1,w,evalw1).
call eigen (v1,v,evalv1).
compute o=t(w)*s*v.
compute q1=o &/abs(o).
compute k1=diag(q1).
compute k=mdiag(k1).
compute ww=w*k.
compute t1=ww*t(v).
compute procrust=loadings*t1.
```

```
compute cmlm2=t(procrust)*norms.
compute ca=diag(cmlm2).
compute csum2m1=cssq(procrust).
compute csum2m2=cssq(norms).
compute csqrtl1=sqrt(csum2m1).
compute csqrtl2=sqrt(csum2m2).
compute cb=t(csqrtl1)*csqrtl2.
compute cc=diag(cb).
compute cd=ca&/cc.
compute faccongc=t(cd).
compute rm1m2=procrust*t(norms).
compute ra=diag(rm1m2).
compute rsum2m1=rssq(procrust).
compute rsum2m2=rssq(norms).
compute rsqrtl1=sqrt(rsum2m1).
compute rsqrtl2=sqrt(rsum2m2).
compute rb=rsqrtl1*t(rsqrtl2).
compute rc=diag(rb).
compute faccongr=ra&/rc.
compute cross1=procrust&*norms.
compute sumcross=csum(cross1).
compute mssqproc=cssq(procrust)/nrow(procrust).
compute mssqnorm=cssq(norms)/nrow(norms).
compute prop=sumcross/(sqrt(mssqproc&*mssqnorm)).
compute cross2=sumcross/nrow(procrust).
compute meanproc=csum(procrust)/nrow(procrust)).
compute sdproc=sqrt(mssqproc-meanproc&*meanproc).
compute meannorm=csum(norms)/nrow(norms)).
compute sdnorm=sqrt(mssqnorm - meannorm&*meannorm).
compute covar=sumcross/nrow(procrust)-meannorm&*meanproc.
compute correl=covar/(sdproc&*sdnorm).
compute addit=2*covar/(sdnorm&*sdnorm + sdproc&*sdproc).
compute idcoef=2*sumcross/(cssq(procrust)+cssq(norms)).
compute rowsqdif=sqrt(rssq(procrust-norms)/ncol(procrust)).
compute colsqdif=sqrt(cssq(procrust-norms)/nrow(procrust)).
compute dif={procrust-norms}.

print procrust /title = "FACTOR LOADINGS AFTER TARGET ROTATION"/ format f5.2.

print  dif  /title = "DIFFERENCE IN LOADINGS AFTER TARGET ROTATION"
  /format f5.2.

* the following two vectors express the difference between source loadings
* and target-rotated loadings. In the first the difference is taken between
* the loadings of two corresponding loadings and the difference is squared.
* For each item the squared differences are summed across all factors. The square
* root of these differences is then taken. The second vectors adds the squared
* differences across variables for each variable.

print rowsqdif /title = "Square Root of the Mean Squared Difference"
+ " per Variable (Item)" /format f5.2.
print colsqdif/title ="Square Root of the Mean Squared Difference"
+ " per Factor" / format f5.2.
print idcoef/title = "IDENTITY COEFFICIENT per Factor" /format f5.2.
print addit/title = "ADDITIVITY COEFFICIENT per Factor" /format f5.2.
print faccongc/title = "PROPORTIONALITY COEFFICIENT per Factor" /format f5.2.
print correl/title = "CORRELATION COEFFICIENT per Factor" /format f5.2.
end matrix.
```

5.1. Participant Recruitment Advertisement for CFA, Reliability, & Construct Validity Studies

We are a team of researchers at Monash University. We are currently undertaking a research project exploring the experience of equanimity within meditation and its relationship with mindfulness and wellbeing. Our research project received approval from the Monash University Human Research Ethics Committee (CF16/136 - 2016000696).

We are seeking participants to assist by (i) participating in the study and (ii) forwarding this email/survey link among their networks in order to invite others to participate in the project. We hope that you will be able to help. Your assistance is of course voluntary and anonymous.

The study is for research purposes only. It forms part of Dominic Hosemans' Ph.D. thesis and is being conducted under the supervision of Dr. Janette Simmons, Dr. Tristan Snell, and Associate Professor Craig Hassed. The study involves completing an online survey, which will take approximately 30-40 minutes to complete.

If you agree to participate in the study, you will remain free to withdraw at any time and to withdraw any unprocessed data.

For more information on the study, or to access the online survey, please go to:

http://monasheducation.az1.qualtrics.com/SE/?SID=SV_3xfC5It8FbBdB0p

Thank you in anticipation of your assistance.

Yours sincerely,

Dominic Hosemans

Dominic.hosemans@monash.edu

5.2. Explanatory Statement for CFA & Construct Validity Studies

Project Title: 'Equanimity and the Cultivation of Wellbeing'

Project Number: CF16/136 – 2016000696

Dr. Janette Simmonds
Department of Education
Ph: 9905 2902
E: janette.simmonds@monash.edu

Dominic Hosemans
[redacted]

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?
The study aims to explore the experience of equanimity (stillness) within meditation. Initially, focus groups and in-depth interviews were carried out with experienced meditators regarding their understanding of stillness in meditation. This resulted in the creation of a number of statements encompassing the following survey. This survey has undergone some initial analyses, with this current study further exploring this construct. Individuals are asked to state if they meditate, and if so their experience with meditation (i.e., years, average sessions per week, time for each session). Subsequent to this, all individuals (meditators and non-meditators) will be asked to respond to a series of questionnaires related to the experience of stillness. Total time requirement for this is not expected to exceed 25 minutes. For those who choose to complete the survey, you will have the option of leaving your email address, which will go into the running to win one of two $100- gift vouchers for an online bookstore - booktopia.com.au.

Why were you chosen for this research?
It is a requirement for this research that you must be over 18 years of age as well as proficient in English. The research aims to recruit individuals who practice meditation (either mindfulness or stillness) as well as non-meditators. You have likely been chosen to participate in this research as you have previously identified that you would like to be contacted to participate in research regarding the effects of meditation or individuals in your network believed that you may be interested in participating and have subsequently forwarded this survey to you.

Consenting to participate in the project and withdrawing from the research
Participation in the study is completely voluntary; with participants free to change their mind at any point during the process of completing the survey as well as withdrawing any unprocessed data. Each participant will remain completely anonymous, with only the general trends of the results reported.

Possible benefits and risks to participants
No risks are anticipated with regards to participating in the survey. Although there may be a small potential risk that reflecting on your experience in order to respond to particular items within the survey may bring to light some uncomfortable feelings, this is expected to be very minimal, if at all.

Confidentiality
Participation in the study will be completely confidential. Data provided will not be identifiable and will be securely stored. Only the general trends of the results reported. Only the general trends will be reported in the form of a Ph.D. thesis, journal article, and conference presentation.

Storage of data
The data collected will be securely stored in password protected files on the student researcher's password protected computer. Only the student researcher and his Ph.D. supervisors will have access to the data. The data will be deleted permanently from the student researcher's password protected computer subsequent to completing his Ph.D. thesis, at the end of 2017.

Results
Participants interested in obtaining a brief summary of the trends across the interviews and focus groups can contact the student researcher at dominic.hosemans@monash.edu.

Complaints
Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):

Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800

Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831

Thank you,

Dominic Hosemans

dominic.hosemans@monash.edu

5.3. Unifactorial Solution for Equanimity (including Standard Errors)

	Samatha				Vipassanā			
Item	Loading	Intercept	Residual	R^2	Loading	Intercept	Residual	R^2
C1.	.565 (.070)	2.547 (.173)	.324 (.066)	.319 (.079)	.615 (.038)	2.321 (.106)	.622 (.046)	.398 (.046)
C2.	.573 (.056)	2.140 (.124)	.671 (.064)	.329 (.640)	.557 (.045)	2.075 (.090)	.689 (.050)	.311 (.050)
C3.	.555 (.068)	2.346 (.162)	.692 (.075)	.308 (.075)	.551 (.042)	2.327 (.102)	.697 (.046)	.303 (.046)
C4.	.703 (.044)	2.897 (.233)	.506 (.062)	.494 (.062)	.660 (.038)	3.019 (.158)	.564 (050)	.436 (.050)
C5.	.769 (.041)	3.651 (.339)	.409 (.063)	.591 (.063)	.709 (.037)	3.963 (.232)	.497 (.052)	.586 (.052)
C6.	.712 (.047)	3.095 (.221)	.493 (.066)	.507 (.066)	.621 (.042)	3.101 (.152)	.614 (.052)	.386 (.052)
C7.	.589 (.074)	3.474 (.252)	.653 (.087)	.374 (.087)	.647 (.047)	3.603 (.190)	.582 (.061)	.418 (.061)
C8.	.705 (.055)	3.345 (.303)	.503 (.078)	.497 (.078)	.678 (.044)	3.487 (.196)	.541 (.060)	.459 (.060)
C9.	.822 (.040)	3.972 (.347)	.324 (.066)	.676 (.066)	.687 (.036)	3.473 (.183)	.529 (.049)	.471 (.049)
R1.	.729 (.047)	4.721 (.347)	.469 (.069)	.531 (.069)	.686 (.039)	4.011 (.252)	.529 (.053)	.471 (.053)
R2.	.744 (.051)	4.962 (.454)	.446 (.077)	.554 (.077)	.699 (.042)	4.579 (.280)	.511 (.058)	.489 (.058)
R3.	.708 (.046)	2.664 (.191)	.498 (.065)	.502 (.065)	.636 (.036)	2.575 (.111)	.595 (.046)	.405 (.046)
R4.	.694 (.056)	4.649 (.368)	.518 (.077)	.482 (.077)	.661 (.040)	4.037 (.241)	.563 (.054)	.437 (.054)
R5.	.737 (.055)	4.696 (.454)	.456 (.081)	.544 (.081)	.723 (.032)	4.330 (.243)	.479 (.046)	.521 (.046)
R6.	.443 (.096)	2.760 (.104)	.803 (.085)	.197 (.085)	.547 (.050)	3.901 (.256)	.700 (.055)	.300 (.055)
R7.	.783 (.041)	3.922 (.402)	.387 (.064)	.613 (.064)	.765 (.0432	3.749 (.213)	.515 (.050)	.585 (.050)
R8.	.762 (.043)	3.982 (.327)	.419 (.066)	.581 (.066)	.729 (.034)	2.360 (.100)	.468 (.049)	.532 (.049)
R9.	.560 (.068)	2.081 (.124)	.686 (.077)	.314 (.077)	.569 (.049)	2.705 (.129)	.677 (.055)	.323 (.055)
R10.	.582 (.074)	3.587 (.302)	.661 (.086)	.339 (.089)	.691 (.038)	3.151 (.171)	.522 (.052)	.478 (.052)
R11.	.654 (.056)	2.946 (.195)	.572 (.067)	.428 (.067)	.729 (.030)	2.753 (.136)	.469 (.044)	.531 (.044)

	Stillness				Non-meditators			
Item	Loading	Intercept	Residual	R^2	Loading	Intercept	Residual	R^2
C1.	.753 (.034)	2.634 (.196)	.433 (.051)	.567 (.051)	.452 (.070)	1.946 (.097)	.795 (.063)	.205 (.063)
C2.	.533 (.071)	2.292 (.145)	.716 (.076)	.284 (.076)	.188 (.075)	1.616 (.079)	.965 (.028)	.035 (.028)
C3.	.397 (.076)	2.162 (.127)	.842 (.061)	.158 (.061)	.266 (.081)	1.827 (.089)	.929 (.043)	.071 (.043)
C4.	.646 (.058)	3.174 (.232)	.583 (.075)	.417 (.075)	.553 (.063)	2.179 (.114)	.694 (.070)	.306 (.070)
C5.	.740 (.051)	4.526 (.398)	.452 (.076)	.548 (.076)	.693 (.056)	2.258 (.153)	.520 (.077)	.480 (.077)
C6.	.668 (.050)	3.036 (.205)	.554 (.066)	.446 (.066)	.592 (.057)	2.227 (.126)	.650 (.067)	.350 (.067)
C7.	.557 (.094)	3.448 (.245)	.689 (.104)	.311 (.104)	.524 (.076)	2.799 (.168)	.725 (.080)	.275 (.080)
C8.	.773 (.041)	4.744 (.411)	.402 (.064)	.598 (.064)	.710 (.040)	2.396 (.135)	.495 (.056)	.505 (.056)
C9.	.779 (.036)	4.663 (.388)	.393 (.056)	.607 (.056)	.836 (.028)	2.751 (.191)	.301 (.046)	.699 (.046)
R1.	.828 (.034)	4.718 (.438)	.314 (.056)	.686 (.056)	.845 (.019)	2.563 (.147)	.286 (.032)	.714 (.032)
R2.	.825 (.029)	5.653 (.451)	.320 (.048)	.680 (.048)	.839 (.025)	2.753 (.172)	.295 (.042)	.705 (.042)
R3.	.707 (.045)	2.990 (.222)	.501 (.064)	.499 (.064)	.632 (.042)	2.017 (.109)	.601 (.053)	.399 (.053)
R4.	.815 (.032)	4.434 (.376)	.335 (.052)	.665 (.052)	.766 (.033)	2.751 (.153)	.413 (.050)	.587 (.050)
R5.	.814 (.035)	5.888 (.494)	.337 (.057)	.663 (.057)	.879 (.019)	2.735 (.182)	.227 (.033)	.773 (.033)
R6.	.418 (.090)	3.071 (.166)	.825 (.076)	.175 (.076)	.454 (.069)	2.352 (.126)	.794 (.063)	.206 (.063)
R7.	.802 (.037)	5.144 (.473)	.357 (.060)	.643 (.060)	.901 (.017)	2.684 (.198)	.187 (.030)	.813 (.030)
R8.	.841 (.032)	4.972 (.407)	.293 (.052)	.707 (.052)	.804 (.028)	2.455 (.149)	.294 (.046)	.706 (.046)
R9.	.635 (.074)	3.004 (.208)	.597 (.094)	.403 (.094)	.441 (.057)	1.979 (.094)	.805 (.050)	.195 (.050)
R10.	.724 (.053)	3.456 (.286)	.476 (.076)	.424 (.076)	.542 (.059)	2.025 (.117)	.706 (.064)	.294 (.064)
R11.	.576 (.069)	3.229 (.233)	.668 (.080)	.332 (.080)	.464 (.056)	2.100 (.112)	.785 (.052)	.215 (.052)

5.4. Two-Factor Solution for Equanimity, Comprising both Centring and Resonating (inc. *SE*s)

Samatha					
Item	Loading		Intercept	Residual	R^2
	Centring	*Resonating*			
C1.	.798 (.041)		3.972 (.323)	.363 (.065)	.637 (.065)
C2.	.729 (.053)		3.346 (.314)	.469 (.078)	.531 (.078)
C3.	.798 (.037)		3.651 (.314)	.362 (.058)	.638 (.058)
C4.	.734 (.050)		4.649 (.346)	.461 (.091)	.539 (.073)
C5.	.812 (.041)		4.697 (.432)	.341 (.066)	.659 (.066)
C6.	.819 (.034)		3.923 (.368)	.330 (.055)	.670 (.055)
C7.	.837 (.033)		3.982 (.318)	.300 (.055)	.700 (.055)
C8.	.804 (.037)		4.962 (.436)	.353 (.060)	.647 (.060)
C9.	.745 (.045)		4.721 (.333)	.445 (.066)	.555 (.066)
R1.		.731 (.040)	2.141 (.144)	.466 (.059)	.534 (.059)
R2.		.711 (.048)	3.095 (.210)	.494 (.069)	.506 (.069)
R3.		.696 (.048)	2.346 (.170)	.515 (.068)	.485 (.068)
R4.		.547 (.070)	3.475 (.234)	.701 (.077)	.299 (.077)
R5.		.565 (.081)	2.760 (.211)	.681 (.091)	.319 (.091)
R6.		.651 (.061)	3.587 (.301)	.576 (.080)	.424 (.080)
R7.		.771 (.036)	2.897 (.233)	.405 (.052)	.595 (.056)
R8.		.789 (.033)	2.946 (.211)	.377 (.052)	.623 (.052)
R9.		.747 (.045)	2.665 (.209)	.442 (.067)	.558 (.067)
R10.		.700 (.048)	2.081 (.129)	.509 (.067)	.491 (.067)
R11.		.706 (.051)	2.547 (.177)	.501 (.072)	.499 (.072)

Vipassanā					
Item	Loading		Intercept	Residual	R^2
	Centring	*Resonating*			
C1.	.649 (.038)		3.474 (.172)	.579 (.049)	.421 (.049)
C2.	.592 (.053)		3.489 (.172)	.649 (.063)	.351 (.063)
C3.	.672 (.040)		3.963 (.205)	.548 (.054)	.452 (.054)
C4.	.731 (.033)		4.037 (.236)	.466 (.048)	.534 (.048)
C5.	.859 (.019)		4.331 (.250)	.262 (.032)	.738 (.032)
C6.	.822 (.029)		3.900 (.244)	.325 (.048)	.675 (.048)
C7.	.813 (.026)		3.749 (.206)	.339 (.042)	.661 (.042)
C8.	.843 (.024)		4.580 (.285)	.289 (.041)	.711 (.041)
C9.	.756 (.032)		4.012 (.246)	.429 (.049)	.571 (.049)
R1.		.676 (.035)	2.075 (.089)	.543 (.047)	.457 (.047)
R2.		.648 (.041)	3.101 (.145)	.580 (.054)	.420 (.054)
R3.		.612 (.042)	2.326 (.107)	.626 (.051)	.374 (.051)
R4.		.637 (.047)	3.603 (.181)	.595 (.060)	.405 (.060)
R5.		.649 (.041)	2.704 (.132)	.579 (.053)	.421 (.053)
R6.		.754 (.032)	3.152 (.170)	.431 (.048)	.569 (.048)
R7.		.731 (.032)	3.019 (.155)	.466 (.047)	.534 (.047)
R8.		.773 (.027)	2.753 (.134)	.402 (.041)	.598 (.041)
R9.		.708 (.033)	2.575 (.114)	.499 (.047)	.501 (.047)
R10.		.645 (.043)	2.360 (.100)	.584 (.055)	.416 (.055)
R11.		.713 (.032)	2.321 (.106)	.491 (.045)	.509 (.045)

Stillness					
Item	Loading		Intercept	Residual	R^2
	Centring	*Resonating*			
C1.	.722 (.039)		4.663 (.350)	.478 (.057)	.522 (.057)
C2.	.736 (.043)		4.744 (.363)	.458 (.063)	.542 (.063)
C3.	.730 (.047)		4.526 (.376)	.467 (.069)	.533 (.069)
C4.	.865 (.024)		4.434 (.364)	.252 (.042)	.748 (.042)
C5.	.870 (.025)		5.888 (.466)	.243 (.043)	.757 (.043)
C6.	.824 (.035)		5.144 (.420)	.321 (.057)	.679 (.057)
C7.	.879 (.026)		4.972 (.389)	.228 (.046)	.772 (.046)
C8.	.892 (.020)		5.654 (.460)	.204 (.035)	.796 (.035)
C9.	.856 (.027)		4.718 (.404)	.269 (.047)	.733 (.047)
R1.		.679 (.055)	2.295 (.152)	.539 (.075)	.461 (.075)
R2.		.769 (.041)	3.036 (.231)	.408 (.064)	.592 (.064)
R3.		.539 (.057)	2.162 (.132)	.710 (.061)	.290 (.061)
R4.		.623 (.070)	3.449 (.242)	.612 (.088)	.388 (.088)
R5.		.549 (.075)	3.071 (.174)	.699 (.082)	.301 (.082)
R6.		.743 (.053)	3.457 (.294)	.449 (.079)	.551 (.079)
R7.		.696 (.059)	3.174 (.240)	.516 (.082)	.484 (.082)
R8.		.621 (.063)	3.230 (.262)	.615 (.078)	.385 (.078)
R9.		.824 (.036)	2.990 (.248)	.321 (.059)	.679 (.059)
R10.		.701 (.063)	3.005 (.211)	.508 (.089)	.492 (.089)
R11.		.853 (.023)	2.635 (.189)	.273 (.040)	.727 (.040)

Non-meditators					
Item	Loading		Intercept	Residual	R^2
	Centring	*Resonating*			
C1.	.843 (.027)		2.751 (.183)	.289 (.045)	.711 (.045)
C2.	.675 (.045)		2.396 (.138)	.545 (.061)	.455 (.061)
C3.	.678 (.050)		2.528 (.151)	.540 (.068)	.460 (.068)
C4.	.773 (.034)		2.751 (.163)	.402 (.052)	.598 (.052)
C5.	.907 (.017)		2.735 (.183)	.177 (.030)	.823 (.030)
C6.	.913 (.015)		2.683 (.188)	.167 (.028)	.833 (.028)
C7.	.837 (.028)		2.455 (.134)	.300 (.047)	.700 (.047)
C8.	.864 (.023)		2.753 (.160)	.254 (.040)	.746 (.040)
C9.	.879 (.016)		2.562 (.155)	.228 (.028)	.772 (.028)
R1.		.568 (.052)	1.616 (.074)	.678 (.059)	.322 (.059)
R2.		.708 (.043)	2.337 (.125)	.499 (.061)	.501 (.061)
R3.		.491 (.056)	1.828 (.099)	.758 (.055)	.242 (.055)
R4.		.588 (.071)	2.799 (.144)	.655 (.083)	.345 (.083)
R5.		.702 (.040)	2.353 (.131)	.507 (.056)	.493 (.056)
R6.		.749 (.043)	2.026 (.109)	.439 (.064)	.561 (.064)
R7.		.705 (.048)	2.179 (.120)	.504 (.068)	.496 (.068)
R8.		.773 (.032)	2.101 (.118)	.403 (.050)	.597 (.050)
R9.		.703 (.037)	2.017 (.099)	.506 (.052)	.594 (.052)
R10.		.730 (.036)	1.979 (.101)	.467 (.053)	.533 (.053)
R11.		.713 (.051)	1.946 (.101)	.491 (.073)	.509 (.073)

5.5. Direct Hierarchical Solution for each Independent Group (inc. *SE*s)

	Samatha					
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.693 (.142)	.575 (.114)				
C1.	.505 (.074)		.350 (.029)	3.851 (.301)	.377 (.063)	.623 (.063)
C2.	.462 (.164)		.314 (.177)	3.326 (.290)	.487 (.075)	.513 (.075)
C3.	.493 (.165)		.336 (.179)	3.549 (.297)	.415 (.057)	.585 (.057)
C4.	.495 (.183)		.349 (.196)	4.390 (.313)	.393 (.067)	.607 (.067)
C5.	.538 (.136)		.352 (.153)	4.477 (.394)	.324 (.064)	.676 (.064)
C6.	.511 (.160)		.345 (.164)	3.794 (.351)	.376 (.056)	.624 (.056)
C7.	.549 (.180)		.355 (.202)	3.828 (.282)	.302 (.048)	.698 (.048)
C8.	.542 (.152)		.362 (.169)	4.740 (.403)	.302 (.053)	.698 (.053)
C9.	.485 (.172)		.368 (.181)	4.478 (.296)	.381 (.058)	.691 (.058)
R1.		.490 (.067)	.282 (.029)	2.220 (.154)	.521 (.066)	.479 (.066)
R2.		.498 (.152)	.313 (.158)	3.042 (.207)	.474 (.069)	.526 (.069)
R3.		.500 (.102)	.267 (.123)	2.380 (.171)	.524 (.070)	.476 (.070)
R4.		.435 (.171)	.302 (.184)	3.418 (.238)	.569 (.082)	.431 (.082)
R5.		.465 (.122)	.255 (.126)	2.806 (.209)	.582 (.088)	.418 (.088)
R6.		.493 (.154)	.301 (.183)	3.457 (.276)	.495 (.079)	.505 (.079)
R7.		.513 (.157)	.294 (.168)	2.901 (.234)	.477 (.066)	.523 (.066)
R8.		.539 (.111)	.296 (.136)	2.877 (.192)	.439 (.053)	.561 (.053)
R9.		.512 (.161)	.305 (.181)	2.644 (.198)	.465 (.064)	.535 (.064)
R10.		.501 (.092)	.263 (.116)	2.126 (.136)	.528 (.072)	.472 (.072)
R11.		.516 (.119)	.276 (.138)	2.521 (.170)	.494 (.071)	.506 (.071)

Vipassanā						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.682 (.124)	.605 (.083)				
C1.	.463 (.060)		.316 (.023)	3.378 (.167)	.487 (.046)	.513 (.046)
C2.	.432 (.159)		.321 (.151)	3.436 (.091)	.521 (.067)	.479 (.067)
C3.	.468 (.115)		.336 (.112)	3.774 (.199)	.453 (.051)	.547 (.051)
C4.	.491 (.122)		.332 (.129)	3.795 (.205)	.426 (.042)	.574 (.042)
C5.	.543 (.111)		.345 (.125)	4.067 (.214)	.331 (.032)	.669 (.032)
C6.	.506 (.121)		.329 (.128)	3.740 (.227)	.395 (.046)	.605 (.046)
C7.	.517 (.117)		.341 (.130)	3.551 (.188)	.376 (.039)	.624 (.039)
C8.	.544 (.112)		.345 (.129)	4.278 (.242)	.329 (.039)	.671 (.039)
C9.	.496 (.143)		.335 (.154)	3.786 (.218)	.414 (.045)	.586 (.045)
R1.		.475 (.047)	.287 (.021)	2.099 (.091)	.527 (.049)	.473 (.049)
R2.		.479 (.099)	.299 (.101)	3.058 (.148)	.508 (.052)	.492 (.052)
R3.		.466 (.120)	.281 (.128)	2.345 (.105)	.546 (.052)	.454 (.052)
R4.		.472 (.102)	.316 (.112)	3.473 (.174)	.496 (.059)	.504 (.059)
R5.		.474 (.093)	.274 (.109)	2.757 (.138)	.544 (.054)	.456 (.054)
R6.		.510 (.110)	.308 (.122)	3.074 (.161)	.456 (.047)	.544 (.047)
R7.		.494 (.110)	.293 (.122)	3.019 (.159)	.496 (.048)	.504 (.048)
R8.		.504 (.111)	.305 (.121)	2.729 (.136)	.467 (.043)	.533 (.043)
R9.		.489 (.103)	.291 (.108)	2.575 (.113)	.504 (.048)	.496 (.048)
R10.		.477 (.096)	.284 (.109)	2.363 (.100)	.528 (.060)	.472 (.060)
R11.		.476 (.106)	.273 (.117)	2.400 (.114)	.541 (.045)	.459 (.045)

Stillness						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.757 (.161)	.593 (.109)				
C1.	.473 (.073)		.358 (.027)	4.304 (.289)	.391 (.052)	.609 (.052)
C2.	.456 (.280)		.375 (.293)	4.484 (.330)	.393 (.051)	.607 (.051)
C3.	.462 (.208)		.359 (.229)	4.290 (.336)	.407 (.055)	.593 (.055)
C4.	.522 (.244)		.376 (.267)	4.280 (.328)	.289 (.041)	.711 (.041)
C5.	.549 (.255)		.392 (.282)	5.570 (.406)	.219 (.038)	.781 (.038)
C6.	.519 (.219)		.382 (.238)	4.898 (.376)	.289 (.050)	.715 (.050)
C7.	.540 (.254)		.403 (.275)	4.796 (.350)	.216 (.039)	.784 (.039)
C8.	.567 (.270)		.392 (.299)	5.370 (.396)	.188 (.030)	.812 (.030)
C9.	.517 (.296)		.395 (.318)	4.525 (.363)	.268 (.043)	.732 (.043)
R1.		.464 (.072)	.275 (.024)	2.380 (.178)	.557 (.075)	.443 (.075)
R2.		.514 (.093)	.298 (.080)	3.013 (.224)	.465 (.069)	.535 (.069)
R3.		.441 (.125)	.245 (.137)	2.271 (.160)	.618 (.075)	.382 (.075)
R4.		.482 (.135)	.296 (.157)	3.351 (.258)	.511 (.085)	.489 (.085)
R5.		.455 (.131)	.263 (.127)	3.081 (.197)	.582 (.092)	.418 (.092)
R6.		.505 (.129)	.322 (.135)	3.375 (.281)	.448 (.070)	.552 (.070)
R7.		.489 (.111)	.294 (.099)	3.180 (.246)	.504 (.080)	.496 (.080)
R8.		.471 (.124)	.295 (.126)	3.185 (.251)	.527 (.073)	.473 (.073)
R9		.531 (.112)	.304 (.110)	2.948 (.236)	.434 (.065)	.566 (.065)
R10.		.499 (.147)	.298 (.157)	2.965 (.220)	.485 (.086)	.515 (.086)
R11.		.518 (.104)	.294 (.112)	2.671 (.200)	.464 (.052)	.536 (.052)

Non-Meditators						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.613 (.110)	.641 (.134)				
C1.	.505 (.062)		.310 (.023)	2.653 (.168)	.458 (.046)	.542 (.046)
C2.	.502 (.159)		.308 (.155)	2.310 (.130)	.464 (.061)	.536 (.061)
C3.	.496 (.118)		.303 (.121)	2.471 (.149)	.478 (.064)	.522 (.064)
C4.	.522 (.122)		.318 (.126)	2.541 (.137)	.423 (.046)	.577 (.046)
C5.	.506 (.110)		.307 (.117)	2.644 (.154)	.459 (.043)	.541 (.043)
C6.	.491 (.107)		.299 (.108)	2.677 (.173)	.489 (.043)	.511 (.043)
C7.	.524 (.101)		.319 (.103)	2.271 (.122)	.419 (.044)	.581 (.044)
C8.	.524 (.105)		.318 (.110)	2.548 (.135)	.421 (.037)	.579 (.037)
C9.	.513 (.121)		.311 (.129)	2.434 (.132)	.445 (.039)	.555 (.039)
R1.		.487 (.070)	.312 (.027)	1.546 (.069)	.470 (.052)	.530 (.052)
R2.		.478 (.171)	.306 (.175)	2.315 (.134)	.491 (.059)	.509 (.059)
R3.		.481 (.135)	.306 (.146)	1.776 (.092)	.486 (.061)	.514 (.061)
R4.		.494 (.242)	.317 (.247)	2.650 (.143)	.454 (.059)	.546 (.099)
R5.		.476 (.138)	.303 (.144)	2.340 (.137)	.497 (.050)	.503 (.050)
R6.		.479 (.163)	.306 (.176)	2.005 (.119)	.489 (.053)	.511 (.053)
R7.		.451 (.213)	.289 (.224)	2.273 (.140)	.546 (.071)	.454 (.071)
R8.		.492 (.145)	.313 (.147)	2.022 (.103)	.463 (.045)	.537 (.045)
R9.		.483 (.191)	.310 (.196)	1.974 (.100)	.479 (.050)	.521 (.050)
R10.		.509 (.140)	.323 (.153)	1.822 (.082)	.425 (.047)	.575 (.047)
R11.		.469 (.141)	.299 (.154)	1.962 (.112)	.511 (.061)	.489 (.061)

5.6. Direct Hierarchical Solution across Gender (inc. *SE*s)

	Male					
Item		Loading		Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.728 (.018)	.859 (.018)				
C1.	.382 (.029)		.278 (.046)	2.449 (.159)	.623 (.070)	.377 (.070)
C2.	.412 (.033)		.286 (.059)	2.119 (.110)	.577 (.069)	.423 (.069)
C3.	.395 (.029)		.288 (.046)	2.453 (.137)	.596 (.079)	.404 (.079)
C4.	.436 (.033)		.305 (.057)	2.923 (.188)	.523 (.057)	.477 (.057)
C5.	.436 (.025)		.334 (.038)	3.476 (.236)	.487 (.067)	.513 (.067)
C6.	.463 (.036)		.314 (.070)	3.033 (.190)	.474 (.053)	.526 (.053)
C7.	.437 (.026)		.332 (.039)	3.525 (.230)	.488 (.064)	.512 (.064)
C8.	.429 (.027)		.320 (.042)	3.202 (.211)	.514 (.070)	.486 (.070)
C9.	.470 (.037)		.337 (.050)	3.442 (.212)	.435 (.055)	.565 (.055)
R1.		.450 (.013)	.363 (.015)	4.222 (.280)	.484 (.050)	.616 (.050)
R2.		.442 (.014)	.354 (.015)	4.478 (.300)	.410 (.053)	.590 (.053)
R3.		.366 (.010)	.323 (.012)	2.624 (.150)	.558 (.054)	.442 (.054)
R4.		.409 (.013)	.335 (.014)	4.062 (.224)	.585 (.053)	.515 (.053)
R5.		.444 (.013)	.365 (.014)	4.395 (.281)	.392 (.049)	.608 (.049)
R6.		.317 (.010)	.288 (.011)	2.844 (.174)	.660 (.080)	.340 (.080)
R7.		.408 (.011)	.351 (.013)	3.537 (.264)	.464 (.059)	.536 (.059)
R8.		.436 (.013)	.357 (.014)	3.697 (.231)	.416 (.044)	.584 (.044)
R9.		.331 (.010)	.295 (.012)	2.233 (.113)	.636 (.070)	.364 (.070)
R10.		.361 (.009)	.335 (.011)	3.504 (.237)	.550 (.081)	.450 (.081)
R11.		.375 (.009)	.345 (.011)	2.933 (.179)	.517 (.055)	.483 (.055)

Female						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.802 (.026)	.885 (.028)				
C1.	.375 (.039)		.310 (.075)	2.640 (.115)	.588 (.050)	.412 (.050)
C2.	.387 (.043)		.302 (.092)	2.197 (.089)	.572 (.051)	.428 (.051)
C3.	.359 (.041)		.284 (.084)	2.287 (.093)	.626 (.054)	.374 (.054)
C4.	.406 (.040)		.322 (.081)	3.135 (.149)	.522 (.054)	.478 (.054)
C5.	.434 (.031)		.371 (.052)	4.213 (.205)	.416(.050)	.584 (.050)
C6.	.424 (.049)		.321 (.129)	3.081 (.137)	.499 (.043)	.501 (.043)
C7.	.394 (.041)		.311 (.085)	3.398 (.152)	.522 (.063)	.448 (.063)
C8.	.447 (.034)		.370 (.060)	4.089 (.206)	.398 (.053)	.602 (.052)
C9.	.437 (.033)		.365 (.057)	3.812 (.194)	.419 (.038)	.581 (.038)
R1.		.440 (.020)	.364 (.024)	4.126 (.204)	.391 (.039)	.609 (.039)
R2.		.458 (.019)	.386 (.022)	4.753 (.268)	.328 (.039)	.672 (.039)
R3.		.360 (.014)	.332 (.017)	2.777 (.116)	.550 (.043)	.450 (.043)
R4.		.438 (.018)	.375 (.021)	4.412 (.194)	.377 (.037)	.623 (.037)
R5.		.444 (.018)	.382 (.021)	4.460 (.229)	.357 (.036)	.643 (.036)
R6.		.314 (.014)	.290 (.017)	2.914 (.137)	.657 (.059)	.343 (.059)
R7.		.446 (.016)	.394 (.019)	4.485 (.249)	.334 (.042)	.666 (.042)
R8.		.449 (.018)	.387 (.021)	3.395 (.197)	.341 (.034)	.659 (.034)
R9.		.347 (.015)	.318 (.017)	2.611 (.110)	.583 (.053)	.417 (.052)
R10.		.350 (.015)	.346 (.017)	3.150 (.154)	.503 (.041)	.497 (.041)
R11.		.360 (.015)	.326 (.018)	2.890 (.129)	.557 (.049)	.443 (.049)

5.7. Direct Hierarchical Solution across Marital Status (inc. *SE*s)

	Un-partnered					
Item		Loading		Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.819 (.174)	.722 (.376)				
C1.	.328 (.259)		.268 (.510)	2.529 (.103)	.677 (.054)	.323 (.054)
C2.	.344 (.385)		.259 (.230)	2.134 (.078)	.669 (.053)	.313 (.053)
C3.	.308 (.334)		.259 (.417)	2.332 (.089)	.707 (.053)	.293 (.053)
C4.	.386 (.259)		.316 (.501)	3.066 (.142)	.552 (.055)	.448 (.055)
C5.	.366 (.126)		.377 (.193)	4.164 (.226)	.498 (.054)	.502 (.054)
C6.	.438 (.558)		.295 (.448)	3.197 (.143)	.520 (.047)	.408 (.047)
C7.	.301 (.327)		.251 (.425)	3.654 (.161)	.722 (.061)	.278 (.061)
C8.	.394 (.218)		.338 (.377)	3.664 (.201)	.513 (.055)	.487 (.055)
C9.	.392 (.153)		.374 (.236)	3.954 (.207)	.466 (.047)	.534 (.047)
R1.		.515 (.219)	.335 (.164)	4.312 (.215)	.372 (.037)	.628 (.037)
R2.		.560 (.271)	.325 (.182)	4.615 (.229)	.317 (.036)	.683 (.036)
R3.		.391 (.157)	.315 (.144)	2.685 (.100)	.570 (.039)	.430 (.039)
R4.		.486 (.236)	.305 (.171)	4.346 (.194)	.456 (.039)	.544 (.039)
R5.		.546 (.234)	.344 (.170)	4.532 (.220)	.313 (.030)	.687 (.030)
R6.		.274 (.134)	.242 (.134)	2.855 (.122)	.771 (.050)	.299 (.050)
R7.		.524 (.181)	.380 (.150)	4.018 (.215)	.294 (.040)	.706 (.040)
R8.		.544 (.222)	.354 (.167)	3.977 (.175)	.301 (.033)	.699 (.033)
R9.		.324 (.146)	.272 (.139)	2.290 (.083)	.694 (.045)	.306 (.045)
R10.		.378 (.148)	.315 (.140)	3.166 (.140)	.585 (.045)	.415 (.045)
R11.		.383 (.150)	.316 (.141)	2.791 (.112)	.578 (.044)	.422 (.044)

Married						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.837 (.082)	.827 (.122)				
C1.	.329 (.120)		.275 (.253)	2.470 (.135)	.665 (.068)	.335 (.068)
C2.	.354 (.163)		.278 (.521)	2.139 (.103)	.633 (.070)	.367 (.070)
C3.	.339 (.150)		.271 (.412)	2.276 (.116)	.657 (.068)	.343 (.068)
C4.	.360 (.093)		.319 (.158)	2.996 (.176)	.576 (.073)	.424 (.073)
C5.	.389 (.075)		.369 (.118)	4.245 (.264)	.472 (.056)	.528 (.056)
C6.	.436 (.351)		.311 (.356)	3.258 (.185)	.485 (.064)	.515 (.064)
C7.	.443 (.146)		.275 (.386)	3.655 (.209)	.649 (.079)	.351 (.079)
C8.	.482 (.092)		.341 (.156)	3.428 (.212)	.519 (.059)	.481 (.059)
C9.	.398 (.084)		.363 (.137)	3.655 (.232)	.469 (.053)	.531 (.053)
R1.		.467 (.082)	.338 (.077)	4.289 (.266)	.407 (.049)	.593 (.049)
R2.		.456 (.078)	.337 (.074)	5.021 (.346)	.423 (.058)	.477 (.058)
R3.		.388 (.054)	.338 (.058)	2.659 (.128)	.517 (.048)	.483 (.048)
R4.		.436 (.066)	.347 (.065)	4.244 (.254)	.439 (.051)	.561 (.051)
R5.		.450 (.066)	.356 (.065)	4.672 (.291)	.404 (.046)	.496 (.046)
R6.		.258 (.053)	.252 (.056)	2.784 (.150)	.737 (.065)	.263 (.065)
R7.		.449 (.062)	.367 (.062)	4.112 (.272)	.390 (.053)	.610 (.053)
R8.		.483 (.063)	.393 (.063)	3.913 (.220)	.298 (.040)	.702 (.040)
R9.		.331 (.054)	.290 (.057)	2.286 (.110)	.648 (.060)	.352 (.060)
R10.		.408 (.057)	.343 (.060)	3.169 (.175)	.481 (.048)	.519 (.048)
R11.		.475 (.054)	.329 (.057)	2.766 (.139)	.548 (.059)	.452 (.059)

5.8. Direct Hierarchical Solution across Religious Preference (inc. *SE*s)

No Religion						
Item		Loading		Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.669 (.019)	.935 (.014)				
C1.	.379 (.034)		.254 (.046)	2.442 (.143)	.663 (.076)	.337 (.076)
C2.	.392 (.038)		.251 (.053)	2.232 (.115)	.651 (.078)	.349 (.078)
C3.	.381 (.030)		.271 (.038)	2.563 (.115)	.644 (.069)	.356 (.069)
C4.	.447 (.037)		.289 (.051)	3.068 (.203)	.444 (.053)	.456 (.053)
C5.	.469 (.029)		.337 (.038)	3.893 (.264)	.455 (.066)	.545 (.066)
C6.	.459 (.040)		.288 (.059)	3.154 (.189)	.529 (.054)	.471 (.054)
C7.	.429 (.033)		.290 (.044)	3.558 (.216)	.565 (.065)	.435 (.065)
C8.	.451 (.038)		.288 (.055)	3.318 (.216)	.540 (.066)	.460 (.066)
C9.	.476 (.034)		.317 (.047)	3.571 (.251)	.471 (.066)	.529 (.066)
R1.		.401 (.011)	.352 (.015)	4.624 (.309)	.451 (.062)	.549 (.062)
R2.		.400 (.010)	.355 (.014)	4.877 (.368)	.449 (.066)	.551 (.066)
R3.		.313 (.007)	.300 (.009)	3.009 (.164)	.636 (.062)	.364 (.062)
R4.		.367 (.009)	.334 (.011)	4.350 (.284)	.524 (.063)	.476 (.063)
R5.		.395 (.009)	.357 (.012)	4.496 (.314)	.453 (.058)	.547 (.058)
R6.		.270 (.006)	.263 (.008)	3.077 (.198)	.725 (.080)	.275 (.080)
R7.		.364 (.007)	.343 (.009)	4.055 (.304)	.516 (.064)	.484 (.064)
R8.		.394 (.008)	.363 (.010)	4.339 (.250)	.445 (.047)	.555 (.047)
R9.		.284 (.007)	.274 (.008)	2.355 (.121)	.699 (.064)	.301 (.064)
R10.		.322 (.007)	.311 (.008)	3.486 (.237)	.612 (.072)	.388 (.072)
R11.		.322 (.007)	.310 (.008)	3.237 (.195)	.613 (.066)	.387 (.066)

Buddhist						
Item	Loading			Intercept	Residual	R^2
	Centring	*Resonating*	*Equanimity*			
E.	.766 (.016)	.903 (.014)				
C1.	.400 (.025)		.306 (.043)	2.507 (.171)	.559 (.062)	.441 (.062)
C2.	.412 (.028)		.303 (.056)	1.988 (.118)	.547 (.062)	.453 (.062)
C3.	.385 (.026)		.291 (.047)	2.057 (.113)	.596 (.067)	.404 (.067)
C4.	.462 (.026)		.347 (.048)	2.975 (.208)	.420 (.058)	.580 (.058)
C5.	.431 (.023)		.336 (.039)	3.602 (.283)	.479 (.073)	.521 (.073)
C6.	.461 (.031)		.331 (.070)	2.884 (.206)	.443 (.055)	.557 (.055)
C7.	.420 (.022)		.334 (.036)	3.493 (.256)	.497 (.084)	.503 (.084)
C8.	.459 (.023)		.361 (.038)	3.525 (.311)	.405 (.070)	.595 (.070)
C9.	.444 (.021)		.356 (.034)	3.495 (.259)	.432 (.052)	.566 (.052)
R1.		.432 (.010)	.398 (.015)	3.755 (.301)	.345 (.052)	.655 (.052)
R2.		.434 (.014)	.379 (.021)	4.506 (.400)	.371 (.063)	.629 (.063)
R3.		.382 (.010)	.352 (.015)	2.648 (.182)	.487 (.060)	.513 (.060)
R4.		.416 (.014)	.363 (.021)	4.123 (.337)	.423 (.058)	.577 (.058)
R5.		.436 (.013)	.285 (.019)	4.473 (.365)	.358 (.055)	.642 (.055)
R6.		.319 (.010)	.299 (.013)	2.728 (.179)	.637 (.078)	.363 (.078)
R7.		.433 (.011)	.292 (.016)	3.636 (.324)	.352 (.055)	.648 (.055)
R8.		.447 (.013)	.394 (.019)	3.748 (.280)	.327 (.049)	.673 (.049)
R9.		.430 (.011)	.313 (.015)	2.416 (.147)	.595 (.082)	.405 (.082)
R10.		.388 (.010)	.364 (.013)	3.121 (.232)	.562 (.067)	.538 (.067)
R11.		.393 (.010)	.362 (.015)	2.617 (.173)	.457 (.064)	.543 (.064)

6.1.1. Ethics Certificate for Reliability and Predictive Validity Studies

MONASH University

Monash University Human Research Ethics Committee

Approval Certificate

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number: 0337
Project Title: Equanimity and the Cultivation of Wellbeing - Longitudinal Study
Chief Investigator: Dominic Hosemans
Expiry Date: 08/08/2021

Terms of approval - failure to comply with the terms below is in breach of your approval and the *Australian Code for the Responsible Conduct of Research*.

1. The Chief Investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data can occur at the specified organisation.
2. Approval is only valid whilst your hold a position at Monash University.
3. It is responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash letterhead and the Monash University complaints clause must include your project number.
6. Amendments to approved projects including changes to personnel must not commence without written approval from MHUREC.
7. Annual Report - continued approval of this project is dependent on the submission of an Annual Report.
8. Final Report - should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected completion date.
9. Monitoring - project may be subject to an audit or any other form of monitoring by MUHREC at any time.
10. Retention and storage of data - The Chief Investigator is responsible fo the storage and retention of the original data pertaining to the project for a minimum period of five years.

Thank you for your assistance.

Professor Nip Thomson

Chair, MUHREC

6.1.2. Explanatory Statement for Longitudinal Study

EXPLANATORY STATEMENT

Project Title: 'Equanimity and the Cultivation of Wellbeing – Longitudinal Study'

Project Number: 0337

Student's name: Dominic Hosemans
[redacted]

You are invited to take part in this study. Please read this Explanatory Statement in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the phone numbers or email addresses listed above.

What does the research involve?
The study aims to explore the experience of equanimity (stillness) within meditation. Initially, focus groups and in-depth interviews were carried out with experienced meditators regarding their understanding of stillness in meditation. This resulted in the creation of a number of statements comprising the potential measure of stillness. Subsequent analyses indicated that the measure assessing stillness in meditation is a valid instrument. Additionally, it appears that the structure of stillness is similar across heterogeneous groups; moreover, individuals who meditate report more experiences of stillness in everyday life compared with individuals who do not meditate. The current study is looking at the development of the experience of stillness over time. This will involve the collection of responses to the same four measures, one of which concerns the experience of stillness, over the duration of three months. Thus, four points of data collection are required, one at the commencement of the study, and once a month for three consecutive months thereafter. It is expected that each survey will take approximately 5 to 10 minutes to complete on each occasion, resulting in a total time investment of between 20 to 40 minutes. All individuals learning meditation who participate in this study will go into the running to win one of three $100 gift vouchers for an online bookstore – booktopia.com.au.

Why were you chosen for this research?
It is a requirement for this research that you must be over 18 years of age as well as proficient in English. The research aims to understand the development of stillness over a three-month time period. This will involve analysing responses from individuals who are learning to meditate and their experience of stillness over the duration of three-month study. Additionally, a control condition, individuals who do not meditate, will be compared with beginning meditators in order to understand the potential differences as a result of practicing meditation.

Consenting to participate in the project and withdrawing from the research
Participation in the study is completely voluntary, with participants free to change their mind at any point during data collection. Each participant will remain anonymous, except where a codename is provided in order to facilitate matching up

all four responses over the duration of the three-month study in which case only the student researcher will have access to that information. All responses are confidential, with only the general trends of the results reported.

Possible benefits and risks to participants
No risks are anticipated with regards to participating in the study. Although there may be a small potential risk that reflecting on your experience in order to respond to particular items within the surveys may bring to light some uncomfortable feelings, this is expected to be very minimal, if at all.

Confidentiality
Participation in the study will be completely confidential. Data provided will not be identifiable and will be securely stored. Only the general trends will be reported in the form of a Ph.D. thesis, journal article, and conference presentation.

Storage of data
The data collected will be securely stored in password-protected files on the student researcher's password protected computer. Only the student researcher and his Ph.D. supervisors will have access to the data. The data will be deleted permanently from the student researcher's password protected computer subsequent to completing his Ph.D. thesis, at the end of 2017.

Results
Participants interested in obtaining a brief summary of the results subsequent to the completion of the study can contact the student researcher at dominic.hosemans@monash.edu.

Complaints
Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics (MUHREC):
Executive Officer
Monash University Human Research Ethics Committee (MUHREC)
Room 111, Building 3e
Research Office
Monash University VIC 3800
Tel: +61 3 9905 2052 Email: muhrec@monash.edu Fax: +61 3 9905 3831
Thank you,

Dominic Hosemans

Contact email: dominic.hosemans@monash.edu

6.1.3. Consent form for Predicative Validity Study

MONASH University

CONSENT FORM

Project: 'Equanimity and the Cultivation of Wellbeing - Longitudinal Study'

Chief Investigator: Dr. Janette Simmonds
Student Researcher: Dominic Hosemans

I have been asked to take part in the Monash University research project specified above. I have read and understood the Explanatory Statement and I hereby consent to participate in this project. Although this study involves two occasions of data collection, I understand that I am able to withdraw at any stage during the process without any warning.

I consent to the following:	Yes	No
Participating in the current survey as well as the an identical survey that follows at approximately a six-week interval	☐	☐
Having the general trends of the discussion reported in research	☐	☐

Name of Participant

Participant Signature Date

6.1.4. T-test Assumptions for Predictive Validity

	Normality of Distributions (Shapiro Wilk test)	Equality of Variance (Levene's Test)
Contrast	*df* = 17	
Centring		
T1	.943, $p > .001$	2.141, $p > .001$
T2	.914, $p > .001$	.915, $p > .001$
Resonating		
T1	.945, $p > .001$	.769, $p > .001$
T2	.953, $p > .001$	.686, $p > .001$
Mindfulness	*df* = 20	
Centring		
T1	.919, $p > .001$	
T2	.960, $p > .001$	
Resonating		
T1	.967, $p > .001$	
T2	.976, $p > .001$	

6.2.1. The Philadelphia Mindfulness Questionnaire (Cardaciotto et al., 2008)

Awareness subscale

Please answer the following according to the frequency each statement was experienced over the past week:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

1. I am aware of what thoughts are passing through my mind.
2. When talking with other people, I am aware of their facial and body expressions.
3. When I shower, I am aware of how the water is running over my body.
4. When I am startled, I notice what is going on inside my body.
5. When I walk outside, I am aware of smells or how the air feels against my face.
6. When someone asks how I am feeling, I can identify my emotions easily.
7. I am aware of thoughts I'm having when my mood changes.
8. I notice changes inside my body, like my heart beating faster or my muscles getting tense.
9. Whenever my emotions change, I am conscious of them immediately.
10. When talking with other people, I am aware of the emotions I am experiencing.

Acceptance subscale

Please answer the following according to the frequency each statement was experienced over the past week:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

1. I try to distract myself when I feel unpleasant emotions.
2. There are aspects of myself I don't want to think about.
3. I try to stay busy to keep thoughts or feelings from coming to mind.
4. I wish I could control my emotions more easily.
5. I tell myself I shouldn't have certain thoughts.
6. There are things I try not to think about.
7. I tell myself that I shouldn't feel sad.
8. If there is something I don't want to think about, I'll try many things to get it out of my mind.
9. I try to put my problems out of mind.
10. When I have a bad memory, I try to distract myself to make it go away.

6.2.2. The Warwick-Edinburgh Mental Heath Well-Being Scale (Tennant et al., 2007)

Below are some statements about feelings and thoughts. Please identify to what degree best describes your experience of each over the last two weeks.

1	2	3	4	5
None of The time	Rarely	Some of the time	Often	All of the time

1. I've been feeling optimistic about the future.
2. I've been feeling useful.
3. I've been feeling relaxed.
4. I've been dealing with problems well.
5. I've been thinking clearly.
6. I've been feeling close to other people.
7. I've been able to make up my own mind about things.

6.2.3. Kessler Psychological Distress Scale (Kessler et al., 2002)

These questions concern how you have been feeling over the past 30 days. Indicate the degree to which each statements represents how you have been:

1	2	3	4	5
None of The time	A little of the time	Some of the time	Most of the time	All of the time

1. During the last 30 days, about how often did you feel tired out for no good reason? (A)
2. During the last 30 days, about how often did you feel nervous? (A)
3. During the last 30 days, about how often did you feel so nervous that nothing could calm you down? (A)
4. During the last 30 days, about how often did you feel hopeless? (D)
5. During the last 30 days, about how often did you feel restless or fidgety? (A)
6. During the last 30 days, about how often did you feel so restless you could not stand still? (A)
7. During the last 30 days, about how often did you feel depressed? (D)
8. During the last 30 days, about how often did you feel that everything was an effort? (A)
9. During the last 30 days, about how often did you feel so sad that everything was an effort? (D)
10. During the last 30 days, about how often did you feel worthless? (D)

Note. A & D represents the two factor structure of Psychological Distress comprising Anxiety and Depression identified by Sunderland et al. (2012)

6.2.4. Authenticity Scale (Wood et al., 2008)

Please rate each statement according to how true they are for you:

1_____2_____3_____4_____5_____6_____7

Does not describe very me at all — Describes me very well

1. *I feel as if I don't know myself very well.
2. *I feel out of touch with the 'real me"
3. *I feel alienated from myself.
4. *I don't know how I really feel inside.
5. I always stand by what I believe in.
6. I am true to myself in most situations.
7. I think it is better to be yourself, than be popular.
8. I live in accordance with my values and beliefs.
9. *I usually do what other people tell me to do.
10. *Other people influence me greatly.
11. *I am strongly influenced by the opinion of others.
12. *I always feel I need to do what others expect me to do.

Note. * indicates reversed item.

Authentic Living: 1, 8, 9, & 11

Accepting External Influence: 3, 4, 5, & 6 (Reversed)

Self-Alienation: 2, 7, 10, & 12 (Reversed)

6.2.5. The Short Index of Self-Actualisation (Faraci & Cannistraci, 2015; Jones & Crandall, 1986)

1_____2_____3_____4

Disagree Somewhat Disagree Somewhat Agree Agree

Self-Efficiency & Self Esteem

1. *I fear failure.
2. *I am bothered by fears of being inadequate.

Autonomy

3. *I feel I must do what others expect me to do.
4. *It is always necessary that others approve of what I do.

Acceptance of Emotions, Self-Direction, and Trust in Interpersonal Relations

5. I do not feel ashamed of any of my emotions.
6. It is better to be yourself than to be popular.
7. I believe that people are essentially good and can be trusted.

Responsibility in Inter-personal Relations and Self-Acceptance

8. *I do not feel responsible to help anybody.
9. *I do not accept my own weaknesses.

Note. * indicates reversed item.

6.2.6. Santa Clara Brief Compassion Scale (Hwang et al., 2008)

Please answer the following questions honestly and quickly using the scale below:

1_____2_____3_____4_____5_____6_____7

Not at all true of me — Very true of me

1. When I hear about someone (a stranger) going through a difficult time, I feel a great deal of compassion for him or her.
2. I tend to feel compassion for people, even though do not know them.
3. One of the activities that provides me with the most meaning to my life is helping others in the world when they need help.
4. I would rather engage in actions that help others, even though they are strangers, than engage in actions that would help me.
5. I often have tender feelings toward people (strangers) when they seem to be in need.

6.2.7. Measure of Decentring (Fresco, et al., 2007)

1_____2_____3_____4_____5

Never All the time

1. I am better able to accept myself as I am.
2. I can observe unpleasant feelings without being drawn into them.
3. I notice that I don't take difficulties so personally.
4. I can treat myself kindly.
5. I can separate myself from my thoughts and feelings.
6. I have the sense that I am fully aware of what is going on around me and inside me.
7. I can slow my thinking at times of stress.
8. I can actually see that I am not my thoughts.
9. I am consciously aware of a sense of my body as a whole.
10. I can take time to respond to difficulties.
11. I view things from a wider perspective.

6.2.8. The Acceptance and Action Questionnaire-II (Bond et al., 2011; Hayes et al., 2004)

Below you will find a lit of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

1	2	3	4	5	6	7
Never True	Very rarely True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True

1. My painful experiences and memories make it difficult for me to live a life that I would value.
2. I'm afraid of my feelings.
3. I worry about not being able to control my worries.
4. My painful memories prevent me from having a fulfilling life.
5. Emotions cause problems in my life.
6. It seems like most people are handling their lives better than I am.
7. Worries get in the way of my success.

Appendix 6.2.9. The 7-Item Nonattachment Scale (Sahdra et al., 2010)

To help us understand your general approach to life and your views about yourself, others, and life in general, tell us the extent to which the following statements reflect your experiences at this point in your life. Select a number from 1 to 6 on the scale provided with each statement to rate the extent to which you agree with it.

1	2	3	4	5	6
Disagree Strongly	Disagree Moderately	Disagree Slightly	Agree Slightly	Agree Moderately	Agree Strongly

1. I can let go of regrets and feelings of dissatisfaction about the past.
2. I can enjoy pleasant experiences without needing them to last forever.
3. I view the problems that enter my life as things/issues to work on rather than reasons for becoming disheartened or demoralized.
4. I can enjoy my family and friends without feeling I need to hang onto them.
5. I can take joy in others' achievements without feeling envious.
6. I do not get "hung up" on wanting an "ideal" or "perfect" life.
7. When pleasant experiences end, I am fine moving onto what comes next.

6.2.10. The Brief Emotional Intelligence Scale (Davies et al., 2010)

Indicate the extent to which each item applies to you using the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree

Appraisal of own emotions:

1. I know why my emotions change.
2. I easily recognise my emotions as I experience them.

Appraisal of others' emotions:

3. I can tell how people are feeling by listening to the tone of their voice.
4. By looking at their facial expressions, I recognise the emotions people are experiencing.

Regulation of own emotions:

5. I seek out activities that make me happy.
6. I have control over my emotions.

Regulation of others' emotions:

7. I arrange events others enjoy.
8. I help other people feel better when they are down.

Utilization of emotions:

9. When I am in a positive mood, I am able to come up with new ideas.
10. I use good moods to help myself keep trying in the face of obstacles.

6.2.11. Meditative Insight Scale (Ireland, 2013)

Please choose the number that indicates to what extent your meditation practice has allowed you to EXPERIENCE insights into:

0	1	2	3	4
Not at all	A little bit	Moderate	Quite a bit	Very much

1. The *suffering* caused by *attachment* to phenomena and experiences including the ego / personal identity?
2. The *conditional* and *relative* nature of phenomena and experiences including the ego / personal identity?
3. The *impermanent* nature of phenomena and experiences including the ego / personal identity?
4. The *emptiness* and / or *oneness* which underlies phenomena and experiences including the ego / personal identity?

6.2.12. Factor Loadings used in the Calculation of AVE

Uni-dimensional factors		Direct Hierarchical Model		
Centring	*Resonating*	*Centring*	*Resonating*	*Equanimity*
.714	.653	.504	.460	.328
.629	.695	.424	.472	.330
.704	.618	.471	.443	.338
.801	.577	.543	.402	.339
.807	.597	.605	.445	.347
.835	.716	.557	.476	.362
.875	.689	.601	.465	.353
.903	.736	.643	.488	.341
.824	.743	.552	.488	.345
	.709		.488	.270
	.734		.490	.316
				.276
				.303
				.258
				.326
				.315
				.321
				.322
				.286
				.297

6.2.13. Data Screening and Assumption Testing for Variables in Construct Validity Study

	Missing Data[□]	MCAR	Univariate Outliers[□]	Multivariate Outliers	Multivariate Normality (χ^2)	Multicollinarity (VIF)	Bartlet's Test (χ^2)
FMS (Awareness)	0	-	0	4	(20) 126.55***	1.245 – 1.749	(45) 1044.42***
FMS (Acceptance)	0	-	7	5	(20) 131.44***	1.640 – 2.744	(45) 1967.78***
WEMWBS-7	15	(24) 28.60	17	4	(14) 51.74***	1.405 – 2.146	(21) 1076.40***
K-10	29	(60) 75.58	32	7	(20) 543.83***	1.683 – 2.457	(45) 1905.03***
Authenticity	12	(99) 133.81*	64	16	(24) 1148.99***	1.722 – 3.576	(66) 12929.34***
SAS	24[#]	(63) 52.18	25	1	(18) 801.82***	1.041 – 1.960	(36) 758.81***
SCBCS	1	(4) 2.81	12	1	(10) 102.64***	2.023 – 2.565	(10) 1353.13***
EQ	10	(90)	26	6	(22) 127.55***	1.445 – 2.193	(55) 1805.21***
AAQ-II	19[#]	(36) 52.45*	5	7	(14) 206.14***	1.103 – 1.812	(21) 591.74***
NAS-7	2	(18) 5.125	25	8	(14) 308.61***	1.463 – 2.361	(21) 1043.63***
BEIS-10	14	(80) 54.47	11	7	(20) 200.50***	1.196 – 2.344	(45) 1150.27***
MI[n]	2	(6) .951	18	5	(8) 131.87***	2.108 – 3.677	(6) 915.36***

Note. (df); * $p < .05$; *** $p < .001$; [□]Missing data and Univariate outliers were replaced using Multiple Imputation using the participant's score on the remaining items of the same variable to predict the score. wOne participant was removed due to responding inconsistently as determined by responding in the same manner to positively and negatively worded statements; [#]One participant did not respond to any item within the SAS and was removed for analyses concerning this variable; [n]n = 292 as only individuals who meditated in a Buddhist context completed this scale.

6.2.14. Model Fit and Internal Reliability for Variables in Concurrent and Construct Validity Analyses

Scale	SB_χ^2 (df)	Relative SB_χ^2	RMSEA [95%CI]	SRMR	CFI	TLF	ω
Equanimity subscale of the Cognitive Styles Mediated by Meditation Measure (Sakairi, 2004)							
	39.521 (20)	1.976	.100 [.053, .146]	.069	.883	.836	.449
Awareness subscale from FMS (Cardaciotto, 2008)							
	66.657 (35)	1.905	.048 [.030, .074]	.038	.963	.953	.444
Acceptance subscale from FMS (Cardaciotto, 2008)							
	84.338 (35)	2.401	.060 [.044, .077]	.035	.958	.946	.601
7-item WEMWBS (Tennant et al., 2007)							
	59.844 (14)	4.275	.092 [.068, .116]	.035	.951	.927	.632
Kessler Psychological Distress Scale (Kessler et al., 2002) – Uni-factorial							
	202.856 (35)	5.796	.111 [.096, .126]	.057	.878	.832	.598
Kessler Psychological Distress Scale (Kessler et al., 2002) – Hierarchical							
	177.460 (34)	5.219	.104 [.089, .119]	.052	.896	.862	.640
Authenticity Scale (Wood et al., 2008) – Three Factors							
	797.926 (51)	15.656	.194 [.182, .206]	.015	.759	.688	.991
Authenticity Scale (Wood et al., 2008) – Hierarchical							
	620.266 (42)	140.768	.188 [.175, .201]	.013	.813	.707	.992
The Short Index of Self-Actualisation (Faraci & Cannistraci, 2015; Jones & Crandall, 1986) – Four Factorial							
	77.052 (21)	3.669	.083 [.063, .103]	.002	.968	.946	.980

The Short Index of Self-Actualisation (Faraci & Cannistraci, 2015; Jones & Crandall, 1986) – Hierarchical							
	24.432 (12)	2.036	.052 [.021, .081]	.001	.993	.979	.998
Santa Clara Brief Compassion Scale (Hwang et al., 2008)							
	89.222 (5)	17.844	.208 [.171, .247]	.073	.914	.827	.800
Measure of Decentring (Fresco, et al., 2007)							
	177.391 (44)	4.032	.088 [.075, .102]	.051	.906	.883	.578
The AAQ-II (Bond et al., 2011; Hayes et al., 2004)							
	50.704 (14)	3.622	.082 [.058, .107]	.004	.941	.912	.996
The 7-Item Nonattachment Scale (Sahdra et al., 2010)							
	13.948 (14)	.996	.000 [.000, .049]	.023	1.000	1.000	.633
The Brief Emotional Intelligence Scale (Davies et al., 2010) – Five Factors							
	56.836 (25)	2.273	.057 [.037, .077]	.040	.952	.913	.094
The Brief Emotional Intelligence Scale (Davies et al., 2010) – Hierarchical							
	24.511 (30)	.817	.040 [.000, .068]	.022	.985	.956	.170
Meditative Insight Scale (Ireland, 2013)							
	7.056 (4)	1.764	.044 [.000, .097]	.005	1.000	1.000	1.000

Appendix 6.2.15. Factor Loadings, Intercepts, Residuals, and R^2 for each of the Comparison Measures

Equanimity subscale of the Cognitive Styles Mediated by Meditation Measure (Sakairi, 2004)

Item	Loading	Intercept	Residual	R^2
1.	.689 (.066)	5.783 (.427)	.525 (.091)	.475 (.091)
2.	.618 (.076)	4.901 (.366)	.618 (.091)	.382 (.091)
3.	.723 (.064)	5.164 (.366)	.477 (.092)	.523 (.092)
4.	.582 (.080)	5.406 (.401)	.661 (.093)	.339 (.093)
5.	.451 (.092)	4.890 (.365)	.797 (.083)	.203 (.083)
6.	.712 (.066)	5.229 (.389)	.493 (.094)	.507 (.094)
7.	.592 (.080)	4.360 (.329)	.650 (.095)	.350 (.095)
8.	2.93 (.106)	2.927 (.233)	.940 (.052)	.060 (.052)

Awareness subscale from FMS (Cardaciotto, 2008)

Item	Loading	Intercept	Residual	R^2
1.	.487 (.047)	5.782 (2.06)	.762 (.046)	.238 (.046)
2.	.476 (.043)	6.011 (.229)	.773 (.041)	.227 (.041)
3.	.546 (.045)	4.233 (.168)	.702 (.049)	.298 (.049)
4.	.641 (.035)	4.064 (.164)	.586 (.044)	.411 (.044)
5.	.469 (.046)	5.237 (.186)	.780 (.043)	.220 (.043)
6.	.636 (.038)	5.070 (.207)	.596 (.049)	.404 (.049)
7.	.630 (.043)	5.010 (.179)	.603 (.054)	.397 (.054)
8.	.562 (.042)	5.054 (.197)	.684 (.048)	.316 (.048)
9.	.699 (.030)	4.964 (.172)	.512 (.042)	.488 (.042)
10.	.686 (.033)	5.565 (.220)	.529 (.045)	.471 (.045)

Acceptance subscale from FMS (Cardaciotto, 2008)

Item	Loading	Intercept	Residual	R^2
1.	.657 (.035)	3.570 (.156)	.569 (.046)	.431 (.046)
2.	.675 (.034)	3.896 (.164)	.545 (.045)	.455 (.045)
3.	.697 (.032)	4.276 (.211)	.514 (.045)	.486 (.045)
4.	.629 (.033)	3.201 (.123)	.604 (.046)	.396 (.046)
5.	.692 (.033)	3.898 (.193)	.521 (.046)	.479 (.046)
6.	.775 (.029)	3.771 (.161)	.400 (.045)	.600 (.045)
7.	.651 (.040)	4.438 (.222)	.576 (.051)	.424 (.051)
8.	.783 (.028)	4.198 (.184)	.386 (.043)	.614 (.043)
9.	.698 (.040)	3.866 (.159)	.513 (.056)	.487 (.056)
10.	.426 (.129)	2.120 (.732)	.819 (.110)	.181 (.110)

7-item WEMWBS (Tennant et al., 2007)

Item	Loading	Intercept	Residual	R^2
1.	.646 (.034)	4.808 (.166)	.583 (.043)	.417 (.043)
2.	.705 (.033)	4.944 (.186)	.503 (.046)	.497 (.046)
3.	.691 (.040)	5.366 (2.19)	.522 (.056)	.478 (.056)
4.	.764 (.029)	5.631 (.231)	.416 (.044)	.584 (.044)
5.	.769 (.032)	5.378 (.222)	.408 (.050)	.592 (.050)
6.	.681 (.038)	4.309 (.191)	.537 (.052)	.463 (.052)
7.	.550 (.046)	5.102 (.209)	.698 (.050)	.302 (.050)

Kessler Psychological Distress Scale (Kessler et al., 2002) – Uni-factorial

Item	Loading	Intercept	Residual	R^2
1.	.565 (.040)	2.458 (.080)	.681 (.045)	.319 (.045)
2.	.668 (.029)	2.662 (.087)	.554 (.039)	.446 (.039)
3.	.678 (.037)	2.201 (.068)	.540 (.050)	.460 (.050)
4.	.784 (.027)	2.160 (.051)	.385 (.043)	.615 (.043)
5.	.569 (.039)	2.451 (.075)	.676 (.045)	.324 (.045)
6.	.625 (.044)	2.281 (.080)	.610 (.055)	.390 (.055)
7.	.771 (.028)	2.121 (.067)	.405 (.043)	.595 (.043)
8.	.725 (.028)	2.164 (.062)	.475 (.041)	.525 (.041)
9.	.771 (.028)	1.862 (.061)	.405 (.043)	.595 (.043)
10.	.515 (.100)	1.863 (.194)	.735 (.103)	.265 (.103)

Kessler Psychological Distress Scale (Kessler et al., 2002) – Hierarchical

Item	Loading	Intercept	Residual	R^2
Anx.	.962 (.046)		.054 (.090)	
1.	.577 (.040)	2.458 (.081)	.667 (.046)	.333 (.046)
2.	.709 (.028)	2.662 (.088)	.497 (.040)	.503 (.040)
3.	.716 (.035)	2.201 (.069)	.488 (.050)	.512 (.050)
5.	.602 (.037)	2.451 (.075)	.638 (.045)	.362 (.045)
6.	.665 (.041)	2.281 (.082)	.558 (.055)	.442 (.055)
8.	.702 (.031)	2.164 (.063)	.508 (.044)	.492 (.044)
Dep.	.926 (.042)		.167 (.076)	
4.	.806 (.027)	2.160 (.050)	.351 (.043)	.649 (.043)
7.	.797 (.026)	2.121 (.068)	.365 (.042)	.635 (.042)
9.	.783 (.028)	1.862 (.059)	.387 (.044)	.613 (.044)
10.	.536 (.098)	1.863 (.199)	.712 (.106)	.288 (.106)

Authenticity Scale (Wood et al., 2008) – Three Factors

Item	Loading	Intercept	Residual	R^2
Living				
1.	.966 (.032)	1.303 (.549)	.067 (.062)	.933 (.062)
8.	.966 (.032)	1.265 (.539)	.067 (.062)	.933 (.62)
9.	.978 (.021)	1.146 (.475)	.044 (.041)	.956 (.041)
11.	.981 (.018)	1.144 (.478)	.037 (.034)	.963 (.034)
Accepting				
3.	.995 (.005)	.360 (.123)	.011 (.010)	.989 (.010)
4.	.988 (.012)	.381 (.132)	.024 (.023)	.976 (.023)
5.	.948 (.048)	.560 (.205)	.101 (.091)	.899 (.091)
6.	.971 (.028)	.508 (.187)	.058 (.054)	.942 (.054)
Alienation				
2.	.994 (.006)	.396 (.139)	.012 (.011)	.988 (.011)
7.	.968 (.031)	.401 (.141)	.064 (.060)	.936 (.060)
10.	.965 (.033)	.645 (.250)	.068 (.063)	.932 (.063)
12.	.962 (.035)	.530 (.192)	.075 (.068)	.925 (.068)

Authenticity Scale (Wood et al., 2008) – Hierarchical

Item	Loading	Intercept	Residual	R^2
Living	.953 (.044)		.092 (.083)	
1.	.969 (.027)	1.243 (.477)	.061 (.052)	.939 (.052)
8.	.969 (.026)	1.206 (.460)	.061 (.051)	.929 (.051)
9.	.980 (.017)	1.092 (.411)	.040 (.034)	.960 (.034)
11.	.983 (.013)	1.069 (.395)	.033 (.027)	.967 (.027)
Accepting	1.004 (.004)		.008 (.008)	
3.	.995 (.005)	.360 (.117)	.011 (.010)	.989 (.010)
4.	.988 (.011)	.381 (.126)	.024 (.022)	.976 (.022)
5.	.948 (.047)	.561 (.200)	.101 (.089)	.899 (.089)
6.	.971 (.027)	.507 (.179)	.058 (.052)	.942 (.052)
Alienation	.997 (.003)		.006 (.006)	
2.	.971 (.027)	.400 (.136)	.012 (.011)	.988 (.011)
7.	.967 (.030)	.402 (.138)	.064 (.059)	.936 (.059)
10.	.965 (.032)	.647 (.240)	.068 (.061)	.932 (.061)
12.	.962 (.034)	.531 (.182)	.075 (.065)	.925 (.065)

The Short Index of Self-Actualisation (Faraci & Cannistraci, 2015; Jones & Crandall, 1986) – Four Factorial

Item	Loading	Intercept	Residual	R^2
Self-Efficiency				
1.	.993 (.007)	.530 (.023)	.014 (.014)	.986 (.014)
2.	.995 (.005)	.496 (.188)	.009 (.009)	.991 (.009)
Autonomy				
3.	.994 (.006)	.413 (.150)	.012 (.011)	.988 (.011)
4.	.995 (.005)	.373 (.132)	.010 (.010)	.990 (.010)
Acceptance				
5.	.980 (.020)	.682 (.277)	.040 (.039)	.960 (.039)
6.	.996 (.004)	.815 (.351)	.008 (.008)	.992 (.008)
7.	.990 (.010)	.724 (.304)	.019 (.019)	.981 (.019)
Responsibility				
8.	.991 (.009)	.342 (.117)	.019 (.018)	.981 (.018)
9.	.988 (.009)	.384 (.137)	.025 (.024)	.975 (.024)

The Short Index of Self-Actualisation (Faraci & Cannistraci, 2015; Jones & Crandall, 1986) – Hierarchical

Item	Loading	Intercept	Residual	R^2
Self-Efficiency	.991 (.008)		.017 (.017)	
1.	.992 (.008)	.531 (.025)	.016 (.015)	.984 (.015)
2.	.995 (.005)	.497 (.186)	.010 (.009)	.990 (.009)
Autonomy	.998 (.002)		.004 (.005)	
3.	.994 (.005)	.418 (.153)	.011 (.011)	.989 (.011)
4.	.995 (.005)	.374 (.130)	.010 (.011)	.990 (.010)
Acceptance	.993 (.007)		.015 (.015)	
5.	.980 (.019)	.671 (.266)	.039 (.037)	.961 (.037)
6.	.996 (.004)	.806 (.335)	.008 (.008)	.992 (.008)
7.	.990 (.010)	.717 (.219)	.020 (.019)	.980 (.019)
Responsibility	.996 (.004)		.007 (.007)	
8.	.988 (.012)	.342 (.114)	.024 (.023)	.976 (.023)
9.	.990 (.010)	.385 (.134)	.020 (.020)	.980 (.020)

Santa Clara Brief Compassion Scale (Hwang et al., 2008)

Item	Loading	Intercept	Residual	R^2
1.	.924 (.016)	5.171 (.207)	.147 (.030)	.853 (.030)
2.	.931 (.014)	5.161 (.218)	.133 (.027)	.867 (.027)
3.	.658 (.035)	4.203 (.179)	.567 (.045)	.433 (.045)
4.	.579 (.032)	2.873 (.096)	.664 (.037)	.336 (.037)
5.	.766 (.026)	4.055 (.168)	.414 (.040)	.586 (.040)

Measure of Decentring (Fresco, et al., 2007)

Item	Loading	Intercept	Residual	R^2
1.	.666 (.043)	6.004 (.278)	.556 (.057)	.444 (.057)
2.	.701 (.030)	4.960 (.205)	.509 (.042)	.491 (.042)
3.	.705 (.031)	4.326 (.187)	.503 (.043)	.497 (.043)
4.	.711 (.034)	5.545 (.252)	.495 (.048)	.505 (.048)
5.	.694 (.034)	4.903 (.193)	.518 (.047)	.482 (.047)
6.	.533 (.054)	4.882 (.182)	.716 (.058)	.284 (.058)
7.	.643 (.039)	4.357 (.159)	.587 (.050)	.413 (.050)
8.	.667 (.041)	4.860 (.191)	.556 (.054)	.444 (.054)
9.	.675 (.034)	4.167 (.184)	.544 (.046)	.456 (.046)
10.	.654 (.039)	5.425 (.228)	.573 (.505)	.427 (.050)
11.	.602 (.042)	6.071 (.268)	.638 (.051)	.362 (.051)

The AAQ-II (Bond et al., 2011; Hayes et al., 2004)

Item	Loading	Intercept	Residual	R^2
1.	.973 (.026)	.778 (.313)	.054 (.050)	.946 (.050)
2.	.972 (.027)	.580 (.219)	.056 (.052)	.944 (.052)
3.	.960 (.037)	.689 (.258)	.079 (.070)	.921 (.070)
4.	.984 (.015)	.502 (.186)	.032 (.030)	.968 (.030)
5	.982 (.017).	.597 (.232)	.036 (.034)	.964 (.034)
6.	.981 (.018)	.634 (.244)	.038 (.036)	.962 (.036)
7.	.942 (.053)	.706 (.261)	.113 (.099)	.887 (.099)

The 7-Item Nonattachment Scale (Sahdra et al., 2010)

Item	Loading	Intercept	Residual	R^2
1.	.602 (.050)	3.946 (.223)	.637 (.060)	.363 (.060)
2.	.756 (.033)	7.278 (.398)	.428 (.050)	.572 (.050)
3.	.683 (.041)	6.365 (.298)	.533 (.056)	.467 (.056)
4.	.593 (.041)	6.563 (.295)	.648 (.049)	.352 (.049)
5.	.593 (.041)	7.004 (.313)	.649 (.048)	.351 (.048)
6.	.739 (.031)	4.990 (.252)	.454 (.046)	.546 (.046)
7.	.881 (.025)	6.035 (.259)	.343 (.041)	.657 (.041)

The Brief Emotional Intelligence Scale (Davies et al., 2010) – Five Factors

Item	Loading	Intercept	Residual	R^2
Own-emotions				
1.	.582 (.100)	4.554 (.191)	.661 (.116)	.339 (.116)
2.	.667 (.105)	5.346 (.205)	.554 (.141)	.446 (.141)
Other-emotions				
3.	.673 (.090)	5.253 (.206)	.547 (.121)	.453 (.121)
4.	.684 (.078)	5.232 (.192)	.533 (.107)	.467 (.107)
Regulation-own				
5.	.553 (.097)	5.340 (.192)	.694 (.108)	.306 (.108)
6.	.495 (.096)	3.786 (.200)	.755 (.095)	.245 (.095)
Regulation-other				
7.	.529 (.082)	4.040 (.217)	.720 (.087)	.280 (.087)
8.	.646 (.090)	5.503 (.231)	.582 (.117)	.418 (.117)
**Utilization*				
9.	.496 (.960)	4.395 (.398)	.754 (.952)	
10.	.371 (.981)	4.167 (.249)	.991 (.077)	

**Note*. According to Hausman's (1978) calculation, the standardized residual could not be computed due to negative variance estimates. Muthén and Muthén (2007b) suggest that in such instances, the normalised residual can be used in its place. Therefore, figures represent the normalised scores, with R^2 omitted due to requiring the standardised residual for its calculation.

The Brief Emotional Intelligence Scale (Davies et al., 2010) – Hierarchical

Item	Loading	Intercept	Residual	R^2
Own-emo	.582 (.071)		.661 (.083)	
1.	.680 (.048)	4.091 (.145)	.538 (.066)	.462 (.066)
2.	.770 (.049)	4.777 (.154)	.407 (.076)	.593 (.076)
Other-emo	.568 (.061)		.678 (.070)	
3.	.779 (.044)	4.757 (.162)	.393 (.069)	.607 (.069)
4.	.796 (.036)	4.733 (.150)	.367 (.058)	.633 (.058)
Reg-own	.698 (.073)		.513 (.102)	
5.	.635 (.064)	4.756 (.164)	.597 (.082)	.403 (.082)
6.	.580 (.064)	3.434 (.153)	.663 (.075)	.337 (.075)
Reg-other	.660 (.069)		.565 (.091)	
7.	.605 (.054)	3.736 (.176)	.634 (.065)	.366 (.065)
8.	.744 (.059)	5.138 (.183)	.447 (.088)	.553 (.088)
Utilization	.764 (.614)		.417 (.938)	
9.	.646 (.516)	5.718 (.266)	.582 (.667)	.418 (.667)
*10.	.905 (.635)	1.180 (.994)	.980 (.094)	

**Note*. As above.

Meditative Insight Scale (Ireland, 2013)

Item	Loading	Intercept	Residual	R^2
1.	1.000 (.000)	.703 (.032)	.000 (.000)	1.000 (.000)
2.	1.000 (.000)	.700 (.032)	.000 (.000)	1.000 (.000)
3.	1.000 (.000)	.702 (.032)	.000 (.000)	1.000 (.000)
4.	.993 (.006)	.686 (.032)	.013 (.013)	.987 (.013)