



Self-related processing removal or revision? The Buddhist theory of no-self and the mechanisms of mindfulness

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Abstract

There is substantial evidence that mindfulness-based interventions (MBIs) have beneficial effects for a range of disorders, though their underlying mechanisms remain unclear. Prominent developers of MBIs have proposed the Buddhist concept of no-self as a core mechanism driving their efficacy. The idea of no-self has been interpreted as the process of reducing, attenuating or eliminating all senses of self – subjective, narrative, agential – across the spectrum of self-related processing (SRP). This article reconstructs and critiques four empirical arguments and one conceptual challenge to the Buddhist no-self hypothesis – that reducing all SRP is the central mechanism underpinning the health benefits of MBIs – drawn from the psychological research of Willoughby Britton and Jared Lindahl. While acknowledging that their empirical arguments, while defeasible, provide strong reasons for a more cautious approach to this hypothesis, this article argues that alternative interpretations of no-self can effectively evade these critiques. Moreover, it demonstrates that these alternative views can align with existing evidence which suggests that a valenced shift in self-concepts – from positive to negative – is one mechanism for the efficacy of MBIs.

Keywords Mindfulness · Mechanisms · Buddhism · No-self · Self-related processing · Health · Meditation

1 Introduction

There is growing evidence that mindfulness-based interventions (MBIs), such as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) have beneficial effects for a range of disorders. Studies covering a wide range of research provide robust meta-analytical support for their efficacy in treating the symptoms of mild to severe emotional stress (Bohlmeijer et al., 2010; Goyal

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et al., 2014), as well as anxiety and depression in adults (Goldberg et al., 2019; Khoury et al., 2013; Vøllestad et al., 2012). However, much remains unknown about the mechanisms by which they exert their therapeutic effects. There is a growing consensus that the kinds of practices involved in MBIs are complex and multidimensional, and so it is widely assumed that there must be several distinct interacting processes or mechanisms. While some psychological models of these mechanisms have been proposed (Baer, 2003; Brown et al., 2007; Lutz et al., 2015; Shapiro et al., 2006), there is little consensus about which mechanisms are essential to particular MBIs, which generalise across all MBIs, and whether there are any qualifying or influencing factors on their individual or combined efficacy.

Some researchers have proposed ‘changes in the sense of self’ as the central or fundamental mechanism by which MBIs generate positive health outcomes. This view is explicitly informed by the Buddhist concept of no-self (*anattā/anātman*).¹ Jon Kabat Zinn, originator of MBSR, claims that understanding the Buddha’s teaching that “nothing is to be clung to as I, me, or mine” (Kabat-Zinn, 2010: xvii) is key to MBSR’s benefits. Similarly, proponents of MBCT argue that its therapeutic effectiveness aligns with the Buddhist notion that suffering originates, in part, from identifying experiences as parts of ‘me’ or as ‘mine’ (Teasdale & Chaskalson, 2011a: 93). The supposed significance of Buddhist no-self for MBI efficacy is also reflected in clinical literature and recent studies. According to the *Handbook of Mindfulness*: “Perhaps fundamental to the effects of mindfulness training on positive functioning is the disidentification from these phenomena that an individual normally takes to be ‘me’.” (Brown et al., 2015: 318) Moreover, some recent studies explicitly draw on Buddhist ideas to hypothesise that linking “present moment subjective experience (e.g., sensations, emotions, thoughts) with the self—underlies various forms of maladaptation” (Hadash et al., 2016: 856). They propose that “processing present moment subjective experience without self-referentiality—is a principal mechanism responsible for several salutary effects of mindfulness practice and, more broadly, an important mechanism underlying mental health.” (p.857).

Assessing whether Buddhist no-self represents the principal mechanism underlying MBI efficacy presents several challenges. First, there is ambiguity around the exact meaning of the Buddha’s teaching of no-self and how it is relevant to meditation. Amongst Buddhist scholars, this teaching is most widely understood as the denial of an enduring substance that explains personal identity over time (Gethin, 1998: 145). However, Buddhist philosophers, both historical and contemporary, hold divergent views on its assumptions and implications. Scholarly discourse tends to center on its metaphysical, epistemological and semantic aspects, with various Buddhist traditions advocating their own interpretations in critical response to others. While it is agreed that a right understanding of no-self is intended to have practical effects for reducing or removing suffering, there is little consensus on precisely how these effects are achieved in the context of meditation.

¹ In this article, the first italicised term in parentheses will be in Pāli, and the second is in Sanskrit, unless the term is the same.

Second, the concept of ‘self’ is contested in neuroscientific and psychological literature and used in a variety of ways that are not always well defined or consistent. The construct “self-related processing” (SRP) has been introduced to refer to those mental processes or mechanisms that involve a sense of self (Desbordes 2019; Hölzel et al. 2011; Northoff et al. 2006; Northoff 2011), but this construct has itself been challenged as ill-defined. Recent studies leverage distinctions from phenomenology and the cognitive sciences to categorise SRP into three main sub-constructs²: (1) subjective SRP, (2) narrative SRP, and (3) agential SRP.³

Subjective SRP encompass conceptions of self that imply a “sense of being the immediate subject of experience in the present and taking a first-person perspective” (Tagini & Raffone, 2010: 10). It is taken to include such notions as the “minimal self” (Gallagher, 2000), “minimal phenomenological selfhood” (Metzinger, 2004), “experiential self” (Farb et al., 2007; Lambie & Marcel, 2002, Zahavi, 2003) and “core self” (Damasio, 2010). Some of these notions integrate a sense of ownership or ‘mineness’ with regards to inner experience (Metzinger, 2009).

Narrative SRP refers to an individual’s conception or representation of themselves, including cognitions and beliefs about their identity and attributes. It encompasses autobiographical aspects of personal identity that are reconstructed from past experiences and projected into the future (Damasio, 1999; Gallagher, 2000). This form of SRP includes the “self-concept” from clinical psychology (Bhar & Kyrios, 2016), comprising descriptions, appraisals, and expectations about one’s attributes, weaknesses and goals (Desbordes, 2019; Hattie, 2014). It also encompasses key psychological constructs such as self-esteem and “valenced self-evaluations”, which are characterized as positive or negative beliefs about oneself (Britton et al., 2021a, 2021b).

It is unclear whether *agential* SRP is a distinct concept or a sub-type of subjective or narrative SRP.⁴ It refers to the sense of self as agent, doer, or controller of actions, which includes a sense of authorship or ownership of actions as behaviors done ‘by me’ (Gallagher, 2000). It may include a sense of purpose, reason, or intention that are relevant to the self (Balconi, 2010). Some also take it to encompass ‘self-efficacy’, a type of self-evaluation and/or sense of confidence in one’s capacity to exert control over one’s motivations, behavior, and environment (Bandura, 1997).

With these distinctions in view, the question arises: changes in which type of SRP do mindfulness researchers propose as the mechanism of MBI-efficacy, and

² This does not exhaustively analyse the concept of self, as it neglects sub-personal or neural-level representations of self, such as those assumed to function in homeostasis (see Damasio, 2005).

³ Different labels are also used for (1-3) and there is variation in whether they are all classified as SRP. While further research is required to precisify these classifications, in this article I will refer to all as forms of self-related processing (SRP).

⁴ For instance, Vago and Silbersweig (2012) take both the subjective and agential sense of self to be aspects of the “experiential phenomenological self (EPS)” which they define as “an agentic, self-as-subject acting as awareness in the present moment” (p.6) Christoff et al. (2011) similarly define them both as aspects of “self as knowing subject and agent” as distinct to the “self as object of attribution” (p.104) Dambrun (2023), however, treats the agential self (or “self-as-agent”) as an aspect of the narrative self. This seems reasonable for those characterisations of agential self that involve self-efficacy and where self-efficacy is defined as an evaluative belief about one’s capacities for control. However, self-efficacy is sometimes defined as a sense of confidence, which may not be conceptual.

what kind of change in this SRP do they hypothesize? In a recent series of articles, Willoughby Britton and Jared Lindahl (B&L) represent Buddhist no-self as recommending the reduction, removal, or elimination of *all* SRP (1–3). They present this both as the assumption of mindfulness researchers and as an accurate reflection of the Buddha’s teaching. When presented as a mechanism of mindfulness, Buddhist no-self is understood as a process of reducing or attenuating all SRP.⁵ This article will call this the *Buddhist no-self hypothesis*. According to this hypothesis, reducing or attenuating all SRP is the fundamental mechanism by which MBIs generate their health outcomes. B&L challenge the Buddhist no-self hypothesis across a growing body of research. In this article, I will identify and critically analyse five arguments from their research. Briefly, they argue:

1. There is no evidence that the benefits of MBIs result from a global reduction in SRP;
2. There is evidence of an association between reduced SRP and psychopathology;
3. Changes in the sense of self have been reported as meditation-related adverse effects, with increased attenuation in SRP positively correlated with increased functional impairment;
4. There is robust evidence that some positive effects of MBIs are mediated by a shift in the subject’s evaluation of their self-concept, from negative to positive, but no evidence that they are mediated by the removal of all SRP;
5. Buddhism is a religious worldview that provides an explanatory framework that is fundamentally distinct from scientific inquiry.

The first four arguments are empirical and B&L treat them as evidence that the Buddhist no-self hypothesis is a flawed proposal of the mechanisms underlying MBI-efficacy. The fifth argument is more conceptual and provides a reason why invoking the Buddha’s teaching of no-self to model or develop the mechanisms of mindfulness is fundamentally misguided. According to B&L, this approach reflects a ‘decontextualisation’, ‘detraditionalisation’ and ‘psychologisation’ of Buddhist constructs and objectives, which are fundamentally ‘separate’, ‘distinct’ and ‘exclusive’ to those of modern science (Britton et al., 2018; Lindahl & Britton, 2019; Lindahl et al., 2023).

This article will focus on B&L’s empirical arguments (1–4) and will contend that they present a credible empirical challenge to the Buddhist no-self hypothesis. However, it will challenge the implied conclusion that the Buddha’s teaching of no-self cannot meaningfully inform the mechanisms of MBI-efficacy. It does this by demonstrating that alternative interpretations of Buddhist no-self can both evade their critique and align with some of their empirical findings. In so doing, this article

⁵ Some present the hypothesis as proposing that MBI efficacy stems from ‘selfless processing’, where all SRP has been eliminated (see Hadash et al., 2016). This represents a stronger and more evidentially demanding claim than that MBI efficacy results from reducing or attenuating all SRP. I will focus on this weaker interpretation, which is the primary target of B&L’s critique, although their arguments also apply to this stronger version.

indirectly challenges B&L's conceptual argument, by proposing a potential avenue for dialogue between Buddhism and mindfulness research. Nevertheless, it is also important to address their conceptual argument directly, as I will now do, since its validity would threaten to undermine *all* interdisciplinary dialogue between Buddhism and science, beyond the debate over the Buddhist no-self hypothesis.

There are undoubtedly many differences between Buddhist and modern scientific explanatory frameworks. Many scholars note that the Buddhist spiritual path shares the same general goals as clinical practice; namely, alleviating suffering and cultivating wellbeing (Teasdale & Chaskalson, 2011a, 2011b; Wilson, 2014). While this observation is reasonable, it calls for greater nuance. In clinical settings, these goals are defined in terms of health. While the concept of health is debated, it is generally understood to at least refer to normal functioning without impairment or distress. Some extend it to encompass a sense of subjective well-being and happiness. I will use the conjunct 'health and well-being' to refer to both concepts. By apparent contrast, the soteriological goal of Buddhist practices is the attainment of *nibbāna/nirvāṇa*. While this goal is widely interpreted as encompassing health and wellbeing, traditional Buddhist texts also describe it more comprehensively as the realisation of enlightenment (*bodhi*) and liberation from the cycle of karmic rebirth (*samsāra*). These outcomes are traditionally understood to be achieved by following the Buddha's Eightfold Path, which involves cultivating a correct understanding of the nature of mind and reality, living a life of good ethical conduct informed by wholesome intentions, and sustained by contemplative practice. In early Buddhism, such practices are said to 'remove karmic seeds' and 'purify mental defilements (*kilesas/kleśas*).' In later Mahāyāna traditions, the ultimate goal is conceived as the attainment of Buddhahood – a transcendent state characterised by omniscient wisdom, boundless compassion, and limitless skill in alleviating the suffering of all sentient beings. Many of these constructs are not measurable within mainstream scientific frameworks, and do not equate to health and well-being in contemporary scientific discourse.

Some Buddhist scholars take this as reason to resist interdisciplinary dialogue with science, suggesting that Buddhism is better understood as a religion that guides ethical behaviour and spiritual pursuit (Lopez, 2008). This view has merit. It is not necessary to view Buddhism as a science, nor does Buddhism require validation from scientific frameworks. However, B&L's conceptual argument goes further, suggesting that Buddhism and science are incommensurable explanatory frameworks. If true, this would imply that no scientific basis can be provided for any Buddhist empirical claim, even those seemingly naturalistic claims as that entities arise from causes and conditions and are thus impermanent, or that self-attachment causes certain types of suffering. This seems to overreach.

The fact that there are differences, even significant ones, between Buddhist and modern scientific explanatory frameworks does not entail that they are entirely inconsistent or incommensurable. Many Buddhist scholars and popular Buddhist writers assume that *nibbāna/nirvāṇa* either encompasses mental health and subjective well-being or that health and wellbeing are achievable milestones along the way towards the more transcendent soteriological goals of Buddhist practice. While these assumptions require evidential support, they are at least conceivable. Many

mindfulness researchers also strategically bracket unverifiable Buddhist concepts, such as karma and mental defilements, when engaging interdisciplinary dialogue. For example, MBSR and MBCT are developed from the Buddhist practices of focused-attention and open-monitoring meditation, “leaving behind their religious, esoteric and mystical elements.” (Crane et al., 2017: 992). Decades of research affirm the positive impact of these MBIs on anxiety, depression, and a variety of mental disorders. B&L do not deny these findings. The crucial issue is whether Buddhist no-self is one of those unverifiable Buddhist constructs best ‘left behind’. B&L clearly think it is. This article will argue that B&L’s evidence does not support this view, and that alternative analyses of no-self can withstand their arguments. Central to my case is the observation that B&L’s empirical arguments target the Buddhist no-self hypothesis – that reducing or attenuating all SRP is the mechanism underpinning MBI efficacy. I will argue that alternative interpretations of the Buddha’s teaching of no-self can both evade these arguments and align with existing findings. This challenges B&L’s suggestion that Buddhism and science are incommensurable explanatory frameworks, by proposing a potential avenue for interdisciplinary dialogue.

My argument will proceed as follows. First, I will present reasons why Buddhist no-self might be supposed to recommend reducing all SRP as a mechanism of MBI efficacy. This shows that B&L have a proper target for their empirical arguments. Second, I will explicate and critically examine the above four empirical arguments against the Buddhist no-self hypothesis from B&L’s body of research and will argue that their challenge is credible and significant. Third, I will highlight B&L’s recognition of evidence that valenced change in self-concepts, from negative to positive, is one mechanism of MBI efficacy. Fourth, I will introduce two Buddhist interpretations of no-self – that of Thānissaro Bhikkhu (2011)⁶ and that of Mark Siderits (2003, 2007, 2013) – and demonstrate how both can support the pragmatic use of, and valenced change in, self-concepts. Fifth, and last, I will suggest how these accounts can integrate with the cognitive mechanisms of modified forms of MBCT and will refine my account in response to objections.

2 Buddhist no-self as the removal of all SRP

According to B&L, the Buddhist no-self hypothesis posits that a “pervasive global reduction in SRP” (Alejandro-Lara et al., 2022: 670) or the “global and comprehensive attenuation of all forms of selfhood” constitutes the central mechanism underlying contemplative practice (Britton et al. 2021a: 14). They take this to reflect how the concept of no-self is conceived by mindfulness researchers and to be an accurate interpretation of the practical import of the Buddha’s teaching on no-self. Their evidence for this view draws on analyses of decentering and disidentification processes within MBIs, which are informed and justified in relation to Buddhism.

⁶ My sincere thanks to Kevin Berryman for drawing my attention to the relevance of Thānissaro’s work to my argument.

There are two standard MBIs: MBSR and MBCT. MBSR is an eight-week structured program that consists of four weeks of focused-attention meditation and four weeks of open-monitoring meditation, both derived from Buddhism. MBCT builds on the foundations of MBSR and integrates cognitive therapy techniques, such as identifying and labelling patterns of negative thinking. Decentering has been identified as an essential mechanism in both programs, characterised as “the capacity to shift experiential perspective – from within one’s subjective experience onto that experience” (Bernstein et al., 2015: 1). It has been analyzed into several interconnecting processes, although the extent to which they measure the same or different constructs is unclear (Bernstein et al., 2015, 2019; Fresco et al., 2007). One process claimed to be integral within this framework is “disidentification”, defined as “the experience of internal states as separate from one’s self” (Bernstein et al., 2015: 3). Proponents of standard MBIs draw on Buddhist teachings to prioritize disidentification and delineate its scope. For instance, Jon Kabat Zinn ascribes to the Buddha the view that “nothing is to be clung to as I, me, or mine” (2010: xvii). This is derived from the Buddha’s analysis of personal identity into five “aggregates” (*khandhas/skandhas*), or five classes of psychological and physical elements. They are elements of bodily physical matter (*rūpa*), feeling (*vedanā*), discriminative cognition such as perception, memory, and conceptualisation (*saññā/sañjñā*), volitional formations (*saṅkhāra/saṃskāra*) and conscious awareness (*viññāṇa/vijñāna*). The Buddha claims that these elements “should be seen as [they] really [are] with correct wisdom thus: ‘This is not mine, this I am not, this is not my self.’” (MN 22, 35, 62, 109). Kabat Zinn takes this teaching to recommend a complete disidentification “from the *entire* play of inner experience” (1990: 297, my italics). The developers of MBCT similarly take this teaching to imply that “*nothing whatever* is to be clung to as I, me, or mine” (Teasdale & Chaskalson, 2011a: 99; my italics).

Within mindfulness research, the underlying rationale for this view is that self-identification is a cause of suffering – i.e., “psychological distress” (Hölzel et al., 2011: 547) or “maladaptive processes” that include anxiety symptoms (Hadash et al., 2016: 858) – and that “disidentification results in less afflictive experience” (Hölzel et al., 2011: 547). This rationale is broadly justified in relation to early Buddhist teachings. For instance, the Buddha discussed suffering (*dukkha/duhkha*) in terms that range from bodily, physical pain to complex psychological states associated with attachment, aversion, and loss (e.g. sorrow, grief, fear, anxiety, MN10). He identified ignorance about no-self as a cause of suffering.⁷ Other forms of ignorance include that of the dependence of all existing things on causes and conditions (*paṭ iccasamuppāda/pratītyasamutpāda*) and of their impermanence (*anicca/anitya*, SN 56). In the Buddhist context, ignorance is not merely a lack of knowledge but a mistaken view that distorts or obscures the apprehension of reality. Being ignorant of no-self is thus to misperceive or falsely believe that there is a self. The Buddha identifies attaining the ‘right view’ as a crucial component of the Eightfold Path leading to the cessation of suffering. This involves dispelling the ignorance that is a cause of suffering. Since the mistaken view or false belief in a self is a cause of suffering, it

⁷ The Buddha also identified craving (*taṇhā/trṣṇā*) that conditions clinging (*upādāna*) as a root cause of suffering. I will revisit this point in Section 3.3.

would seem to follow that to achieve the cessation of suffering one must uproot or eliminate this mistaken view.

Describing ignorance about no-self as a mistaken view or false belief implies that the relevant sense of self is conceptual or cognitive. So understood, the Buddha's advice to refrain from identifying physical or psychological elements as 'I, me, or mine' can be interpreted as counsel against engaging in conceptual self-identification and thus narrative forms of SRP. Some Buddhist scholars and mindfulness researchers broaden the relevant sense of self to include subjective and agential SRP. B&L endorse this expansion, arguing that it accurately reflects the interpretive breadth of Buddhist no-self presented in the early Buddhist teachings (Lindahl & Britton, 2019). In support, they cite Steven Collins' (1982) claim that the "psychological realisation of *anattā*" is a gradual reduction and eventual "destruction" of "the conceit of 'I am'" from "all experience and action" (p.94). They reference Mahāsi Sayādaw's (2013) identification of four senses of self as problematic objects of attachment to be abandoned: an abiding self (believed to persist in the body), an executive self (responsible for governing and executing desires, thoughts, and intentions), an agential self (engaging in performing actions), and an experiencing self (that witnesses or is aware of what arises in experience) (pp.12–13). B&L also reference Andrew Olendzki (2006), who interprets the Buddha to have held that all senses of self are "erroneous, maladaptive, and a downright hazardous invention" that need to be eradicated in order to achieve the cessation of suffering (p.256). Some mindfulness researchers also interpret Buddhist no-self to encompass all SRP; subjective, agential, narrative. For instance, Hadash et al. (2016) take it to recommend a pervasive disidentification (what they call "selfless" processing) in which "there is no sense of the self as an immediate subject of experience, devoid of a sense of identification, ownership, agency, or self-referential evaluation of experience" (p.857). Moreover, they contend that this global and comprehensive disidentification is "an important mechanism underlying mental health" (p.857).

There is thus ample evidence that some mindfulness researchers do interpret Buddhist no-self to recommend reducing or attenuating all SRP when they propose it as the mechanism that drives the therapeutic outcomes of MBIs. It is also clear that some Buddhist scholars interpret the Buddhist teaching of no-self along these lines. B&L thus have a legitimate target for their critique.

3 The case against no-self as a mechanism of mindfulness

B&L empirically contest the Buddhist no-self hypothesis – that reducing or attenuating all SRP is the central mechanism by which MBIs produce their health benefits. In this section I will critically analyse this contention in terms of their four empirical arguments and will concede that their challenge is significant and credible. However, in the next section, I will argue that these arguments do not necessarily preclude modeling the mechanisms of mindfulness in terms of the Buddhist teaching of no-self. This is because, as I will demonstrate, the Buddha's teaching of no-self can be interpreted in ways that both evade this critique and align with findings that B&L themselves recognise.

3.1 There is no evidence that the benefits of MBIs are associated with reducing all SRP

Thousands of MBI random control trials (RCTs) and multiple meta-analyses testify to the health benefits of MBIs. However, Britton et al. (2021a) identify only 14 RCTs that assess any SRP as mediators of health benefits. While several RCTs provide evidence that decentering mediates some therapeutic outcomes, Britton, Desbordes et al. argue that it is unclear what exactly produces these effects. Moreover, none of these RCTs show that reducing *all* SRPs is a cause of MBI health benefits. Britton, Desbordes et al. conclude “there is currently no evidence that the benefits of MBIs come from a ‘more drastic disidentification’ from all phenomena one takes to be ‘me,’ or from ‘the entire play of inner experience.’” (p.7).

There are some limitations on these findings. MBI research is an emerging field and a current lack of evidence is not necessarily evidence of absence. Britton, Desbordes et al. recognize that their survey may not be exhaustive since there could be additional studies that assess SRP as secondary effects. They also admit to being constrained by the measurement tools used in existing research. Nevertheless, the current lack of evidence supporting the reduction of all SRP as a mechanism for mindfulness suggests that this hypothesis should be treated more speculatively than is typically the case.

3.2 There is evidence of an association between reduced SRP and psychopathology

B&L repeatedly insist that global reductions in SRP are associated with various forms of psychopathology and impaired functioning (Alejandro-Lara et al., 2022; Lindahl et al., 2017, Lindahl & Britton, 2019, Lindahl et al., 2020). They cite a large body of research that identifies a diminished sense of self as a component or risk factor for schizophrenia (Borda & Sass, 2015, Cermolacce et al., 2007, Sass, 2014, Sass & Parnas, 2003), dissociation (Lebois et al., 2019), depersonalization (Medford et al., 2016; Sierra & David, 2011), psychosis (Kuijpers et al., 2007), autism (Burrows et al., 2017), and dementia (Sorg et al., 2007). B&L take this literature to cast doubt on no-self as the driving mechanism behind positive MBI effects. While not decisive, I agree that this association provides further reason for mindfulness researchers to take a cautious approach to this hypothesis.

3.3 Changes in the sense of self are reported as meditation-related adverse effects

B&L are the lead researchers of the Varieties of Contemplative Experience (VCE) study of Western⁸ meditators and teachers who reported experiencing “adverse effects” of Buddhist meditation practices (Lindahl et al., 2017). B&L define “meditation-related adverse effects” (MRAE) as effects of meditation that subjects assess

⁸ The category of ‘Western’ is contested. In the VCE and subsequent MBI study, it encompasses participants that were predominantly white and from the United States.

as being “challenging, difficult, distressing, or functionally impairing” (p.1). There were several inclusion criteria for the VCE study. For example, participants were required to report experiences that result from one or more Buddhist forms of meditation (e.g., *śamatha*, *vipassanā*, *zazen*, *mettā*, *dzogchen*). Participants were excluded if they had prior psychological experiences similar to those reported in the study or a mental illness that could solely explain their experience (p.7), although some did report a prior traumatic history (43%) or psychiatric history (32%). There were also some limitations on the VCE study itself. For example, it did not directly explore the mechanisms by which Buddhist meditation practice contributes to MRAE. However, causal attributions of these effects to meditation were subject to a causality assessment criteria, which included temporal proximity (occurring during or immediately after meditation), consistency (occurring on more than one occasion), and exacerbation (increasing while meditating). To meet the minimal threshold for causal attribution, at least two criteria needed to be satisfied.⁹ The VCE study also did not directly investigate MRAEs within the context of standard MBIs. However, a subsequent study focused on Western participants in variants of an 8-week program of MBCT (Britton, 2021a, 2021b). Britton et al. (2021b). Unlike the VCE study, the ability to report an MRAE was not an inclusion criteria for the MBI study. Participants nevertheless reported side effects and MRAEs that replicated some of the VCE findings.

B&L have published several analyses of the VCE findings. I will here address those related to changes in sense of self. Lindahl et al. (2017) found that 75% of participants in the VCE study reported changes in their sense of self as the result of Buddhist meditation practice across the following six categories: (1) a change in narrative self, (2) loss of sense of ownership, (3) loss of sense of agency, (4) change in sense of embodiment, (5) change in self-other or self-world boundaries, and (6) loss of sense of basic self (p.16). This encompasses the spectrum of SRP under discussion; subjective, narrative, and agential. Among those who reported changes in sense of self, 55% reported associated distress and 45% reported associated impairment in functioning (p.175). Moreover, many participants reported changes in sense of self for more than one of these categories, with 65% reporting two or more changes, and 41% reporting three or more (p.176). B&L conducted a Pearson correlation analysis on these reports, and found that the total number of changes of self was the only significant predictor of distress or impairment, with other potential influencing factors – such as the form of practice, tradition, gender, retreat versus daily practice,¹⁰ or psychiatric and trauma history – showing no discernible relationship

⁹ Lindahl et al. (2017) recognise that this is a relatively weak measure; however, they justify its use by noting that similar causality criteria are employed by regulatory agencies when assessing adverse effects of medical procedures (p.28). Additionally, while they acknowledge that a RCT with multi-year follow-up would be the ideal study design to confirm causal attributions, they argue that such a study is currently not feasible.

¹⁰ The absence of a discernible difference between retreat-based meditation and daily practice is noteworthy, as it might be intuitively expected that longer periods of intensive practice would foster deeper engagement with Buddhist concepts and would thus yield different, or potentially more beneficial, outcomes than shorter-term, less intensive practice. At the same time, it is important to note that B&L’s study does not rule out the possibility that such differences could matter, given its lack of experimental controls and limitations in causal attributions.

(p.175). From this they infer that “the greater the number of dimensions of selfhood attenuated by meditation – that is, the more ‘global’ the change in sense of self – the more likely the experience was to be associated with impairments in functioning.” (p.177). Britton et al. (2021b) contend that the MBI study replicates these findings. While changes in sense of self were less frequent and less negatively evaluated in the MBI study, they were found to pose a slightly elevated risk of lasting bad effects. Britton, Lindahl et al. take these results to “parallel findings from the VCE study in which greater attenuation in senses of self, although not always unpleasant, were associated with greater impairment in functioning.” (p.1197). Although neither study directly investigates the mechanisms underlying these effects, the lack of consistent alignment between these effects and positive health outcomes suggests that mechanisms aimed at producing these effects are unlikely to invariably yield positive health outcomes.

There are limitations on these findings. B&L recognise that it cannot be generalised that all meditators will experience adverse effects of meditation. The VCE study is based on a non-representative sample. Participants were selected *because* they reported having had challenging meditation experiences and four participants were excluded from the study for failing to report any challenging experiences. The participant cohorts for both studies were also predominantly white, American, middle-aged, with high levels of educational attainment and practiced exclusively Buddhist forms of meditation. The findings may thus not generalise to other populations, such as Asian Buddhist meditators or those practicing non-Buddhist forms of meditation (Lindahl et al., 2017: 27; Lindahl et al., 2020: 16).

Importantly, the VCE study does not establish that changes in sense of self are necessarily experienced as MRAEs. The study documented 59 discrete meditation-related effects, categorised into 7 clusters: cognitive, perceptual, affective, somatic, conative, sense of self, and social effects. While it is notable that 75% reported changes in their sense of self, this was the least frequently reported cluster, with affective effects being the most common, reported by 100% of participants. Moreover, not all practitioners who reported a change in sense of self evaluated that change as challenging, distressing or functionally impairing. Indeed, for each of the 6 changes in sense of self that some participant reported as an MRAE, some other participant in the VCE study evaluated the same or similar experiences positively or as insignificant effects of their meditative practice (Lindahl & Britton, 2019: 175). In the MBI study, changes in the sense of self were also unlikely to be appraised negatively (Britton et al. 2021b: 1197). Affective effects follow a similar pattern: while 82% of participants reported affective states as effects of meditation, 75% reported positive affective experiences.

The fact that subjects provided contrasting evaluations of changes in sense of self does not necessarily imply that these changes contribute to health and well-being for some subjects but not for others. In the VCE study, positive appraisals of reduced senses of self were frequently made using Buddhist normative constructs, such as “signs of progress” or “part of the path” (Lindahl & Britton, 2019). This suggests that positive appraisals of these changes may not correlate with positive health outcomes; instead, they might simply reflect alternative interpretations of the same or similar outcomes through the lens of Buddhist doctrine. Additionally, in the VCE

study, teachers in distinct Buddhist traditions had different normative perspectives on, and used distinct, tradition-specific terms to interpret, various meditation-related challenges (Lindahl et al., 2020). This creates a challenge for differentially diagnosing signs of progress in Buddhist practice from mental disorders or psychopathology. It also adds reason to B&L's view that Buddhism and science are distinct explanatory frameworks.

However, two key points should be noted. First, participants in the MBI study did not rely on Buddhist constructs when positively appraising changes in their sense of self, and no participant in that study evaluated these changes negatively. Therefore, it does not necessarily follow that all positive appraisals of such changes result from interpreting them through the lens of Buddhist doctrine. Second, a subject's report of an MRAE does not necessarily indicate a negative health outcome in the sense of distress or impaired functioning. An MRAE is defined as an effect of meditation that is 'challenging, difficult, distressing, or functionally impairing'. An outcome that is difficult or challenging does not necessarily indicate poor health. Nevertheless, B&L's finding of a correlation between higher numbers of SRP changes and increased functional impairment does cast doubt on whether mechanisms aimed at removing *all* SRP will invariably or reliably cause positive health outcomes.

3.4 There is evidence that the benefits of MBIs are mediated by changes in the valence of narrative SRP but not reducing all SRP

B&L acknowledge that there is evidence that *some* changes in SRP can mediate the health benefits of MBIs, but argue that there is no evidence that they are mediated by reducing all SRP. According to Britton et al. (2021a), the strongest evidence of an SRP-based mechanism for MBIs relates to change in rumination. Rumination refers to repetitive and persistent negative thinking centered on oneself (Beck et al., 1979; Watkins & Roberts, 2020). There is robust evidence that rumination plays a significant role in both the development and maintenance of depression and anxiety (Ehring & Watkins, 2008; Just & Alloy, 1997; Nolen-Hoeksema, 2000). Multiple meta-analyses of RCTs show that decreased rumination is an associated effect of MBIs that consistently leads to improved mental health outcomes (Gu et al., 2015; van der Velden et al., 2015).

Some researchers analyze the decrease in rumination induced by MBIs as a decrease in SRP. This view is supported by extensive research demonstrating a correlation between elevated depressive symptoms and excessive self-focus (Brockmeyer et al., 2015; Lemogne et al., 2009). Excessive self-focus is a tendency to interpret stimuli as strongly related to oneself (Northoff et al., 2006). One measure of excessive self-focus involves assessing frequency in first-person singular pronoun use and recall. Meta-analytic reviews demonstrate a positive association of increased frequency in the use and recall of terms such as 'I' and 'me' and depression symptoms (Tackman et al., 2019). There is also neural evidence that depressed people have increased activation in brain areas that have been associated with SRP (Sheline et al., 2009), and some evidence that mindfulness might modulate these same neural regions (Lin et al., 2018). These findings have been taken to support

the hypothesis that MBIs improve depression symptoms by modulating ‘SRP neural systems’ (p.181).¹¹ Taken together, this research might seem to support the Buddhist no-self hypothesis that reducing all SRP is a viable mechanism for MBI effects on depression. However, the support is limited. Rumination and excessive self-focus are cognitive, narrative forms of SRP, and the Buddhist no-self hypothesis is defined as reduction in *all* SRP. Evidence that reducing cognitive forms of SRP reduces depression symptoms is not evidence that reducing all SRP has the same effect.

Alejandre-Lara et al. (2022), which includes B&L among its authors, raise a further challenge to the Buddhist no-self hypothesis. According to cognitive theories, depressed patients exhibit two kinds of biases (Clark & Beck, 1999). First, they preferentially attend to and recall negative information while showing diminished attention to and recall of positive information. Second, they excessively self-focus or interpret information as strongly related to themselves. Alejandre-Lara et al. call the former “valence-bias” and the latter “self-bias” and note that both biases are operative in rumination. Rumination studies usually do not differentiate or control for these distinct biases. This opens the possibility that either a change in valence-bias, self-bias, or a change in both (valenced self-bias) mediates MBI benefits for depression. But which one?

Cognitive behavioural therapies treat negative self-conception (or negatively valenced self-bias) as the central feature of depression, and view a shift towards more realistically positive self-conceptions and a healthily robust self-esteem as a primary therapeutic objective (Hofmann et al., 2013).¹² Alejandre-Lara et al. present the Buddhist no-self hypothesis as modelling processes that aim exclusively at reducing self-bias, without directly challenging or changing the evaluative content of self-conceptions. Indeed, they argue that it explicitly *opposes* altering the valence-bias of self-conceptions. They attribute this stance to the influence of Buddhist philosophy, which, in their view, advocates for “impartiality regarding positive or negative valence-bias” because “seeking positive experiences (craving, attachment) or trying to decrease or avoid negative ones (aversion) is viewed as a primary source of suffering.” (p.669). Despite their seemingly different approaches to rumination, MBIs and CBT demonstrate similar efficacy in treating depression. This might appear to validate the Buddhist no-self hypothesis regarding MBI efficacy as equally effective compared to cognitive treatment models. However, Alejandre-Lara et al. propose that current methodologies for measuring rumination obscure the underlying mechanisms by failing to distinguish the self-bias and valence-self-bias that are distinct targets of these models.

To try to determine which change in bias mediates the positive MBI effects on depression, Alejandre-Lara et al. conducted a study involving individuals with mild to severe levels of depression who they recruited to participate in variants of an

¹¹ While I reference these inferences from neural activation, they warrant caution as multiple distinct processes can activate the same brain region. See Pessoa (2022)

¹² The “realistic” and “healthily robust” moderators are important, as many studies show that an *unhealthy* self-esteem, based on comparisons to others or self-aggrandizement, is unstable and can have converse health effects. (Baumeister et al., 2003; Brummelman, 2018; Swann et al., 2007).

8-week course of MBCT, which combines MBSR with elements of cognitive therapy. Depression symptoms were assessed at baseline, 8-weeks, and 20-week follow-up after the course, and were shown to decrease across this duration. Before and after the course, participants were asked to complete a memory recall self-reference task. It consisted of showing and subsequently asking participants to recall positively or negatively valenced adjectives, some of which were prompted by the word “self” along with the question “Does this word describe you?” Self-bias, valence-bias, and valenced self-bias were measured by the fraction of word-type recalled relative to the total words recalled.

The study found that all participants displayed self-bias in recall, which Alejandro-Lara et al. claims corresponds with the well-documented “self-reference effect” in memory (Symons & Johnson, 1997). However, they found no correlation between a decrease in self-bias and improved depression symptoms. This points to a limitation of the study. Alejandro-Lara et al. hypothesise that, on the Buddhist no-self hypothesis, MBIs attribute therapeutic effects to decreased self-bias. However, given their own admission that memory is self-biased, their memory recall self-reference task seems to bias the results against the Buddhist no-self hypothesis. Nevertheless, they found a positive association between these improvements and changes in valence-bias and increased positive-self-bias. They conclude that this challenges the Buddhist no-self hypothesis of MBI efficacy by alternatively suggesting that MBCT “decrease depression symptoms through changes in valence and valenced self rather than through a generalised reduction in self-referential processing.” (p.670). This conclusion is consistent with Britton et al. (2021a) who found that the strongest evidence for SRP-based mechanisms of MBIs involves “increases in certain conceptual SRPs and decreases in others” (p.14). They also argue that the strongest evidence in support of decentring “comes from disidentifying from negative self-evaluative thoughts, similar to cognitive therapy.” (p.14).

3.5 Conclusion

The four empirical arguments presented above are derived from a range of articles in which Britton and Lindahl are either lead or contributing authors. However, several key conclusions are reiterated and developed across multiple articles. B&L maintain that “current evidence does not support the theoretical claim that mindfulness training produces its salutary effects through a global and comprehensive attenuation of all forms of selfhood.” (Britton et al., 2021a: 14). Instead, it shows that mindfulness-based wellbeing is better explained by positive shifts in self-concepts rather “than Buddhist-derived ego-quieting or multi-level SRP reduction.” (Alejandro-Lara et al., 2022: 13).

While B&L’s empirical findings are limited and defeasible, I agree that they pose a significant challenge to the Buddhist no-self hypothesis. I support their call for a more cautious approach to this hypothesis. However, B&L go further, taking their findings to show that modelling or developing the mechanisms of mindfulness in terms of the Buddhist teaching of no-self is misguided, a view they reinforce by the repeated claim that such an approach imposes a religious worldview that is

fundamentally distinct from modern science. In what follows I will challenge this conclusion by showing how alternative interpretations of Buddhist no-self can avoid B&L's empirical critique.

4 Two alternative Buddhist interpretations of no-self

B&L's empirical arguments rest on a specific interpretation of Buddhist no-self. In this section I will introduce two alternative interpretations that evade their conclusions. The first is Ṭhānissaro Bhikkhu's *No Self Theory*, which draws on early Buddhist teachings in the Nikāya Suttas of Pāli canon. The second is Mark Siderits *Buddhist Reductionism*, which is based in the later scholastic traditions of Abhidharma and Madhyamaka Buddhism and draws on the Buddhist doctrine of Two Truths. My intention is not to argue that either interpretation of no-self is superior or more accurate than the one B&L critique. In fact, as will become evident, Ṭhānissaro Bhikkhu's interpretation overlaps with key aspects of B&L's own view. I focus on these two because they provide pragmatic reasons to admit the use of self-concepts on the path to achieving the goals of Buddhist practice. I address them both because they draw on different Buddhist texts to arrive at similar conclusions, which suggests that this is not an isolated finding. I will later extend their arguments to show that, on the same pragmatic grounds that permit the use of self-concepts, they can also justify valenced change in self-concepts. However, I will first demonstrate that their pragmatic approach broadly aligns with the Buddha's use of pragmatic reasoning to encourage belief adoption and revision among non-monastic individuals, which lends authority to the overall strategy.

4.1 The Buddha's pragmatic reasoning to non-monastic individuals

Several suttas in the Pāli canon recount the Buddha visiting villages of "householders" – laypeople living ordinary non-monastic lives – who sought his guidance in negotiating the conflicting views of wandering ascetics who offered different perspectives on the nature of reality and how one ought to live (e.g., MN 60, AN 65.5). Although, in principle, it was assumed possible for these villagers to gain such knowledge themselves, they sought the Buddha's advice because their household lives limited their ability to engage in the intensive practices required to attain it. In the *Apaṇṇaka Sutta*, the Buddha offered an "incontrovertible teaching" (MN 60.4) to some villagers regarding the doctrines of karma and rebirth. He advised that they would be better off accepting the view that karma and rebirth exist "whether or not the word of those good recluses and brahmans is true" (MN 60.9). He reasons that if it turns out to be false, they would still benefit from positive social outcomes from regulating their conduct as though the doctrine were true – i.e., being "here and now praised by the wise as a virtuous person" (MN 60.12). If karma and rebirth turn out to be true, however, they will have "made a lucky throw on two counts" (MN 60.12) because they will gain both good social and karmic outcomes. The Buddha argues that regardless of the actual truth of the doctrine of karma and rebirth, accepting and

living one's life in accordance with this view "will lead to your welfare and happiness for a long time" (MN 60.4). This is a pragmatic argument, endorsing the adoption of a view based on its practical benefit to the believer rather than its truth.¹³

4.2 Ṭhānissaro on the Buddha's strategy of self and no-self

Ṭhānissaro Bhikkhu (2011) provides a pragmatic interpretation of Buddhist no-self that is informed by his observation that, in several suttas, the Buddha refuses to answer direct questions raised by wandering ascetics about self or no-self. When later queried about this by his disciples, the Buddha explains that to answer "is not beneficial" to such a questioner because it would "cause them even more confusion" and would "not lead to the cessation [of suffering]... to enlightenment, to *nibbāna*." (MN 68).

Ṭhānissaro takes the Buddha's stance in these suttas to reveal a "strategic" (p.8) approach to his teaching that is pragmatically aimed at helping its recipients achieve the cessation of suffering, motivated by his great compassion (p.7). Ṭhānissaro does not deny that the Buddha analyses personal identity into five aggregates – the five complex classes of psychophysical elements mentioned earlier – or that the Buddha says that we should not regard these elements as I, me, or myself. However, he interprets the Buddha's point as follows:

First, he takes the Buddha to hold that "perceptions of self" (p.49) – i.e., self-concepts and narrative forms of SRP – are constructions. They are instances of what the Buddha describes as "I-making" (*ahaṅkāra/ahaṅkāra*) (p.9) that are actively and purposively constructed out of the dynamically changing complex of psychophysical elements identified by the Buddha. Ṭhānissaro elaborates that we construct many, often competing, self-concepts from different constellations of elements in different contexts given the fact that we inhabit different social roles and strategically distinguish ourselves from others in a variety of ways in order to satisfy our various needs and desires (p.10).

Ṭhānissaro also emphasises that the Buddha distinguishes skillful (*kusala/kuśala*) and unskillful (*akusala/akuśala*) actions based on their causal relations to "long term happiness" or "long term suffering" respectively (p.8). He infers that self-concepts, as constructive acts of I-making, can be evaluated as skillful and unskillful on the same grounds. He diagnoses *unskillful* self-concepts to involve clinging or attachment (*upādāna*). According to this interpretation, when the Buddha instructs his disciples not to regard the psychophysical elements as oneself, he is not prescribing an immediate cessation of all acts of self-conception. Rather, he is emphasizing that we should not regard our self-concepts as stable and fixed reflections of our true, unchanging nature; i.e., 'This is who I really, essentially am'. To do so leads to suffering. Why does he think this? Because the psychophysical elements from which our self-concepts are constructed are impermanent and *cannot* constitute a stable and unchanging nature.

¹³ See Finnigan (2024) for an analysis of this argument using the tools of modern decision-theory and in comparative dialogue with scholarship on Pascal's Wager.

This interpretation of the Buddha's teaching of no-self admits the possibility of *skillful* self-concepts; i.e., skillful acts of self-construction. This is important since the Buddha not only used self-referential concepts and language, he also advised his disciples to adopt certain attitudes towards their selves. For instance, in the *Dhammapada* the Buddha recommends "you yourself should reprove yourself, should examine yourself. As a self-guarded monk with guarded self, mindful you dwell at ease." (Dhp. 379). These features of the Buddha's teachings would be puzzling if the Buddha recommended refraining from all self-conception. Ṭhānissaro argues that the Buddha's recommendation for the skillful use of self-concepts is pragmatically justified, as it motivates intention-formation and responsible ethical actions that result in long-term happiness and reduced suffering (p.51).

Thus, on Ṭhānissaro's interpretation of Buddhist no-self, "a sense of self is an important part of [Buddhist] practice" (p.21). While Ṭhānissaro does think that self-concepts are eventually relinquished on the pathway to achieving broader Buddhist soteriological goals, a point to which I will return, he emphasizes that maintaining skillful self-concepts and revising unskillful ones are important strategies along the way. Moreover, he justifies their use on broadly pragmatic grounds, in relation to their causal role in increasing happiness and reducing suffering.

4.3 A Buddhist Two Truth analysis of Buddhist no-self

Mark Siderits (2003, 2005, 2007, 2013) takes a more complicated route to a similar conclusion that draws on the Buddhist Two Truth distinction between ultimate and conventional truth. While there is much to unpack in Siderits account, I will restrict myself to sketching its key steps to the conclusion that the conventional use of self-concepts is pragmatically justified in causal relation to increased happiness and reduced suffering.

Unlike Ṭhānissaro, Siderits takes the Buddha to be positively committed to the idea that there is no self. Like many Buddhist scholars, he takes the relevant sense of 'self' (*attā/ātman*) to be a permanent, unchanging substance that owns and controls the arising of psychophysical elements and secures diachronic personal identity despite changes in these elements over a lifetime (and lifetimes).¹⁴ Given this interpretation of self, the Buddha's commitment to no-self follows straightforwardly from his claim that all things are impermanent and depend on causes and conditions. It also provides a rationale for why the Buddha advises not to treat the psychophysical elements as oneself. For instance, in the *Anattalakkhaṇa Sutta*, the Buddha rhetorically asks:

¹⁴ Some evidence that this conception of self is a target of the Buddha's discourses can be found in the *Alagaddūpana Sutta* where the Buddha rejects the view that "after death I shall be permanent, everlasting, eternal, not subject to change, I shall endure until eternity" (MN 22.15). Some recent Buddhist scholars consider the explicit target of this view to be the Upaniṣadic concept of self (see Collins, 1982). While the Upaniṣadic self does share many of the features of this targeted view, and does become a target of later Indian Buddhist scholarship, there is some debate about whether this is precisely what the Buddha had in mind at the time of his discourses.

“Now is what is impermanent, what is painful since subject to change, fit to be regarded thus: ‘This is mine, this is I, this is my self’?” — “No, venerable sir.” (SN 22.59)

For Siderits, this denial reflects an acknowledgement of inconsistency: a self is permanent, the psychophysical elements are impermanent, so it is inconsistent to regard these elements as oneself. On the assumption that these elements exhaust the possible referents for a self, it follows that there is no self. Thānissaro emphasizes a different aspect of the Buddha’s teaching of impermanence: ‘what is impermanent is painful [*if you cling to it*], since subject to change’. For Siderits, clinging to the elements is problematic insofar as it involves conceiving of them as a self; i.e., an unchanging entity persisting across a lifetime. Nevertheless, on both accounts, it follows from the impermanence of these elements that identifying with them as a self or clinging to them as our unchanging true nature ultimately leads to suffering.

Unlike Thānissaro, Siderits interprets the Buddha’s teaching of no-self as a specific instance of a broader reductionism whereby composite entities – wholes, aggregations, or groups – are analysed into their basic constituents. He identifies this approach with Abhidharma Buddhism and illustrates it with the analogy of a chariot, as described in the *Milindapañha*. According to this analogy, chariots do not exist independently of their parts but “[j]ust as when the parts are rightly set the word ‘chariot’ is spoken. So when there are the [aggregates] it is the convention to say ‘being’” (Miln. p.38). On Siderits Two Truths analysis, the psychophysical elements into which the Buddha analyses personal identity are ultimately real, but selves and persons are not. Nevertheless, like chariots, persons can be said to exist in a conventional sense and thus, for Siderits, can count as conventionally real but ultimately unreal.¹⁵

What justifies our conventional belief in the existence of selves or persons despite their ultimate unreality? Siderits provides pragmatic reasons that appeal to considerations of utility. He initially argues that the concept of a person or self serves as a heuristic that “eases communication” (2005: 99) and “lightens our cognitive load” (2013: 5) by temporally aggregating a complex causal series of psychophysical elements as a singular whole. However, according to Siderits, for beliefs involving selves and persons to be justified as conventionally *true*, they must be useful in the sense of producing actual causal effects measurable at the level of ultimate reality. For Siderits, the relevant causal effects are “maximizing happiness or well-being, impersonally construed, and reducing pain and suffering” (2003: 37, 58; 2005: 105, 113). Siderits argues that the concepts of selves or persons “may well be the most

¹⁵ There is ongoing dispute about whether the fact that words like ‘chariot’ and ‘persons’ function as conventional designations is enough to grant the designated group the status of conventional *reality*. The issue is part of a broader discussion on whether conventional designation should be viewed as pragmatic instrumentalism—a mere heuristic without ontological significance – or a form of reductionism, which maintains the ontological status of both the reduced and reducing levels of analysis. There is some ambiguity in Siderits writing about which approach he endorses insofar as he both describes persons as “useful fictions” and “mere heuristics” – terms central to pragmatic instrumentalism – and insists on a reductive basis to justify the usefulness of these heuristics or fictions, warranting the label of Buddhist Reductionism. See Chadha & Nichols (2023) and Ganeri (2023) for competing criticisms based on opposing interpretations of Siderits view.

effective strategy for minimising overall suffering” (2005: 113) we currently have for achieving this outcome, albeit one that is “dispensable in principle” (p.113). This is because these concepts relate present psychophysical elements and future causal effects as events that will happen ‘to me’. When embedded in beliefs, deliberation and counterfactual reasoning (psychological elements of ultimate reality according to the Buddha’s five aggregate analysis) these concepts can give rise to intentions and actions (also ultimately real elements) that actually prevent future pain and produce happiness (2005: 106). Thus, while selves or persons are not ultimately real, Siderits’ Two Truth theory admits the pragmatic justification of beliefs involving self-concepts and person-concepts as conventionally true, based on their causal contribution to increasing happiness and reducing suffering.

5 Buddhist justified change in valence of self-concepts

Ṭhānissaro Bhikkhu and Mark Siderits draw on early Buddhist texts and later Abhidharma philosophy, respectively, to pragmatically justify the use of self-concepts as skillful or conventionally appropriate, given their role in increasing happiness and well-being and reducing pain and suffering. While neither directly discuss valenced change in self-concepts, such change can be justified on the same pragmatic grounds. That is, if cultivating positively valenced self-concepts yields health benefits measurable in terms of reduced suffering and enhanced well-being, then a shift from negative to positive self-conception can be pragmatically justified as skillful or conventionally acceptable within both frameworks. Indeed, Ṭhānissaro explicitly affirms the skillfulness of constructing a “healthy sense of self” (2011: 25) “self-worth” (p.25) and “a high sense of self-esteem” (p.26).

B&L acknowledge that shifting from negative to positively valenced self-concepts is a fundamental mechanism for improving health outcomes through MBIs. As Britton et al. (2021a) claim, “the strongest evidence for SRP-based mechanisms of MBIs’ beneficial effects comes from increasing positively valenced and/or decreasing negatively valenced conceptual senses of self.” (p.13). However, Alejandro-Lara et al. (2022) argue “to the extent that MBIs rely on Buddhist philosophy and practices to inform mechanisms, MBIs are hypothesized to exert their beneficial effects by reducing self-bias, without shifting valence bias from negative to positive.” (p.669). It is now clear that this conclusion need not follow from the Buddhist teaching of no-self. The interpretations of no-self advanced by Ṭhānissaro and Siderits can pragmatically justify shifting valence bias in self-concepts from negative and positive as a strategy for increasing happiness wellbeing and reducing suffering. As such, they suggest a way in which the Buddhist teaching of no-self can align with B&L’s empirical findings and thereby a potential avenue for interdisciplinary dialogue.

6 Limitations and responses

The argument presented here has some limitations. In this section, I will further develop my account in response to three issues.

6.1 Justification is not a mechanism for producing valenced change in self-concepts

I have argued that valenced changes in self-concepts can be justified in terms that are consistent with acceptance of the Buddha's teaching of no-self. However, this argument does not describe a process or mechanism for achieving such changes. If it did, then improvement in mental health would seemingly require no therapeutic intervention at all beyond the simple recognition that positive self-concepts lead to more happiness and wellbeing than negative ones. To credibly claim that Thānissaro and Siderits interpretations of Buddhist no-self can align with B&L's finding that valenced change in self-concepts is a viable SRP-based mechanism for MBI efficacy, I must provide at least some suggestion about how they might be integrated into such mechanisms to produce these effects.

I propose that these interpretations can make cognitive contributions to modified forms of MBCT; i.e., programs that combine mindfulness based stress reduction with elements of cognitive therapy. Although it is beyond the scope of this argument to provide a comprehensive explanation, I have two suggestions.

6.1.1 Understanding that our self-concepts are constructions might facilitate self-concept revision.

It is well-recognised in behavioural cognitive therapy that revising self-concepts is a challenging process because self-concepts are often deeply engrained, rigid, and resistant to change. Thānissaro attributes this difficulty to clinging or attachment to self-concepts, which involves treating them as accurate and stable reflections of our true selves.¹⁶ The process of belief-revision might be facilitated by recognizing that (a) our self-concepts do not accurately represent or describe our true selves, and (b) these self-concepts are merely constructions – context-sensitive, driven by changeable desires, and based on causal systems of psychophysical elements that are impermanent and subject to change.¹⁷

It might be objected that Thānissaro's insight provides insufficient motivation for a cognitive shift from a negative to positive self-concept. Self-concepts are multifaceted constructs. They integrate beliefs, appraisals, and expectations about one's attributes, limitations, aspirations, as well as perceived agency over motivation, behaviour and environment, among other dimensions. One relevant dimension is self-appraisal linked to beliefs and expectations about one's ability to prevent unwanted outcomes, such as rejection or social criticism. It could be argued that an individual may accept that their self is a constructed concept yet still have good reasons to maintain a negative self-appraisal regarding their ability to prevent such outcomes – that is, if it aligns more closely with their lived psychological experiences, behavioural patterns, and external

¹⁶ For comparable Buddhist analyses, see Albahari 2006, Anālayo, 2010, 2011; Harvey, 1995; Sayadaw, 2016.

¹⁷ See Gallagher et al. (2024) and Berkovich-Ohana et al. (2024) for recent interdisciplinary analyses of how combined pattern theory and Buddhist psychology might help address rigidity in self-concepts.

feedback as compared to a positive self-appraisal. However, Siderits has some insights that might address this objection.

6.1.2 Recognising that self-concepts causally influence future trajectories might facilitate self-concept revision when corroborating evidence is limited.

As highlighted by B&L's work, research shows that negative self-concepts contribute to maintaining mental health disorders. Cognitive models suggest that they do this by generating a self-reinforcing feedback loop of negative thinking and behaviour (Disner et al., 2011). In the example of negatively self-appraising one's ability to prevent unwanted outcomes, this feedback loop can be conceived as a process in which decision-making is guided by pessimistic expectations, which lead to suboptimal choices that produce adverse results that, in turn, reinforce the initial beliefs and expectations.

If negative self-concepts are taken merely as descriptions of observed psychological and behavioural patterns, it might seem that there is no viable way out of this self-reinforcing loop. However, as Siderits work emphasises, conventional beliefs embedded in deliberative practices – such as the belief that 'I am a persisting self' – can produce positive causal effects even if those beliefs are not ultimately true.¹⁸ I propose an extension of this insight: cultivating a realistically *positive* self-concept – even if its expectations initially diverge from current evidence – might nonetheless shape intentions and actions in ways that generate positive outcomes that may, in time, bring one's psychological reality in closer alignment with the expectations embedded in the positive self-concept. What I have in mind can be understood as a kind of *conceptual bootstrapping*. That is, even if immediate feedback does not validate a shift in valence – even if our attitudes and behaviour do not immediately yield outcomes consistent with a more optimistic self-conception – there remains good reason to persist in its cultivation since a positive self-conception correlates with improved health outcomes and so its benefits are likely to emerge over time. There are likely several processes by which these benefits are achieved. For instance, revised expectations might prompt different actions and outcomes, or cause individuals to focus on positive rather than negative effects, which, in turn, might gradually stabilise and reinforce the revised self-concept. There are also likely to be important variations in how negative self-concepts maintain different mental disorders, and thus the effectiveness of conceptually bootstrapped positive self-concepts may differ across disorders. Certain dimensions of self-evaluation may be more amenable to reframing than others in the face of countervailing evidence than others. This strategy would also likely require the integration of complementary therapeutic techniques – such as cultivating self-compassion (Neff, 2003a, 2003b) – to be effective. Nevertheless, this

¹⁸ In Siderits account, the belief in a persisting self (what he calls the 'personhood convention') motivates us to project our present aversion to suffering into the future, prompting efforts to prevent what we perceive as 'our own' future suffering. This, in turn, supports decision-making based on counterfactual expectancies about the likely consequences of our actions – an approach which, according to Siderits, can reduce more suffering overall than would be achieved without the extension of self-concern facilitated by the personhood convention.

preliminary sketch provides reason to believe that cultivating a realistically positive self-concept, even in the presence of competing beliefs and initially countervailing evidence, can make a meaningful contribution to modified forms of MBCT, particularly when grounded in the understanding that self-concepts are constructed rather than fixed descriptions of an unchanging, true nature.

6.2 Ṭhānissaro's overall position seems to align with the Buddhist no-self hypothesis

Both Ṭhānissaro and Siderits pragmatically justify the use of self-concepts based on their causal role in increasing happiness or well-being and reducing or minimising pain and suffering. As I have shown, this approach aligns with the Buddha's pragmatic strategy when engaging non-monastic audiences, encouraging the adoption of views based on their practical utility, as measured by outcomes that are accessible to those individuals. To the extent that the subjects of MBIs and other studied meditation practices are ordinary, unenlightened individuals, this strategy is appropriate. Moreover, to the extent that the relevant outcomes outlined in Ṭhānissaro and Siderits interpretations broadly correspond with health and wellbeing, there is sufficient common ground between Buddhism and science to meaningfully explore the plausibility of their proposed cognitive strategies for mental health regulation.

However, it could be objected that I have presented only a partial account of Ṭhānissaro's position, and that a more complete presentation reveals a closer alignment with the view targeted by B&L.¹⁹ While Ṭhānissaro does pragmatically justify the use of skillful self-concepts on the path to *nibbāna*, he maintains that we must ultimately "let go of every possible sense of self" (p.21) upon attaining that goal. His rationale seems to be that self-concepts are skillful or strategic only insofar as they serve a purpose, and cease to be so once that purpose is achieved. "Only at the end of the path, when you no longer need these forms of motivation, can you let go of every possible sense of self." (p.21) The culmination of the path is the achievement of *nibbāna*. Significantly, Ṭhānissaro also identifies *nibbāna* with "true happiness" (p.27). If by "true happiness" Ṭhānissaro means psychological health and subjective wellbeing, he might seem committed to the view that this is ultimately achieved by reducing all SRP. If so, it might seem that rather than providing an alternative interpretation of Buddhist no-self to the one targeted by B&L, Ṭhānissaro's final position might, in fact, be a variant of it.

One might try to block this objection by arguing that *nibbāna*, for Ṭhānissaro, is a transcendent state that is not equivalent to health and wellbeing. He describes it, for example, as "transcendent happiness" that is "totally unconditioned" and involves a "special kind of consciousness" (p.54). If reducing all SRP is required to achieve such a transcendent state, it does not follow that it is required to achieve the proximate goals of health and wellbeing. However, there is good reason to think that Ṭhānissaro does, in fact, intend *nibbāna* to encompass psychological health and subjective wellbeing.

¹⁹ Many thanks to Miri Albahari and an anonymous reviewer for pressing me on this point.

Nevertheless Ṭhānissaro clearly conceives of *nibbāna* as more than clinically defined health and wellbeing. He portrays it as a state of complete enlightenment, attainable by following the Buddha's Eightfold Path and marked by the cultivation of compassion, generosity, virtue and good will (p.30). Such a state is not achieved by participants in MBI programs. It is thus implausible to suppose it reveals a commitment to the Buddhist no-self hypothesis, since it is not reasonable to suppose he is describing the mechanisms underlying MBI efficacy. Moreover, while it is, in principle, possible to scientifically investigate the attainment of Ṭhānissaro's 'true happiness', the appropriate subject of such an inquiry would be an enlightened individual rather than the kind of ordinary, unenlightened meditation practitioners who are the typical subjects of contemplative science.²⁰ One implication of this is that B&L's empirical finding that some unenlightened people experience impairment or distress in response to changes in the sense of self does not, in itself, refute the possibility that 'true happiness' involves a diminished sense of self. It does, however, highlight the significant practical challenges involved in scientifically verifying the link between true happiness and clinically defined health and wellbeing, given the difficulty in finding a proper subject.

Still, it could be argued that Ṭhānissaro's view implies that *some* form of de-identification is integral to achieving health and wellbeing, insofar as these are encompassed—though not exhausted—by his definition of *nibbāna* and he construes *nibbāna* as a selfless state. While this is plausible, it does not imply any specific mechanism. It could be interpreted to involve the progressive removal of all SRP, but it could alternatively be understood as a gradual detachment from any fixed self-concept taken to represent one's true nature. On the latter reading, self-concepts can be flexibly used and revised in light of a deepened insight of their constructed and contingent nature, and justified in relation to decreased suffering and enhanced wellbeing, even if ultimately relinquished once enlightenment is achieved. Whether or not this reflects Ṭhānissaro's final view, there is good reason to think that his framework can pragmatically justify such an approach as skillful for ordinary practitioners, measured in relation to clinically defined health and wellbeing "at the mundane level" (p.43), even if it ultimately falls short of *nibbāna*.

6.3 Ṭhānissaro and Siderits do not exhaust the relevant range of alternative interpretations of Buddhist no-self

I have presented two alternative interpretations of Buddhist no-self to that targeted by B&L's empirical arguments to demonstrate that no-self need not be understood as recommending the removal of all SRP in the context of MBIs. It can be alternatively understood to admit valenced change in self-concepts as useful strategies for alleviating suffering and improving wellbeing. While I have suggested ways to incorporate Ṭhānissaro and Siderits cognitive insights into modified forms of MBCT, several existing Buddhist meditation practices already acknowledge a positive role for self-concepts and narrative SRP. These include practices of self-compassion (Anālayo

²⁰ I owe this point to an anonymous reviewer.

& Dhammadinnā, 2021; Neff, 2003a, 2003b) and loving-kindness or *mettā* meditation (Gethin, 1998: 187; Bodhi, 1995: 1181; Salzberg, 1995). There is growing evidence that these meditation practices have positive health effects. For instance, a meta-analysis has found that *mettā* meditation not only reduces depression but also enhances psychological well-being (Galante et al., 2014). However, the philosophical justifications for these practices often rely on interpretations of no-self that are distinct from those discussed in this article. Rather than indicating a limitation of the current argument, this reinforces its central claim that B&L's empirical findings against one hypothesis of Buddhist no-self as a mechanism of mindfulness do not necessarily generalise against all interpretations.

Consider *mettā* meditation, which is a structured practice in which participants direct wishes for well-being, initially to oneself and then gradually to include loved ones, acquaintances, and those considered challenging. The aim is to cultivate loving-kindness towards oneself and others (Salzberg, 1995). A gradual understanding of the “interdependence” of self and other is often taken to be integral to this practice. As Susan Salzberg writes: “The path begins with cultivating appreciation of our oneness with others... [and as we continue to meditate we] become deeply aware of the suffering caused by separation and of the happiness of knowing our connection with all beings.” (1995: 6). The concept of interdependence is derived from the Buddha's teaching of dependent arising (*paṭiccasamuppādalpratītyasamutpāda*). In early Indian Buddhism, dependent arising is understood as the idea that all existing things depend on causes and conditions. This is the interpretation assumed by Ṭhānissaro and Siderits in their interpretation of no-self. However, in Chan, Zen, and Thiền Buddhism it takes on a broader meaning, emphasising that all existing things are dependent *on all existing things* for their existence. The Vietnamese Thiền master Thich Nhat Hanh coined the term “interbeing” to capture this idea of the interdependence of all things (1988: 3–4). In this context, no-self is the idea that there are no separate and distinct selves but a web of interconnected living beings. It is taken to imply an expanded and more inclusive sense of self that transcends individual boundaries (Halifax, 1990; McMahan, 2009; Salzberg, 1995). Recent analyses of *mettā* meditation suggest that a positively valenced *interconnected* sense of self (or “self-other integration”) might mediate its positive effects (Colzato et al., 2012; Frick et al., 2020; Galante et al., 2014). While further research is needed to substantiate this hypothesis, it nevertheless reinforces the point that Buddhist no-self has more to offer mindfulness research than simply the removal of all SRP.

7 Conclusion

B&L's expanding body of research presents a substantial evidence-based critique of the influence of Buddhism on mindfulness research and of the Buddha's teaching of no-self conceived as a mechanism for MBI efficacy. Their work stands as a valuable contribution to contemplative science, which draws heavily from Buddhist philosophy to formulate hypotheses about the causal mechanisms of mindfulness. B&L's critique is centred on an interpretation of no-self as recommending the reduction

or attenuation of all SRP. I called this the Buddhist no-self hypothesis and showed that B&L not only have a legitimate target for their critique, but that their empirical arguments against it are significant and credible. Mindfulness researchers should heed their findings and adopt a more cautious approach to this hypothesis, while also remaining open to alternatives that may have more empirical support.

I have nevertheless shown that B&Ls empirical arguments do not establish that modelling or developing the mechanisms of mindfulness in light of the Buddha's teaching of no-self is fundamentally misguided. I have primarily approached this by presenting alternative interpretations that evade their critique. However, it could also be supported by emphasising the defeasible nature of their empirical findings – for example, the limited number of studies of any SRP as mediators of MBI health benefits, and the lack of RCTs supporting causal attributions of adverse effects to meditation practice. Nevertheless, B&L acknowledge robust evidence that change in the valences of self-concepts is a mechanism for certain therapeutic effects of MBIs. I have demonstrated that alternative interpretations of the Buddha's teaching of no-self can rationalise these changes and have suggested how they might provide cognitive support for therapeutic efforts at self-concept revision within the context of MBIs. This undermines B&L's suggestion of an inherent flaw in utilising Buddhist ideas to construct explanatory hypotheses within mainstream scientific discourse. While there is much to debate about the plausibility of these Buddhist interpretations of no-self – both as interpretations of the Buddha and as plausible theories of how senses of self might relate to wellbeing – this article suggests that there remains much potential for interdisciplinary dialogue between Buddhism and contemplative science, provided such discourse adopts an evidence-based approach that welcomes challenge and opportunities for refinement.

Abbreviations AN: *Āṅguttara Nikāya* Of the Buddha, in Bodhi (trans.) (2012); BCA: *Bodhicaryāvatāra* Of Śāntideva, in Crosby & Skilton (trans.) (1998); Dh: *Dhammapada* Of the Buddha, in Norman (trans.) (1997); Miln: *Milindapañha*, In Horner (trans.) (1963); MN: *Majjhima Nikāya* Of the Buddha, in Ñāṇamoli & Bodhi (trans.) (1995); SN: *Samyutta Nikāya* Of the Buddha, in Bodhi (trans.) (2005)

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