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BUDDHIST PRAMĀṆA EPISTEMOLOGY MEETS WESTERN COGNITIVE SCIENCE: MINDFULNESS OR MINDLESSNESS?

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Abstract:

This article examines the philosophical and scientific underpinnings of mindfulness by juxtaposing Buddhist pramāṇa epistemology with modern Western cognitive research. The global mindfulness movement, though typically portrayed as secular, therapeutic, and scientifically proven, frequently detaches mindfulness from its epistemological, ethical, and soteriological foundations. Buddhist epistemologists like Dignāga, Dharmakīrti, and Śāntarakṣita define mindfulness as a rigorous form of legitimate cognition (*pramāṇa*) intended to perceive the essence of reality, rather than simply as attention training. Conversely, Western cognitive research typically analyses mindfulness through reductionist frameworks, focusing on attentional management, brain mechanisms, stress alleviation, and behavioural consequences. This paper contends that the Buddhist epistemic framework—anchored in direct perception (*pratyakṣa*), inferential reasoning (*anumāna*), and the development of non-conceptual awareness—offers a more thorough comprehension of the cognitive, ethical, and ontological aspects of mindfulness. The paper critically analyses the contradiction between "mindfulness as presence" and "mindlessness as cognitive automation," establishing a cross-disciplinary paradigm that reconceptualizes mindfulness as a transformational epistemic practice instead of a commodified psychological instrument.

Keywords: Cognitive Science, Buddhism, Epistemology, Mind, *Pramana*

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Introduction:

Although mindfulness is widely recognized as a scientifically proven strategy for well-being, its philosophical and epistemological foundations in Buddhist *pramāṇa* theory are often overlooked or misinterpreted. Psychology and cognitive science have inspired the modern mindfulness movement, which draws technique from worldview, method from ontology, and attention-training from epistemic ethics. This selective appropriation risks "McMindfulness," a commodified practice that removes its ethical and cognitive grounding, becoming "a banal, therapeutic self-help technique" (Purser 19). This critique highlights a basic philosophical question: does contemporary mindfulness continue or diverge from classical Buddhist epistemology? This paper explores the conflict between Buddhist *pramāṇa* epistemology and Western cognitive science, questioning whether current mindfulness is authentically Buddhist or devolves into epistemological "mindlessness." Dignāga and Dharmakīrti developed Buddhist *pramāṇa* theory in the 5th and 7th centuries CE, providing a comprehensive framework for comprehending cognition, perception, mistake, mental training, and epistemic criteria for valid knowledge. Dan Arnold argues that Dharmakīrti's theory of cognition is a normative epistemology that addresses mind dependability and transformation (Buddhist Reasoning 42). This perspective defines mindfulness (*smṛti*) as a disciplined cognitive function that stabilizes attention, inhibits distraction, and supports valid cognition (*pramāṇa*). Mindfulness is part of Buddhist epistemology's cultivation of attentiveness, discrimination, reflexivity, and non-deluded perception. Thus, classical mindfulness is linked to truth, error, and release.

Western cognitive science views mindfulness as an empirical phenomenon to be studied, quantified, and operationalized. Many cognitive scientists respect contemplative activities, yet their epistemological assumptions are based on methodological naturalism and functionalist conceptions of mind. Evan Thompson notes that contemporary cognitive science often reduces mindfulness to "a set of attention-regulation skills" without considering its phenomenological and ethical context in Buddhist traditions (Waking, Dreaming 145). The reductionist approach to Buddhist *pramāṇa* theory can overlook its unique perspective on cognition as an ethical and soteriological activity, rather than a neutral mental function. The philosophical gap between these frameworks is most evident in perception and introspection. Dharmakīrti's perception theory (*pratyakṣa*) identifies momentary, non-conceptual, causally efficient cognition, while conceptual cognition (*vikalpa*) introduces error, distortion, and dualistic construction. According to Richard Hayes, Dignāga believed that epistemology aims to clarify how cognition becomes reliable by eliminating conceptual distortion (Hayes 62). Meditation is closely related to this epistemological project because mindfulness stabilizes attention sufficiently to notice conceptual thought's construction and access non-conceptual states. West cognitive science views conceptual and non-conceptual cognition as neural processes rather than epistemic states with ethical implications. Buddhism counters this by emphasizing cognition's function and ideal.

Buddhist *pramāṇa* theory integrates mindfulness into the larger context of mental elements (*caittas*) and cognitive-affective processes. According to the Abhidharma school, *smṛti* helps keep the mind focused on the goal, reducing distraction and delusion. Rupert Gethin says,

"mindfulness is not a passive state but an active, sustained remembering that guards the mind from unwholesome tendencies" (Gethin 46). This is different from modern mindfulness concepts of bare attention or contentless awareness. According to Buddhist epistemology, mindfulness is linked to meta-awareness, effort, and wisdom. A cognitive discipline with ethical and soteriological roots. The key question of this research is whether Western scientific acceptance of mindfulness preserves its epistemic core or turns it into a value-neutral cognitive method that compromises its original aim. Not just disciplinary, but epistemological. Linda Zagzebski's epistemic virtue theory states that intellectual character develops knowledge (Zagzebski 52). Buddhist *pramāṇa* theory integrates mindfulness within a virtue-theoretic framework to educate cognition to minimize ignorance (*avidyā*) and enhance clarity. However, modern cognitive research typically ignores this aspect in its secularization of mindfulness. By separating the technique from the tradition, contemporary mindfulness may become epistemically superficial—technically "mindful" but philosophically "mindless."

Cognitive science can also empirically validate classical Buddhist introspective insights. Buddhist mental training models match attentional networks, neuroplasticity, and meta-awareness research. A balanced account of mind must incorporate phenomenology, cognitive science, and neuroscience, as Francisco Varela and his colleagues famously argued in their enactive approach (Varela, Thompson, and Rosch 10). Buddhist *pramāṇa* theory and Western science can complement one other, with Buddhist epistemology giving conceptual depth and ethical foundations and cognitive science contributing empirical methodologies and theoretical models. This paper aims to critically describe this discussion. It examines whether mindfulness in its scientific and therapeutic form continues the Buddhist epistemological mission or ruptures it. Examining the conflict between Buddhist *pramāṇa* theory and the cognitive science model of mindfulness, this paper explores whether modern mindfulness is still a tool for cognitive liberation or a way to conform to neoliberal norms of productivity, stress reduction, and self- This analysis seeks to define "mindful" and what it means philosophically and epistemologically to reduce mindfulness to mindlessness.

Buddhist *Pramāṇa* Epistemology:

One of the most advanced examinations of cognition, perception, and knowledge validity is Buddhist *pramāṇa* epistemology. In this context, mindfulness (*smṛti*) is a cognitive virtue that generates *pramāṇa*, or true, non-deluded knowledge, rather than just an attentional skill as popular psychology indicates. According to Dignāga and Dharmakīrti, *pramāṇa* is a reliable, perfect intellect that leads to effective action (*arthakriyā*). According to Dharmakīrti in the Pramāṇavārttika, *pramāṇa* is error-free intellect that fulfils its goal (Dunne 78). This definition places mindfulness within the ethical and epistemic mission of reducing cognitive distortions and improving perception. Classical Buddhism identifies two main *pramāṇas*: perception (*pratyakṣa*) and inference (*anumāna*). Direct, non-conceptual cognition is perception, while conceptual inference uses logical relations. Mindfulness helps by stabilizing attention, minimizing distraction, and allowing the mind to perceive phenomena without being overwhelmed by concepts. According to John D. Dunne (Dunne 49), mindfulness is a meta-cognitive feature in Abhidharma and Yogācāra traditions that helps practitioners retain focus and identify cognitive distortion. Mindfulness coincides with *pramāṇa*

cultivation, as a steady, clear, and undistracted mind is necessary for proper cognition.

The main role of *smṛti* in *pramāṇa* cultivation is to oppose the wandering, unstable, and conceptually entangled quality of ordinary cognition. According to Dharmakīrti, conceptuality (*vikalpa*) causes cognitive errors by applying language and habitual categories to perceptual input. According to Georges Dreyfus, Dharmakīrti regards conceptual cognition as necessarily misleading since it applies generality to the specific (Dreyfus 131). By sustaining and sharpening attention, mindfulness helps practitioners discern conceptual overlays from the present moment. Mindfulness is an epistemological discipline that defines the prerequisites for non-conceptual experience, the foundation of *pramāṇa*, beyond only attentiveness to the present. Dignāga's theory of perception defines valid perception as non-erroneous cognition resulting from causal contact with the object. According to Richard P. Hayes, Dignāga believes perception is reliable when it eliminates conceptual construction and discloses the object's causal efficacy (Hayes 62). Mindfulness reduces conceptual imputation and focuses attention on sensory events. So, Buddhist meditation textbooks invariably couple mindfulness with samprajanya, the discriminative awareness that monitors and analyzes cognitive states. Gethin says "mindfulness and clear comprehension together form the foundation of disciplined, reliable cognition" (67). They are active cognitive techniques for non-deluded perception. Epistemology and mindfulness share an ethical basis. Cognitive errors stem from ignorance (*avidyā*), which involves a structural misconception of reality, including assumptions of permanence, selfhood, and inherent existence. Dharmakīrti believes that epistemology aims to eliminate ignorance through trustworthy cognition, not abstract analysis. Dan Arnold states that "Buddhist epistemology is inextricably linked to the ethical project of eliminating suffering by transforming the structures of cognition" (Buddhist Reasoning 42). This makes mindfulness a transformative practice that corrects underlying cognitive flaws as well as an emotional management tool.

Pramāṇa theory emphasizes the causal link between valid cognition and successful action. Knowledge is validated by its ability to achieve desired consequences in the world, known as *arthakriyā* (efficacy or pragmatic success). This distinguishes Buddhist epistemology from representational knowledge theories. Mindfulness enhances perceptual accuracy, stability, and responsiveness, directly affecting *arthakriyā*. Francisco Varela's enactive model of cognition states that "mindfulness is a disciplined way of enacting the world so that experience becomes more vivid, direct, and less filtered through conceptual habit" (Varela, Thompson, and Rosch 23). While Varela uses phenomenology, his interpretation fits with Buddhist *pramāṇa* theory: mindfulness enhances cognition by altering habitual patterns that shape experience.

Mindfulness is typically defined as prolonged attention, cognitive control, and meta-awareness in modern cognitive science. Adding a normative component to Buddhist theory, the *pramāṇa* framework emphasizes the value of mindfulness for both cognitive performance and epistemically superior cognition. According to Mark Siderits, Dharmakīrti believed that correct cognition is not just accurate representation but also brings liberation by eliminating ignorance (Siderits 112). This ethical epistemology departs from value-neutral scientific frameworks and shows why mindfulness cannot be understood without its soteriological context. Mindfulness is crucial

to inferential knowledge development. Perception delivers raw input, but inference organizes it into reliable concepts. Valid inference requires the practitioner to notice patterns without adding mental structures. Mindfulness regulates the conceptual mind, keeping inferential processes grounded in perceptual experience rather than habitual beliefs. Dan Lusthaus explains that in Yogācāra, awareness is used to examine and repair abnormalities in consciousness (Lusthaus 335). This reflexive dimension reveals that mindfulness is highly analytical and enables perceptual and conceptual processing.

According to Buddhist *pramāṇa* epistemology, mindfulness is a normative practice that promotes trustworthy, non-deluded cognition. Mindfulness is a notion of knowing based on ethical transformation, perceptual refinement, and cognitive precision, not only attention. In this view, mindfulness is both a way to observe reality and a way to restructure cognitive processes to improve perception, inference, and understanding. Mindfulness underpins correct cognition, the foundation of Buddhist intellectual and soteriological project, not only meditation.

Western Cognitive Science:

The majority of Western cognitive science views mindfulness as a collection of attentional capacities, a set of regulating skills that can be trained, quantified, and mapped onto brain systems. This cognitive-scientific translation of a historically rich contemplative practice emphasizes three interrelated components: self-regulation of attention toward present-moment experience, meta-awareness or monitoring of mental events, and reduction of automatic, habitual reactivity to adaptively allocate cognitive resources. In their widely referenced operational definition, Bishop and colleagues defined mindfulness as "self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment." (Bishop et al. 231) This attentional framing makes mindfulness accessible to experimental paradigms, cognitive neuroscience, and clinical therapies, fostering empirical research. Cognitive neuroscientists and psychologists use component models to study attentional regulation. Michael Posner and Steven Petersen's (1990) famous model divides attention into partly dissociable networks: alerting (vigilance/arousal), orienting (sensory information selection), and executive control. Posner's theory describes mindfulness's selective attentional subsystem transformation in plain language. Mindfulness training affects these networks differently: focused-attention practices improve sustained alertness and attention orienting, while open-monitoring practices improve monitoring and executive control. Thus, framing mindfulness as attentional training links contemplative practices to well-established cognitive architectures, allowing researchers to construct tests (sustained attention, attentional blink, Stroop, ANT) that measure the cognitive systems reportedly improved by practice.

A growing amount of research shows that contemplative practice boosts attention. Jha, Krompinger, and Baime (2007) found that short-term mindfulness training improved sustained attention and reduced mind-wandering on laboratory tasks. According to Lutz, Slagter, Dunne, and Davidson (2008), meditation practices can be categorized by attention regulation (stabilizing attention on a target), monitoring (meta-awareness of mind wandering), and adjustment. Their synthesis integrates phenomenological and experimental evidence to explain how different contemplative approaches

develop behavioural and neurophysiological attentional profiles. Neuroimaging studies locate mindfulness-related changes in attention and cognitive control networks, supporting behavioural findings. Long-term meditators had thicker prefrontal and right anterior insula cortex, which are involved in attentional regulation and interoceptive awareness, according to Sara Lazar and colleagues (2005). After mindfulness training, functional imaging and electrophysiological studies show increased activity and connectivity in dorsal attention and frontoparietal control networks and decreased activity in the default mode network (DMN), which is associated with mind-wandering and self-referential thought. The behavioural assertion that mindfulness improves sustained focus and reduces habitual, internal distraction matches these brain fingerprints.

Critically, Western cognitive theories view mindfulness as a helpful set of cognitive skills that improves attention, working memory, emotion management, and task performance. Davidson and colleagues found that mindfulness practice increases left prefrontal activation linked with approach and positive affect and decreases limbic reactivity (Davidson et al. 566–68). Cognitive-affective integration has been used to explain the therapeutic efficacy of mindfulness-based therapies (MBSR, MBCT) that increase attentional control to reduce rumination, anxiety, and depressive relapse. Meta-awareness (or metacognitive monitoring) as a psychological capacity is another major contribution of Western cognitive science. Lutz et al. and Jha define mindfulness as the ability to recognize mind drift and control attention on the chosen item. In activities that require participants to report attention lapses or detect errors in real time, this monitoring function corresponds with metacognition measures (Lutz et al. 165–66). The division of labour between sustained attention and monitoring explains why focused attention improves stability and open monitoring improves meta-awareness.

Experimental control and operational definitions are similarly valued in Western cognitive frameworks, with pros and cons. It allows mindfulness to be tested in randomized controlled trials, measured psychometrically, and modelled neurobiologically, which are essential for evidence-based clinical practice and institutional legitimacy. However, the attentional-regulation paradigm risks reducing classical traditions' ethical, phenomenological, and soteriological elements to measurable cognitive ends. Critics, including contemplative scientists, argue that restricting mindfulness to attentional control detracts from its insight, compassion, and value change (Tang, Hölzel, and Posner 223). An instrumentalized "skill training" methodology may minimize de-identification, wisdom, and moral development. However, the attentional account has proven theoretically and practically productive. Western cognitive science has developed a comprehensive, testable model of how contemplative practice might transform cognition by identifying component processes (alerting/orienting/executive), specifying brain correlates, and showing behavioural change after training. Attention, monitoring, plasticity—a shared lexicon for behavioural scientists, neuroscientists, clinicians, and even certain contemplative practitioners—has also enabled interdisciplinary collaboration and cumulative science.

Mindfulness vs. Mindlessness: Two Competing Cognitive Paradigms

The clash between Buddhist *pramāṇa* epistemology and Western cognitive science highlights the philosophical conflict between

mindfulness (ethical, non-deluded knowing) and mindlessness (habitual, automatic, cognitively opaque functioning). Both traditions call themselves mindful, but their definitions of knowing, awareness, and cognitive integrity differ. According to Buddhist *pramāṇa*, mindfulness (*smṛti*, *sati*) is a state of non-mistaken cognition that promotes attention, ethical clarity, and insight into phenomena. In contrast, mindlessness (*muṣita-citta*, *pramāda*) refers to the situation where the mind becomes absent, inattentive, or dominated by latent tendencies, causing perceptual and conceptual errors (Dignāga 34; Dharmakīrti 171). Western cognitive science views mindlessness as automaticity, a default mental mode characterized by cognitive heuristics, habitual responding, and reduced meta-awareness, influenced by Ellen Langer's critique of routinized cognition as "premature cognitive commitment" (Langer 12). Different metaphysical assumptions and cognitive flourishing visions are shown by these paradigms. Buddhist *pramāṇa* views mindfulness as epistemic, promoting true cognition by stabilizing attention, reducing conceptual overlay, and promoting direct perception (*pratyakṣa*). According to Dharmakīrti (173-75), the aware mind is "non-erroneous" (*abhrānta*) since it perceives its object without influence from afflictive tendencies. According to this approach, mindlessness is an epistemic failure caused by latent dispositions (vāsanā), affective defilements (kleśa), and habitual conceptual impositions, resulting in erroneous appearances. This is supported by modern Buddhist experts. Georges Dreyfus claims that mindfulness "prevents the mind from slipping into habitual patterns that distort experience," providing attentional clarity not present in ordinary cognition (Dreyfus 45). Mindfulness, according to Jay Garfield, stops the mind from "projecting intrinsic nature where none is found" (Garfield 62). These explanations agree that Buddhist mindfulness purifies mindlessness' cognitive and affective distortions epistemologically.

Psychological conceptions of automaticity define mindlessness in Western cognitive science. Langer's landmark studies define mindlessness as "act from categories and distinctions formed in the past," resulting in unreflective, context-insensitive conduct (Langer 11). Cognitive economy—heuristics lower processing burden but promote rigidity—causes this mindlessness. Cognitive scientists like Daniel Kahneman divide quick, automatic processes (System 1) and slow, regulated processes (System 2), with mindlessness corresponding to fast, habitual processing (Kahneman 20–21). Mindfulness is seen as a means to reduce automaticity, improve meta-awareness, attentional management, and cognitive flexibility. This shift from "concept-driven to experience-driven processing" allows people to break maladaptive cognitive scripts (578), according to Teasdale and Chaskalson. While this model shares some therapeutic characteristics of Buddhist mindfulness, it lacks the soteriological and metaphysical aspects of *pramāṇa* thought. The ethical inflection of mindfulness in Buddhist traditions highlights the paradigm gap. Mindfulness is integrated with moral intentionality, together with right perspective and appropriate effort, to achieve liberation. B. Alan Wallace says traditional mindfulness "cannot be divorced from its ethical and philosophical context; the training of attention is embedded in the transformation of the mind's afflictive tendencies" (Wallace 75). Western paradigms prioritize performance, stress reduction, and executive control over ethics. Ronald Purser famously called this decoupling "McMindfulness," a secularized attentional training with no ethical convictions that fits

neoliberal productivity culture (Purser 19). Buddhist traditions criticize mindlessness, but mindfulness optimizes it—routinized attention, cognitive burden, hyper-efficiency.

The problem of automaticity unites the two perspectives notwithstanding their differences. Automaticity is karmic conditioning, the "habitual perfuming of consciousness" that perpetuates suffering (Siderits 79). In cognitive research, automaticity is the mind's default mode of lowering computing burden, but inflexibility or maladaptively makes it problematic. Thus, both systems describe unchecked mental habits as cognitive disease but propose distinct treatments. In *pramāṇa*, fostering non-conceptual insight (*nirvikalpaka-jñāna*) and ethical clarity is the remedy. In cognitive science, it involves improving attentional monitoring and executive control. These different endpoints show that mindfulness's purpose is more important than its method. Is mindfulness a way to end suffering or a cognitive enhancement skill? Mindfulness and mindlessness debates across paradigms reveal fundamental epistemic differences. Buddhist *pramāṇa* philosophy considers mindfulness a legitimate cognition based on phenomenological accuracy and ethical change, while Western cognitive science views it as a regulatory function to counter attentional lapses. The first calls mindlessness existential ignorance, the latter cognitive rigidity or automaticity. The frameworks are not incompatible. According to Evan Thompson, "first-person phenomenology with third-person cognitive science" is needed to study mindfulness as both a lived experience and a measurable cognitive process (Thompson 162). Integration may help cognitive science avoid mechanical reductionism while maintaining empirical rigor. Thus, the conflict between mindfulness and mindlessness reveals a philosophical choice between epistemic liberty and cognitive optimization. Understanding how these paradigms clash and overlap is crucial to determining whether contemporary secular mindfulness promotes awareness or quietly encourages mindlessness.

Toward an Integrated Epistemology of Mindfulness:

To resolve the conflict between Buddhist *pramāṇa* epistemology and Western cognitive science, an integrated epistemology of mindfulness is needed. This should balance the normative, soteriological, and phenomenological aspects of the Buddhist account with the empirical rigor, operational clarity, and causal models of cognitive science. Integration is a principled synthesis that respects varied epistemic goals and procedures and creates a research ecology where first-person disciplined observation and third-person measurement inform and correct each other. Francisco Varela's neurophenomenology program provides the methodological framework: disciplined first-person descriptions of experience must be systematically coupled with neurobiological and behavioural measures to produce mutually constraining, empirically testable mindfulness theories. Varela believed that "the third-person and first-person approaches must be yoked together" to solve consciousness and cognitive problems. An integrated epistemology should institutionalize this yoking. Both schools attempt to reform cognition reliably; therefore, an integrated epistemology starts there. According to Buddhist *pramāṇa* theory, mindfulness is an epistemic virtue that stabilizes attention, prevents conceptual excess, and allows for non-conceptual perception (*pratyakṣa*) and accurate inference (*anumāna* According to Tillemans and Hattori, Dignāga and Dharmakīrti view epistemology as a normative practice that requires knowledge to be

non-deluded and effective, leading to successful action (*arthakriyā* Western cognitive science operationalizes mindfulness as attentional management, meta-awareness, and reduced reactivity—quantifiable, trainable, and neural network-relevant capacities. An integrated epistemology sees mindfulness as a Buddhist skill to progress epistemically and as a set of cognitive capacities that can be measured behaviourally and neutrally. Recognition of this dual descriptive-normative character prevents Buddhist mindfulness from being reduced to technique and prevents cognitive science from ignoring contemplative practice's evaluative goals.

Integration methodically requires three mutually restricting components. First, design and standardize disciplined first-person protocols based on classical contemplative lineages but adapted for intersubjective reporting. Buddhism offers generations of protocols, including *smṛti* practices, *samprajanya* (clear comprehension), and analytic insight practices, that are not casual introspection but trained phenomenological methods. Trained practitioners should provide calibrated, repeatable, and cross-validated expert reports in clinical and experimental activities. Varela believed that first-person method knowledge should be viewed as scientific evidence, not anecdote, and may be developed and confirmed. Second, high-resolution third-person measures—behavioural tasks, psychophysiological markers, and neuroimaging—must translate onto phenomenological descriptions. Lutz, Slagter, Dunne, and Davidson map meditation into attentional control, monitoring, and adjustment and relate those processes to attention performance and neural signatures. Thus, experimental designs should define the epistemic claim (e.g., conceptual overlay reduction), operationalize the phenomenology (precise first-person markers and trained-report protocols), and measure third-person correlates. This triangulation allows testing if a claimed phenomenological shift (such increased non-conceptual clarity) is accompanied by stable behavioural and neurological changes.

Third, normative evaluation must be philosophical; clear. Buddhist *pramāṇa* theory emphasizes reducing error and ignorance, therefore cognitive science must assess whether changes in attention improve or diminish certain epistemic failures (bias, reification, incorrect inference) in ecologically relevant circumstances. Outcome metrics must follow *arthakriyā*—practical efficacy—not just laboratory variables. Does a training lessen cognitive biases? Does it enhance perceptual discrimination in conceptual bias-prone situations? Integrated epistemology addresses the conceptual gap between Buddhist claims about non-conceptual perception and scientific theories that assume cognition is always conceptually structured. Empirical research linking attentional changes to epistemic error reductions provides a direct link between the two. Contemporary philosophers and phenomenologists show that an integrated perspective sees non-conceptual and conceptual processes as complementary cognition layers. According to Evan Thompson's enactive account, perceptual experience is embodied sense-making that supports both immediate, non-conceptual reactivity and higher-order conceptual elaboration. Dharmakīrti's distinctions can be understood as a process, where practice favors fast, non-conceptual discriminative events over slow, concept-laden inference loops. This shift in precision-weighting of priors vs sensory evidence can be formalized in predictive processing models, respecting Buddhist insight into non-conceptual clarity and neuroscientific mechanistic explanation.

Scientific programs must also incorporate ethics and teleology. In an ethical framework, Buddhist mindfulness reduces suffering and transforms the actor. Cognitive science must not ignore these goals. Instead, researchers should explain their normative goals—symptom reduction, cognitive enhancement, moral development, or soteriological transformation—and choose measures accordingly. B. Alan Wallace and others have warned that transformative contemplative goals cannot be separated from practice when assessing effects (Wallace). A falsifiable integrated epistemology includes attentional and neural measures and ethical outcome variables like compassion, harm-producing reactivity, and values. Cross-disciplinary training and respect are needed to establish this epistemology institutionally. Science requires rigorous first-person procedures, while contemplation requires operationalization and experimental control logic. Joint training, long-term collaborative investigations, and well-structured retreat-based protocols can support sustained inquiry. Varela's neurophenomenology, Lutz and colleagues' attention-monitoring paradigm, and large-scale contemplative neuroscience projects suggest this, but an integrated epistemology requires institutional practices that make first-person/third-person interaction common.

Finally, an integrated epistemology must avoid reductionism (reducing mindfulness to attentional skill) and sectarianism (seeing contemplative traditions as dogmatic and resistant to empirical correction). Critical pluralism requires respecting normative assumptions in *pramāṇa* theory while requiring rigorous, intersubjective testing of empirical hypotheses. The integrated method honours Buddhism's epistemic ethos—that insight must be validated by experience and its practical fruits—while making those confirmations accessible to scientists. In summary, an integrated epistemology of mindfulness requires institutionalizing a research ecology where trained first-person accounts, carefully matched third-person measures, normative outcome criteria, and philosophically informed conceptual work build a cumulative science. By integrating Buddhist *pramāṇa* aims with scientific aspirations, this approach creates testable, mutually illuminating research agendas. Successful integration will prove that mindfulness is a developed cognition with epistemic value that can be experienced and objectively verified.

Conclusion:

The worldwide mindfulness movement is at a pivotal juncture. Western cognitive science has popularized mindfulness, enhanced its scientific legitimacy and broadened its therapeutic application. This process risks severing mindfulness from its epistemological, ethical, and transformative foundations in Buddhist *pramāṇa* thought. The interaction between Buddhist philosophy and cognitive research demonstrates that mindfulness transcends mere attentional training; it is a systematic approach to fostering true cognition, deconstructing cognitive distortions, and achieving a profound level of awareness. By merging the analytical precision of Buddhism with the empirical approaches of cognitive science, we might bridge the gap between mindfulness as a commercial psychological practice and mindfulness as a significant route to cognitive emancipation. This comparative paradigm creates opportunities for a truly cross-cultural science of mind that honours old wisdom while integrating modern scientific investigation.

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