

Mindful meta-awareness: sustained and non-propositional

John D Dunne¹, Evan Thompson² and Jonathan Schooler³

Meta-awareness appears to be essential to nearly all forms of mindfulness practice, and it plays a key role in processes that are central to therapeutic effects of mindfulness training, including decentering — shifting one's experiential perspective onto an experience itself — and dereification or metacognitive insight — experiencing thoughts as mental events, and not as the things that they seem to represent. Important advances in the conceptualization of meta-awareness in mindfulness have recently been made, yet more clarity is required in order to characterize the type of meta-awareness implicated in the ongoing monitoring of attention and affect, even while attention itself is focused on an explicit object of awareness such as the breath. To enhance research on this form of meta-awareness cultivated in at least some styles of mindfulness, a construct of sustained, non-propositional meta-awareness is proposed.

Addresses

¹ University of Wisconsin, Madison, United States

² University of British Columbia, Canada

³ University of California, Santa Barbara, United States

Corresponding author: Dunne, John D (jdunne@wisc.edu)

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In traditional Buddhist and secular contexts, numerous practices can be grouped under the rubric of 'mindfulness.' While significant differences distinguish these practices [1[•]], one overall feature concerns the capacity to remain undistracted. Buddhist sources employ the term 'mindfulness' (*smṛti* in Sanskrit or *sati* in Pali) with a wide semantic range, but when used in its most precise sense as a 'mental facet' (*cetasika*), the term *smṛti/sati* is narrowly defined in precisely this way, namely, as an attentional feature that prevents distraction by inhibiting selection of a non-target object [1[•],2–7]. Many Buddhist

accounts, especially after the 7th century (C.E.), distinguish this technical sense of *smṛti/sati* as 'distraction preventer' from the capacity to notice that distraction has occurred, and they often refer to this capacity with the Sanskrit term *samprajanya* [1[•],8–10].⁴ Through this other cognitive function, one can notice that, in lieu of attending to one's intended object such as the breath, one is now daydreaming about a tropical beach. Buddhist accounts and empirical studies suggest that various styles of mindfulness training enhance not only *smṛti* ('mindfulness') as a capacity that prevents distraction, but also *samprajanya* ('meta-awareness') as a capacity to detect distraction when it occurs [11,12]. Moreover, improvements in meta-awareness may be especially relevant in clinical contexts. For example, by enhancing awareness of mental contents and processes, meta-awareness may facilitate key aspects of decentering, such as the process of non-reactively attending to experience itself and recognizing that thoughts are actually mental events, and not the things that they seem to represent (dereification, metacognitive insight) [12–16]. All these raise a crucial question: in the context of mindfulness, what exactly is meta-awareness?

An inquiry into meta-awareness within mindfulness could easily lead to lengthy discussions in multiple domains, including cognitive science, philosophy, and Buddhist studies. Here, we simplify our task by focusing on meta-awareness in terms of its role in the ongoing monitoring of awareness. We begin by examining a widespread account of meta-awareness and then turn to Buddhist discussions of a particular mindfulness-style practice that suggests the need to revise that widespread account. We then propose the notion of 'sustained, non-propositional meta-awareness' as a construct that clarifies some recent work on meta-awareness in mindfulness and may thus enhance our understanding of mindfulness-style practices in both theoretical and empirical terms.

Meta-awareness as intermittent and propositional

One of us (Jonathan Schooler) has developed with colleagues an account of meta-awareness that is now widely cited [17]. This account builds on work on metacognition (cognition about cognition [e.g. Ref. 18]) that distinguishes: (1) meta-cognitive knowledge, that is, knowledge of general facts about how the mind works; (2) meta-cognitive

⁴ Although this interpretation of *samprajanya* is found earlier, Śāntideva (c. 625 C.E.) is often cited as its promulgator, and many later authors, especially in Tibet, follow his approach [1[•],10]. Earlier Buddhist sources, including those in the Theravāda tradition, do not emphasize the monitoring aspect of *samprajanya* (or *sampajañña* in Pali); instead, it is understood to be primarily a form of 'clear comprehension' or 'clear knowing' [2–4].

monitoring, that is, tracking one's mental operations; and (3) meta-cognitive control, that is, using the results of meta-cognitive monitoring to modulate performance (for a review of meta-cognition and its relationship to meta-awareness, see Schooler and Smallwood [19]). Schooler noted that meta-cognitive monitoring can be carried out with or without explicit awareness [e.g. Refs. 20–22] and thus distinguished between non-conscious tacit monitoring and meta-awareness. Accordingly, on this view meta-awareness involves the 'ability to take explicit note of the current contents of consciousness' [23–25]. A paradigmatic context for this account of meta-awareness is the detection of mind-wandering. For example, as one is reading a passage, at some point one may notice that, instead of paying attention to the text, one's mind is engaged with something else. This moment of noticing mind-wandering requires one to have a conscious judgment about the contents of awareness in a form such as, "I am not paying attention to this article!" This form of meta-awareness thus requires one to consciously attend to its contents: one is no longer focused on reading the article; instead, one is now focused on one's mental contents and/or processes, for example, the episode of mind-wandering. This form of meta-awareness is also 'propositional,' in that it involves generally verbal [26], propositionally structured judgments (e.g. "I am not paying attention!"). Likewise, on this account meta-awareness is intermittent, in that it occurs only at specific times when one explicitly attends to — and makes judgments about — the contents or processes of one's awareness.

Divergent Buddhist accounts of meta-awareness

For some Buddhist styles of mindfulness meditation, meta-awareness — *samprajanya* as the monitoring function that detects distraction — is conceptualized as intermittent and propositional in the aforementioned fashion. The goal of such practices is to obtain an undistracted state focused on a chosen object, and once complete stability of attention on the object has been achieved, the monitoring provided by meta-awareness will actually disrupt the focus on the object [8,27]. For these styles of practice, an account of meta-awareness as sustained (not intermittent) and non-propositional (not involving an internally verbalized judgment) would be problematic. Some research on 'focused attention' [28] styles of practice has conceptualized meta-awareness in this way [29]. In contrast, some Buddhist styles of mindfulness practice seek to culminate in an undistracted state that does not involve focus on an object. Allegedly devoid of subject-object structure, such meditative states are thus 'non-dual' (Sanskrit, *advaya*; Tibetan, *gnyis med*), and they are cultivated by various Buddhist contemplative traditions that have influenced contemporary approaches to mindfulness, including Mindfulness-Based Stress Reduction [30–33]. For these styles of mindfulness, it is highly problematic to hold that meta-awareness is intermittent and propositional. Along these lines,

some recent publications involving meta-awareness in the specific context of contemporary mindfulness point to the need for an alternative account of meta-awareness without directly articulating it.⁵ Building on that work, we aim to more explicitly formulate meta-awareness in these terms by turning to the specific example of a nondual style of meditative practice that has influenced contemporary mindfulness, namely, Tibetan Mahāmudrā.

Meta-awareness in Tibetan Mahāmudrā

Although the main Mahāmudrā meditation manuals and theorists exhibit considerable variation, they agree on a particular sequence of mindfulness-style practice, which they characterize as 'mental quiescence' (Skt., *śamatha*; Tib., *zhi gnas*) for those following a 'gradual' approach (Tib., *rim bzhin pa*) [41,42]. One begins by practicing 'with signs' (*mtshan bcas*) by directing the mind to an anchor for attention such as the sensations of breathing, and one monitors the mind for distractions. Strictly speaking, this attentional anchor is not the meditation's 'object' (*yul*). Instead, it simply serves as a 'reminder' (*dran rtags*) that minimally captures attention so as to inhibit capture by distractors. Eventually, after some stability is achieved, one resorts less and less often to the 'reminder' as a focus, and one finally moves on to a stage 'without signs' (*mtshan med*) where one cultivates the 'mindfulness of mere non-distraction' (*ma yengs tsam gi dran pa*) without explicit focus on any object at all. Known as the 'supreme *śamatha*' (*mchog gi zhi gnas*) [43], this form of nondual mindfulness resembles the practice of 'choiceless awareness' found in MBSR and elsewhere [44,45].

Sometimes called 'the spy of mindfulness' (*dran pa'i so pa*), a form of mindful meta-awareness plays a key role in this style of practice [41–43]. Initially, one uses an attentional anchor, and attentional resources are directed toward that anchor within a subject-object structure; yet most resources are devoted to monitoring for distraction. Importantly, that monitoring occurs without making an inward, introspective turn because that turn would require dropping attention to the anchor so as to focus attention on consciousness itself. Instead, while maintaining explicit but minimal focus on the anchor, one uses mindful meta-awareness to sense features of the ongoing experience that are not about the explicit object (such as the breath), but are instead about the off-object features, such as the mind's current affective qualities, its attentional vividness, proprioceptive state,

⁵ Several recent publications [11,13–15,34–37] discuss meta-awareness as involving the awareness of mental processes, and not just contents, and while meta-awareness of a process could still be intermittent, these authors may intend that it be sustained, as seems clear in the account by Ruimi *et al.* [38]. Hadash and Bernstein in this issue [39] discuss 'sustained mindful awareness,' yet it is not clear whether this applies specifically to meta-awareness. The question of meta-awareness as non-propositional has not been directly addressed in these sources, but some discussions of fringe consciousness in mindfulness [37,40] suggests that perspective.

and so on. These off-object features of experience are presented through meta-awareness without making them the explicit object of attention, which is sustained on the anchor. As one gradually learns to drop attention to the anchor, one sustains meta-awareness, such that one is instructed to persist in the awareness of these off-object features of awareness without turning awareness itself into an explicit object of introspection.

In contrast to the intermittent and propositional meta-awareness discussed earlier, this form of meta-awareness is not focused on mental contents or process themselves as the objects of propositional judgments. As noted above, intermittent meta-awareness involves conscious (usually verbal) judgments, whose contents are explicit objects in a process of ‘knowing that’ something is the case (e.g. “my mind is wandering”). In contrast, this form of meta-awareness involves ‘knowing how,’ as when one is aware of *how* one is attending affectively to an object (e.g. a conscious feeling of desire while attending to something attractive). This ‘knowing how’ presents itself in the phenomenal character of the experience. By way of illustration, Dahl *et al.* note the difference between two ways of watching a film. When completely absorbed in the cinematic action as if it were actually occurring in front of one, one no longer has the sense that one is sitting in a theater. Alternatively, one may watch the film while still aware of being seated in a cinema [13]. From the perspective of meta-awareness, the difference between these two ways of watching the film is not constituted just by knowing *that* one is in a theater; instead, the difference also emerges in the awareness of *how* one is watching the film. In other words, without the thought, “I am in the theater,” non-propositional meta-awareness presents off-object aspects of the experience, such as one’s affective reactions and seated position, and it thus continuously frames the experience as occurring in a theater [46].

Finally, the mindful meta-awareness in Mahāmudrā practice is sustained, rather than intermittent. In this phase of Mahāmudrā training, practitioners seek to cultivate a form of meta-awareness that continuously monitors awareness even while attention to the anchor is sustained. Moreover, Mahāmudrā theorists must hold that mindful meta-awareness is sustained, because it is precisely the aspect of consciousness that persists even after explicit focus on an object is dropped. If mindful meta-awareness is only intermittent, then conscious awareness would also be intermittent—an unacceptable position for these Buddhist theorists.

Non-propositional meta-awareness: research contexts and pathways

Within Tibetan Mahāmudrā, theoretical accounts and meditation instructions articulate meta-awareness as non-propositional and sustained. Since MBSR draws on similar insights and techniques [1,30,32,33], this

construct is relevant to MBSR as well. However, theoretical claims and meditation instructions do not in themselves establish the utility of this construct. With that in mind, we point briefly to two research contexts that resonate with — and suggest pathways to explore — sustained, non-propositional meta-awareness.

One such a research context is the cognitive science and philosophy of metacognition. According to some theorists, metacognition requires representing one’s own mental states as mental states. The philosopher Joelle Proust, however, suggests that, metacognition involves ‘a procedural form of knowledge that is generated by actually engaging in a first-order cognitive task, and monitoring its success’ [47]. In this view, cognitive activities generate ‘noetic feelings’ (e.g. feelings of familiarity, knowing, or certainty; tip-of-the-tongue states) [48]. For Proust, these feelings relate to a procedural monitoring of one’s own mental activities, and they do not depend on an ability to represent and attribute mental states to oneself and others. Of particular interest is the way that noetic feelings, which for Proust arise from an unconscious procedural process, are presented as implicit yet conscious features of one’s explicit focus: they are the manifestation of ‘knowing how’ within ‘knowing that.’ Here the construct of sustained, non-propositional meta-awareness may be especially useful for guiding research on metacognition.

A second relevant research context is the study of mindfulness and other contemplative practices. In several domains, the construct of sustained, non-propositional meta-awareness may help clarify the impact of contemplative training. As articulated here, this form of meta-awareness underlies experienced contemplatives’ enhanced capacity for awareness of ongoing mental processes, such as the spontaneous arising of thoughts, as well as fluctuations in attention and affect [49]. More specifically, this form of meta-awareness theoretically constitutes the initial, conscious awareness of affective states in a way that makes them available to explicit regulation. This construct may thus explain improvements in emotion regulation from contemplative training [12,13], as is suggested by Ruimi *et al.*’ work on meta-awareness and bias [38]. In the context of pain, enhancements in non-propositional meta-awareness that come through contemplative training may be central to improvements in regulating the response to a nociceptive pain signal [50]. In the context of sleeping and dreaming, the impact of contemplative practices on the maintenance of consciousness in these states may be best explained by enhancements in sustained, non-propositional meta-awareness [51]. Non-propositional meta-awareness may be especially relevant to lucid dreaming. In a stable lucid dream, one has a sustained awareness of the dream-state, even while experiencing events in the dream. If one sees, for example, the full

moon, this experience occurs with a phenomenal feeling that marks the experience as occurring within a dream [52]. Sustained access to that phenomenal feeling — the awareness of *how* one is seeing the dreamt moon — would seem to be a clear case of sustained, non-propositional meta-awareness.

Conclusion

The particular case of ‘mental quiescence’ or *śamatha* practice in Tibetan Mahāmudrā illustrates the need for a revision to widespread notions of meta-awareness as propositional and intermittent. Given the impact that nondual styles of practice such as Mahāmudrā have had on MBSR, meta-awareness in MBSR (and broadly in contemporary mindfulness) is not adequately characterized as intermittent and propositional—an insight already suggested by several recent publications [11,13–15,34–36,38,39]. Motivated by this work and by the key role that meta-awareness plays in the therapeutic effects of mindfulness, we have thus proposed a construct of ‘mindful meta-awareness’ as non-propositional and sustained. This construct suggests several pathways of research. For example, it may be instructive to investigate the process of non-propositionally yet consciously monitoring the quality of one’s attention, without perturbing attention on an object, and comparing that to intermittent monitoring processes (see the approach to the behavioral assessment of mindfulness articulated by Hadash and Bernstein [39]). One prediction is that whereas verbal suppression disrupts propositional meta-awareness [26], it may have little impact on non-propositional meta-awareness. These pathways of research have the potential to address some of the challenges posed by this construct, such as the problem of measurement. In any case, this construct will surely develop in response to empirical and theoretical inquiry, but even in this initial form it may prove useful for examining a crucial aspect of mindfulness.

Conflict of interest statement

Nothing declared.

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