



Toward a Unified Account of Advanced Concentrative Absorption Meditation: A Systematic Definition and Classification of Jhāna

Terje Sparby^{1,2} · Matthew D. Sacchet³

Accepted: 25 April 2024
© The Author(s) 2024

Abstract

Objectives The jhānas are series of advanced concentrative absorption meditative (ACAM) states brought about by meditation. While previously cultivated mostly in monastic settings, a series of modern meditation manuals both openly discuss the jhānas and describe how they may be attained by laypeople. Simultaneously, the phenomenological and neuroscientific investigation of the jhānas is advancing. Although the descriptions of the jhānas in contemporary jhāna manuals to some degree overlap with one another, there are also significant disagreements. Here our objectives are to identify common features of jhāna in meditation manuals, to identify and discuss disagreements, and to offer an account of jhāna that is both comprehensive and consistent.

Methods A literature search and review was conducted. The search resulted in eight meditation manuals that provide phenomenologically rich accounts of the full range of the jhānas. Common characteristics and discrepancies in the different accounts of the jhānas have been identified by comparing terms and descriptions.

Results We offer a general definition of jhāna, distinguish three types of jhāna, and investigate phenomenological dimensions that may be necessary to address in order to comprehensively articulate the experience of ACAM.

Conclusions To ensure scientific rigor, the study of jhāna needs to be informed by both commonalities and differences in the existing accounts of jhāna. While differences exist, these may also be systematically unified in a way that yields a comprehensive account of ACAM.

Keywords Meditation · Jhana · Concentration · Absorption · Attention · Expert meditators

The *jhānas* are states of deep concentrative absorption (Anālayo, 2020; Arbel, 2017; Yang et al., 2023b) arising from meditation (Sparby & Sacchet, 2022; Wright et al., 2023) that have been practiced by contemplatives for at least 2500 years. While such states are integral to different contemplative traditions (Fisher, 2022; Rose, 2018), the Buddhist account of the jhānas, especially how it was formulated within Early Buddhism and the Theravāda tradition, gives a particularly systematic and detailed account of a progression through different jhānas (“Theravāda” is the name of the longest existing

Buddhist school that initially formed in Sri Lanka and then spread to Southeast Asia). Growing out of Hinduism, more specifically early Brahmanic meditation (Wynne, 2009), the jhānas (from Sanskrit *dhyāna*) were seen as states connected to insight into the fundamental structures and conditions of existence and as a way of meditation that could lead to the ultimate liberation from suffering. There is, however, ongoing discussion regarding whether the jhānas themselves should be seen as involving liberation (Anālayo, 2017; Arbel, 2017) or simply as providing an optional support for the process leading up to it (Anālayo, 2016; Wynne, 2019).

The jhānas were mostly cultivated within traditional settings and primarily by monastics. In recent decades, some Theravāda Buddhist teachers in Western contexts have started teaching the jhānas to wider audiences (Quli, 2008). Several meditation manuals have appeared, describing how the jhānas can be practiced in principle by everyone (Brahm, 2014; Brasington, 2015; Catherine, 2008; Dennison, 2022; Ingram, 2018; Johnson, 2018; Snyder &

✉ Terje Sparby
terje.sparby@steinerhoyskolen.no

¹ Steiner University College, Oslo, Norway

² Department of Psychology and Psychotherapy,
Witten/Herdecke University, Witten, Germany

³ Meditation Research Program, Department of Psychiatry,
Massachusetts General Hospital, Harvard Medical School,
Boston, MA, USA

Rasmussen, 2009; Yates et al., 2015). These manuals represent something new in that they provide detailed experiential accounts of how to attain advanced states of meditation, and yet they emphasize that they are consistent with the traditional accounts of these states.

The literature review and content analysis of the *jhānas* that we have conducted were motivated by apparent differences in the accounts of *jhāna* found in these manuals. The authors of the *jhāna* manuals are all linked to the Theravāda tradition. However, the authors emphasize different developments within the Buddhist tradition. Some see themselves as inspired by primarily the Suttas, which we argue conceives of the *jhānas* as lighter forms of absorption. Others draw predominantly from practice commentaries of the Abhidharma, and notably the the *Visuddhimagga* by Buddhaghosa (ca. 500 CE), which conceives of *jhāna* as a more radical, deep absorption. This distinction between Sutta and commentary/*Visuddhimagga* *jhāna* may explain differences in categorization. Also, the experiential information and meditation instruction contained in these texts is either scarce or difficult to interpret, which may explain the need for manuals for those practicing outside of traditional settings who cannot receive continual guidance directly from teachers.

It is notable that, while there is some overlap in terminology used in the contemporary manuals, the phenomenological descriptions of the *jhānas* sometimes differ significantly from each other. For example, there is disagreement about how much thought may be present in *jhāna*. Some claim that some thoughts may be present (Brasington, 2015; Ingram, 2018); others claim that no thoughts at all may be present (Brahm, 2014; Catherine, 2008). Such issues have sparked controversy over which *jhānas* are “true” *jhānas*, and some practitioners and scholars maintain that the *jhānas* are exceedingly rarified states of consciousness only available to those with extreme dedication (Shankman, 2008). These kinds of disagreements, more of which will be identified and discussed below, make it questionable whether people are referring to the same kind of absorption state when they are describing the *jhānas*.

As the science of meditation progresses and continues to address hypotheses informed by wisdom traditions (Wright et al., 2023), it will increasingly refine the terminology used and include investigations of advanced meditation which are states and stages of practice that unfold with mastery. We have recently highlighted the crucial importance that the terms used when studying effects of meditation are as clearly defined as possible (Sparby & Sacchet, 2022) and have also developed a theory for the study of meditative development (Galante et al., 2023). Together, these works support the investigation of *jhāna* practice (cultivating and mastering the *jhānas*) in both clinical and

non-clinical settings. The neuroscience of meditation has progressed considerably (for review see Yang, Chowdhury et al., 2023) and is just beginning to include the study of *jhāna* (Dennison, 2019; Hagerty et al., 2013; Yang, Chowdhury et al., 2023). For this research to be rigorous, it is vital that we understand the varieties of *jhāna*. Otherwise, the results of scientific studies may have limited validity, and different studies will be difficult to compare, and the term *jhāna* may lose meaningfulness. Furthermore, having access to a comprehensive account of the *jhānas* is essential not only for scientific advancement, but also for meditation practitioners, teachers, and those seeking to develop technologies to aid the cultivation of *jhāna*. Even traditional meditation approaches could potentially benefit from comprehensive accounts of the *jhānas* and empirical research on their effects.

In this context, fundamental questions include: What are the minimal criteria for calling an altered state of consciousness *jhāna*? Which type of *jhāna* supports the quickest, most reliable, and deepest relief from suffering? Which type of *jhāna* most strongly supports progress towards meditative endpoints such as awakening? This article aims to contribute to the kind of fundamental research and research questions thus outlined. Below, the historical and scientific perspective on the *jhānas* will be elaborated. In the “**Methods**” section, the selection of sources and method of analysis will be described. In the “**Results**” section, a comprehensive account of the *jhānas* based on the selected sources will be provided. The “**Discussion**” section will treat various related issues concerning the interpretation of basic terms, which terms are essential for defining *jhāna*, and different non-traditional characteristics.

Little is known about at what time human beings started to cultivate states of deep absorption and we will refrain from speculating about this here. What is known, is that the practice of absorption/*jhāna* also belongs to pre-Buddhist traditions. This idea is itself part of Buddhist belief, which states that the Buddha learned the practice of certain *jhānas* from some of his teachers. The word “*jhāna*” can be traced back to the Sanskrit root “*dhi*,” which is one of the earliest words for meditation; both “Zen” and “Chan,” as in Zen and Chan Buddhism, are directly related to the word *jhāna* (Suzuki, 2018). The *Mahāsaccaka Sutta*, which is part of the Theravāda Buddhist canon and a source of biographical information about the Buddha’s life, explains the origin of *jhāna* practice. When discussing contemplative practice with the Saccaka, a well-regarded debater and a Jain, the Buddha is said to have recognized *jhāna* as the way to awakening and the end of suffering (Ñānamoli & Bodhi, 1995, pp. 332–343). The Buddha explains that after having experienced the limitations of asceticism, which weakened the body and did not lead to insight, the Buddha decided to try entering into the first

jhāna, which he had experienced as a young child. While the jhānas are pleasant, they do not represent sensory indulgence. Rather, the jhānas lie between the extremes of asceticism and sensory indulgence. The Buddha then recounts that he realized awakening by going through four jhānas, which became an integral part of the so-called eightfold path of Buddhism.

As indicated, cultivation of concentration states can also be found in many contemplative traditions, such as Christian mysticism, Yoga, Kabbalah, and Sufism (Fisher, 2022; Khema, 1997; Rose, 2018). Here, we will focus exclusively on the Buddhist tradition and specifically jhāna. In Buddhist traditions, the development of contemplative concentration has often been understood as a preparation for insight. Insight meditation, for example recognizing phenomena as devoid of self, impermanent, and unsatisfactory, also requires at least some level of momentary concentration (Sayadaw, 2016). However, during religious reforms in Southeast Asia, particularly in Burma, jhāna practice was discouraged, as deep concentration was regarded as unnecessary for awakening (Braun, 2013; Dennison, 2022). A different conception of meditation practice “without deep concentration” (Braun, 2013, p. 162) was initially conceived of by Ledi Sayadaw (1846–1923) and developed by several of his students. The focus of this practice, sometimes called “dry vipassana,” was the contemplation of bodily sensations, and formed the background of

meditation movements that have sought to make meditation available to lay people. The focus on vipassana or insight practices influenced the Buddhist practices that were transferred into the Western world, through meditation teachers such as S.N. Goenka (Braun, 2013, p. 6).

Although jhāna practice was typically either disregarded or remained in the background among Western Buddhist practitioners, some meditation teachers began re-introducing such practice (Quli, 2008). An early indication of a changing attitude came through the work of Bhante Gunaratana (Gunaratana, 1992), who not only encouraged jhāna practice but presented an experientially informed account of the jhānas based on a pre-reform Theravāda view. Furthermore, jhāna was being practiced in different communities such as the one surrounding the German-born nun and meditation teacher Ayya Khema and Pa Auk Sayadaw. Inspired by these and others, some Western meditation teachers (see Table 1 for overview) started writing meditation manuals that included descriptions of the jhānas and how to practice them. These authors sometimes draw on modern science and appear less bound to tradition. Some openly write about their own meditation experiences, something which is traditionally uncommon or even forbidden (Full et al., 2013), and yet vital for the study of advanced meditation that unfold with increasing mastery.

Academic research on the jhānas is scarce and is mainly conducted within two fields: (1) “soft science,” that is, the humanities, especially religious studies, phenomenology,

Table 1 Included meditation manuals. The table includes each manual’s title, year of publication, author name, teachers (based on names listed in the respective manuals), and what meditation technique/object is used to enter jhāna

| Manual | Published | Author | Teachers | Technique |
|---|----------------------------|-----------------------------------|--|--|
| <i>Focused and Fearless</i> | 2008 | Shaila Catherine | Myoshin Kelley, Joseph Goldstein, Amita Amy Schmidt, Sarah Doering, Michelle McDonald, Pa Auk Sayadaw, Venerable U Jagara | Nimitta-based jhāna (“nimitta” meaning an internally perceived light) |
| <i>Mindfulness, Bliss, and Beyond Right Concentration</i> | 2006 2015 | Ajahn Brahm Leigh Brasington | Nai Boonman, Ajahn Chah Ayya Khema | Nimitta-based jhāna Focus on gladness to initiate jhāna, and then individual jhāna factors (factor-based) |
| <i>Practicing the Jhānas</i> | 2009 | Stephen Snyder, Tina Rasmussen | Pa Auk Sayadaw | Nimitta-based, kasiṇa-based |
| <i>The Mind Illuminated</i> | 2015 | John Yates | Upasaka Kema Ananda, Jotidhamma Bhikkhu | Whole-body, gladness/factor-based, nimitta-based |
| <i>The Path to Nibbana</i> | 2017 | David C. Johnson | Bhante Vimalaramsi | TWIM (tranquil wisdom insight meditation) |
| <i>Jhāna Consciousness</i> | 2022 | Paul Dennison | Nai Boonman | Nimitta-based jhāna |
| <i>Mastering the Core Teachings of the Buddha</i> | 2018 (expanded edition) | Daniel Ingram | Bill Hamilton, Bhante Gunaratana, Christopher Titmuss, Norman Feldman, Sharda Rogell, Guy Armstrong, Sharda Rogell, Yvonne Weier, Jose Reisig, Subhana Barzaghi, Norman Feldman, and Fred von Allmen, Kenneth Folk | Factor-based, brahmavihara-based, and kasiṇa-based |

and social science; (2) “hard science,” that is, empirical mind and brain sciences, including experimental psychology and cognitive neuroscience. We will review these fields in turn below.

One relevant qualitative psychological study of expert meditators was conducted by Brown and Engler (1980). Brown and Engler gathered some descriptions of access concentration which is regarded as a meditation state that is preliminary to *jhāna*, being characterized by stable attention and presence of some of the phenomenological aspects, such as joy and equanimity, that are typical of the *jhānas*. The investigation of access concentration is especially relevant for understanding the process of how the *jhānas* arise. In another study, Stuart-Fox described and discussed the historical developments from the account of the *jhānas* in the Suttas to the Abhidharma, which introduced a fifth *jhāna* to the traditional four found in the Suttas: an addition made arguably based on scholastic reasons (Stuart-Fox, 1989). According to Stuart-Fox, “for the scholastic mind, there existed an uncomfortable asymmetry where five hindrances were juxtaposed with [four] *jhāna* factors.” (Stuart-Fox, 1989, p. 99). By inserting a further *jhāna*, the *jhānas* could be understood as sequential overcoming of the five hindrances; as one *jhāna* factor falls away, so does one corresponding hindrance. Next, Bucknell published an article that gave a systematic account of the *jhānas* in the Theravāda tradition while suggesting ways in which each *jhāna* may unfold experientially (Bucknell, 1993). Bronkhorst’s book *Absorption. Human Nature and Buddhist Liberation* (Bronkhorst, 2012) is also worth mentioning. Referring to *jhāna* as “stage-of-meditation,” Bronkhorst argues for the centrality of absorption for mystical experiences. Furthermore, Wynne described the historical origins of Buddhist meditation and the *jhānas* (Wynne, 2009). Quli investigated the reception of *jhāna* among Western Theravāda converts, discussing how these practitioners position themselves in relation to modernist and traditional perspectives (Quli, 2008). Polak suggested a way of understanding the account of the *jhānas* as they are found in Early Buddhism, that is, before Theravāda and later developments (Polak, 2011). Among other things, Polak argues that the Early Buddhist account of the *jhānas* does not involve the stopping of sensory input, which is part of the Theravāda account of the *jhānas* (Polak, 2011, p. 12). Arbel has argued that the *jhānas* themselves realize insight (Arbel, 2017), a view that has been critiqued by Anālayo (2016). The most in-depth comparison of the phenomenology of concentration states has been conducted by Rose, who identified structural similarities between the *jhānas* as presented in the *Visuddhimagga*, a classic of the Theravāda tradition, and Patanjali’s *Yoga Sūtras* as well as in Christian mysticism (Rose, 2018). We have previously conducted a preliminary micro-phenomenological investigation of the *jhānas*, focusing mainly on access concentration and

creating a more comprehensive account of the experiential dimensions and mental activities involved in *jhānas* (Sparby, 2019b). These articles raise numerous issues relevant to the study of *jhāna*, such as how they are cultivated and arise in practitioners, how one may explain the different accounts of the *jhānas* by incorporating historical and textual research, and how they may relate to states described by other traditions. Furthermore, it is clear that there is an important distinction in what is meant by the word *jhāna*, such as whether one refers to a state that either excludes or includes sensory input. This difference is reflected in the manuals that will be treated below and also affects the account of the different forms of the *jhānas* that will be developed in this manuscript.

Only three neuroscientific studies have been conducted up until now. In increasing degree of rigor, an early case study was conducted by Hagerty (Hagerty et al., 2013), a group EEG study was conducted by Dennison (2019), and a more recent intensively sampled case study from our group (Chowdhury et al., 2023; Yang, Chowdhury et al., 2023). A recent review of the scientific publications on the *jhānas* concludes that research on the *jhānas* holds potential for further neuroscientific investigation as it has wide-ranging benefits to well-being, emotion regulation, and cognition, and that empirical research on advanced meditation needs to proceed with methodological rigor (Yang et al., 2023). A fourth neuroscientific study conducted by DeLosAngeles et al. (2016) could be added. However, although it is stated that the *jhānas* were investigated, the instructions and experiences reported make it questionable whether the states were *jhānas*. Moving from the first to the second *jhāna*, for example, consists of switching from feeling the breath at the nostrils to feeling the breath moving through the torso. Entering subsequent *jhānas* includes either prolonging or following the in-breath or out-breath. We are not aware of any descriptions, either traditional or contemporary, that use instructions like this. Furthermore, the experiences reported seem to be a mix of deep and light absorption and are difficult to harmonize with the accounts in traditional literature and contemporary manuals. The first *jhāna* involves counting the breath, which would seem disruptive to absorption and is never recommended in any of the manuals. The second *jhāna* is described as a cessation of all thought processes; the third *jhāna* is described as consisting of the inability to move the body. This is indicative of the deep *jhāna* described in the Theravāda tradition (Brahm, 2014; Catherine, 2008; Snyder & Rasmussen, 2009). However, DeLosAngeles et al. state that the fourth *jhāna* includes breath pauses; in the Theravāda account of the *jhānas*, breath ceases or becomes imperceptible in the fourth *jhāna* (Sparby, 2019a); for Brasington, breath pauses are taken to be indicative of access concentration or that the mind is ready to enter a lighter form of absorption. These issues make it questionable whether what DeLosAngeles et al. refer to as “*jhāna*” is comparable to other accounts.

To ensure scientific rigor, it is absolutely vital that the terms and constructs involved are clearly defined (Sparby & Sacchet, 2022). For any claims to the effect that “jhāna” increases well-being, attention, emotion regulation, etc., one needs to know what exactly jhāna is, otherwise the cause or potential range of causes will remain unclear. As we elaborate below, while there is some fundamental agreement about a basic set of different terms that tend to be seen as constitutive of jhāna, there is considerable disagreement about what those terms mean, that is, which experiences or mental activities the terms refer to. Furthermore, there is disagreement about which terms and experiences should be used to characterize the jhānas and their progression. Finally, it is possible that the jhānas may include a richer set of experiences than what has traditionally been described.

Imagine a state of chemistry where there was disagreement about what “water” means, whether it contains hydrogen and/or oxygen, and whether it essentially consists of more than these two kinds of atoms. Until clarity had been reached about these matters, chemistry could hardly be considered a mature science, let alone have practical impact. Something similar to this is true when it comes to the relationship between contemplative science and states of concentration such as the jhānas. While the jhānas may be understood as ways of categorizing experience without there being any natural kind (like water) that “jhāna” refers to, consistency of categorization is still vital for achieving scientific rigor. This article aims to contribute to the advancement of contemplative science through a comprehensive review and synthesis of contemporary meditation manuals and represents a model for how to approach other traditions when moving towards a unified account of advanced states of concentration meditation and systematic classification of meditation generally.

Method

The motivation for conducting a literature review and a content analysis of the experience of jhāna was the observed apparent discrepancies and similarities of the description of the experience of jhāna. The central aim of the review and analysis was to create an overview of similarities and dissimilarities that help guide future research on the jhānas. The population selected were meditation experts who have provided in-depth accounts of the jhānas in meditation handbooks. Such handbooks are currently the most readily available source of experiential accounts of the jhānas.

We were already aware of several handbooks before starting the literature search. Google Books was used to check for additional handbooks. We used the search terms “jhana” and

“handbook” or “manual.” The search yielded 438 results. This was reduced to 19 books that were published meditation manuals or handbooks describing jhāna practice. The following inclusion and exclusion criteria were used to determine which books to include in further analysis:

1. *The manual must contain meditation instructions explaining how to enter and proceed through the jhānas.* We understand “meditation manual” to mean books that provide not only a generalized description of what happens (or should happen) when one meditates but also instructions for *how* to meditate. These instructions include descriptions of techniques and how to proceed through certain states or stages of advanced meditation, and their unfolding, that is, meditative development (Galante et al., 2023), and in this case, the jhānas.
2. *The manual must contain a comprehensive description of the phenomenology of eight jhānas (four jhānas and four formless states).* The text must contain experiential accounts of eight jhānas, or four jhānas and four formless states as they are also called (from now on, “the eight jhānas” will refer collectively to the four jhānas and four formless states). Comprehensive descriptions are necessary for in-depth comparison; this criterion also enables exclusion of general accounts of the jhānas, which can be found in numerous texts.
3. *The manual must be published within the last two decades (after 2003).* This criterion serves to limit the search range and make the analysis manageable. There are also not many publications before 2000; we expect to have included the most comprehensive manuals and also most of the ones published.

These criteria led to several exclusions. Robert Burbea’s *The seeing that frees* (Burbea, 2014) was excluded since it does not contain a systematic account of the eight jhānas. Furthermore, we are aware of two manuals or guides published before 2003: Bhikkhu Khantipalo’s *Calm and insight. A Buddhist manual for meditators* (Khantipalo, 1994), originally published in 1981, and Ayya Khema’s *Who is my self?: A guide to Buddhist meditation* (Khema, 1997). Khantipalo represents practice similar to what we will later refer to as “deep jhāna” (Khantipalo, 1994, p. 52), which is covered by several other manuals in our selection. Khema’s view is represented by Brasington, one of her students, in our selection. A notable difference between them concerns their interpretation of *vitakka* and *vicāra*, as discussed below (for Khema these terms are primarily attention-related, while for Brasington they are thought-related). Bhante Henepola Gunaratana’s work on the jhānas (Gunaratana, 1992) was excluded because of Criteria 1 and 3. Hyunsoo Jeon’s book, *Shamatha, jhāna, vipassanā. Practice at the Pa-Auk monastery: A meditator’s experience* (Jeon, 2018), was excluded because

it takes the form of a personal account of his experience at the Pa Auk monastery. An in-depth presentation of Pa Auk's approach is also represented in our selection by Snyder and Rasmussen, who practiced at the same monastery as Jeon. Delson Armstrong's manual *A mind without craving* (Armstrong, 2021) was considered, but was excluded because of Criteria 1 and 2. Mark Edsel Johnson's *Tranquil wisdom insight meditation* (Edsel Johnson, 2019) was excluded because it did not contain full descriptions of all eight jhānas. Bhante Vimalaramsi's book *A guide to tranquil wisdom insight meditation* was excluded for the same reason (Vimalaramsi, 2015). Armstrong's, Edsel Johnson's, and Vimalaramsi's books represent a view similar to that of Johnson (2018), which we include—all are representatives of tranquil wisdom insight meditation (TWIM). Fickelstein's *A meditator's Atlas* (Fickelstein, 2007) similarly did not contain an account of all eight jhānas. Thepyanmongkol's *Samatha-vipassanā meditation* (Thepyanmongkol, 2011) only contained reference to traditional terms without phenomenological elaboration. Shaila Catherine has also published an additional meditation manual that could have been included, *Wisdom Wide and Deep* (Catherine, 2011), but since this manual is consistent with *Focused and Fearless*, we have not included it here. Some of the works that are not specifically explicated as part of the analysis are still referred to in the discussion. See Table 1 for an overview of all included manuals.

The definitions of the jhānas presented in Table 2 were selected by identifying the first occurrence of a general definition of jhāna in the respective manuals. The criteria for, and general definition of, jhāna that we provide were based on common elements in the definitions described within the manuals. The content of the manuals was analyzed using a process similar to thematic analysis. Main terms or themes that were used in describing the jhānas were identified and listed in a table and organized so that it is clear which manual contains which term (the table is included in the Supplementary Information). Traditional terms were used when stated. The names for other themes were anchored in the words used in the manuals; in some cases, we used two similar terms for a theme (e.g., "tranquility/peace"). In some cases, it was unclear whether a term was present or not (e.g., it could be inferred from previous statements, although it was not explicitly connected to a specific jhāna). Such cases were marked by a "?" in the table. For some themes, a description was added to qualify the content further (e.g., the theme "pacification of external senses" was qualified further using statements such as for instance "full" or "sounds may disappear"). This overview was used as a basis for the close textual comparison that aimed to reveal similarities and differences. The result of the comparison is described here in the "Results" section.

Results

The meditation manuals that we review here have come into existence at the confluence of Western culture, science, and Buddhist contemplative traditions. Some of the manuals have been written by people who have spent a significant amount of time in monastic settings. A common feature of the manuals is a willingness to discuss and question experiential phenomena openly. Still, all of the manuals emphasize that they present authentic descriptions of the advanced states of meditation found in Buddhist tradition. They explicate this more or less extensively through, for instance, references to the Buddhist Suttas or other central Buddhist texts.

Given that there are several different states that are sometimes called jhānas, one may ask: What warrants the use of the same word, "jhāna," to refer to all of them? This concerns the question of what essentially constitutes jhāna. While we will treat each jhāna individually below, we will first present a selection of one or more definitional characterizations of what constitutes jhāna generally from the manuals listed above. See Table 2 for the specific quotes.

The quotes in Table 2 may be summarized in the following way:

- (1) The jhānas are defined by stable concentration, focus, and absorption achieved in the context of meditation.
- (2) The jhānas are positively valenced (happy, joyful, pleasurable, blissful, comforting).
- (3) The jhānas are restful (tranquil, secluded) and still (little or no thought).
- (4) There is clear awareness in jhāna as opposed to trance or sleep states that are without awareness.
- (5) There is a progression through the jhānas in which the factors associated with the different jhānas change (generally in the direction of more refinement or disentanglement of the self).
- (6) The jhānas prepare the mind for insight.
- (7) The effects of jhāna include purification, healing/rejuvenation, and a transforming/reshaping of the mind that ultimately leads to awakening.
- (8) The jhānas are said to be wholesome, can be likened to flow states, and have intrinsic value.
- (9) There are different types of jhāna.

The issue of different types of jhāna is something that we will treat more in-depth after considering how each jhāna is described in the different manuals. Note that jhāna is sometimes differentiated from "access concentration", which we may understand as a form of more or less effortless concentration accompanied by some of the jhāna factors such as rapture, happiness, etc. (Sparby, 2019b). There are also states beyond the eight jhānas

Table 2 General characterizations of jhāna. Quotes containing definitional characterizations from the selection of jhāna manuals included in this study

| Manual | Definitional characterizations |
|---|---|
| <i>Focused and Fearless</i> | Jhānas are states of happiness that can radically transform the heart, reshape the mind, imbue consciousness with enduring joy and ease, and provide an inner resource of tranquility that surpasses any conceivable sensory pleasure. Jhānas are states of deep rest, healing rejuvenation, and profound comfort that create a stable platform for transformative insight. Throughout the development of jhāna, we intertwine the calming aspects of concentration with the investigative aspects of insight meditation. The fruit of concentration is freedom of heart and mind. (Catherine, 2008, p. xii). |
| <i>Mindfulness, Bliss, and Beyond</i> | [...] jhāna designates Buddhist meditation proper, where the meditator's mind is stilled of all thought, secluded from all five-sense activity, and is radiant with otherworldly bliss. (Brahm, 2014, p. 127). [...] It is helpful to know, then, that within a jhāna: (1) There is no possibility of thought; (2) No decision-making process is available; (3) There is no perception of time; (4) Consciousness is nondual, making comprehension inaccessible; (5) Yet one is very, very aware, but only of bliss that doesn't move; (6) The five senses are fully shut off, and only the sixth sense, mind, is in operation. (Brahm, 2014, p. 155) |
| <i>Right Concentration</i> | The jhānas are eight altered states of consciousness, brought on via concentration, and each yielding a deeper state of concentration than the previous. In teaching the eightfold path, the Buddha defined right concentration to be the jhānas. The jhānas themselves are not awakening, but they are a skillful means for concentrating the mind in a way that leads in that direction, and they are attainable not only by monastics, but also by many serious lay practitioners. (Brasington, 2015, p. xi) |
| <i>Practicing the Jhānas</i> | The words jhāna and absorption are synonymous. In absorption concentration, awareness is pulled into the jhāna with a "snap." [...] In absorption, in addition to the strong presence of the appropriate jhāna factors, the awareness is extremely secluded and focused, and ongoing concentration is more easily maintained. Awareness fully penetrates and is suffused by the jhāna factors. [...] First, there is awareness while in jhāna. It is not a zombie state, trance, or period of unconsciousness. However, there is no sense of "me" while in jhāna. The only awareness while in full absorption is of the object. If meditators have awareness of data from the five senses, it is because they are temporarily out of absorption. [...] Awareness in the jhānas is incredibly pristine, purifying, and indescribable. It is distinctly different from access concentration." (Snyder & Rasmussen, 2009, pp. 27–29). |
| <i>The Mind Illuminated</i> | Used in the general sense, jhāna means any kind of meditation where attention is quite stable, as opposed to novice meditation with its mind-wandering, gross distractions, and dullness. [...] Used in the narrow sense, jhāna refers to specific states of "absorption" that occur in meditation. To be absorbed mentally with something is just what it sounds like: your mind is completely engaged by a particular object. Some common synonyms for mental absorption are concentration, complete attention, immersion, and being engrossed or enthralled. Everyone has been mentally absorbed with something at one time or another and knows these absorptions can take many different forms. However, jhānas differ from other mental absorptions in three important ways: the absorption is wholesome; the jhāna factors are present; and the absorption occurs in the context of meditation. [And the absorption is] of the type that constitute "flow" experiences. (Yates et al., 2015, p. 377). |
| <i>The Path to Nibbana</i> | [...] there are two kinds of jhāna or two different ways to understand the term. One style is made up of one-pointed absorption jhānas, which are achievable by various concentration methods, including observing the breath, focusing on a colored disc (kasiṇā), or absorbing yourself in a candle flame. These jhānas are the states achieved by the yogic masters and were learned by the future Buddha when he first started down the path. [...] The second type of jhāna is the Tranquil Aware Jhāna, which is the jhāna described in the suttas [...] It is helpful to understand that the jhāna factors — these are the wholesome states that arise when one is in jhāna — in a tranquil aware jhāna or in an absorption concentration jhāna are very similar in nature. The difference is that in a tranquil aware jhāna the hindrances are gently released, and in the concentration state the hindrances are suppressed and pushed aside. The resulting states that arise are similar but definitely not the same. (Johnson, 2018, pp. 37–39). |
| <i>Jhāna Consciousness</i> | At its heart is the teaching and practice of jhāna meditation, which requires meditators to progressively disengage their personal "I" from their habitual everyday sensory consciousness, lived in since birth, to develop states of deep absorption leading to insight into the nature of existence and identity. Jhāna belongs within what is commonly described as the samatha division of Buddhist meditation, often translated as "tranquility" or "serenity," with the second division being vipassanā, translated as "insight" or "wisdom." Mindfulness, a much more familiar term in the West and well-known in its own right as a recognized treatment for recurrent depression, is just one of several basic factors underpinning both samatha and vipassanā. Historically, over more than 2,500 years, Buddhist teachers have regarded both jhāna meditation and vipassanā as essential practices to complete the Path. Usually translated as "absorption," jhāna has a secondary root, jhāpeti, meaning "to burn up," which is a reflection that jhāna is a highly active and far from passive state, and that the translation of samatha as tranquility or serenity can be rather deceptive." (Dennison, 2022, p. 1) |
| <i>Mastering the Core Teachings of the Buddha</i> | Sharpening your concentration may help almost everything you do, and can provide mental and emotional stability that can be very useful, translating to many other areas of your life. Concentration can also lead to very pleasant states referred to as "jhānas". These can be extremely blissful and peaceful. Being able to access these states of mind can be ridiculously enjoyable and profound. These states are valuable in and of themselves and serve the important function in the Buddhist tradition of providing a disposable foundation for insight practice, in that you can build those states up and then tear them down with investigation of the sensations that make them up [...]. (Ingram, 2018, p. 15). |

that we are considering here, such as *nirodha samāpatti*, in which the meditator does not experience any conscious processing at all for extended periods of time. Furthermore, the jhānas are also sometimes connected to supernatural abilities or siddhis (Snyder & Rasmussen, 2009, p. 34). Recently, some authors have turned to the question of supernatural abilities in Buddhism (Clough, 2010; Fiordalis, 2012; Overbey, 2012; Patton, 2020; Van Schaik, 2020). The issue for these authors is not the veracity of the claims to such abilities but understanding the historical context and their role in Buddhist soteriology. The collection of early Buddhist scriptures, the Pāli Nikāyas, indeed connect liberation to the *abhiññās*, the higher knowledges, or “certain extraordinary psychic powers [developed] by those adepts who have reached advanced stages of meditation” (Clough, 2010, p. 409). These include for example mind-reading and the recollection of past lives, but also knowledge that destroys defilements and lead to liberation. The higher knowledges were seen as potentially arising when a practitioner had attained the fourth jhāna (Ñanamoli & Bodhi, 1995, p. 370). The evaluation of these higher knowledges in the early scriptures is, however, ambiguous. On the one hand, they can lead to worldly attachment, on the other hand, they may support or be part of the awakening process (Clough, 2010). As the Mahāsaccaka Sutta presents the Buddha’s awakening, insight into past lives arose as a precursor to insight into what ultimately causes suffering (Ñanamoli & Bodhi, 1995, p. 351). Little information is contained in the Pali Nikāyas about how the higher knowledges abilities are developed. In contrast, the Vissudhimagga provides much more detail, connecting the higher knowledges to the development of concentration in different ways, including mastery of kasiṇa practice (meditations utilizing different visual objects such as colored discs) (Clough, 2012, pp. 80–81). However, since none of the contemporary manuals that we are considering here describe developing such abilities in connection to the jhānas, there is little ground for discussing them further in this article.

Based on the quotes in Table 2, the disagreements about what constitutes jhāna include the following topics:

- (1) Whether the hindrances to meditation (sensory desire, doubt, restlessness, etc.) are reduced or completely gone in jhāna.
- (2) Whether there are thoughts in jhāna.
- (3) Whether one may intentionally think or investigate consciousness in jhāna (a disagreement about the depth of absorption that constitutes jhāna).
- (4) Whether a sense of self is present in jhāna.
- (5) Whether a special kind of object is used (an internally perceived light or nimitta) for entering jhāna.

- (6) Whether external sensory impressions and a sense of time are present in jhāna.

Setting these disagreements aside for now, we propose the following as an inclusive definition of jhāna:

The jhānas are sequentially ordered states of (a) intentional, effortlessly stable concentration and aware absorption in which (b) negative mind states are reduced or completely absent, while (c) factors including bliss, peace, and formless aspects are developed and refined, and (d) the mind is inclined towards mental rejuvenation, psychological and philosophical insight, and meditative endpoints.

The high degree and stable focus on one object and clear awareness differentiate jhānas from trance states and other states of absorption. Negative mind states, traditionally referred to as the hindrances, include a set of specific meditation obstacles such as sensory desire, worry, and doubt, but may also include all negatively valenced states in the more general sense of fetters (greed, hate, etc.) (Sparby, 2022). The factors include traditional factors such as *vitakka* (thinking or initial attention) and *vicāra* (examining or sustained attention), *pīṭisukha* (bliss, happiness, and contentment), *upekkhā* (equanimity), and other factors. Furthermore, (a) and (b) may be regarded as fundamental features of jhāna, while (c) concerns the process that unfolds *during* jhāna, and (d) concerns the outcome. The following discussion will be principally concerned with (c), that is, the process of unfolding that takes place during jhāna. The above definition holds true generally for all forms of jhānas that we define later (see the section “[Different Types of Jhāna](#)”), but further aspects may be added or modified to highlight differences between forms of jhāna.

The Eight Jhānas

The purpose of the comparison of the eight jhānas below is to outline how descriptions converge and diverge and to uncover non-traditional phenomenological dimensions in the experience of jhāna (by “non-traditional” we mean experiences that are not part of the canonical accounts of the jhānas and yet not in contradiction with them). Here we will focus on providing a broad overview of agreements and disagreements regarding typical factors associated with each jhāna and bring attention to further phenomenological dimensions. We will use traditional terms common in the manuals and note when different interpretations vary. While we have strived to remain neutral in our analysis and presentation of the material below, there may be limits to our understanding of what is presented in the manuals. Hence, we do not claim to present *the* true account of the Buddhist jhānas, but only that we have summarized similarities and differences in our selection

of meditation manuals. For an overview of the different traditional factors and how they are presented in the manuals, see Supplementary Information.

The First Jhāna

There is a large degree of overlap in the manuals when it comes to the traditional factors that include *vitakka*, *vicāra*, *pīti*, *sukha*, and *ekaggatā*. However, two manuals refer to *vitakka* and *vicāra* as *thinking and examining* (Brasington, 2015; Johnson, 2018), while the rest understand these terms as *initial and sustained attention*; initial attention consists of directing attention to the meditation object, while sustained attention consists of attention staying with the object.

All manuals agree that *pīti* and *sukha* are present in the first *jhāna*. *Pīti* may be translated as joy, bliss, or rapture, while *sukha* is often translated as happiness.

Some manuals connect *ekaggatā* to the first *jhāna* (and subsequent *jhānas*). While *ekaggatā* can be translated as “one-pointedness,” the interpretation of this term is challenging. If taken literally, “one-pointedness” may seem to indicate a small spatial area of focus, but it is also understood to mean “collected and unified” (Johnson, 2018, p. 106) and “unification of mind” (Dennison, 2022, p. 32). According to Brahm, *ekaggatā* indeed means being focused only on “minute area of existence” in relation to space (“point-source of bliss”), time (“present moment”), and phenomena (“the mental object of *pīti-sukha*”) (Brahm, 2014, p. 156). Catherine offers an in-depth phenomenological description of *ekaggatā* as “the capacity of mind to remain focused and one-pointed with a chosen object” and “to lock on to the chosen object with an intimacy that rivets the attention, stills the mind, and settles into unwavering focus.” (Catherine, 2008, p. 107). Here *ekaggatā* is far from being spatial. Furthermore, *ekaggatā* is said to be less evident in the first *jhāna* due to the activity of *vitakka* and *vicāra* (Catherine, 2008, p. 128).

Some manuals point to *primary factors* for each *jhāna*. One claims that the central factor for the first *jhāna* is *vitakka* and *vicāra* (Dennison, 2022), while two manuals suggest that *pīti* is the primary factor of the first *jhāna* (Brasington, 2015; Johnson, 2018).

All manuals understand the mind to be secluded from the hindrances (e.g., desire, hate, doubt) in the first *jhāna*, which is variously interpreted as either that the hindrances are dampened or completely absent. This seclusion is traditionally seen to be connected to the arising of meditative joy (*pīti*).

Other phenomenological factors that are connected to the first *jhāna* are *narrow width* (Ingram, 2018), *tranquility* (Catherine, 2008; Johnson, 2018), and *increased brightness* (Catherine, 2008). Brahm describes a process happening

during the first *jhāna* that he calls “the wobble,” which consists of the movement of attention in relation to bliss: the mind grasps at the bliss and then lets it go automatically. Brahm connects this to the presence of *vitakka* and *vicāra* in the first *jhāna* (Brahm, 2014, pp. 155–156).

The Second Jhāna

The manuals all agree that the second *jhāna* is characterized by the absence of *vitakka* and *vicāra*, as either thinking/examining or initial/sustained attention. Brahm mentions a jhanic state that does not have applied attention, yet does have sustained attention; this state is said to be so close to the second *jhāna* that it is often included in it (Brahm, 2014, p. 159). Ingram states the second *jhāna* is characterized by the dropping of “almost all applied and sustained effort”; it has “much more of the quality of showing itself to you, welling up, filling the field of attention with itself, blossoming naturally (Ingram, 2018, p. 164). For Catherine, in the second *jhāna*, the mind “locks on” to the meditation object and enters into a “trusting one-pointed unification with [it]” (Catherine, 2008, p. 133). According to Brahm, the wobble, that is, the lapses of attention described above, ceases (Brahm, 2014, p. 159). Dennison notes that attention becomes “effectively automatic” in the second *jhāna* (Dennison, 2022, p. 53), which is connected to the subsiding of *vitakka* and *vicāra* and the arising of the unification of mind (Dennison, 2022, p. 51). For those who understand the *vitakka* and *vicāra* as related to thinking, Johnson writes that “internal verbalizing has essentially stopped” (Johnson, 2018, p. 112). In contrast, Brasington notes that one may find that thinking does not completely subside unless one has been on retreat for a month or longer (Brasington, 2015, p. 49).

In two manuals, *pīti* or *pītisukha* is identified as the predominant factor of the second *jhāna* (Dennison, 2022, p. 50; Ingram, 2018, p. 164). For Brasington, *sukha* is in the foreground in the second *jhāna*, while it is in the background in the first *jhāna* (Brasington, 2015, p. 48). This foreground/background reversal is what is meant by “inner tranquility” in the traditional description of the second *jhāna* according to Brasington (Brasington, 2015, p. 49). According to Catherine, in the second *jhāna* “[t]he factor of *pīti* intensifies; however, without the agitation of directed and sustained energies, this pleasure stabilizes into a powerful experience of inner tranquility.”

For Brasington, the second *jhāna* is mostly experienced as being located lower in the body than in the first *jhāna*:

The experience of the second *jhāna* seems to be located lower in the body than the experience of the first *jhāna*; it’s more in the heart center for most people. It feels like the happiness is coming from your heart and welling up as from a spring. (Brasington, 2015, p. 50)

This is a characteristic that is not part of the traditional factors. Other authors, such as Johnson (2018), also indicate that different *jhānas* may be focused on different parts of the body or spatial areas (as noted below in each specific case).

The Third *Jhāna*

There is consensus that in the third *jhāna*, *vitakka* and *vicāra* are not present. Furthermore, *sukha* (happiness or contentment) is considered to be present while *pīti* is gone or transformed (Dennison, 2022, p. 41). Shaila states that the mind of the meditator is “unified with quiet joy, contentment” (Catherine, 2008, p. 139), which may be taken to indicate the presence of *ekaggatā*. Snyder/Rasmussen explicitly state that *ekaggatā* is present in the third *jhāna* (Snyder & Rasmussen, 2009, p. 79), while Brahm, Dennison, Johnson, and Ingram do not explicitly mention *ekaggatā* in relation to the third *jhāna*. However, it may be inferred that they hold *ekaggatā* to be present based on (i) the fact that these authors tend to follow the traditional *Visuddhimagga* characterizations for their lists of characteristics, and (ii) that they would have mentioned if *ekaggatā* were to fall away (as for example *vitakka/vicāra* in the second *jhāna*).

Catherine states that *sukha* takes the “center stage” of the third *jhāna* (Catherine, 2008, p. 139) while Brasington indicates that the idea of the third *jhāna* is to make *sukha* seem “all-pervasive” (Brasington, 2015, p. 57). In this way, *sukha* may be regarded as a primary factor of the third *jhāna*.

Tranquility and peace are also seen to be connected to the third *jhāna* alongside mindfulness, clear comprehension, and equanimity. These factors may also be regarded as traditional, although they are not typically presented as primary factors.

Ingram states that in the third *jhāna* “formless elements” may occur, which include “the sense of the body falling away, sights falling away, sounds falling away” (Ingram, 2018, p. 167). Furthermore, for Ingram, in the third *jhāna*, attention is clear around the edges while unclear in the center (in other words, attention is “wide”), which contrasts with attention in the second *jhāna*, which is clear in the center (Ingram, 2018, p. 165). For Brasington, the third *jhāna* is located more in the belly (Brasington, 2015, p. 56). These two characteristics we characterize as non-traditional.

The Fourth *Jhāna*

All manuals agree that the fourth *jhāna* is characterized by *sukha*/happiness falling away while equanimity remains. Dennison notes that equanimity gradually takes over as the primary factor of the third *jhāna*, while “the subtle attachment to *sukha* fades,” at which point the transition to the fourth *jhāna* can take place (Dennison, 2022, p. 79). Brahm

notes that a profound sense of peace is the hallmark of the fourth *jhāna*:

Nothing moves here, nothing glows. Nothing experiences happiness or discomfort. One feels perfect balance in the very center of the mind. At the center of a cyclone, nothing stirs in the center of the mind’s eye. There is a sense of perfection here, a perfection of stillness and awareness. (Brahm, 2014, p. 163).

This stillness is then connected to equanimity. Brasington characterizes the fourth *jhāna* as an “even-mindedness of neither pleasure nor pain” and Johnson explicitly states that any pain in the body will cease in the fourth *jhāna* as there is no aversion present (Johnson, 2018, p. 118).

Mindfulness is highlighted by some manuals as a further central quality of the fourth *jhāna* (Catherine, 2008, p. 147; Ingram, 2018, p. 168; Yates et al., 2015, p. 382), and may be seen as being fully refined (perfected) by equanimity.

A further aspect of the fourth *jhāna* that is also noted in the traditional literature is that the breath stops. One manual notes that the breath becomes “very, very shallow” (Catherine, 2008, p. 147); another notes that experientially it feels like the breath stops (Snyder & Rasmussen, 2009, p. 82). This may be connected to the phenomenon of pacification, which most manuals note is prominent in the fourth *jhāna*: There may be no perception of the external world at all (Brahm, 2014, p. 164; Catherine, 2008, p. 147) or the contact with the body may vary between some contact and full disappearance of contact in the fourth *jhāna* (Ingram, 2018, p. 168). Sounds and other impressions may still intrude into the fourth *jhāna* if they are loud or intrusive enough (Catherine, 2008, p. 146).

Two manuals mention changes in light perception in the fourth *jhāna*, as either increased brightness (Brasington, 2015, pp. 63–64) or the presence of a golden light (Johnson, 2018, p. 118). Dennison states that the fourth *jhāna* is embodied at the top of the head (Johnson, 2018, p. 118), while Brasington states that the fourth *jhāna* is experienced by going further down from the third *jhāna* (which was located in the region of the belly); the body may even start slumping (Brasington, 2015, pp. 61–62). Ingram states that the fourth *jhāna* has a panoramic quality (Ingram, 2018, p. 168).

Insight and wisdom may also arise in the context of the fourth *jhāna* in a way that leads to behavioral changes. If one comes in contact with sensory experiences in the context of the fourth *jhāna*, they “will be known from the perspective of equanimity.” (Catherine, 2008, p. 146). Aversion towards pain as a source of avoidance of painful situations may be replaced by responses based on intelligence and wisdom, that is, actions based on insight into what constitutes helpful responses to pain (Catherine, 2008, p. 149).

The Fifth Jhāna or the First Formless Jhāna

The formless jhānas are traditionally considered to be based on the fourth jhāna (Dennison, 2022, p. 139; Ingram, 2018, p. 172). Indeed, most manuals consider all the formless jhānas to be characterized by equanimity and ekaggatā (Brahm, 2014, p. 169; Catherine, 2008, p. 193; Dennison, 2022, p. 139; Snyder & Rasmussen, 2009, p. 101; Yates et al., 2015, p. 383). What is specific to the fifth jhāna is *boundless space*, which is variously described as infinite (Brasington, 2015, p. 77) or “empty, immeasurable, and undefined” (Brahm, 2014, p. 170). The fifth jhāna may be entered either by focusing on the quality of infinite expansion (Brasington, 2015, p. 77) or by using so-called kasiṇas, which are sensory objects such as colored discs. To enter the fifth jhāna, one can for example focus on the edges of holes in material objects (Snyder & Rasmussen, 2009, p. 102).

Some subtle visual qualities may be connected to the fifth jhāna as well, such as grayness, off-white, or blackness (Brasington, 2015, p. 78). Johnson states that the fifth jhāna consists of compassion that expands in all directions (Johnson, 2018, p. 124).

Pacification may be stronger in the fifth jhāna, but there is no consensus with regard to whether sensory impressions, including sounds, necessarily go away completely. Individual manuals report that subjectivity may fade away (Dennison, 2022, pp. 148–149); that tiredness goes away in the fifth jhāna to such a degree that “sleep might feel impossible” (Snyder & Rasmussen, 2009, pp. 196–197); and that the fifth jhāna is deeply purifying, although this is true for all the formless jhānas (Snyder & Rasmussen, 2009, p. 104).

The Sixth Jhāna or the Second Formless Jhānas

Most manuals agree that the sixth jhāna is characterized by equanimity and one-pointedness or unification of mind (as this is true for the seventh and eighth jhānas as well, we will not mention this aspect again). The object of the sixth jhāna is boundless consciousness or an infinite consciousness that is “neither big, large, and expanded nor infinitesimally small” (Catherine, 2008, p. 200). This consciousness is also described as an awareness of awareness that is “very big, unlimited” and “dark” (Brasington, 2015, p. 80). Johnson’s account of the sixth jhāna adds that the object of the sixth jhāna is *muditā* or altruistic joy (Johnson, 2018, p. 127).

Infinite consciousness can for example be accessed by attending to the consciousness that was aware of the boundless space of the fifth jhāna. However, some manuals point out that “boundless consciousness” should not be taken as “the ground of being” or as evidence for a kind of idealism where consciousness or the self is the foundation of everything (Brasington, 2015, pp. 80–81; Ingram, 2018, p. 174); while the experience of infinite consciousness may seem to

indicate the presence of a universal self or mind, this presence should be understood as an illusion or fabrication. The sixth jhāna can, however, be taken as a starting point for insight, it is “a wonderful platform for calling into question the habitual association of consciousness with its objects” (Catherine, 2008, p. 200). Making observations while in the state may, however, be impossible, which means that insight arises from reflecting on and comparing states to each other after having experienced them (Catherine, 2008, p. 199). This contrasts with Johnson’s account, which indicates that insights take place while in jhāna: “You see firsthand how truly impermanent everything is. There’s no doubt in your mind anymore that everything just comes into existence and then fades away.” (Johnson, 2018, p. 127).

The Seventh Jhāna or the Third Formless Jhāna

In the seventh jhāna, “nothingness” becomes the object of meditation and the core experience. The kind of nothingness in question may be described as the sense of absence ensuing when one expects to find something but discovers that “no thing” is present. Other ways of describing nothingness include “voidness” (Catherine, 2008, p. 202), a kind of absence (Brasington, 2015, p. 82), and “no-consciousness” (Brahm, 2014, p. 170). Dennison suggests that the nothingness of the seventh jhāna lies between subjectivity (the experiencing mind) and objectivity (the mind reaching out towards objects) (Dennison, 2022, p. 156). Thus, it is a liminal concept, a very subtle “something,” an absence that is a contrast to a presence that is concrete, specific, and identifiable. Beyond this, unification of mind and equanimity is said to be equally present in the seventh jhāna, as in the other formless jhānas. In contrast to other manuals, Johnson states that the seventh jhāna is located in the head and characterized by equanimity (i.e., no longer *muditā*, as in the sixth jhāna) (Johnson, 2018, p. 135).

The seventh jhāna may be seen to consist of a no-self experience (Johnson, 2018, p. 133), and yet there may be a “tiny sense of an observer suspended in the nothing” (Brasington, 2015, p. 83). Despite equanimity and peacefulness, the nothingness may be experienced as fearful for the same reason that a dark room or the unknown may evoke fear (Brasington, 2015, p. 83; Ingram, 2018, p. 176).

The Eighth Jhāna or the Fourth Formless Jhāna

All manuals agree that the eighth jhāna can be characterized by the rather paradoxical statement “neither perception nor non-perception.” One may enter the state by turning attention towards the awareness of the “no-thingness” of the seventh jhāna (Catherine, 2008, p. 202). “Neither perception nor non-perception” can be taken to mean that this state is “largely incomprehensible” (Ingram, 2018, p. 178) or

impossible to describe in a logically consistent way. However, there are ways of unpacking what “neither perception nor non-perception” means that do not defy logic. In the eighth jhāna, there may be a residue of perception that is so subtle that it is not a perception of anything specific, not even a perception of nothing/absence (Brahm, 2014, p. 171). Or it can be described as a state that is *recognizable*, but not recognizable as *something*, that is, a this-and-not-that (Catherine, 2008, p. 203). The further descriptions offered by the different manuals vary between paradoxical statements and attempts at describing it in specific terms: on the one hand, the eighth jhāna can be a state without awareness, it is “kind of there, kind of not” (Johnson, 2018, p. 147) or in the state one is “neither identifying nor not identifying” (Brasington, 2015, p. 85). On the other hand, the state may be located in front of the face (Brasington, 2015, p. 85) and it can be characterized by softness and peace (Catherine, 2008, p. 203).

Snyder and Rasmussen describe the state as consisting of “non-dual awareness,” as it contains both and neither of perception and non-perception “at the same time” (Snyder & Rasmussen, 2009, p. 109). Brasington describes a particular kind of wobble that may occur in the state; since the state is so refined, it is easier for the focus to be lost (Brasington, 2015, p. 86). Hence, although the state itself may be hard to describe in a logically consistent way, there are at least phenomenological aspects of it that are comprehensible and communicable.

Discussion

The analysis of the different meditation manuals has revealed not only significant overlap in the description of the eight jhānas and the progression through them, but also some disagreements and idiosyncrasies. In the following, we will discuss these issues. While there are agreements, certain disagreements are so significant that they warrant establishing different types of jhānas, which will be outlined below. We will also summarize potential new phenomenological dimensions that could be added to the traditional factors that may facilitate future research on the jhānas.

Agreements and Disagreements

Here we discuss certain agreements and disagreements. Our aim is not to identify which interpretation of the jhānas is correct but to give a comprehensive overview of all research-relevant varieties of experience that may be related to jhāna.

Vitakka and Vicāra

The descriptions of vitakka and vicāra in the manuals align with the traditional accounts: Vitakka and vicāra are present

in the first jhāna and absent in the second jhāna and onwards. It is worth noting that the Abhidharma speaks of five and not four jhānas, with the second jhāna constituted by the absence of vitakka while vicāra is still present (Stuart-Fox, 1989). As indicated earlier, Stuart-Fox argues that a jhāna was inserted between the traditional first and second ones for scholastic reasons. However, one may interpret the insertion to mean that indeed vitakka and vicāra fall away in stages: In the first stage, attention locks on to the meditation object, but is not yet fully stable. Whenever attention becomes unstable, there is no need to direct attention back to the object, that is, vitakka is not necessary, but vicāra still is. In the second stage, vicāra is no longer necessary either. This aligns with Brahm’s account of the wobble in the first jhāna and the presence of two substages in the first jhāna.

To what extent the factors should be understood as being either strictly present or absent in each jhāna is debatable. Brasington states, for example, that thinking may not fully go away in the second jhāna if one has not spent a long time in retreat (Brasington, 2015, p. 49). This means that the absorption experienced in jhāna is not necessarily connected to the absence of thinking; one may be absorbed even though thoughts are present. This may be why the traditional texts speak of imperfect jhānas (Sparby, 2019b) or that there may be “thorns” in jhāna, namely experiences that intrude on the absorption and potentially pull one out of it (Brasington, 2015, pp. 111–112), even though one is technically still in jhāna.

One central disagreement concerns whether vitakka and vicāra refer to thinking or attention. There is a debate about which interpretation is correct. One side argues that the early Buddhist suttas use these terms to mean thinking and examining (Brasington, 2015, pp. 97–102), while the other side argues that the basic function of vitakka and vicāra is that of directing the mind to an object and anchoring it there (Gunaratana, 1992, pp. 51–58). The latter view leads to the conclusion that as long as attention is anchored to an object, which constitutes vitakka and vicāra, no thought can possibly exist in jhāna (Brahm, 2014, p. 156). However, it seems clear that either side would agree that both thinking and attention may undergo radical change as one goes into and proceeds through the jhānas, with the tendency being that thinking is reduced or stops completely and that attention becomes stable. Regardless of which interpretation of the terms is correct, both of these dimensions of experience should be tracked for research purposes. There surely is a link between the absence of thoughts and the stability of attention, but it is questionable whether the absence of thoughts necessitates the stability of attention. As attention tends to be connected to what one is currently thinking, the presence of discursive thoughts, inner speech, etc., makes it difficult to stabilize attention. In contrast, focusing on one object, like in jhanic absorption, presupposes that narrative thought is reduced or absent.

The case of vitakka and vicāra illustrates the necessity of considering agreements and disagreements in conjunction. While the manuals agree that vitakka and vicāra are present in the first jhāna, there is disagreement regarding exactly *what* is present (thoughts or attentional activity), and so considering the terms alone without experiential reference and conceptual clarification may not be fruitful.

Which Factors are Essential for Defining Jhāna?

A main difference in the account of the jhānas is the number of factors used in characterizing jhāna. The Theravāda account of the first jhāna typically uses five factors to define the first jhāna, while the more strictly Sutta-based approach uses four (the difference relates to whether ekaggatā or unification of mind is included).

However, the manuals often involve more factors when characterizing jhāna, and these are sometimes viewed as essential for giving a full account of what jhāna is. This is, for example, evident in the case of Brahm's criteria that in jhāna there is no thought, no decision-making, no perception of time, no comprehension, no experience in relation to the five senses, and yet an awareness of unmoving bliss (Brahm, 2014, p. 155). On closer scrutiny, the first jhāna for Brahm is characterized by a wobble, that is, an automatic grasping and then letting go of grasping, conceived of as a movement of vitakka and vicāra. One may ask how such a movement can be experienced. A change from one state to another entails that there is a before and after, and how is this possible to experience such a shift without a perception of time? One may also ask whether the wobble does not involve some amount of decision-making and cognition (thought/comprehension), even though these processes may be automatic.

Similarly, Brasington points out that although the absence of thinking is a definition of the second jhāna, this condition is not strict, as some may only experience this while on long retreats. This gives rise to the difficult question: If someone experiences jhāna in a way that is consistent with many of the traditional criteria, yet exhibits some individual difference, should the definition of jhāna be adjusted to include this individual difference or does this warrant the conclusion that the person is not experiencing jhāna or an imperfect realization of it? This question becomes even more difficult if we consider that there are different interpretations of the jhānas. This is not a question we will attempt to answer here. Rather, the question may be regarded as a central research issue. Answering it is likely to consist of a complex interaction between information from traditional texts, phenomenology, neuroscience, individual differences, and behavioral analysis: what do the ancient and modern texts say? What do people actually experience? How do these experiences relate to brain activity? What individual differences actually exist, and do they change over time? What are the effects of

different forms of jhāna practice on behavior? Do different forms of jhāna more effectively help to reduce suffering and realize happiness?

Given that more than four or five criteria may be used to define jhāna, one may also ask why only a small set is typically presented as central. One simple answer may be that these are the most salient features. However, there are other accounts of jhāna-like states, such as the samādhi-states in Patanjali's Yoga Sutras, that described ways that are similar to the Buddhist account of jhāna. For example, samādhi is based on vitarka and vicāra and bliss/ānanda (which would correspond to pītisukha), yet also involves reference to the presence and absence of ego/asmitā in the account of samādhi (Rose, 2018). This indicates that while there may be a core, cross-tradition experience of absorption and describing the unfolding of such states by reference to factors and their reduction or transformation, the factors used to describe this process, or processes, vary. When developing research-based comprehensive accounts of contemplative concentration states, it seems wise to include a larger range of criteria than four or five, and also potential experiential dimensions beyond those typical included in traditional accounts (see the section "[Further Phenomenological Dimensions](#)"). At the same time, it seems necessary to define different forms of jhāna, since some of the criteria used by the manuals, especially those related to the depth of absorption, are quite different (see the section "[Different Types of Jhāna](#)").

Peak of Pīti

An important point of disagreement is the progress of pīti, including its peak, in the jhānas. Brasington indicates that pīti peaks in the first jhāna and refers to this peak energetic surge as the primary indicator that one is in the first jhāna (Brasington, 2015, p. 38). To switch to the second jhāna, pīti is calmed down (Brasington, 2015, p. 48). Others see pīti as peaking in the second jhāna (Catherine, 2008, p. 133; Dennison, 2022, p. 50; Ingram, 2018, p. 164). Johnson not only seems to suggest that joy is the primary factor of the first jhāna by (Johnson, 2018, p. 103), but also states that joy that arises in the second jhāna is "stronger" and "deeper" (Johnson, 2018, p. 111). Hence, the different accounts of the jhānas seem to be contradictory with regard to how pīti develops. However, if one takes a step back, a general agreement can be discerned. There is agreement that concentration grows in conjunction with the increase of pīti, which at some point peaks, leaving concentration strong, while pīti diminishes or ceases. Hence, the disagreement is not necessarily about a phenomenological progression, but rather a disagreement about the terms used when accounting for the progression through the jhānas. As indicated in Fig. 1, the peak of pīti may be understood to belong to either the

first or second jhāna. If pīti is seen to peak in the first jhāna, then what happens before that would be access concentration. The second jhāna would start where sukha enters the foreground, and the third jhāna would start when pīti is completely reduced. Again, the whole process may be phenomenologically identical while the terms used to indicate peaks and transitions may still differ across manuals.

Different Types of Jhāna

Based on the material thus far analyzed here, there is considerable evidence suggesting a differentiation between types of jhāna. We suggest that one can speak of three forms of jhāna:

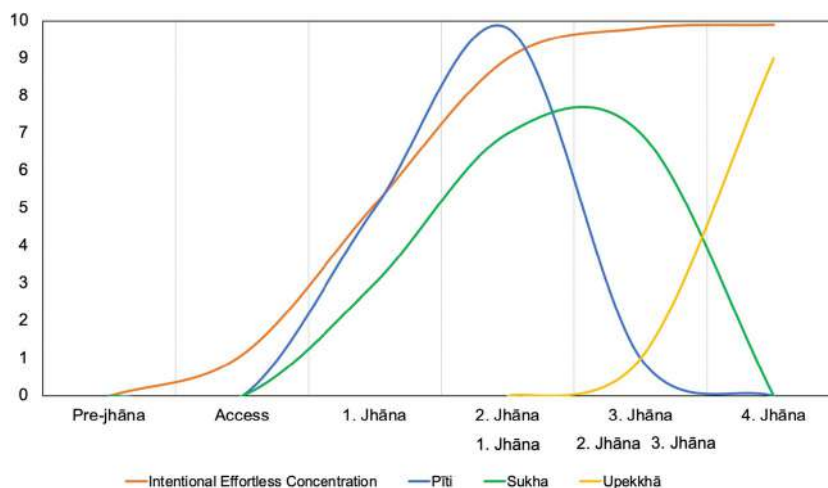
1. Light jhāna: As defined by John Yates: “any kind of meditation where attention is quite stable as opposed to novice meditation with its mind-wandering, gross distractions, and dullness” (Yates et al., 2015, p. 377); the first jhāna would begin when any of the traditional jhāna factors such as joy is present after focusing on the meditation object for a few minutes (Johnson, 2018, p. 103) or when there is a reduction “in the number of thoughts unrelated to the [meditation] object” is experienced (DeLosAngeles et al., 2016, p. 29).
2. Intermediate jhāna: Starts with a phenomenological shift where attention locks onto the meditation object and the traditional jhāna factors are initially present and then reduce while attention remains stable; the beginning of jhāna may or may not be accompanied by peaking pīti.
3. Deep jhāna: Starts when the mind fully absorbs into the meditation object (the nimitta) or any of the characteristics of the formless reals. When jhāna begins, the traditional factors are present and then are reduced until unification of mind and equanimity remains. Awareness remains while these domains of experience disappear (fully from the second jhāna onwards): external per-

ception, thinking, decision-making, time, and comprehension. There is no separate self and yet awareness remains.

Light jhānas may seem to be used in the context of TWIM (tranquil wisdom insight meditation) represented by Johnson’s manual (Johnson, 2018) in our selection. Johnson rejects that jhāna consists of absorption (Johnson, 2018, pp. 39–40) and concentration (Johnson, 2018, p. 57). However, the kind of absorption that is rejected is the one where external sensory input is gone. The meditation instruction is to “sink into” the object (Johnson, 2018, p. 96), which in TWIM is the feeling of mettā, and to surround oneself with that feeling (Johnson, 2018, p. 78). We consider this to be a light form of absorption, and in the higher or subsequent TWIM-jhānas, there is indeed a “pulling away” from the body (Johnson, 2018, p. 55), which we consider a stronger absorption. The kind of concentration that is rejected is a forceful one, which is replaced by a light resting on the object (Johnson, 2018, p. 95). Still, the “collectedness” that arises is indeed one that involves effortless staying with the object (Johnson, 2018, p. 95), which clearly is a case of heightened concentration. Hence, TWIM practice does involve both intensified concentration and some form of absorption.

A similar distinction between what we here call “intermediate” and “deep” jhānas has been made elsewhere (Shankman, 2008, p. 103), which is also referred to as “Sutta jhāna” and “Visuddhimagga jhāna.” Our analysis shows that there are differences in the interpretation of intermediate jhānas as well: vitakka and vicāra may be interpreted as either thinking or attention and unification of mind may or may not be included (Brasington, 2015; Ingram, 2018). This means that while there may be overarching similarities between different forms of jhānas, further level of detail may be necessary for understanding exactly how “jhāna” and related terms are understood in a specific context.

Fig. 1 Trajectories of factors through pre-jhāna and the first four jhānas. The progression of several factors through jhāna, including varying intensities of pīti, effortless focus, sukha, and equanimity, and thus offers a model for the contents of key pre-jhāna states and jhānas 1–4. There are some discrepancies in how terms are used to refer to the general trajectory as indicated by the different placement of 2 and 3 jhāna (first line) and 1–3 jhāna (second line)



Brasington describes entering into a deep jhāna after an extended period of retreat practice: “after being on retreat for almost five months, I did enter a state where there was no feeling, no perception, no body sensations, no sounds, and no passage of time” (Brasington, 2015, p. 143). Hence, the practice of one type of jhāna does not preclude the practice of others. However, as one progresses through a sequence of light and intermediate jhānas, one moves closer to the territory of the deep jhānas, given that the mind becomes more still, attention more stable, and sensory input more muted. Hence the phenomenological differences between the different types of jhāna may be the strongest when they initially appear. Figure 2 provides a model of how the discussed differences in the experience of the first and fourth jhāna may be understood according to the differentiation between light, intermediate, and deep jhāna (the second and third jhānas have been excluded to make the differences and similarities between the forms more apparent).

In the light first jhāna, there will be joy and stable attention, while thinking is reduced. The body will be present. In the intermediate first jhāna, the joy and stability of attention will be much stronger and thinking, self, and volition much lower, and yet the body is still present. In the deep first jhāna, the body goes away, attention is mostly fully stable with perhaps a few near interruptions of focus, joy is extremely intense, and further factors such as equanimity are present as well. In the fourth jhāna, the experiential richness has been radically reduced and the differences between the forms of jhāna are much less pronounced.

Figure 2 does not indicate qualitative differences within each dimension. For example, effortlessness could be connected to the highest levels of attention. Pīti may be characterized by a single event of “goosebumps” to the body feeling fully energized all over. There may also be strong positive or

negative correlations between the different dimensions. For example, stable attention is likely to be negatively correlated with thinking. Regardless of these considerations, there will be shared features between the different forms of jhāna, and they may at different levels of practice be phenomenologically quite similar. However, if certain fundamental phenomenological dimensions, such as embodiment, are not included in future research, it will be difficult to sufficiently differentiate the different forms of jhāna.

Note that a way of distinguishing different types of jhānas from one another is to consider the technique that is used to enter them. To enter the first jhāna, some practitioners may use an initial focus on any meditation object (typically the breath) and then switch to gladness as an object of focus (Brasington, 2015). After this, different factors may be used to traverse through the jhānas. TWIM practitioners use an intentional, if gentle, focus on mettā (the feeling of loving kindness). Nimitta-based jhāna practitioners use a perceived light that appears during deep concentration meditation (typically focusing on the breath) to enter and traverse through the first four jhānas; to enter the formless jhānas, the main factor of the jhāna (space, consciousness etc.) becomes the object of focus. A deep absorption similar to the nimitta-based jhānas may also be achieved by kasiṇa-based meditation. Deep absorption to the extent that sensory input goes away completely (sometimes referred to as “pacification”) may also occur based on using breath-related sensations as a meditation object (Yates et al., 2015). Because of this, here we chose not to differentiate forms of jhāna primarily based on meditation objects. We have summarized our understanding of the three types of jhāna in Table 3.

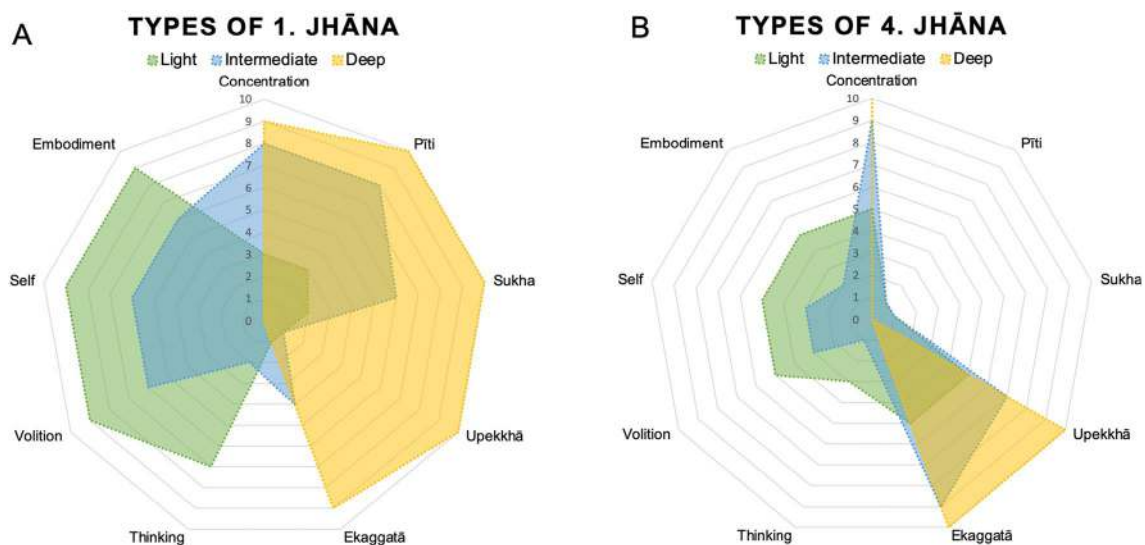
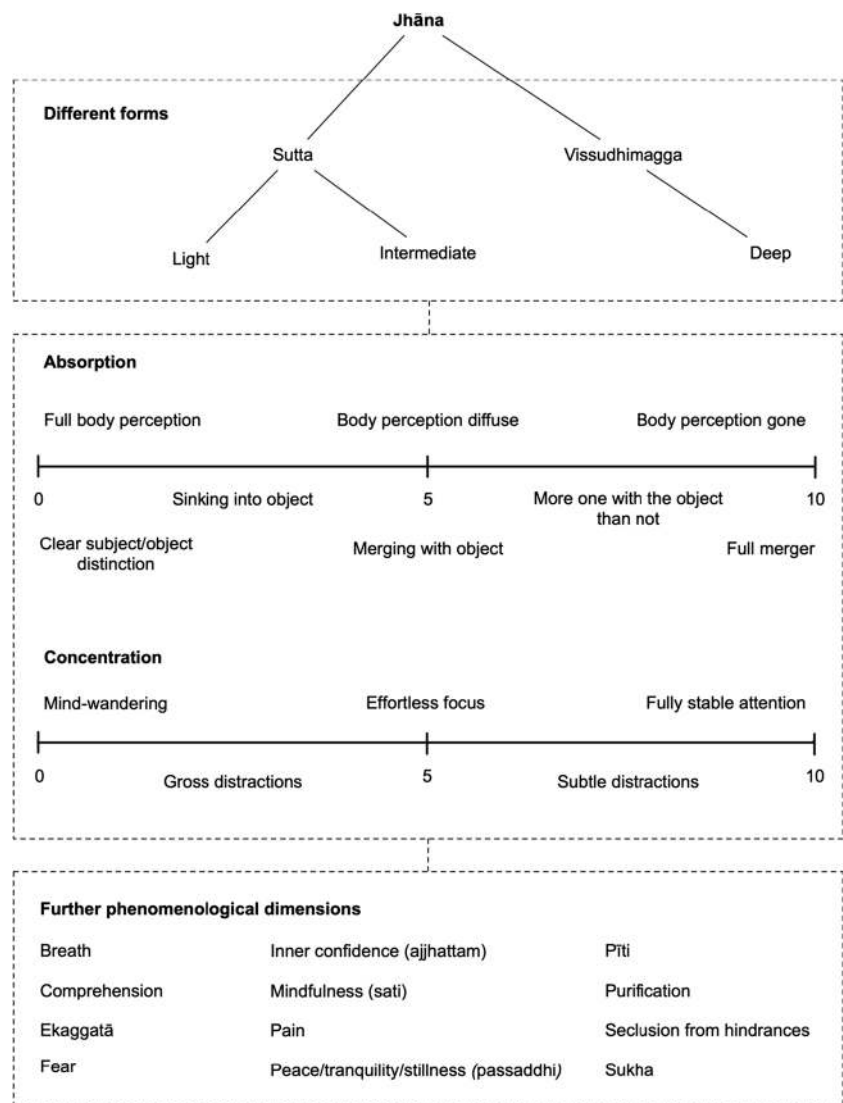


Fig. 2 Comparison of the different types of jhāna. Depicted are the first (A) and fourth (B) jhānas. The numbers 1–10 indicate the approximate intensity of each experiential dimension

Table 3 Three types of Jhāna. Summary of the differences between the three types of jhāna

| | Light | Intermediate | Deep |
|------------------------------------|---|--|--|
| <i>Type of concentration</i> | Heightened focus on a single object. Interruption is possible and potentially somewhat frequent | Intentional effortless focus on a single object. Interruptions are possible but are rare and short in duration; adjustments are automatic. Intention may have to be refreshed periodically | Effortless focus on a single object without interruptions, except for in the first jhāna. No refreshment of intention is necessary |
| <i>Type of absorption</i> | Slight sinking into meditation object without pull from the object. Observation and investigation are possible without effort | Sinking into and merging with the object, yet awareness and a separate self are present and recognizable. The meditation object automatically pulls awareness into it, while both the mind and the meditation object may be observed and investigated with some effort | The mind is fully one with the meditation object. No separate self may be distinguished. Investigation is not possible |
| <i>Body awareness/pacification</i> | Present. No pacification of the senses | Present. May fade into the background or become like a field. Energetic sensations in the body often are present in the first stages of jhāna. Pacification phenomena may appear | Gone/complete pacification. Body sensations may intrude into jhāna, especially in the first, but represent imperfections |
| <i>Insight practice</i> | Possible | Possible. Insights may appear spontaneously. Insight meditation can be practiced while in jhāna or directly afterwards. Insight practice may disrupt absorption | Impossible. Conducted outside of jhāna |
| <i>Nimitta</i> | Absent | Brightness may appear, especially in the fourth jhāna | Present in the rupa/form jhānas, but not the arupa/formless jhānas |
| <i>Hindrances</i> | Gently released | Gone, very subtle, or far in the background | Gone/temporarily fully removed |
| <i>Jhāna factors</i> | Increase of one or more factors. No pīti surge. Sequential refinement is identifiable, but not clear | Factors are clearly identifiable. Pīti surge in the first or second jhāna. Clear sequential refinement | Strong presence and sequential refinement. Identifiable on review after having exited practice |
| <i>Breathing</i> | Breath pauses may be experienced in the fourth light jhāna | Breath pauses are indicative of access concentration and that jhāna may arise. The breath may become softer and hard to perceive | Breathing is generally imperceivable |

Fig. 3 Overview of jhāna as concentration and absorption. Summarizes the understanding of jhāna developed in this article. The term “jhāna” is used in two or three senses as indicated. “Absorption” combines “embodiment” and “self” from A/B. “Concentration” combines vitakka and vicāra, and also volition and effortlessness from A/B. The distinction between gross and subtle distraction concerns whether the distraction is in the foreground or background (Yates et al., 2015, p. 164). The alphabetically ordered further phenomenological dimensions were identified in the manuals analyzed



Further Phenomenological Dimensions

The analysis provided here has indicated that more than the traditional four or five (Sutta and Visuddhimagga-based jhāna, respectively) factors are typically used to describe the jhānas. Here, we present a list and summary of these. Some of these factors may be connected to traditional ones as noted. We include phenomenological dimensions that have been mentioned more than once by more than one manual (the number in the parentheses indicates the total number of mentions):

1. *Peace/tranquility/stillness* (12). These may be regarded as different aspects of the traditional factor of passaddhi. This quality may be seen to increase as one progresses through the jhānas. With that said, some jhānas are described as particularly peaceful.
2. *Mindfulness* (10). Mindfulness, often referred to as present moment awareness, is a traditional factor (sati) that is also sometimes mentioned explicitly in the manuals. It may be of particular importance for connecting the effects of jhāna to insight practice.
3. *Comprehension* (8): as clear knowing, 2; as either difficult or impossible, 6). Some describe the jhānas as enabling clear knowing even while in jhāna, while others state that no comprehension is possible at all.
4. *Embodiment* (6). Several manuals indicate that the jhānas may be experienced as centered in different regions of the body and that the sequence in which they unfold may have a direction either downwards, outwards, or upwards.
5. *Effortlessness* (4). Effortlessness is described as a kind of locking onto a meditation object and may be seen as not only one aspect of vitakka and vicāra, but also an altered form of volition.

6. *Seclusion from hindrances* (3). Some manuals state that the jhānas include the disappearance of hindrances, which is also a traditional claim. Note that this is not strictly a phenomenological quality, but rather an indication of the absence of a set of experiences and tendencies of mind.
7. *Brightness* (3). The jhānas may be connected to increased visual brightness either during the onset or at specific points when progressing during the jhānas. Some manuals indicate that different colors may be associated with different jhānas, although this seems to have strong variation across individuals.
8. *Pain* (2). Pain perception may change during the jhānas. Pain may become either difficult or impossible to perceive.
9. *Breath* (2). The breath may become shallow or disappear completely from experience.
10. *Purification* (2). Some describe a form of purification that happens through the jhānas that continues after jhāna has ended. Purification consists of the absence of hindrances/fetters and may hence overlap strongly with number 6 above.
11. *Inner Confidence* (2). Inner confidence is a traditional factor (ajjhātam) that is indicated by two manuals to be present in the second jhāna.
12. *Fear* (2). Two manuals state that the seventh jhāna (nothingness) may evoke fear.

See Supplementary Information for an overview over which manuals refer which terms. Further explicating and studying these dimensions promises to provide insights into a more comprehensive account of all possible experiential dimensions of the jhānas. As indicated above, some of these dimensions may be so closely related that one may question whether they can be meaningfully distinguished. Until it has been shown that certain dimensions strongly co-vary over time, they may be regarded as separate dimensions. See Fig. 3 for a summary of the understanding of jhāna that we have developed here. Two main forms of jhāna are typically distinguished (Sutta and Vissuddhimagga style jhāna), but we also think that that one may meaningfully speak of two forms of Sutta jhāna, which is based on a less stable concentration and lighter absorption. We take concentration and absorption to be the main features of jhāna, while there clearly are other experiential dimensions as well.

We have explicated here that in the meditation manuals, there are both significant agreement and disagreement about what the ancient term “jhāna” means. The agreement is anchored in a set of four or five traditional factors and their sequential changes through jhāna practice and forms a broad perspective that is consistent across the manuals investigated here. This overarching agreement about the sequence of these factors may be summarized like this:

During concentration meditation, there is, as one develops a certain degree of mastery, a significant increase in the stability of attention and a reduction of thought that leads to absorption, which initially consists of a strong increase of energy and joy, before settling into contentment, and ultimately develops into equanimity.

The sequence may be carved up into different states termed the jhānas. There is also a set of subsequent formless jhānas that unfold through a focus on boundless space, consciousness, nothingness, and neither-perception-nor-non-perception. However, on further investigation, there are differences in the interpretation of the traditional jhāna factors; there is also disagreement about further dimensions of experience such as embodiment, which lead to the differentiation into different forms of jhāna. There is also a set of less typical and non-traditional factors that are used in describing the jhānas. Some consistency can be found in the ways these factors are used, but they do not challenge the traditional core progression. Further research on the jhānas needs to take into account the differences in the jhānas and additional experiential dimensions that may be non-traditional when investigating how these states appear phenomenological, how they are associated with human biology, and how they impact other areas of meditation practice (such as insight) and behavioral change. While we take an agnostic stance here, there ultimately may be underlying structure to jhāna that can be accessed through different meditative approaches that may have unique phenomenological trajectories that are characterized by similar and different characteristics across methods. This approach to understanding jhāna promises to lead to the development of a comprehensive and secular science-informed account of advanced concentrative absorption that spans traditions and meditation states, stages, and factors. This account may have profound implications for the fostering of well-being in diverse clinical and non-clinical settings and cultures.

Author Contribution Terje Sparby conducted the initial analysis and wrote the initial draft. Matthew D. Sacchet commented on and revised both. Terje Sparby and Matthew D. Sacchet revised the final draft.

Funding Open Access funding enabled and organized by Projekt DEAL. Terje Sparby is funded by the Software AG Stiftung. Matthew D. Sacchet and the Meditation Research Program are supported by the National Institute of Mental Health (Project Number R01MH125850), Dimension Giving Fund, and individual donors.

Data Availability Not applicable. No new data was generated.

Declarations

Ethics Approval Not applicable. No human subjects were involved in this study.

Informed Consent Not applicable.

Conflict of Interest The authors declare no competing interests.

Use of Artificial Intelligence Artificial intelligence tools were not used.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Anālayo, B. (2016). A brief criticism of the “two paths to liberation” theory. *Journal of the Oxford Centre for Buddhist Studies*, 11, 38–51.
- Anālayo, B. (2017). On the supposedly liberating function of the first absorption. *Buddhist Studies Review*, 33(1–2), 271–280. <https://doi.org/10.1558/bsrv.31649>
- Anālayo, B. (2020). A brief history of buddhist absorption. *Mindfulness*, 11(3), 571–586. <https://doi.org/10.1007/s12671-019-01268-7>
- Arbel, K. (2017). *Early Buddhist meditation. The four jhanas as the actualization of insight*. Routledge.
- Armstrong, D. (2021). *A mind without craving*. Suttavada Foundation.
- Brahm, A. (2014). *Mindfulness, bliss, and beyond. A Meditator's Handbook*. Wisdom.
- Brasington, L. (2015). *Right concentration: A practical guide to the jhanas*. Shambhala.
- Braun, E. (2013). *The birth of insight. Meditation, modern Buddhism and the Burmese monk Ledi Sayadaw*. The University of Chicago.
- Bronkhorst, J. (2012). *Absorption. Human nature and Buddhist liberation*. UniversityMedia.
- Brown, D. P., & Engler, J. (1980). The stages of mindfulness meditation: A validation study. *Journal of Transpersonal Psychology*, 12(2), 143–192.
- Bucknell, R. S. (1993). Reinterpreting the jhanas. *Journal of the International Association of Buddhist Studies*, 16(2), 375–409.
- Burbea, R. (2014). *Seeing that frees. Meditations on emptiness and dependent Arising*. Hermes Amara.
- Catherine, S. (2008). *Focused and fearless*. Wisdom.
- Catherine, S. (2011). *Wisdom wide and deep. A practical handbook for mastering jhāna and vipassanā*. Wisdom.
- Chowdhury, A., Bianciardi, M., Chapdelaine, E., Riaz, O. S., Timmermann, C., Lutterveld, R., Sparby, T., & Sacchet, M. D. (2023). *Multimodal neurophenomenology of advanced concentration meditation: An intensively sampled case study of Jhana practice* [Manuscript submitted for publication]
- Clough, B. S. (2010). The higher knowledges in the Pāli Nikāyas and Vinaya. *Journal of the International Association of Buddhist Studies*, 33(1–2), 409–433.
- Clough, B. S. (2012). The cultivation of yogic powers in the Pāli path manuals of Theravāda Buddhism. In K. A. Jacobsen (Ed.), *Yoga powers. Extraordinary capacities attained through meditation and concentration* (pp. 77–96). Brill.
- DeLosAngeles, D., Williams, G., Burston, J., Fitzgibbon, S. P., Lewis, T. W., Grummett, T. S., Clark, C. R., Pope, K. J., & Willoughby, J. O. (2016). Electroencephalographic correlates of states of concentrative meditation. *International Journal of Psychophysiology*, 110, 27–39. <https://doi.org/10.1016/j.ijpsycho.2016.09.020>
- Dennison, P. (2019). The human default consciousness and its disruption: Insights from an EEG study of Buddhist Jhāna meditation. *Frontiers in Human Neuroscience*, 13, 178. <https://doi.org/10.3389/fnhum.2019.00178>
- Dennison, P. (2022). *Jhāna consciousness: Buddhist meditation in the age of neuroscience*. Snow Lion.
- Edsel Johnson, M. (2019). *Tranquil wisdom insight meditation. Samatha-vipassanā meditation based on the Sutta Piṭaka*. BTS Publishing.
- Fickelstein, M. (2007). *A meditator's atlas. A roadmap of the inner worlds*. Wisdom.
- Fiordalis, D. V. (2012). The wondrous display of superhuman power in the Vimalakīrtinirdeśa: Miracle or marvel? In K. A. Jacobsen (Ed.), *Yoga powers. Extraordinary capacities attained through meditation and concentration* (pp. 97–126). Brill.
- Fisher, N. E. (2022). Flavors of ecstasy: States of absorption in Islamic and Jewish contemplative traditions. *Religions*, 13(10), 935. <https://doi.org/10.3390/rel13100935>
- Full, G. E., Walach, H., & Trautwein, M. (2013). Meditation-induced changes in perception: An interview study with expert meditators (sotapannas) in Burma. *Mindfulness*, 4(1), 55–63. <https://doi.org/10.1007/s12671-012-0173-7>
- Galante, J., Grabovac, A., van Lutterveld, R., Wright, M., Sanguinetti, J., Sacchet, M., Van Dam, N., Sparby, T., & Ingram, D. (2023). A framework for the empirical investigation of mindfulness meditative development. *Mindfulness*, 14, 1054–1067. <https://doi.org/10.1007/s12671-023-02113-8>
- Gunaratana, H. (1992). *The path of serenity and insight: an explanation of the Buddhist jhānas*. Motilal Banarsidass Publ.
- Hagerty, M. R., Isaacs, J., Brasington, L., Shupe, L., Fetz, E. E., & Cramer, S. C. (2013). Case study of ecstatic meditation: fMRI and EEG evidence of self-stimulating a reward system. *Neural Plasticity*, 2013, 653572. <https://doi.org/10.1155/2013/653572>
- Ingram, D. (2018). *Mastering the core teachings of the Buddha: An unusually hardcore dharma book*. Aeon Books.
- Jeon, H. (2018). *Shamatha, jhāna, vipassanā. Practice at the Pa-Auk monastery*. Wisdom.
- Johnson, D. C. (2018). *The path to Nibbana. How mindfulness of loving-kindness progresses through the tranquil aware jhānas to awakening*. BTS Publishing.
- Khantipalo, B. (1994). *Calm and insight. A Buddhist manual for meditators*. Curzon.
- Khema, A. (1997). *Who is my self? A guide to Buddhist meditation*. Wisdom.
- Ñānamoli, B., & Bodhi, B. (1995). *The middle length discourses of the Buddha*. Wisdom.
- Overbey, R. R. (2012). On the appearance of Siddhis in Chinese Buddhist texts. In K. A. Jacobsen (Ed.), *Yoga powers. Extraordinary capacities attained through meditation and concentration* (pp. 127–144). Brill.
- Patton, T. N. (2020). *The Buddha's wizards. Magic, protection, and healing in Burmese Buddhism*. Columbia University.
- Polak, G. (2011). *Reexamining jhana: Towards a critical reconstruction of early Buddhist soteriology*. Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej.
- Quli, N. (2008). Multiple buddhist modernisms: Jhāna in convert Theravāda. *Pacific World: Journal of the Institute of Buddhist Studies*, 3, 225–249.
- Rose, K. (2018). *Yoga, meditation, and mysticism. Contemplative universals and meditative landmarks*. Bloomsbury.
- Sayadaw, M. (2016). *Manual of insight*. Wisdom.
- Shankman, R. (2008). *The experience of samādhi. An in-depth exploration of Buddhist meditation*. Shambhala.

- Snyder, S., & Rasmussen, T. (2009). *Practicing the jhanas. Traditional concentration meditation as presented by the Venerable Pa Auk Sayadaw*. Shambhala.
- Sparby, T. (2019a). Fear, bliss, and breathing changes during meditation. A case study of a transformative experience. *Mind and Matter*, 17(1), 7–35.
- Sparby, T. (2019b). Phenomenology and contemplative universals: The meditative experience of dhyāna, coalescence or access concentration. *Journal of Consciousness Studies*, 26(7–8), 130–156.
- Sparby, T. (2022). What stands in the way becomes the way. Dual and non-dual approaches to meditation hindrances in Buddhist traditions and contemplative science. *Religions*, 13(9), 840. <https://doi.org/10.3390/rel13090840>
- Sparby, T., & Sacchet, M. D. (2022). Defining meditation: Foundations for an activity-based phenomenological classification system. *Frontiers in Psychology*, 12, 795077. <https://doi.org/10.3389/fpsyg.2021.795077>
- Stuart-Fox, M. (1989). Jhana and Buddhist scholasticism. *The Journal of the International Association of Buddhist Studies*, 12(2), 79–110.
- Suzuki, D. T. (2018). *An introduction to Zen Buddhism*. Grove.
- Thepyanmongkol, P. (2011). *Samatha-vipassanā meditation. In accordance with the four foundations of mindfulness to reach lord Buddha's dhammakayas and Nibbāna*. Petkaserm Printing Group.
- Van Schaik, S. (2020). *Buddhist magic. Divination, healing, and enchantment through the ages*. Shambhala.
- Vimalaramsi, B. (2015). *A guide to tranquil wisdom insight meditation. Attaining Nibbāna with the earliest Buddhist teachings using mindfulness of lovingkindness*. Dhamma Sukha Publishing.
- Wright, M. J., Sanguinetti, J. L., Young, S., & Sacchet, M. D. (2023). Uniting contemplative theory and scientific investigation: Toward a generative and comprehensive model of the mind. *Mindfulness*, 14(5), 1088–1101. <https://doi.org/10.1007/s12671-023-02101-y>
- Wynne, A. (2009). *The origin of Buddhist meditation*. Routledge.
- Wynne, A. (2019). Further thoughts on the two path thesis. *Journal of the Oxford Centre for Buddhist Studies*, 16.
- Yang, W. F. Z., Chowdhury, A., Bianciardi, M., van Lutterveld, R., Sparby, T., & Sacchet, M. D. (2023a). Intensive whole-brain 7T MRI case study of volitional control of brain activity in deep absorptive meditation states. *Cerebral Cortex*, 34(1), bhad408. <https://doi.org/10.1093/cercor/bhad408>
- Yang, W. F. Z., Sparby, T., Wright, M., & Sacchet, M. D. (2023b). *Volitional meditative mental absorption and a trajectory through states of increasingly refined consciousness: Toward a scientific understanding of advanced meditation and the case of jhana*. [Manuscript submitted for publication]
- Yates, J., Immergut, M., & Graves, J. (2015). *The mind illuminated. A complete meditation guide integrating Buddhist wisdom and brain science*. Dharma Treasure.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.