

# Fear is Anticipatory: A Buddhist Analysis<sup>1</sup>

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## ABSTRACT

This article derives from the Buddhist Nikāya Suttas the idea that fear has an intentional object that is best analysed in anticipatory terms. Something is feared, I argue, if construed as dangerous, where to construe something as dangerous is to anticipate it will cause certain unwanted effects. To help explain what this means, I appeal to the concept of formal objects in the philosophy of emotions and to predictive processing accounts of perception. I demonstrate how this analysis of fear can do exegetical work in the context of the Nikāya Suttas, and respond to philosophical issues concerning the relation between the intentional and anticipatory dimensions of fear; the relevant anticipated effects of feared objects; and, whether fearing subjects necessarily know that they anticipate unwanted effects. I also draw an analogy to allostatic sensations to engage issues concerning how the anticipatory dimension of fear relates to the motivational.

**Keywords:** Buddhism, emotion, fear, anticipation, motivation, feeling, affect, formal object, predictive processing, allostasis

## 1. Introduction

There is growing interdisciplinary interest in Buddhist views on emotions but also challenges for interdisciplinary dialogue. One challenge comes from the fact that there is no single term in traditional Buddhist languages (Pāli, Sanskrit, Tibetan) that “maps in any tidy way” or

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“corresponds exactly” to the English term ‘emotion’ (Ekman *et al.* 2005: 17; Heim 2007: 2, 2018; Tuske 2021). While Buddhist texts do discuss and have concepts for many of the kinds of mental states often classified as emotions in English (e.g. fear, anger, sorrow, loving-kindness, empathic joy), they do not have a term that groups them together as of the same kind and as distinct from ‘cognitive’ kinds of mental states, processes, or activities. Interdisciplinary dialogue is further complicated by “unresolved disagreements [in emotion research] over the fundamental question of how an emotion is to be defined” (Barrett 2006: 28).

It might seem more productive to take a specific mental state as our target. This article will focus on the Buddhist concept of fear (*bhaya*, P., Skt.). It is a concept found in all Buddhist languages and throughout the Buddhist tradition. It is also by far the most studied emotion in the sciences. But challenges arise even for this more focused target. Fundamental disagreements about the nature of emotions penetrate this level of analysis. Emotion researchers disagree about whether the ordinary language term ‘fear’ picks out a natural kind, understood as a biologically coherent and stable cluster of qualitatively distinct properties (Ekman 1992, 1999) or a psychological construction from one or two dimensions, such as affect and arousal (Barrett 2006, Russell 2003). Is fear a latent variable (Adolphs 2013), an emergent process (Clore & Ortony 2008, Coan 2010, Barrett 2006, Scherer 2009), or the experiential effect of neurobiological mechanisms (LeDoux 2015)? It would be anachronistic to suppose that historical Buddhist texts contained decisive and well-evidenced answers to these questions, framed in these terms. These questions nevertheless concern broader issues in the metaphysics of mind (the nature and status of property clusters, the construction of experience, the possibility of latent mental states). Buddhist philosophers debated and had positions on many of these broader metaphysical issues,<sup>2</sup> and so there is reason to think we might be able to extend (at least some of) their views to fundamental questions about the nature of fear, and emotions more broadly.

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<sup>2</sup> For a helpful overview, see Siderits (2007) and Westerhoff (2018).

To reconstruct Buddhist answers to fundamental questions about the nature of fear, we first need some Buddhist conception of fear as our starting point. But given the long history of philosophical disagreement amongst Buddhists over shared concepts, it is unlikely that all Buddhists conceptualise fear in the same way. The living Buddhist traditions have much to say about fear, albeit with differences of emphasis and analysis. By ‘living Buddhist traditions’ I mean the Thai forest lineages of Ajahn Chah (2001, 2002, 2005), the Burmese Theravāda Buddhist tradition influenced by the teachings of Mahāsī Sayādaw (1994, 2016), and the Engaged Buddhist movement of Thich Nhat Hanh (1988, 1992, 2014). Any of these might be a good starting point for interdisciplinary dialogue about fear.

This article will take a different approach. It will derive insights from a conception of fear found in some of the early teachings of the Buddha recorded in the Nikāya Suttas of the Pāli canon.<sup>3</sup> There are several reasons for this approach. First, it would be a novel contribution; no serious attempt has been made to derive an account of fear from this context. The Nikāya suttas are textually rich; there are hundreds of suttas, and many discuss fear. They are also authoritative; few would dispute that they constitute at least one authoritative repository of the Buddha’s teachings. But there are challenges. In Finnigan (2021), I argue that the dominant conception of fear in the Nikāyas assumes the ideas of karma (Skt., *kamma* P.) and rebirth. If this is right, it might seem an unlikely starting point for interdisciplinary dialogue with modern science. Rather than setting aside the ideas of karma and rebirth, this article will take them to suggest an interesting property or dimension of fear; namely, that fear is anticipatory. This is not the only dimension of fear derivable from the Nikāyas. The Nikāyas also assume that fear motivates aversive behaviour (see AN5.272, AN8.31, DN31.5-6, DN1.2.21) and causes or is expressed in characteristic bodily changes (such as trembling,

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<sup>3</sup> A similar conception can arguably also be found in the Vinaya Piṭaka, the *Milindapañha*, some Mahāyāna Sūtras, and the Madhyamaka Mahāyāna *Bodhicaryāvatāra* of Śāntideva (see Brekke 1999, Giustarini 2012, Finnigan 2019)

urination, and piloerection; SN5, SN22, D2). This article will explicate a less obvious dimension; namely, that fear has an intentional object that is best analysed in anticipatory terms. Something is feared, I will argue, if construed as dangerous, where to construe something as dangerous is to anticipate it will cause certain unwanted effects.

The idea that fear is anticipatory is not new to emotion research. But that fear, or any mental state, has an intentional anticipatory structure is innovative to Buddhist philosophy. Most Buddhist discussions of fear focus on its cognitive or non-cognitive causes and practices aimed at its regulation or removal. Few analyse the overall structure and components of the mental state or process of fear itself. Moreover, no scholar has identified or sought to ground an anticipatory analysis of fear in canonical Buddhist texts. If the analysis provided in this article is plausible, it forms a promising basis for interdisciplinary dialogue. While I think this analysis might ultimately illuminate how various Buddhist cognitive and meditative practices might help regulate fear, I won't argue the point here.

The article will proceed as follows. I will first introduce what I take to be the dominant conception of fear in the Nikāya Suttas and some reasons for thinking that it assumes the ideas of karma and rebirth (§2).<sup>4</sup> I will then derive from this conception the idea that fear is an intentional anticipatory state (§3). To help explain what this means, I will draw an analogy with the concept of formal objects in the philosophy of emotions and to predictive processing accounts of perception. I will also provide some reasons to think this analysis can helpfully illuminate remarks made about fear in the Nikāya Suttas. I will then raise four philosophical issues for this analysis and appeal to ideas found in the Nikāya Suttas in response (§4). While this article does not provide a complete and sufficient analysis of fear, nor venture to answer fundamental questions about the nature of emotions, it nevertheless provides a rich starting point for interdisciplinary dialogue about the nature of fear.

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<sup>4</sup> This section of the article reconstructs some of the argument contained in Finnigan (2021).

## 2. Fear in the Nikāya Suttas

The Nikāya Suttas most frequently discuss fear (*bhaya*, P., Skt.)<sup>5</sup> in relation to the Buddha's recommendation that his disciples meditate alone in "remote jungle-thicket resting places in the forest" (MN4.2) or in such "awe-inspiring, horrifying abodes" as charnel grounds (i.e. places where bodies are left to decay unburied and known to attract wild animals, MN7, SN10). There was much to potentially fear in these environments. The Nikāyas list, amongst other things, being killed by wild animals or dying from an animal bite or sting; dying from personal injury or from eating poisonous food; being murdered by bandits or dying as the result of disease (AN5.77). It was known that these and other perils can cause fear, dread (*bherava*), fright (*uttāsa*), terror (*chambhitatta*), and 'hair-raising' horror (*lomahaṃsa*) to arise in some disciples, disrupting their concentration and obstructing the obtaining of wisdom (MN4, MN128, SN1.15). But it provokes the question: if it was known that such environments stimulate fear, and if fear is an impediment to Buddhist practice, why does the Buddha recommend meditating there?

The Buddha not only advises his disciples to meditate in these scary places, but he also advises them to intentionally provoke fear in themselves by meditating on the dangers they are likely to encounter. The Aṅguttara Nikāya contains extensive lists of 'dangers' on which disciples are advised to "dwell heedful, ardent and resolute":

Here, a forest disciple reflects thus: I am now dwelling all alone in the forest. But while I am living here, a snake might bite me, a scorpion might sting me, or a centipede might sting me...people might attack me, or wild spirits might attack me, and I might die; that would be an obstacle for me. (AN5.77).

The immediate purpose of dwelling on these objects, we are told, is to generate a "keen perception of their danger" (*bhayasaññā*, AN4.244). The same term, *bhaya*, is used to denote

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<sup>5</sup> The italicised words will henceforth be in Pāli, except for 'karma' (Skt. *kamma*, P.) which I will retain unitalicized in its Sanskrit form since it is now part of popular discourse.

both fear and danger. This suggests that their relation is not merely causal; to ‘keenly perceive’ the danger of some object *is* to fear it (at least in large part). The list of dangers on which disciples are advised to dwell extends beyond those specific to forests and cemeteries, and include such things as kings, floods, earthquakes, old age, death, even other mental states such as lust and sensual pleasure. Disciples are advised to train themselves thus: “We will fear [*bhaya*]” these objects “and see danger [*bhaya*] in” these objects (AN2.1).

Despite this, the Buddha is recorded to have identified fear as both a kind of suffering and a motive for bad actions that should be resisted (AN5.272, AN8.31, DN31.5-6, DN1.2.21). He remarks that “whatever fears arise, all arise because of the fool, not because of the wise man ... the fool brings fear, the wise man brings no fear.” (MN115). Moreover, the Buddha frequently characterises the goal of Buddhist practice, *nibbāna*, in terms of fearlessness (MN56, MN12); *nibbāna*, we are told, is “inaccessible to fear” (SN8.8) and those who attain it are “beyond all fear and hate, they have escaped all suffering” (MN130.30). If fear is an impediment to Buddhist contemplative practice and fearlessness its goal, why does the Buddha advise his disciples to meditate in provocative environments and to actively provoke fear in themselves?

The initial answer we find in the Nikāyas is that the disturbing feeling of fear generated in these contexts galvanises wise disciples in their contemplative practice. It does so by involving or causing an arousal of energy (*vīriya*) and disturbed sense of urgency (*saṃvega*, AN 3.93) that can have motivational force like one “whose clothes or head had caught fire [and who] would put forth extraordinary desire, effort, zeal, enthusiasm, indefatigability, mindfulness, and clear comprehension to extinguish [the fire on] his clothes or head” (AN3.93). But this does not yet explain why fear galvanises some in their contemplative practice but is an impediment to others. The difference is clearly meant to be agent-relative, but the relevant agent-relative factor is not yet clear.

The *Dhammapada* offers a suggestion. Both wise and unwise disciples fear objects that they “keenly perceive as dangerous” (AN4.244). But where the wise see danger “as it actually is” (MN11), the unwise “see danger when there is no danger, and do not see danger when there is danger” (Dhp. 317). The difference cannot be explained simply in terms of the *particular* objects feared, however (such as being killed by a wild animal) since this is apparently the same. A closer reading of the Nikāya Suttas sheds some light. Disciples are not actually advised to dwell on the danger of being killed by wild animals but, rather, on the ‘obstacle’ that being killed would cause: “Because of that I might die, *which would be an obstacle for me.*” (AN5.77, my italics). This is also true for the other potential sources of death. What obstacle could *death* cause? The answer appears to be that it would be an obstacle to their efforts to attain *nibbāna*. What is so dangerous or fearsome about that? The answer, again, is that if they do not attain *nibbāna* in this life, there is a (good) chance they will be reborn into one of a vast number of hell realms due to the bad karma they have generated from wrongdoing (MN130). As a result, they will likely experience aeons upon aeons of “painful, racking, piercing feelings” upon death (MN12.37, MN45.3).<sup>6</sup> The dominant conception of fear in the Nikāyas thus assumes the notions of karma and rebirth. Meditating in scary environments motivationally energises the wise disciple in their contemplative practice because they realise with an aroused sense of urgency that (1) death would obstruct their ability to attain *nibbāna* and thereby avoid the sufferings of hell, (2) this is the true danger to be averted, and (3) persisting in contemplative practice is the most strategic aversive response.

A variety of contemplative practices are recommended in the face of fear across the Buddhist tradition. Śāntideva, for instance, provokes fear of death in view of the intense sufferings of hell but does so to motivate ‘taking refuge’ in the ‘three jewels’ (the Buddha, his

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<sup>6</sup> Of course, a disciple cannot be certain they will be reborn into a hell realm (or not). Only a Buddha is assumed to have epistemic access to the operations of karma. But the mere possibility (indeed probability) of a bad rebirth is sufficient motivation.

teachings, and the Buddhist community, see Finnigan 2019, 2021). Some living Buddhist traditions promote the practice of ‘engaging fear’ as a strategy for its removal, which involves stimulating fear and, in that heightened state, analysing its causes and conditions in terms of the Buddha’s teachings (of impermanence, no-self, and dependent origination).

The Nikāya Suttas also identify fearlessness as an outcome of contemplative practice. But they do not advise forms of contemplative practice that analyse fear. Rather, they present fear as motivating a sense of urgency in the attempt to attain enlightenment by means of progressively attaining the *jhanas*, or deepened states of contemplative insight (i.e. “Let me now arouse energy for the attainment of the as-yet unattained, for the achievement of the as-yet-unachieved, for the realization of the as-yet-unrealized” AN5.77). The goal of these practices is not to remove fear but to remove the feared object, we might say; namely, the possibility of a bad rebirth and thereby suffering. Attaining this goal also removes fear, because we fear dangerous things and, according to the Nikāyas, a bad rebirth is the only thing that is properly dangerous.<sup>7</sup> This conception of fear thus assumes a deep commitment to the ideas of karma and rebirth. Moreover, this analysis of the conception of fear in the Nikāya Suttas can do some explanatory work. It can explain, for instance, why lust or sensual pleasure (*kāma*) is viewed as a danger which disciples are instructed to fear. Sensual pleasure typically connotes sexual pleasure but includes any kind of bodily sensory enjoyment. Is it necessarily dangerous or fearsome? It might seem not. It is included in the list of dangers to be feared, however, because it is thought to motivate wrongdoing which generates the karmic demerit which will eventually fruition as suffering in a bad rebirth. I will henceforth assume the exegetical plausibility of this analysis and will call it the canonical Buddhist conception of fear. It may not

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<sup>7</sup> There is reason to generalise this to *all* rebirths, since the wise understand that even a ‘good’ rebirth such as into a heavenly realm that involves aeons of aeons of blissful pleasure involves some degree of suffering. Moreover, even a heavenly rebirth will eventually end, at which point it will be followed by a less auspicious state that involves comparatively more suffering.



explain everything said about fear in canonical contexts, let alone across the Buddhist tradition, but there is good reason to think it represents a dominant view.<sup>8</sup>

### 3. Fear is Anticipatory

We can derive some general dimensions or properties of fear from the canonical Buddhist conception of fear. This article will focus on the idea that fear is anticipatory. I do not take this idea to be obvious. It builds on some more obvious points, however, which are initially worth mentioning.

#### 3.1 Fear is an intentional state

The Nikāyas provide many and diverse examples of what individuals do and should fear. They include things, animals, persons, events, situations, states-of-affairs, even other mental states. Despite this diversity, the examples all suggest that fear is a mental state that is *of* or *about* something. One is (or should be) afraid *of* sensual pleasure, *of* being killed by a wild animal, *of* death and old age. This suggests that fear has an intentional structure in the sense of involving or being directed towards an object (what it is of or about). It could be argued that this is just a grammatical feature of the way the Buddha talked about fear rather than a genuine structural feature of the state itself. While this might be true, later Buddhist philosophers ascribe to the Buddha the idea that intentionality is a property of mental states (Dreyfus & Thompson 2007). Whether or not we would want to ascribe intentionality to *all* mental states, the observation that it is a property of at least some mental states fits with one way in which the Nikāyas talk about consciousness or mind (*viññāṇa*); namely, that it involves awareness of objects (Waldron 2006). While neither the Nikāyas nor later Buddhist philosophers explicitly analyse fear in these terms, it would not be controversial to suggest that fear also shares this broader structural feature.

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<sup>8</sup> For further argument, see Finnigan (2021).

### 3.2 Danger is the general object of fear

Do these diverse objects of fear have anything in common that generalises to all fears (and that might count as its formal object)?<sup>9</sup> The Nikāyas list them all as “future dangers” (*anāgatabhayaṃ*) and use the same term, *bhaya*, to denote both fear and danger. This homonymy is reiterated in different Buddhist languages throughout the Buddhist tradition.<sup>10</sup> We might thus say that, for Buddhism, danger is the general object of fear; we do (and should) fear dangerous things. This seems to align with a dominant view in philosophy of emotion, that “danger, then, is the formal object of fear” (Tappolet 2005, see also Magalotti & Kriegel 2022). But the claim needs clarification.

To say that danger is the general object of fear does not mean that we only fear things that are, in fact, dangerous. As we learned in the previous section, the unwise person sees danger when there is no danger and does not see danger when there is danger (Dhp 317). Such a person experiences fear, but they are mistaken about what is dangerous. The object of *their* fear, we might say, is a misconstrual that does not correspond to objective fact. This has general implications. It implies that the general object of fear is a subjective construal; individuals fear what they subjectively *see as* (*dassati*) dangerous. While their construal could, and ideally should, correspond to objective fact, it need not. We can construe something as dangerous, and thus fear it, even when it is not dangerous in fact. And we can also fail to construe something as dangerous that is, in fact, dangerous and so not fear it at all.

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<sup>9</sup> The expression ‘formal object’ goes back to ancient Greek and medieval philosophy but its application to emotions is traced to Anthony Kenny (1963). There is contemporary debate, however, about the precise definition and metaphysical implications of formal objects (see Terroni 2007, Magalotti & Kriegel 2022).

<sup>10</sup> See, for instance, Śāntideva’s *Bodhicaryāvatāra* (BCA) as discussed in Finnigan 2021, n.10.

### 3.3 To construe an object as dangerous is to anticipate it will cause suffering or some other unwanted effect

Let us grant that, for Buddhists, the general object of fear is something construed as dangerous. What does it mean *to construe* an object as dangerous? This is a question neither raised nor answered in the Nikāyas. We might nevertheless derive some insight from their definition of danger. According to the canonical Buddhist conception of fear, an object is *properly* dangerous if causally related to suffering in the next life. Now, clearly not all individuals fear objects construed as dangerous in this sense. This is also not assumed in the Nikāyas; only the fears of the wise are characterised in this way. The idea nevertheless suggests a more general insight; that objects count as dangerous if causally related to *suffering*.

This generalisation would be consistent with the canonical Buddhist distinction between wise and unwise fears. A Buddhist might argue that the wise and unwise both fear objects that are dangerous in the sense of being causally related to suffering, but that the wise fear the *most* dangerous things; namely, those that are causally related to the sufferings of a bad rebirth, such as in a hell realm. This inference might be justified by the assumption that the sufferings in a hell realm would be of greater *magnitude* (intensity, duration etc.) than any suffering experienced in the present human life. The idea also has some exegetical merit insofar as the Nikāyas emphasise the “painful, racking, piercing feelings” (MN12.37, MN45.3) of hell to elaborate its dreadfulness.

This causal analysis of danger does not yet explain what it might mean to construe something as dangerous. It nevertheless suggests two ideas. First, something is *objectively* dangerous in causal relation to suffering (or some other unwanted effect, see §4.2). Second, something is *subjectively construed* as dangerous when a subject anticipates that it will cause this unwanted effect.

Before providing further details about what it means for fear to be anticipatory, I will first put the idea to exegetical work and show how it illuminates some remarks made about fear in the Nikāyas. My claim is not that the Buddha taught or believed that fear is anticipatory. This is a reconstructed analysis. I nevertheless think it can shed light on the thinking that underlies remarks made about fear in this context. The *māluva*-creeper parable in the *Cūḷadhammasamadānā Sutta* provides a helpful illustration:

Disciples, suppose that in the last month of the hot season a *māluva*-creeper pod burst open, and a *māluva*-creeper seed fell at the foot of a *sāla* tree. Then a deity living in that tree became fearful, perturbed, and frightened; but the deity's friends and companions, kinsmen and relatives - garden deities, park deities tree deities, and deities inhabiting medicinal herbs, grass, and forest-monarch trees - gathered together and reassured that deity thus: 'Have no fear, sir, have no fear. Perhaps a peacock will swallow the *māluva*-creeper seed, or a wild animal will eat it, or a forest fire will burn it, or woodsmen will carry it off or white ants will devour it, or it may not even be fertile.' But no peacock swallowed that seed, no wild animal ate it, no forest fire burned it, no woodsmen carried it off, no white ants devoured it, and it was in fact fertile. Then, being moistened by rain from a rain-bearing cloud, the seed in due course sprouted and the *māluva*-creeper's tender soft downy tendril wound itself around that *sāla* tree. Then the deity living in the *sāla* tree thought: 'What future danger [*bhaya*] did my friends and companions, kinsmen and relatives (etc.) see in that *māluva*-creeper seed when they gathered together and reassured me as they did? Pleasant is the touch of this *māluva*-creeper's tender soft downy tendril!' Then the creeper enfolded the *sāla* tree, made a canopy over it, draped a curtain all around it, and split the main branches of the tree. The deity who lived in the tree then realised: 'This is the future danger they saw in that *māluva*-creeper seed. Because of that *māluva*-creeper seed I am now feeling painful, racking, piercing feelings.' (MN45.4)

The subject of this parable is a deity living in a *sāla* tree. The object of his fear is a *māluva*-creeper seed (a present object, not a future event). But why is the deity afraid of a little seed? The answer is that the deity, despite his inexperience with *māluva*-creepers (but arguably

informed by some knowledge of plants) anticipates that the seed will grow into a plant that will cause it suffering. The reassurances of his friends and relatives assume an anticipated effect, since each suggest ways it might be blocked. That the anticipated effect is suffering is assumed by the deity's surprise at the pleasant touch of the plant's early growth; had he not initially anticipated that it would cause suffering he would not have been surprised by this feeling of pleasure. It is also implied by the fact that the feeling of pleasure prompts the deity to ask: what danger did my friends see in this seed? The danger becomes apparent to the deity when the suffering is manifest.

## 4. Questions and Responses

Much would need to be said to sufficiently explain and defend the view that fear is anticipatory. I will here limit myself to engaging four philosophical issues that admit a response that appeals to the Nikāya Suttas.

### 4.1 How are the intentional and anticipatory dimensions of fear related?

The claim that fear is anticipatory is not the claim that we only ever fear future events or that future events are necessarily the intentional objects of fear. While we *can* fear future events we can and do fear present occurrences. The claim is merely that when we fear something, we do so because of, or in virtue of the fact that, it is causally related to certain unwanted effects.

To clarify what it means to fear intentional objects *in anticipation* of certain effects without those effects necessarily counting as the object of fear, it might help to draw an analogy with predictive processing (PP) accounts of perception (e.g., Clarke 2013).

PP accounts of perception assign a role to anticipation and action as part of the perceptual process. At risk of over-simplification, the basic idea is: our perceptions of objects are formed based on the sensory evidence provided by our sense organs. But the sensory evidence for any given object is limited because we only ever perceive from a limited spatiotemporal perspective. We also do not engage all our sense organs at once, and so never

have sensory evidence of the full range of contingent and characteristic properties possessed by the things we perceive at any given moment. And yet we perceptually experience (‘see’) whole objects in full possession of their properties, including those for which we do not presently have sensory evidence. What explains this fact? According to PP accounts of perception, it is explained by the fact that when we perceptually experience some object, we anticipate that we *would* gain sensory evidence of these additional properties *if we were* to move our sense organs or bodies in certain ways or if the object were to move or be moved in certain ways in a relevant context. (Clarke 2013, 2015, see also Noë 2004).

PP accounts of perception are frequently incorporated into grander theories of how the brain processes information (Friston 2010, Kirchoff 2018, Wiese & Metzinger 2017).<sup>11</sup> The analogy I am making is simpler and doesn’t need this elaboration. Perception, we might say, is an anticipatory state in a similar way in which fear is an anticipatory state. We perceive or fear some *particular* object (not necessarily some future event) only insofar as we anticipate that certain outcomes either *will* occur, with some degree of likelihood or probability, or *would* occur if we were to move in certain ways. PP introduces a conditional dimension to anticipation (certain effects *would* occur *if...*) which it links to action.<sup>12</sup> This can enrich the anticipatory analysis of fear. When we fear some object in anticipation that it will cause some unwanted effect, we often do so in anticipation that the object *would* cause this effect *if* it (or we) were to behave in certain expected ways.

The Nikāyas can be read to suggest that anticipation plays a role in the perceptual processes involved in detecting the presence of a dangerous object. In the *Bhayabherava Sutta*, the Buddha describes going to meditate in an “awe-inspiring, horrifying abode” before his

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<sup>11</sup> Later Buddhist philosophers developed inferentialist theories about how we come to perceptually experience determinately whole objects. There is reason to think, however, that the details and metaphysical commitments of these theories are quite different to PP accounts and might be inconsistent with the broader theories into which PP accounts of perception are often embedded (see Dreyfus 1997, Hayes 1987, Tillemans 2020)

<sup>12</sup> Many thanks to David Chalmers for this point.

enlightenment and experiencing “fear and dread coming upon [him]” when a “peacock would knock off a branch, or the wind would rustle the leaves” (MN4.20). He claims not to have rested until that fear and dread was subdued. In this narrative, the sound of branches snapping and leaves rustling causally trigger fear to arise. But it would be a mistake to say that the Buddha feared the snapping of branches or rustling of leaves. More plausibly, these woodland sounds triggered fear to arise by signalling the presence of some object that he construed as dangerous. This implies two ideas. First, the causal trigger of a fear occurrence (woodland sounds) is distinct from the object of fear (a wild animal, say, which is anticipated to cause suffering). Second, the signalling function of woodland sounds and other sensory stimuli involves anticipation. That is, given some limited sensory stimuli (plus some background information about what they signify) the Buddha anticipates the presence of some dangerous object. While the objective causes of these sounds (a peacock, the wind) are not themselves dangerous, the sounds trigger fear insofar as they are taken to signify the presence of an object that *is* anticipated to cause suffering or some other unwanted effect.

#### 4.2 What is the relation between feared objects and anticipated effects?

According to the account defended here, subjects fear objects that they anticipate *will cause* certain unwanted effects. The relation between the intentional object of fear and anticipated effects is causal. But what is the relevant sense of causation? If the claim that feared objects *efficiently* or *agentially* cause anticipated effects, it might be objected that not all feared objects are well-conceived in such terms. Consider fear of death in anticipation of suffering. The process of dying might involve suffering but it might seem unintuitive to positively describe death in efficient causal terms. Of course, this will depend on how one conceives of death. In the Nikāya Suttas, death is arguably conceived as a causally efficacious event in the chain of dependent origination that results in rebirth (on some accounts, death refers to the causal event of a subtle form of consciousness sparking an embryo into sentience in the next life, see Smith,

2020). But even in this case, one would not fear death in anticipation of suffering unless some other conditioning factors were also assumed to be operative (such as the karmic seeds of past misdeeds).

This would also be true of less controversial cases of fear, such as fear of a tiger in anticipation of it attacking. Here, the object of fear is uncontroversially conceived as the agential cause of the anticipated effect, but one would not anticipate this effect and thus fear this object if conditions were assumed to be such that it could not possibly bring this effect about. There might seem to be obvious counterexamples to this. How might we then explain, for instance, why some individuals experience fear when (e.g.) a tiger approaches them from behind bars in a zoo, despite believing it could not attack?<sup>13</sup> It might be partly explained by the fact that we are rarely in a position of epistemic certainty about the relevant conditions. Where there is room for at least some epistemic uncertainty about the operative conditions, and the costs of getting things wrong are high, there is at least some probability of the unwanted effect occurring and thus room for at least some degree of fear.<sup>14</sup>

#### 4.3 What are the relevant anticipated effects of feared objects?

So far, I have only discussed suffering as the relevant anticipated effect of feared objects. This can capture many, but not all, cases of fear discussed in the Nikāyas. The Nikāyas also tell us, for instance, that some of the unwise fear annihilation or becoming nothing when they die. This is presented as a misguided response to the Buddha's teaching that there is no self (*anatta*). Fear of becoming nothing cannot plausibly be analysed in terms of anticipating suffering. Even if we grant that fear of this object is a form of suffering in the sense that it causes or involves a disturbing feeling to which we are averse (more on this in §4.4), we cannot be said to fear becoming nothing when we die because we anticipate that it (becoming nothing) *will cause*

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<sup>13</sup> Many thanks to Daniel Stoljar for pressing me on this point.

<sup>14</sup> I will return to this point in §4.5.



suffering. Nothing causes nothing and so cannot cause suffering. In this case, I think the relevant anticipated effect is better analysed in terms of the loss of something that one values or cares about (such as oneself).

The Nikāyas also discuss fear in relation to the loss or harm to whom we are attached or hold dear. According to the *Dhammapada*, “From endearment... affection...attachment springs grief, from endearment...affection...attachment springs fear. For him who is wholly free from endearment [etc.] there is no grief, whence fear?” (Dhp.16.214). While the anticipated loss of contact with those whom we love can be distressing and a form of suffering, we do not necessarily fear this loss because we anticipate it *will cause* distress or suffering. It is feared because we value, cherish, or are deeply attached to those whose loss is threatened. Incorporating this idea into the analysis, we might thus say that the relevant anticipated effects of feared objects are unwanted consequences that include suffering as well as the loss of, or harm to, objects we value or care about (such as ourselves, things, and relationship to others).

#### 4.4 Do fearing subjects necessarily know that they anticipate unwanted effects of the things they fear?

The Nikāyas do not assert that fear is anticipatory, so do not explicitly answer this question. There is nevertheless reason to think that fearing subjects are *not* assumed to necessarily know that they anticipate unwanted effects of the things they fear if ‘to know’ requires cognitive or meta-cognitive awareness of the fact of anticipation. Of course, some fearing subjects (i.e., mature, adult human beings) *can* know this fact and, in some circumstances, this knowledge might assist them with efforts towards fear-regulation. Since to fear some object is to anticipate certain unwanted effects, it follows that one would *not* fear that object if one did *not* anticipate that it will cause those effects. Knowledge of this fact might, in some circumstances, motivate a subject to engage in (e.g.) present-centred contemplative practices, such as mindfulness, as a strategy to block anticipation and thus to regulate their fear. I say ‘in some circumstances’

because the Nikāyas are also committed to the view that some things are objectively dangerous and so worth fearing. But, on the account developed here, the anticipation of unwanted effects is not assumed to necessitate cognitive awareness of the fact of anticipation. This is because the Nikāyas also assume that a wide range of non-human animals are capable of fear (see AN4), but provide no good reason to think that they have the relevant kinds of cognitive or meta-cognitive ability.<sup>15</sup> It would of course follow from the account defended here that those non-human animals also have capacities for anticipation (even if they lack cognitive awareness of them) since fear is anticipatory. But whether any non-human animal can legitimately be said to possess such capacities is a matter of empirical dispute (Eacott & Easton 2012, Roberts 2012, Raby & Clayton 2009, Reiss 1980; Rescorla 1988). The account defended here leans towards arguments for the affirmative. We are left, however, with the question of whether and how anticipation might be experienced by the fearing subject, if not in the form of a cognitive or meta-cognitive judgment about the likely causal effects of feared objects. This relates to the last issue this article will address.

#### 4.5 How does the anticipatory dimension of fear relate to the motivational?

I earlier remarked that we can derive several dimensions or properties of fear from the Nikāya Suttas in addition to the claim that fear is anticipatory. One of the most obvious additional dimensions is that fear is assumed to motivate aversive behaviour, such as fleeing (AN4, SN35) or turning back (SN10). How does fear motivate such behaviour? It is assumed to do so by means of a disturbing feeling that either causes or consists of an arousal of energy and disturbed

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<sup>15</sup> Having said this, there is some inconsistency in Buddhist views regarding the cognitive abilities of non-human animals. In some contexts, such as when accounting for why animals are not held morally responsible for their behaviour according to the laws of karma, it is assumed that animals have inferior cognitive capacities to humans (which, on some accounts, is a capacity for *cetanā* construed as intentional agency, see Keown 1992). The Jātakas, by contrast, are replete with stories involving animal protagonists with discursive abilities. In these stories, animals not only use natural languages but also closely model aspects of human society (Cowell 1894). This has prompted scholars to read them as allegories that have very little to say about the actual nature of animals. As Harris (2006) remarks, ‘the animals [in the Jātakas] are not really animals at all, for at the end of each story the Buddha reveals that the central character was none other than himself in a former life’ (p.208).

sense of urgency. While there are fundamental questions about how best to conceive of the relationship between fear and this disturbing phenomenal quality (whether constitutive or causal), for convenience I will simply describe this phenomenal quality as the ‘feeling of fear’. How does the feeling of fear motivate aversive behaviour? An easy argument suggests itself. The phenomenal quality of fear ‘feels bad’ or unpleasant; individuals are averse to bad or unpleasant feelings, and so are motivated to do things to block or prevent them. This argument seems to fit neatly with the widely accepted view in emotion research that subjects can both readily distinguish positively and negatively valenced feelings (Barrett 2006: 31) and are attracted to the positive and averse to the negative (Davidson 1992, Damasio 1994: 179, Russell 2003: 162). The Nikāyas similarly assume that a close relation holds between the evaluative and motivational dimensions of suffering (Finnigan 2017, Siderits 2005).

But how does this phenomenal-motivational dimension of fear relate to the anticipatory? According to the canonical Buddhist conception, the feeling of fear motivates the wise to perform actions aimed at averting the causal effects of the feared object. This is not sufficiently explained by an aversion to the disturbing feeling of fear. Why should fear motivate actions aimed at averting the *anticipated effects* of feared objects rather than averting the feeling of fear itself? More needs to be said.

To clarify the issue being raised, here, it might help to draw an analogy to allostatic sensations, such as hunger and thirst. Psychobiologists assume that these sensations play a vital motivating role in the allostatic regulation of sentient beings. To simplify greatly: in order to survive biological organisms need to manage their energetic resources across a variety of sub-systems and within certain parameters. Some of these parameters are relatively fixed (such as brain temperature) but others can vary in response to demand (such as blood pressure and oxygen levels). According to allostatic theory, the brain monitors the body’s current energetic state, treats incoming sensory signals as indicating the most probable load or demand of the

current situation, and commands bodily changes that fit the *anticipated* needs of the body (Sterling 2012). These commands often involve energetic trade-offs between bodily sub-systems, such as directing blood flow away from the heart and towards the limbs. Many of these commands and bodily changes occur sub-personally and do not directly engage the conscious awareness of individual subjects. But some commands take the form of subject-level sensory signals, such as the allostatic sensations or feelings of hunger and thirst.

It is widely assumed that allostatic sensations function to motivate subjects because they ‘feel bad’ and subjects are motivationally averse to bad feelings (Damasio 1994, Russell 2003, Barrett 2006, Rowland 2015, Beaulieu & Blundell 2021). There is good reason to think that aversion to bad feelings *is* a crucial part of the explanation, since adult humans do various things to override or suppress feelings of hunger and thirst rather than satisfy the anticipated biological need. But more needs to be said to explain how and why these feelings function to motivate the subject to act in ways that fit its functional purpose (i.e. to eat or drink to satisfy the anticipated biological need). This is an issue about the functional relation between (a) the motivational properties of allostatic sensations, which are assumed to function via a negatively valenced feeling, and (b) the goal of the aversive actions they are intended to motivate, which are to avert certain anticipated causal effects. A similar explanatory gap, I suggest, arises in the case of fear. How does aversion to a currently felt negatively valenced feeling (the feeling of fear) function to motivate agents to avert the anticipated effects of feared objects, particularly when those anticipated effects are not, themselves, negatively valenced feelings?

This is a complex issue, but the account of fear defended in this article suggests a response. It might be argued that subjects are motivated by the feeling of fear to avert the anticipated effects of feared objects because it would be *strategically efficient* for removing that very feeling of fear. Why think this? Because, on the account defended in this article, fear is only felt when an object is construed as dangerous and thus anticipated to cause those effects.

This is not proposed as the subject's reason for acting; it is a causal-mechanical level of description that functionally explains a motivational response without constituting its intentional content. Averting the anticipated effects of feared objects would nevertheless be a *reliable* means of removing the negatively valenced and aversive feeling (the feeling of fear) because while subjects are not required to respond to this feeling in this way, other methods of response (such as avoidance or suppression) would provide only temporary relief while the danger remains present.

The analogy with allostatic sensations suggests some additional ideas. There is known variation and flexibility in aversive responses to allostatic sensations (within certain boundaries) in response to environmental, cultural, and other learning histories. While there are surely biological organisms in which feelings of hunger and thirst prompt a very rigid set of behaviours in response to energetic deficiencies, it has long been recognised that what counts as a suitable substance to ingest, how it is to be ingested, and in what contexts, can often be highly sensitive to individual and social learning (Heyes & Galef 1996). It is also known that environmental and cultural influences can modulate the intensity and periodicity of these allostatic sensations (Beaulieu & Blundell 2021).

Individual and social learning, as well as environmental and cultural influences, are also relevant to fear. Learning is often relevant to whether one anticipates certain unwanted effects of the things one encounters and thus of whether one fears them, and so we should expect some individual variation.<sup>16</sup> Learning is also relevant to many behavioural strategies employed to avert those unwanted effects. The analogy to allostatic sensations suggests, in addition, that there might be a tight correspondence between the felt intensity of the relevant sensation (its phenomenal-motivational dimension) and the degree of anticipated demand (the

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<sup>16</sup> This is not to say that *all* fears are the (ontogenetic) product of individual and social learning. It is merely that at least some (or perhaps many) fears are sensitive to ontogenetic influences.

anticipatory dimension). The more anticipated need for energetic resources, the more intensely felt the relevant allostatic sensation. Stepping back from the Nikāyas for a moment, there is reason to think there may also be a tight correspondence between the intensity in the feeling of fear and the perceived likelihood of the unwanted anticipated effect of the feared object. That is, the more likely it seems to the subject that some unwanted anticipated effect will occur, the more afraid the subject feels (the more intensely felt is the feeling of fear). There is also reason to think that this relationship is modulated by how much the anticipated effects matter to the individual (their perceived magnitude, cost, or goal relevance).<sup>17</sup> A subject might not feel so scared of an object deemed highly likely to cause suffering but where this effect is of low magnitude and cost to the subject (such as a mosquito bite), than they might be of some other object that is deemed less likely to cause this effect (such as being attacked by a tiger) but where the costs would be significantly higher were it to occur. These weightings will likely also change in response to individual and social learning. Taken together, we might suppose a vector analysis (likelihood vs magnitude vs cost) of modulating influences on the phenomenal feeling of fear, that is sensitive to individual and social learning as well as changes in value.

Do we find any evidence of these ideas in the Nikāya Suttas? We find some indirect evidence of at least some of these ideas. Here are three examples.

#### 4.5.1 Understanding oneself to be in a dangerous environment primes fear

The Nikāyas discuss fear almost always in the context of solitary meditative practice in remote forests and jungle groves, charnel grounds, and cemeteries. These environments are understood to be dangerous; they are known to be locations in which one may encounter dangerous things and might experience suffering thereby. Some examples in the Nikāyas suggest that understanding oneself to be in a dangerous place primes attention to sensory stimuli and makes

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<sup>17</sup> Many thanks to Gabby Donnelly for this suggestion.

one more likely to interpret them as signs of danger than in environments deemed safe. In the *Bhayabherava Sutta*, for instance, the Buddha meditates in an “awe-inspiring, horrifying abode” in order to see whether he would “encounter fear and dread” (MN4.20). He reports fear arising in this context when the wind rustled the leaves, or a bird snapped a branch. His prior understanding that the environment is “horrifying” (i.e., one in which he is likely to encounter dangerous things) arguably primes him to misread these woodland sounds as signalling the presence of danger, and makes him more susceptible to feeling fear in response. In an environment deemed safe, by contrast, an individual is less alert to signals of danger, less inclined to interpret sensory stimuli as signalling its presence, and so less inclined to feel fear. “Suppose a forest deer is wandering in the forest wilds: he walks without fear, stands without fear, sits without fear, lies down without fear. Why is that? Because he [understands that he] is out of the hunter's range.” (MN26.34).

#### 4.5.2 Fear is heightened when one’s capacity to detect danger is masked.

Some suttas suggest that, in environments deemed dangerous, fear is likely to be triggered if sensory stimulation is masked or blocked. The occurrence of darkness in dangerous environments, for instance, is treated as an especially relevant trigger of fear (SN4, SN6). The *Yakkha Saṃyutta*, for example, tells the story of King Anāthapiṇḍika who approaches the gate of a charnel ground and, as he is walking, “the light disappeared, and darkness appeared. Fear, trepidation, and terror arose in him, and he wanted to turn back” (SN10.8). While some texts suggest that darkness might, itself, be an object of fear (SN56.46), its occurrence in contexts already deemed dangerous suggests another interpretation; namely, individuals are primed to detect signals of danger in environments deemed dangerous and are disturbed (feel fear) when their capacity for detection is impeded. If capacities for detection are rightly assumed to be

functional for preventing unwanted effects, we might explain this increased feeling of fear in terms of a sense of increased likelihood of unwanted anticipated effects occurring.

4.5.3 Fear is reduced when environmental affordances to avert danger are perceived.

That a disciple is engaged in *solitary* meditative practice and is thus alone in a dangerous environment is central to most discussions of fear in the Nikāyas. The obvious reason is that, when alone, an individual cannot get help from others if they encounter danger. This implies that the opportunities afforded by an environment to avert dangerous things and anticipate suffering is relevant to whether and to what extent an individual feels fear.

The presence, or potential presence, of friendly others (those likely to assist rather than harm) is one such opportunity. That it bears on fear is assumed by Buddhagoṣa in his advice to those seeking to meditate on corpses in charnel grounds (Vims. Ch.6). Before approaching the location of a corpse, he advises disciples to first inform ‘a senior elder of the Community or some well-known disciple’ of their intention (Vims. 6.15). Why?

Because if all his limbs are seized with shuddering at the charnel ground, or if his gorge rises when he is confronted with disagreeable objects such as the visible forms and sounds of non-human beings, lions, tigers, etc., or something else afflicts him, then he whom he told will have his bowl and robe well looked after in the monastery, or he will care for him by sending young disciples or novices to him. (Vims. 6.16-17)

Buddhagoṣa goes on to claim that, after informing someone of the kind described, a disciple should then “set out eager to see the sign, and as happy and joyful as a warrior-noble on his way to the scene of anointing, as one going to offer libations at the hall of sacrifice, or as a pauper on his way to unearth a hidden treasure.” (Vims. 6.18). Why should joyful eagerness follow? Because the disciple trusts that these esteemed persons can and will assist him if needed; this trust brings assurance, and this assurance moderates the feeling of fear.



The presence of potential tools is another opportunity an environment could afford to avert danger (such as a walking stick or noisemaker; Vims 6.23, T no. 1428, 22 Dharmaguptaka Vinaya cited in Heirman 2019). So too is the spatial location of an individual in an environment (such as “standing on high ground” SN35) if it admits the possibility of deterrence, escape, or avoidance. These environmental opportunities are agent relative. The presence of (e.g.) “grass, twigs, branches and leaves” near “an expanse of water whose near shore is dangerous and fearful and whose further shore is safe and free from danger” (MN22.13, SN35.4) might moderate the fear of an individual who knows how to build a raft, because it would thereby afford them the possibility of escape. But the presence of grass and branches will not have the same moderating effect for one who lacks this knowledge and ability. A single environmental feature might also afford multiple opportunities for an individual to avert danger. The tree at whose foot an individual chooses to meditate might afford both a possibility to escape danger by climbing (if they can climb) as well as some protection by inhibiting attack from behind.

These examples from the Nikāyas provide some support for the idea that, at least from a canonical Buddhist perspective, an individual’s perceived capacity to cope with the expected effects of feared objects, given their perception of the environmental affordances to help avert them, moderate ‘how scared they feel’ and thus how motivated they are to perform aversive actions in response.

## 5. CONCLUSION

There is much interdisciplinary interest in Buddhist views about emotions, with fear a promising locus of interdisciplinary dialogue. The dominant conception of fear in the Nikāya Suttas of the Pāli canon assume the notions of karma and rebirth. Many Buddhists and most non-Buddhist scholars consider these ideas to be inconsistent with the physicalist assumptions of modern science. Some even argue that they should be rejected and entirely set aside as

“superstition and nonsense” (Flanagan 2011, xiii). This article is distinctive. Rather than setting these ideas aside, it derives from them a descriptive insight about the nature and structure of fear; namely, that fear is anticipatory. According to the analysis provided in this article, to fear some object is to construe it as dangerous, and to construe something as dangerous is to anticipate it will cause suffering or other unwanted effects such as the loss or harm to an object of value or concern.

Fundamental questions remain, however. The idea that fear is anticipatory is not new to emotion research. Joseph LeDoux and Abigail Marsh, for instance, both claim that fear is an anticipatory response to danger or possible harm. But where LeDoux (2015) argues that the view “fits best with the idea of emotions as ‘psychological constructions’” (p.20), Marsh (2013) argues that it is better analysed in terms that reflect “biologically coherent and qualitatively distinct responses to particular eliciting stimuli.” (p.6). The identification of anticipation as a dimension or property of fear is not, in itself, decisive for settling the dispute between these fundamentally different theoretical positions. More work needs to be done that systematically considers the implications and commitments of this idea. Nevertheless, the identification of anticipation as a dimension or property of a Buddhist conception of fear is a valuable starting point for interdisciplinary dialogue.

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## ABBREVIATIONS

AN            *Āṅguttara Nikāya* of The Buddha in Bodhi (trans.) (2012)  
BCA          *Bodhicaryāvatāra* of Śāntideva in Crosby & Skilton (trans.) (1998)

Dhp.	<i>Dhammapada</i> of The Buddha in Norman (trans.) (1997)
DN	<i>Dīgha Nikāya</i> of The Buddha in Walshe (trans.) (1995)
MN	<i>Majjhima Nikāya</i> of The Buddha in Ñāṇamoli & Bodhi (trans.) (1995)
P.	Pāli
Siks.	<i>Śikṣā-samuccaya</i> of Śāntideva in Goodman (trans.) (2016)
SN	<i>Samyutta Nikāya</i> of The Buddha in Bodhi (trans.) (2005)
Skt.	Sanskrit
Vism.	<i>Visuddhimagga</i> of Buddhaghosa in Ñāṇamoli (trans.) (1964)

## REFERENCES

- Adolphs, R. (2013) ‘The Biology of Fear’ *Current Biology*, 23(2): 79-93
- Barrett, L.F. (2006) ‘Are Emotions Natural Kinds?’ *Perspectives on Psychological Science*, 1(1): 28-58
- Beaulieu, K., & Blundell, J. (2021) “The Psychobiology of Hunger – A Scientific Perspective”, *Topoi* 40:565–574
- Bodhi, B. (trans.) (2005), *The Connected Discourses of the Buddha: A Translation of the Samyutta Nikaya*, Somerville: Wisdom Publications
- Bodhi, B. (trans.) (2012), *The Numerical of the Buddha: A Translation of the Aṅguttara Nikaya*, Somerville: Wisdom Publications
- Brekke, T. (1999). ‘The role of fear in Indian religious thought with special reference to Buddhism.’ *Journal of Indian Philosophy*, 27: 439–467.
- Ñāṇamoli, B. (trans.) (1964). *The Path of Purification: Visuddhimagga*, Buddhist Publication Society.
- Ñāṇamoli, B. & Bodhi, B. (trans.), (1995), *The Middle Length Discourses of the Buddha: A Translation of the Majjhima Nikaya*, Wisdom Publications
- Chah, A. (2001) *Being Dharma: The Essence of the Buddha’s Teachings*, Boston: Shambhala Publications
- Chah, A. (2002) *Food for the Heart: The Collected Teachings of Ajahn Chah*, Somerville: Wisdom Publications
- Chah, A., (2005) *Everything Arises, Everything Falls Away: Teachings on Impermanence and the End of Suffering*, Shambhala Publications
- Clarke, A., (2013) ‘Whatever next? Predictive brains, situated agents, and the future of cognitive science’ *Behavioural and Brain Sciences*, 36: 181-253
- Clarke, A. (2015) *Surfing Uncertainty: Prediction, Action, and the Embodied Mind*, Oxford University Press
- Clore, G. L., & Ortony, A. (2008). ‘Appraisal theories: How cognition shapes affect into emotion’. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (eds.), *Handbook of Emotions* (3rd ed., pp. 628–642). New York: Guilford Press
- Coan, J.A. (2010) ‘Emergent Ghosts of the Emotion Machine’ *Emotion Review*, 2(3) 274-285
- Cowell, B.C. (1894) *The Jataka or Stories of the Buddha’s Former Births*, Vol.1-6, Cambridge University Press.
- Crosby, K. & Skilton, A. (trans.) (1998) *The Bodhicaryāvatāra*, Oxford University Press
- Damasio, A. (1994) *Descartes Error: Emotion, Reason, and the Human Brain*, Penguin Books.
- Davidson, R. J. (1992). ‘Anterior cerebral asymmetry and the nature of emotion’. *Brain and Cognition*, 20: 125–151.
- Dreyfus, G.B. (1997), *Recognizing Reality, Dharmakīrti’s Philosophy and its Tibetan Interpretations*, Albany: State University of New York Press
- Dreyfus, G.B. & Thompson, E. (2007) ‘Asian Perspectives: Indian Theories of Mind’ in Zelazo, P.D., Moscovitch, M., & Thompson, E. (eds.) *Cambridge Handbook of Consciousness*, Cambridge University Press
- Eacott, M.J. & Easton, A. (2012) ‘Remembering the past and thinking about the future: Is it really about time?’ *Learning and Motivation*, 43(4), 200–208

- Ekman, P. (1992) 'An Argument for Basic Emotions', *Cognition and Emotions*, 6(3/4): 169-200
- Ekman, P. (1999) 'Basic Emotions' in T. Dagleish & M. Power (eds.) *Handbook of Cognition and Emotion*, pp.45-60. Chichester: Wiley
- Ekman, P. Davidson, R.J., Matthieu, R., Alan Wallace, B. (2005) 'Buddhist and Psychological Perspectives on Emotions and Well-Being', *Current directions in psychological science: A journal of the American Psychological Society*, 14 (2): 59-63.
- Finnigan, B. (2017) 'Buddhism and Animal Ethics', *Philosophy Compass*, 12(7): 1-2
- Finnigan, B. (2019) 'Śāntideva and the moral psychology of fear', in Jonathon Gold & Douglas Duckworth eds., *Readings of Santideva's Guide to Bodhisattva Practice*: 221-234, Columbia University Press.
- Finnigan, B. (2021) 'The Paradox of Fear in Classical Indian Buddhism', *Journal of Indian Philosophy* 49: 913-929.
- Flanagan, O. (2011) *The Bodhisattva's Brain*, MIT Press
- Friston, K. (2010) The free-energy principle: A unified brain theory? *Nature Reviews Neuroscience*, 11(2): 127-138.
- Giustarini, G. (2012). 'The role of fear (Bhaya) in the Nikāyas and in the Abhidhamma', *Journal of Indian Philosophy*, 40: 511-531.
- Goodman, C. (trans.) (2016) *The Training Anthology of Santideva: A Translation of the Siksasamuccaya*, Oxford University Press
- Harris, I. (2006) 'A vast unsupervised recycling plant: animals and the Buddhist cosmos' in Paul Waldau & Kimberly Patton (eds.) *A Communion of Subjects : Animals in Religion, Science, and Ethics*, Columbia University Press,
- Hayes, R.P., (1987), *Dignāga on the Interpretation of Signs* Vol. 9. Dordrecht: Springer Netherlands
- Heim, M. (2007) 'Buddhism', in John Corrigan ed., *The Oxford Handbook of Religion and Emotion*, Oxford University Press.
- Heim, M. (2018). 'Emotions', in Patrick Olivelle and Donald R. Davis, Jr eds. *The Oxford History of Hinduism: Hindu Law*: 419-31. Oxford University Press.
- Heirman, A. (2019) How to Deal with Dangerous and Annoying Animals: A Vinaya Perspective, *Religions* 10(113):1-18.
- Heyes, C.M. & Galef, B.G. (1996) *Social learning in animals: the roots of culture*, New York: Academic Press
- Kenny, A. (1963) *Action, Emotion, and the Will*. Routledge.
- Keown, D. (1992) *The Nature of Buddhist Ethics*, Palgrave Macmillan
- Kirchoff, M. (2018) Predictive brains and embodied, enactive cognition: an introduction to the special issue, *Synthese* 195:2355-2366
- LeDoux, J. (2015) *Anxious: The Modern Mind in the Age of Anxiety*, London: OneWorld Publications
- Magalotti, T., & Kriegel, U. (2022), 'Emotion, Epistemic Assessability, and Double Intentionality', *Topoi*, 41:183-194
- Marsh, A. (2013) 'What can we learn about emotion by studying psychopathy?' *Frontiers in Human Neuroscience*, 7(181):1-13
- Ñāṇamoli, B. (trans). (1964) *The Path of Purification: Visuddhimaggha*, Kandy, Sri Lanka: Buddhist Publication Society
- Ñāṇamoli, Bhikkhu & Bodhi, Bhikkhu (trans.) (1995), *The Middle Length Discourses of the Buddha: A Translation of the Majjima Nikaya*, Somerville: Wisdom Publications
- Nhat Hanh, T. (1988) *The Heart of Understanding*, Berkeley, Calif: Parallax Press.
- Nhat Hanh, T. (1992) *The Diamond that Cuts Through Illusion*, Berkeley, Calif: Parallax Press.
- Nhat Hanh, T. (2014) *Fear: Essential Wisdom for Getting Through the Storm*, London: Rider Books.
- Noë, A. (2004) *Action in Perception*, MIT Press
- Norman, K.R. (trans.) (1997) *The word of the doctrine (Dhammapada)*, Oxford: The Pāli Text Society.
- Raby, C.R., & Clayton, N.S. (2009). 'Prospective cognition in animals'. *Behavioural Processes*, 80(3), 314-324
- Reiss, S. (1980). 'Pavlovian conditioning and human fear: An expectancy model'. *Behavior Therapy*, 11(3), 380-396

- Rescorla, R.A. (1988). 'Pavlovian conditioning: It's not what you think it is'. *American Psychologist*, 43(3), 151–160
- Roberts, W.A. (2012). 'Evidence for future cognition in animals'. *Learning and Motivation*, 43, 169–180
- Rowland, N.E (2015) 'Hunger and Eating, the Neural Basis of' *International Encyclopedia of the Social & Behavioral Sciences*, 11:420–422. Second Edition. Elsevier
- Russell, J. (2003), 'Core Affect and the Psychological Construction of Emotion', *Psychological Review*, 110(1): 145–172.
- Sayādaw, M, (1994) *The Progress of Insight: A Treatise on Buddhist Satipatthana Meditation* ed. Thera N. trans., Buddhist Publication Society
- Sayādaw, M, (2016) *Manual of Insight*, Wisdom Publications
- Scherer, K.R. (2009) 'Emotions as Episodes of Subsystem Synchronization Driven by Nonlinear Appraisal Processes' in M. D. Lewis & I. Granic (Eds.), *Emotion, development, and self-organization: Dynamic systems approaches to emotional development* (pp. 70–99). Cambridge University Press
- Siderits, M. (2005). Freedom, Caring, and Buddhist Philosophy, *Contemporary Buddhism*, 6(2): 87-116
- Siderits, M. (2007) *Buddhism as Philosophy*. Ashgate
- Smith, S. (2020) 'A Pāli Buddhist Philosophy of Sentience: Reflections on Bhavaṅga Citta', *Sophia*, 59(3): 457-488
- Sterling, P. (2012) 'Allostasis: a model of predictive regulation' *Physiol Behav.* 106(1):5-15.
- Tappolet, C. (2005) Ambivalent Emotions and the Perceptual Account of Emotions, *Analysis*, 65(3): 229-233
- Tillemans, T. (2020) 'Dharmakīrti' in *Stanford Encyclopedia of Philosophy*, Edward N. Zalta, Ed. URL = <https://plato.stanford.edu/entries/dharmakiirti/>
- Terroni, F. (2007) Emotions and Formal Objects, *Dialectica* 61(3): 395-415
- Tuske, J. (2021) 'The Concept of Emotion in Classical Indian Philosophy', in *Stanford Encyclopedia of Philosophy*, Edward N. Zalta, Ed. URL=<https://plato.stanford.edu/entries/concept-emotion-india/>
- Waldron, W.S. (2006). *The Buddhist Unconscious: The ālaya-vijñāna in the context of Indian Buddhist thought*, London: Routledge Curzon
- Walshe, M. (trans.) (1995), *The Long Discourses of the Buddha: A Translation of the Dīgha Nikaya*, Wisdom Publications
- Westerhoff, J. (2018) *The Golden Age of Indian Buddhist Philosophy*, Oxford University Press
- Wiese, W. & Metzinger T. (2017). 'Vanilla PP for Philosophers: A Primer on Predictive Processing'. in T. Metzinger & W. Wiese (Eds.). *Philosophy and Predictive Processing*: 1. Frankfurt am Main: MIND Group.