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REVIEW

Beyond the attention economy, towards an ecology of attending. A manifesto

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Abstract
We endorse policymakers' efforts to address the negative consequences of the attention economy's technology but add that these approaches are often limited in their criticism of the systemic context of human attention. Starting from Buddhist philosophy, we advocate a broader approach: an 'ecology of attending' that centers on conceptualizing, designing, and using attention (1) in an embedded way and (2) focused on the alleviating of suffering. With 'embedded' we mean that attention is not a neutral, isolated mechanism but a meaning-engendering part of an 'ecology' of bodily, sociotechnical and moral frameworks. With 'focused on the alleviation of suffering' we mean that we explicitly move away from the (often implicit) conception of attention as a tool for gratifying desires. We analyze existing inquiries in these directions and urge them to be intensified and integrated. As to the design and function of our technological environment, we propose three questions for further research: How can technology help to acknowledge us as 'ecological' beings, rather than as self-sufficient individuals? How can technology help to raise awareness of our moral framework? And how can technology increase the conditions for 'attending' to the alleviation of suffering, by substituting our covert self-driven moral framework with an ecologically attending one? We believe in the urgency of transforming the inhumane attention economy sociotechnical system into a humane ecology of attending, and in our ability to contribute to it.

Keywords Attention · Attention economy · Ecology · Buddhism · Mindfulness · AI · Technological design

1 Introduction

The attention economy is the business-inspired approach that uses human attention as a commodity, exploiting impulsive reactivity via attention-grabbing designs/mechanisms. Its technology, with the exponential development of AI applications, such as short-form social media content (Facebook, Tiktok, Snapchat, …), bidirectional brain-machine interfaces (Neurable, Neuralink, Emotiv, …), eye-tracking (Tobii, Smart Eye, and Eyewear), multimodal AI (Gemini, Grok, Deepseek, …), and many more, add to the immersive impact of the attention economy. Attention is the new frontier of the capitalist process of enclosure and commodification, enabling economic and commercial logic to reach deep into our very subjectivities. There is an ongoing convergence of corporate and political acceleration in the use of techniques, including AI, to colonize and instrumentalize individual and collective experiences of attention.

In parallel with the attention economy's expansion, societal critique on its technology has increased exponentially

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too. Research has clearly shown the technology of the attention economy to be disruptive to the public–private balance, decreasing mental well-being worldwide, handing over power to a few high-tech companies, amplifying polarization and extreme political ideologies and contributing to global political instability (Gardenier et al. 2024).

These critiques, based on the defense of individual human rights, are already well-established and indispensable. In agreement with them, we join the voices warning of the inhumane effects of the current attention economy and its AI applications. In section two, we analyze the way attention is conceived in the business-oriented approach of the attention economy and in the lawmaker's attempts to curb its harmful effects. Even though these measures are undeniably important, we argue that they are merely defensive in character and focus too much on minimizing the negative aspects for individual users, partially by protecting privacy, limiting the impact on health, or blocking extreme online political messages. In the third section of this article, we advance the debate on counteracting the attention economy by drawing inspiration from Buddhist philosophy. Insights from Buddhism have already been successfully applied to the study of societal aspects of AI (Dow Schüll 2023; Hershock 2021; Hongladarom 2011; McGuire 2016; Lin 2023; Zheng 2024; Tormen 2023). We are aware that Buddhist philosophy and ethics have been less developed in this journal, but we argue that it certainly merits doing so, as attention is a major key element in Buddhist philosophy and practice. Our criticism of the attention economy can also benefit from instantiating a popular view of Buddhist attention as 'non-judgmental letting go' with a more integrated Buddhist view of attention as part of an 'ecology of attending'. In particular, we draw inspiration from two aspects of Buddhist views on attention: the embedding of attention in the whole of an individual's existence, and the function of attention to alleviate suffering in the world. In this way, we will use the "ecology of attending" in a specific way. We will start considering the concept of "ecology" in its broadest sense, as the system of living organisms, the environment, and their relations. But we will specify the broad concept in two ways. We stress the embeddedness of natural objects, individual beings, collectives and their moral, political, and social interactions. And we specify the "ecology of attending" as a moral, political and social orientation towards action committed to the alleviation of avoidable suffering, rather than to personal gratification (Hannes and Bombaerts 2023; 2024; Hadar and Ergas 2019; Hermann 2023; Bombaerts 2023).

We will do so in order to develop a scaffolding for a more fundamental resistance against the attention economy in the fourth section. Several scholars have described attention as embedded in body, community, morality, epistemology, nature, technology, or time. Others have developed a view on attention as a process or a constitutive practice, with a strong care for oneself (asking attention) or giving attention (to attend to). In parallel, societal action for a broader attention concept has successfully been taken beyond the internal academic sphere, as for instance in the publication of the attention manifesto by the U.S. "Friends of Attention" and the Strother School of Radical Attention (Burnett and Knauss 2022). The Buddhist view on attention as serving the alleviation of suffering is also put forward in technical, moral, sociological, communicational, legal, economic, business, and political approaches. However, we find that there is still a strong need for coherence between these approaches. We make a plea to integrate these systemic approaches to describe the fundamental role of attention in AI applications and developments and to facilitate a discussion that would move us from an attention economy towards an ecology of attending.

2 The attention economy and its liberal critics

This section describes two views on attention, each based on one core document taken as a token for a particular kind of discourse. We acknowledge that a single document cannot capture the entire richness of a particular discourse. For attention seen as an economic commodity (2.1), we refer to the seminal work "The Attention Economy: Understanding the New Currency of Business" by Davenport and Beck (2001). For attention seen as a personal right (2.2), we use the "European Parliament resolution of 12 December 2023 on the addictive design of online services and consumer protection in the EU single market (2023/2043(INI))" (European Parliament 2023).

2.1 Attention as an economic commodity

The term 'attention economy' refers to the business-marketing-economic system that treats human attention—a complex phenomenon, an embodied practice of living in a shared world—as a commodity, an economic resource with substantial fungibility or exchangeability. The attention economy does not only simply *use* attention as a commodity or a resource, it *reduces* it as such. Davenport and Beck define attention as "focused mental engagement on a particular item of information. Items come into our awareness, we attend to a particular item, and then we decide whether to act" (2001, p. 20).

The technological applications of the attention economy are based on simple but ultra-efficient behavioral-change marketing models. They create ease of acting while minimizing effort, elicit psychological motivation to pay attention and promise fulfilling rewards that, however, leave the users wanting more (Ibid., p. 24). To harvest users' attention

and agency, users are reduced as much as possible to quantifiable impulsive reactions to AI-driven systems of enticement (Ibid., p. 53). Emotions and motivations are considered mere means for grabbing attention. When considering mental states, there is a singular focus on subcortical reward learning systems, bypassing control by frontal regions. Davenport and Beck conclude: "Does this mean that to manage attention, business people should start centering all interactions around their associate's interest in sex, violence, and food? Not necessarily, though we are not ruling it out" (Ibid., p. 64).

In this system, in which attention is currency, data is the new gold. AI systems are deployed to maximize the commodity's harvest and increase the companies' impact. Critical thinking about the attention economy system must be avoided, and proof of its damaging effects must be dodged (Ibid., p. 9). The influence and impact of the attention economy system are presented as morally neutral, or as Davenport and Beck write:

> "Derber is undoubtedly right that people are narcissistic, and probably right that it [*authors: influencing attention*] is destructive. However, we are both realists, not social critics. How can an enterprising individual take advantage of the narcissistic nature of his or her peers?" (Ibid., p. 68)

2.2 Attention as a personal right—a liberal critique

Despite its self-acclaimed neutral or 'realistic' stance, the huge success of the attention economy comes with a devastating effect on public and private welfare. Mainstream attention research illustrates its negative consequences, such as disrupting the public–private balance, decreasing mental well-being worldwide, the shifting and clustering of power to a few high-tech companies, global political instability, and so on (Gardenier et al. 2024). This has led to widespread criticism of the side effects of the attention economic system. Up to now, most critiques of the attention economy have aimed to minimize the diminishing of individual autonomy. Consumers "should not be undermined by traders' commercial practices" (European Parliament 2023, §8), but should be offered "real choice and autonomy" (Ibid., §10). The critiques aim to limit impacts on physical and mental health, as well as privacy (Ibid., §B, G, 3).

This essentially liberal perspective, conceived as the belief that it is the aim of politics to preserve individual rights and to maximize freedom of choice, considers attention not merely as an economic commodity, but as a fundamental individual human right. Consumer protection legislation claims that it "will reverse the negative trends that have been weakening consumers' position and reducing consumers' rights in a world dominated by digital technologies" (Ibid., §1, O) and that "policy initiatives and industry standards on safety by design in digital services and products can foster compliance with children's rights" (Ibid., §13). Some aspects of digital services are explicitly seen as positive: increased efficiency, connectedness, accessibility, and leisure, the possibility to connect, learn about, and appreciate different perspectives and worldviews, build knowledge and explore areas of interest, become more productive, exercise more, or solve specific problems (Ibid., §B).

Although turning attention-seeking features off-by-design is seen as crucial (Ibid., § O,10,13), educational guidelines, prevention plans, and awareness-raising campaigns "should promote self-control strategies to help individuals develop safer online behaviors and new healthy habits" (Ibid., §11). This text seems to imply that emotions serve as signals of the decrease in individual well-being (Ibid., §D) and that individuals are given a huge responsibility for individual self-control (Ibid., §D,G,I,J,K,O,8,9,11). As such, this text largely stresses autonomous individual agency as an answer to the emotional reactivity that is core in the attention economy's business approach.

The text does not question the relevance and benefits of digital services and AI systems as such. As in the attention economy business approach, data and information transfers are presented as essentially neutral too (Ibid., §A). Yet, as the liberal critique points out, digital services can create "power imbalances and digital asymmetry" (Ibid., §K). Therefore, digital fairness is understood in terms of the proportionality of business and consumer rights (Ibid., §1, 5, 6), and users' efforts should be proportional and in line with their individual autonomous choices.

In this view, attention remains a resource to be exchanged, this time not as company property, but as a right of the individual user. Companies are blamed for "capturing", "retaining" (Ibid., §A), or "regaining" (Ibid., §L) users' attention, so users should be protected against abuse. Chomanski argues that the right to attention consists in the right to be free from distraction and the right to direct one's attention as one pleases (2023).

But the elements of the AI-based systems (data, design, AI algorithm, interactions, dark patterns in interface design…) are not conceptualized in such a way that is critical of the system itself. Dow Schüll (2023) talks about the attentional sovereignty crisis and the need to overcome the opposition of serfdom and sovereignty, and find alternative forms of attending to ourselves and others. Seaver (2023) opens the discussion about attention as a catchall concept for making sense of value, selection, and human agency itself, meaning many things to many people: a precious resource, an obvious analogy, and the key to social cohesion itself. Such attention economy critiques are well-established and indispensable, yet at the same time, they remain limited to a primarily liberal approach focusing on minimizing the

negative aspects for autonomous individuals in the negotiation of rights.

3 Buddhist inspiration for a wider criticism

To facilitate a broader approach to attention and to develop a positive alternative to the attention economy's technology, we draw inspiration from Buddhist philosophy.

There are many kinds of Buddhism and various Buddhist terms for 'attention'. As our theme is not 'Buddhist attention' as such, we focus on two specific aspects of the way attention is presented in Buddhist sources, to broaden the criticism of the attention economy.

Before we do so, we want to stress what this is not about. We will go beyond the cliché of Buddhist attention practices as they are often presented in the West. Popular parlance tends to reduce Buddhism to its meditation practices, its meditation practices to 'mindfulness', and 'mindfulness' to nonjudgmental attention that lets go of all reactivity (Bishop et al. 2004). This kind of mindfulness is said to allow practitioners to see things as they are, free from outer influences or inner compulsions (McMahan 2008, 2023, p. 6). This underscores the active, constructive nature of our cognitive processes, which shape reality through schemas that reflect our needs and inclinations. By recognizing these cognitive models for what they are, one can begin to loosen their hold, making them more flexible and less prone to generate afflictive mental states or automatic reactions—ultimately reducing suffering (Tormen and Mascarello, forthcoming). Understood in terms of Davenport and Beck's model, the merit of this kind of mindfulness is that its practitioners linger longer in the first self-awareness phase so that they are more free to attend to what they want and decide to act autonomously. In that way, they may be less reactive to the prompts of intrusive marketing strategies and AI-systems. Yet, it has been argued (McMahan 2023; Schlieter 2013) that what traditional Buddhism calls 'enlightenment' or 'liberation' is a process of deconstructing an existing moral framework, understood as suffering-engendering, and substituting it with (or 'awakening' to) another framework that is experienced as more efficient for tackling the suffering caused by a particular way of looking at life (Mascarello, forthcoming). Even within Buddhist history the content of awakening has changed over the centuries and differs among the diverse Buddhist schools (McMahan 2008). It is beyond the scope of this short paper to go into these views, as, again, our aim is not to give the outlines of attention in Buddhism.

But beyond these differences, the reduction of Buddhism to mindfulness as nonjudgmental awareness obscures a great deal of Buddhism's pragmatics and, indeed, a great deal of our reality as human beings. We can wonder what this implies for the 'attention technology' we are embedded in today, and how to resist the harmful effects of the current attention technologies.

The nature and role of attention in Buddhism is a far more complex and subtle matter than this article will be able to convey (Vörös, 2016). In the most technical considerations of early Buddhism, consciousness is an aggregate of three aspects: *citta*—momentary activity of thought, *mānas*—the rational faculty of consciousness, and *viññāṇa*—the sensory and perceptive aspect (Rahula 1959; Tu 2012). *Manasikāra* which concerns *mānas* and can be literally translated as attention, is a universal mental factor, meaning that it is a quality accompanying every moment of active consciousness. It is understood literally as "making in the mind" (Bodhi 2000, p. 81) and is considered the force of the mind averting towards an even slightly impinging object (Jacobs 2017).

The first aspect is that attention is a practice that cannot be considered as neutral or in isolation but needs to be seen as embedded. It is part of an 'ecology', a system of moral and epistemic meaning that emerges from its natural objects, individual beings, and collective constituents. The second aspect focuses on the Buddhist 'right resolve' (*samyaksaṃkalpa*) to use attention for alleviating suffering in the world, rather than as a mere tool for personal gratification.

3.1 Dhammacakka: an ecology of attention

Davenport's and Beck's model represents attention as an isolated non-moral faculty in the AI-supported attention economy. The liberal approach starts from attention as an individual right. Buddhism embeds attention within a wider context of practices. The earliest rendition of the Buddhist way is the so-called 'eightfold path'. Mindfulness features as the seventh of eight domains of practice. All eight of them need to function in harmony to be functional, just as the iconic 'wheel of the teaching' (see Fig. 1) needs its eight spokes to be attuned to each other for the wheel to turn properly. Early in its history, Buddhist traditions grouped the eight aspects into three 'trainings' (Gombrich 2009, p. 109). The training of wisdom consists of 'right view' and 'right resolve'. Moral training contains 'right speech', 'right action' and 'right livelihood'. And 'right effort', 'right mindfulness' and 'right concentration' form the training of the mind or meditation.

The eight factors of the path are not only intended to work together. They are also fundamentally integrated. For instance, in meditation training, the first aspect, immediately preceding mindfulness, is 'right effort'. It is traditionally described as giving rise to wholesome, or skillful (*kusala*) mental states not present yet, cultivating wholesome mental states already present, avoiding unwholesome, or unskillful (*akusala*) mental states not present yet, and diminishing

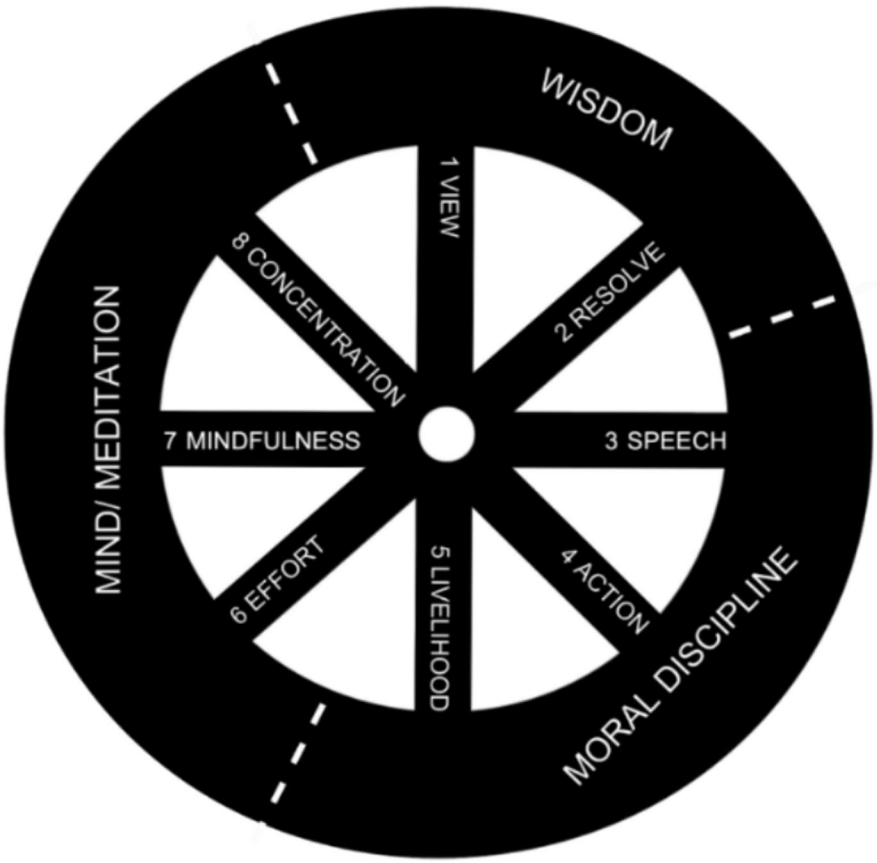

Fig. 1 Dhammacakka: the wheel of the teaching

unwholesome mental states already present (Thanissaro 1996; Adam 2005). Right effort, therefore, is a monitoring kind of attention. Instead of being non-judgmental, it constantly evaluates experiences for their level of wholesomeness. Instead of accepting all, it is discerning, intent on actively building a character to embody an established ideal. And instead of being neutral, it distinguishes skillful from unskillful states. Right effort is blatantly moral: so the training of morality and meditation inform each other. Right effort also overlaps with the wisdom training, as wholesomeness is defined in terms of the Buddhist worldview ('right view') and its basic motivational attitude ('right resolve'), the latter consisting of raising a sustained interest in understanding the causes of suffering and a willingness to alleviate suffering in the world (Bombaerts et al., 2023; 2024). Fortney (2025) adds that Buddhist thought points towards adding to the right of being free from distraction and direct attention as one pleases also a right to attention that includes receiving the kind of societal support that makes it possible to strengthen one's attentive capacities; i.e., a right that amounts to more than just the right to be free from certain kinds of interference. Sen's *Development as Freedom* offers a broader discussion of the idea that, in virtue of our rights, other members of our society may have duties to provide us with certain kinds of support (1999). Thinking about a right to attention in this partly relational way is compatible with thinking of attention even more broadly, in terms of an ecology of attention, as developed in the next sections of this paper.

This is what we call 'embeddedness of attention' here: the fact that our attention is informed by our moral and philosophical frameworks, that in turn are informed by our attention practices.

Our point is not so much that Buddhism is special because its attention practices are embedded, but that *any* kind of attention is embedded. Any kind of attention practice is linked to what is considered to be 'wholesome' action (the moral section of the wheel, Fig. 1) and a set of adopted views on existence and basic intentions that lend direction to our lives for them to be sensed as meaningful (the wisdom section of the wheel, Fig. 1). A 'realist' and 'pragmatic' approach to the attention economy needs to take this embeddedness into consideration. We need to look at its participants not merely as users in an economic system, as Davenport and Beck do. Nor should we understand them merely as legal subjects with inalienable rights, as the liberal critique does. Rather, we must understand them as moral subjects in a shared world, within a 'social imagery', a 'socio-technical system' (McMahan 2023; Hongladarom 2020; Wehrle et al. 2022; Wellner 2022). And we must also understand that, as

individual users of the attention economy, our attentions, moral frameworks and worldviews are mutually constitutive and constantly in interaction with the attention economy and AI-systems in which we live, work, and consume.

We consider an "ecology of attending" as a socio-technical system of natural objects, living beings, collectives and their physical, social, political, and moral interactions, embedded in systemic relationality, committed to the alleviation of avoidable suffering, rather than to personal gratification. In the next section, we further specify what attending to the alleviation of suffering means and what it does not mean (Tresch 2023).

3.2 Samyaksaṃkalpa: attending to the alleviation of suffering

3.2.1 Desire-based attention versus commitment-based attention

An important, often implicit, starting point of attention economy critiques is that the ideal user for attention economy-based businesses is desire-driven, whereas Buddhism is well placed to provide the alternative, as it focuses on unskillful desire as a root cause of our suffering. At face value, and from the individual user's point of view, this contrast is simple. Buddhism's aim is to deconstruct the false promises of what we think are our deepest desires and to wake up to another less-desire-based way of life. Buddhism indeed distinguishes non-systematic attention (*ayoniso-manasikāra*), the so-called 'monkey-mind' on the one hand, and systematic, cultivated attention (*yoniso-manasikāra*) on the other. The former just follows whatever desire crops up, the latter focuses on the aim of the Buddhist path as set out in the wisdom section of the eightfold path (Thanissaro 2006). Garfield and McRae (2024) call this second attention 'commitment-based' rather than desire-based.

Ironically—if not cynically—Davenport and Beck consider Buddhism as a possible ally of the attention economy. They express their hopes that Buddhist insight into the distracted, easily manipulated human attention can be put to use, so that

> "businesspeople who remember that every human brain is mainly a 'monkey mind' are ahead of others right off the mark." (2001, p. 71)

The position of the authors aligns with their self-image as realist and pragmatic thinkers rather than moralists.

We argue that the attention economy is often framed as desire-based. The very name 'attention *economy*' may tempt us into thinking that users are merely engaged in an economic deal that is not expressing or revealing commitment to a certain conviction or behavior. But what we are actually buying (both in the sense of 'purchasing' and in 'accepting without further ado') is just as much an ideological, committed ideal.

Depending on whether we approach the attention economy from the side of the producer (provider) or from the side of the consumer (user), two moral frameworks are at work. For the provider, the moral framework is quite explicit: the resolve is to maximize profit, framed in what has been called 'the Californian Ideology': a mixture of leftist hippie freewheeling spirit and neoliberal yuppie entrepreneurial zeal and technological determinism (Barbrook and Cameron 1996). On the users' side, the moral framework is far more covert, yet no less omnipresent and powerful. Tentatively and for brevity's sake, we will describe it as *the free flow of easy gratification*. It upholds the implicit belief that all that is modern and good is merely a click away. It may seem as little more than 'the monkey mind', but it is a belief calling for being committed to ease. It describes morality in which effort, abstention or delayed desire are not worth pursuing. Just click and all will be well. This is not merely giving in to a non-concentrated wavering attention. This is a systemic, albeit implicit, ideology, and its obscuration may constitute an instance of epistemic injustice. It robs us not only of our attention but also from seeing why we pay attention to the things that receive our attention.

When the liberal view criticizes the attention economy, it does so in the name of the same covert ideal: it blames the attention technology for not delivering its promise by meddling too much [e.g., the Onlife Manifesto (Floridi 2015)]. Users are alienated from their desires by technology that create demands where there were none. Or by subjecting them to data mining in their private quests for fulfillment. Yet, what is neglected in this view is the fact that in the attention economy the pursuit of desires through ease *is* its moral framework, an ideal that truly modern individuals are to be committed to, lest they want to run the risk of being considered outdated—a damning moral verdict.

Conversely, it would be just as misleading to think of Buddhism as non-desire based. Pursuing the Buddhist ideal of awakening and liberation requires great and sustained motivation. In this respect, some Buddhist authors (Sucitto 2010) have distinguished two terms for desire. *Taṇhā* is used for the reflexive desire that chases things that seem to offer pleasantries or do away with what threatens to be unpleasant. *Chanda* is used for the desire for sustainable happiness, related to a life committed to mindful, moral and wise practices. In this perspective, the reduction of Buddhist attention to non-desire-based mindfulness rather leads to quietism and collaboration with prevalent systemic causes of suffering, rather than taking a lively interest in the causes of suffering and in the active development of a better alternative.

3.2.2 Self-committed attention vs attending to the suffering of the world

Rather than opposing desire and commitment, the gap between the function of attention in the attention economy and in Buddhist practice is better described as a contrast between 'self-commitment' versus 'liberation-commitment'. Both the attention economy and the liberal criticism present themselves as self-centered, in the sense that they claim to want each individual to live the life he or she intends to live. The liberal critique reproaches the attention economy of not delivering what it promises, without questioning the promise itself.

Since its earliest days, Buddhism presents itself explicitly as not self-based, to such an extent that it is referred to as the teaching of non-self (*anatta*). Historically speaking, this was a criticism of pre-Buddhist Indian mysticism, which claimed that liberation from suffering was to be found by meditating on one's true self or soul (*atta*) and thus awaken to one's oneness with the cosmic principle (Brahma), which was eternal, fully autonomous and ever blissful. By contrast, the Buddha advised his followers to meditate on the observable experience that no such soul, eternity, autonomy, or ever-lasting bliss was to be found (Gombrich 2009, pp. 64–71). Rather than looking for liberation in a mystical Self, Buddhism looks for liberation in the cultivated attention of 'co-dependent arising' (*paṭicca-samuppāda),* a radical sense of relationality in which to exist means to be related to myriads of causes and conditions, or even *to be* a cloud of interactions. That would be Buddhist 'realism', the first factor of the noble eightfold path, 'right view'. This relationality is taken as the basis for the second factor, 'right resolve', which is not about finding one's true blissful Self, but about favoring wholesome (*kusala*) interactions over unwholesome (*akusala*) ones, to alleviate suffering in the world and enable a radically different way of being. That would be Buddhist 'pragmatics' (Hannes and Bombaerts 2023, 2024).

Projected onto the criticism of the attention economy, the ideology of the free flow of easy gratification is actually closer to the mystical promise of a blissful Self than to Buddhist non-self liberation. Buddhist resolve can serve as an inspiration for finding an alternative resolve, an alternative basic function of attention in our embedded lives. Here we propose to express this contrast as 'attention' versus 'attending'. As a noun, 'attention' can be seen as a resource to be exploited or a currency. Whereas 'attending' emphasizes cultivating a caring practice (Bombaerts et al., 2023). The Collins English Dictionary distinguishes eight current uses of the verb 'to attend', that can be grouped into three categories. One category simply refers to 'listening' or 'paying attention' (Collins, 3). A second one refers to what we have called an 'ecology': as being an integral part of a larger system (one attends classes or a church, Collins 1). Or as a phenomenon coming with or belonging causally to another phenomenon (Collins 4,5, a high fever attends a cold). A third category of meanings are associated with giving care (Collins 2), devoting oneself to something (Collins 6) or someone (Collins 2, 6–8), escorting (Collins 7) and providing for the needs (Collins 8) of somebody.

Historically speaking, Buddhism has emphasized the first-person singular perspective, focusing on the cause of suffering on an individual level, even though some schools encourage seeking awakening for the benefit of all beings (Shi and Ewart 2024). Philosophically speaking, 'liberation' can also apply to alleviating individual or collective suffering caused by systemic societal causes, as is the case for instance in the recent arising of engaged Buddhism (Fuller 2022). Beneficial interdependence can be cultivated on any organizational level. Sub-individual phenomena, like habits and patterns (Candiotto and Dreon 2021), can be checked on their 'wholesomeness'. And so can super-individual systems such as families, work floor cultures, political movements, classes, nations, international institutes, and economical systems. We can substitute both the attention economy's view on society (as essentially an economy of self-interests) and the liberal view on society (as essentially a social contract between autonomous individuals) with a view on any societal level as a systemic ecology (Macy 1991; Loy 2019; Wirth 2021), sharing attention practices, moral frameworks and views on existence.

In sum, if we are serious about offering an alternative to the AI-supported attention-economic system, we cannot limit ourselves to mildly defensive measures, in which we try to save some of the amount of attention available to us, take back something of what is robbed from us, or find ways to boost our attention again. We also need a fully worked out positive alternative approach to our attention. We need to be explicit about what alternative moral ideal we can be committed to in our attention.

In the end, it boils down to the seemingly simple question: *what are we doing when we are online*? Under the condition that we realize that our 'doing' is characterized by attentional, moral and philosophical practices, embedding our attention, practiced in a shared world, and that have us committed to ideals. Do we practice quietism in the face of systemic suffering, or do we develop forms of resistance based on a radically relational view aiming for beneficial relations in our societies?

It is our conviction that in order for us to answer these questions, we need to develop a solid view on both aspects we draw from basic Buddhist thinking: attention as an integral part of an 'ecology' and the function of attention to improve our attending to the suffering in the world.

4 A call for action

4.1 'Ecology' as embedded attention: next steps

The Buddhist sources in section three can be of inspiration to change the context of the current attention economy's technology. It can call on us to consider individual users, designers, and big tech company employees and managers as moral subjects in a shared world whose attentions, moral frameworks and worldviews are mutually constitutive and constantly in interaction with the sociotechnical environment, such as AI systems. Several disciplines have already been developing notions of embedded attention (Doctor et al. 2022; van Vugt et al. 2020). Burnett and Smith (2023, p.7) make a plea to study "the richly matrixed, time-bound, reciprocating, recursive, and ultimately dynamic nature of our attentive lives." These various notions, however, remain scattered. Below, we summarize several of these notions without a clear structure, which is, according to us, the current state of the field.

Crary's (1999) genealogical analysis traces the historical evolution of attention in Western capitalist societies. Since at least the nineteenth century, Western modernity has required individuals to define themselves by their ability to focus, naturalizing a form of human perceptual adaptability and continuously reshaping the boundaries between attention and distraction (Aloisi 2023).

Boullier (2024) and Citton (2017) have proposed to focus on different regimes—sets of institutions, procedures, and practices characterizing a mode of organization and exercise of power that lead to how phenomena occur and unfold—and how they can form a "compass of modern attentional regimes" to analyze different dynamics. The 'loyalty regime' calls for the users' commitment to stay tuned, to return to the social media platform, the smartphone or the app as often as possible. The 'alertness regime' installs an imperative to open to uncertainty and unpredictability. The 'projection regime' installs a sense of coherence into the observed world and entices us to ignore information that might contradict the framework. The 'immersion regime' brings users into a state of pleasurable fragmentation (Citton 2017, pp. 41–43). The political consequences of inhabiting different attentional regimes are significant, especially when projection regimes are prevalent and implicitly present.

Changing the attention economy means intervening in this large historical evolution, which is *technologically* co-shaped. Puzio (2024) refers to "eco-relational" as the whole house we live in, which includes both nature and technologies. Humans are in a relationship with the whole non-human world. The notion of attention has been transformed over time, partly due to the technologies that shape it. In the age of the printed book, attention meant focusing on one activity at a time, and the background had to be silent and unnoticeable. In the age of radio and television, when stations and channels could be switched with a single button, attention was still focused on a single item but for shorter periods of time. Today, in the age of computers, cell phones, and AI, attention is distributed among tasks and appears in the form of "multi-attention" (Wellner 2014, 2019; Gill 2016, 2020). In its distributed form, attention can provide a subversive answer to the attention economy that requires our undivided attention.

A significant part of what we perceive is governed by social norms of relevance and irrelevance: precepts that determine what is worthy of attention ("social norms of focusing"), as well as norms that invite us to deliberately ignore things we notice (Zerubavel 2015; Campo 2022), or how we feel empathy (Concannon and Tomalin 2023; Ho and Ho 2024; Kleinrichert 2024; Montemayor et al. 2022). We learn where to direct our attention through a process of socialization. As such, attention is embedded in our epistemological and moral context.

Concerning the epistemic embedding of attention, we refer to the work of Smith and Archer (2020) who coined the term *epistemic attention deficit* to refer to "to the unjust scenario in which someone is paid less *epistemic* attention than they *ought* to be paid" (2020, p. 779). They give the example of how newspapers or television shows can block certain perspectives, and hence form collective knowledge-production, for example by not interviewing refugees but only politicians debating migration. Epistemic attention deficits result from social power dynamics that accrue more importance to dominant perspectives than to marginalized ones. Becoming aware of this form of epistemic injustice requires that we realize which voices we want to hear, and which perspectives we find worthy of our attention. Sometimes justice requires that we re-curb our attention, and unlearn habits (Schaubroeck 2018). If social networks are epistemic environments (Blake-Turner 2020), we need to ask ourselves what their heavy usage does to our epistemic attention and our related informational skills (Marin 2022).

There is a mutual influence of *morality and attention*. On the one hand, we direct our attention to the things that we find valuable, or at least worthy of our engagement. They matter, even when the value is negative (Watzl 2022). On the other hand, how and whether we attend shapes our moral worldview, changes our moral quality, and enables or blocks our access to a reality outside ourselves. This second point is the insight brought to the ethics of attention, in different ways, by Iris Murdoch and Simone Weil. From the fact that "I can only choose in the world that I can see" (1970, p. 31), Murdoch derived, while engaging with Buddhist thought (Fortney 2024), that vision (or perception) rather than action was the moral faculty par excellence. Murdoch considers

just and loving attention as 'the characteristic and proper mark of the active moral agent' (1998, p. 327). She stresses the ways in which ethics is bound to the individual's 'quality of consciousness', shaped by and shaping our attention. More radically, Weil stresses the truth-seeking dimension of attention, as a way of giving our assent to a reality that we recognize as beyond our control, both epistemically and practically (1951, 1997). Both recommend training attention as an important part of (moral) education (Weil 1951; Murdoch 1992, ch. 3), even regardless of the specific object of attention—which highlights the value they assign to attention as such (Caprioglio Panizza 2022).

In the *political* realm, Berger (2023) argues that the state of attention determines the efficacy of public spaces in articulating and achieving visions of the common good. As politicians seek to amass power by capturing attention, citizens can engage in disciplines of attention such as mindfulness in producing a public power that is more appropriately oriented to the welfare of all. These practices can enable enhanced ontological bonds to form between individuals, which can be the basis for more stable and effective political realities. Such bonds are not given, but rather come about by way of a hermeneutical circle of attention, language, and embodied understanding that recognizes the intrinsic value of mindfulness itself.

From a phenomenological perspective, attention is considered as an intensely *dynamic process* (Waldenfels 2011; Arvidson 2006; Losoncz 2020). The specific feature of the role of attention is that it resides on a threshold of what is conscious/unconscious, known/unknown, within control/beyond control, visible/invisible, and is thus a dynamism that spans domains that are often considered mutually exclusive. In this sense, the dynamics of attention is what enables processes of change within the operational subject and various modes of attuning with the world and the other. Thus, attention becomes a key-faculty in the make-up of our psychological make-up, lived experience and, in extension, an existentially pivotal modality of our consciousness (Fredriksson and Caprioglio Panizza 2022). Correlatively, the exploration and manipulation of its dynamism provide valuable insight into both the experienced dimension of our engagements with the world and others, as well as the possibilities to creatively reshape and enhance these engagements (Varela et al. 1991; Depraz et al. 2003).

Some researchers developed attention as grounded in the *body* through body sensations, physical movements, and interactions with our environment (D'Angelo 2020; Marosan 2023; Wehrle 2020). We see the other's gaze and we respond to it with our gaze, looking at them in the eyes, as an embodied signal that we are minding them (Solomonova et al. 2011). Attention is manifested as responsiveness—to the environment, to another's bid for attention, to artifacts and to ourselves—and this responsiveness is performed with our bodies: we raise our eyes from our smartphone's screen when something captures our attention, we look and gesture in particular ways when we are attentive to something or someone. The corporeal aspects of attention also bring current research in the fields of phenomenology and cognitive psychology into close contact with contemplative approaches within various "wisdom traditions." The latter have developed elaborate practical systems for exploring and modulating different dimensions of attention in concrete, hands-on settings (e.g., various meditative, breathing, somatic, etc., practices). It has therefore been suggested that a collaboration between scientific, philosophical, and contemplative approaches in the study of attention could prove methodologically, epistemologically and experimentally fruitful (Varela et al. 1991; Depraz et al. 2023).

Meditation practitioners anchoring their attention on bodily sensations, breathing, and movement could detect mind-wandering and regulate their attention and emotion (Kerr et al. 2013). Empirical research has been used to show that, by observing their bodily experiences without reaction, practitioners gain a deeper insight into the characteristics of physical and mental phenomena (impermanent, suffering, not self) (Wongkitrungrueng and Juntongjin 2022), and transform their engagements with pain and pleasure experiences. This embodied approach underscores the interconnectedness of mind and body in cultivating attention which contributes to the quality of attention as practitioners (Van de Velde et al. 2024).

Recent findings in cognitive neuroscience support the notion that attention is not a disembodied, neutral mechanism, but deeply embedded in dynamic neural networks such as the default mode, salience, and frontoparietal control networks. These systems not only regulate cognitive flexibility and goal-directed behavior but are also modulated by contemplative practices such as mindfulness and compassion-based meditation. Neuroplasticity studies further suggest that attention can be trained and restructured in ways that align with ethical and prosocial values. From this perspective, attention should be understood not merely as a cognitive resource but as a relational faculty—shaped by our sociotechnical environments, moral orientations, and physiological states. This embedded and modifiable nature of attention offers a compelling neuroscientific complement to the ethical and ecological framework proposed in this manifesto.

The Strother School of Radical Attention pioneered a curriculum around "attention activism", a rallying point for diverse constituencies with a stake in human wellbeing, also *beyond* human. They focus on education (meaning teaching and learning around attention and attention-capture as *consciousness-raising* through pedagogy), organizing (*coalition-building* across relevant communities who see the need to push back against the theft/suborning of human

attention), and sanctuary (cultivation of physical, virtual, fixed, and mobile spaces that provide shelter and nourishment for attentional resources) (Burnett and Mitchell 2025).

The above notions of embedded attention are rich and promising, both at a theoretical and practical level. However, these efforts are still very scattered and lack synergy as a group. Future research should perform a continuous effort to bring these approaches into conversation, to stimulate theoretical and policy-related synergies.

In the interaction of individuals, attention in *economic, business, and governance performance* is not only considered as a commodity but also as a commons that must be protected and cultivated alongside other efforts to dis-enclose the material and phenomenological commons (Doran 2017; Brown and Zsolnai 2018; Zsolnai 2011). While it is well and good to bemoan the excesses of large technology companies, we need to seriously consider whether any realistic proposal to regulate the attention economy can actually produce the desired results. Governments and regulators face informational and motivational constraints paralleling those facing private actors. We should therefore be wary of assuming that even the best-intended regulations will in fact achieve their aims (Chomanski 2021). Using the framework of Non-Western Public Administration and Governance, current studies also have shed light on some of the governance practices in Asia that have historical Buddhist roots or are considered to be Buddhist and are relevant to the aimed research concerning attention economy and the Buddhist perspective towards it (Uttam 2014; Shakya and Drechsler 2019; Drechsler 2019; Lennerfors 2015).

4.2 Attending to the alleviation of suffering

Once we acknowledge that there is a moral direction underlying the attention economy—so prevalent that it is near-invisible—we can and should wonder whether this is the moral framework we want to be directing our attention, values, decisions, but also our societal structures, such as the technological environment that forms a formidable presence in our current lives (Citton 2017; Campo 2023; Park 2008).

As discussed in the third section, Buddhism emphasizes the mutual interrelation of our attention and our moral frameworks. *Sati*, one of its terms for attention, can be understood both as 'noticing what passes by' and 'remembering', as in 'keeping in mind what the Buddhist path is about' (Analayo 2004). This does not only mean that Buddhist attention is practiced within the moral framework of 'awakening' and 'liberation'. It also means that cultivated attention practices have the power to affect practitioners' moral frameworks. Attention practices make us aware of our covert moral frameworks. They can develop mental space for creating a critical distance with respect to ailments in the moral framework by which we appear to be living. And they can offer room for other frameworks to grow as new support for our attention.

Colin Campbell (2015) has argued that moral frameworks are quite resistant to change, let alone to being substituted. They react like beings with a strong survival instinct. Even merely scrutinizing one's moral framework is hard and awkward work, accompanied by strong resistance. Yet we argue that we are in urgent need to do so with respect to the attention economy and that attention researchers of various domains and disciplines are well placed for doing so and for bringing the criticism of the attention economy to a higher and much-needed level.

Three major questions can guide us in this.

1. How can technology help us to acknowledge that we are 'ecological' beings that live in relationality with others, rather than create the image of a self-sufficient, self-driven and self-serving individuals?
2. How can technology help us to raise awareness of our invariably being committed to a moral framework, even if the moral framework is implicit?
3. And if technologies are part of our being and shape our moral decisions, the question arises: What kinds of technologies do we want? How should we design them? How can technology help us to raise the motivation for 'attending' better to the alleviation of suffering, by substituting our covert self-driven moral framework with an ecologically attending one? Not only to attend better to macro-problems such as climate change, concentration of power and wealth, and political polarization but also, and perhaps even in the first instance, to attend better to that which the attention economy promises but fails to deliver: autonomy, the expression of our authenticity and finding contentment in life.

These questions are not only interesting to ethicists. We argue that they reflect a societal urgency. And the answer to them is that we do not really know.

With this manifesto, we call for all stakeholders in sociotechnical attention systems to collaborate. It would be exaggerated to state that "we have nothing to lose but our chains" (Marx and Engels 1888), but we do have chains to pay attention to, to investigate them for their suffering-engendering characteristics and for hijacking not only our hormonal balance but also our moral frameworks and societal embeddings. A relevant technological environment is to be attuned to our long-term needs (Hershock 2023; Hongladarom 2020), as attending ecological beings, enabling us to cultivate freedom within our fully embedded existence (Williams 2018).

5 Conclusion

The abstract of this paper served as a manifesto, a call for a shift from the current attention economy to an ecology of attending. By this we mean an approach that conceptualizes, designs and uses attention in an embedded and liberation-committed way. We turned to Buddhism for clarifying both aspects, yet we hope it is clear that, next to Buddhism and Buddhist ethics (Edelglass 2013; Wright 2009), we think that many other approaches can support our endeavor (e.g. Faruque 2024; Depraz 2003; Hiniker and Wobbrock 2022; Weil 1997; Bombaerts and Botin 2025; Lamberti et al., 2025).

This article hopes to be a stepping stone, offering a rough sketch of many potential conceptualizations that are to be elaborated and complemented with many others. On the basis of our reconceptualization of attention, attention economy applications can be redesigned, underlying business models further developed, and policy strategies worked out. New AI supported developments are inherently linked to attention, and here too the inevitable embeddedness of attention and a desirable liberation-commitment of attention should be built in the design of the digital applications.

We acknowledge that it is far from easy to come to grasps with what the above means concretely for the development of the design. But we argue that this only increases the urgency of further research. And the urgency of assembling all stakeholders at the table to discuss the future of embedded and liberation-committed attention in practice. To transform the inhumane socio-technical system of the attention economy into an ecology of attending.

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Data availability No datasets were generated or analysed during the current study.

Declarations

Conflict of interest The authors declare no competing interests.

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