Chapter 8

When Artificial Intelligence Meets Contemplative Studies: Toward a Wholistic Human Augmentation for Collective Wellbeing

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Introduction

In the late 2010s, HE (higher education) leaders, practitioners, and researchers began to discuss how AI (artificial intelligence), as part and parcel of the 4IR (fourth industrial revolution), might transform IHEs (institutions of higher education) (Aoun 2017; Gleason 2018; Peters & Jandrić 2019). As they enthusiastically embraced the 4IR, however, their discussions tended to focus on how IHEs should actively adapt to the AI-driven economy without critically reflecting on how IHEs might intervene and reshape the trajectory of the 4IR itself. In this regard, their mode of thinking was rather reactive (Saito 2022).

Although this reactive mode of thinking remains dominant, critical reflections also have gained ground since the launch of ChatGPT (Chat Generative Pre-Trained Transformer) in 2022 (UNESCO 2023a, 2023b), consistent with the growing discourse of the 5IR (fifth industrial revolution), Industry 5.0, and Society 5.0 that foreground the importance of wellbeing *vis-à-vis* the potential negative externalities of technological development (Cabinet Office 2024a; European Union 2021). Take, for example, *Generative AI and the future of education* published by Stefania Giannini, assistant director-general for

education at UNESCO (United Nations Educational, Scientific, and Cultural Organisation) (Giannini 2023). In this document, Giannini defines the essential function of education as 'to help us make informed choices of how we want to construct our lives and norms' and adds:

> The central task for education at this inflection moment is less to incorporate new and largely untested AI applications to advance against the usual targets for formal learning. Rather, it is to help people develop a clearer understanding of when, by whom, and for what reasons this new technology should and should not be used. *AI is also giving us impetus to re-examine what we do in education, how we do it, and, most fundamentally, why* (Giannini 2023:8; emphasis added).

This chapter builds on such a critical impulse to fundamentally rethink and reimagine HE *vis-à-vis* AI. To this end, I will first summarise a dominant approach to AI among HE leaders, practitioners, and researchers. Essentially, the dominant approach proposes to use AI to complement human capabilities as an instrument for maximising work-related performance for the economy. In contrast with the dominant approach, I articulate an alternative, *wholistic* approach by illustrating how AI might connect with the incipient growth of contemplative studies in IHEs to help students augment their human capabilities, such as metacognition, empathy, and compassion, for transforming both inner and outer worlds in the direction of *collective wellbeing*. Despite the potential dangers of AI to hack human minds (Harari 2018:ch.19) and harm wellbeing through manipulation, surveillance, and exploitation (Feldstein 2019:122; Zuboff 2019:ch.16), I argue that it is also possible to use AI for *wholistic human augmentation* toward the flourishing of humanity and their fellow beings on Earth.

The Dominant Approach: AI-Human Collaboration for Peak Economic Performance

While HE research on AI had been sparce before the 2010s, the sea change began with the publication of *The fourth industrial revolution* by Klaus Schwab (2016), the founder of the WEF (World Economic Forum). For Schwab, AI was one of the main technological drivers of the 4IR, 'fundamentally changing the way we live, work, and relate to one another' (Schwab 2016:7). Following Schwab, Joseph Aoun (2017:xxi, 22), president of Northeastern University, published *Robot-proof: Higher education in the age of artificial intelligence*, calling on HE leaders and policymakers to rebalance curricula to 'ensure that graduates are "robot-proof" in the workplace' and reform their institutions to 'master the economic and societal challenges brought on by robots, AI, and advanced machines.' Similarly, Nancy Gleason (2018:5), then director of the Centre for Teaching and Learning at Yale-NUS, edited *Higher education in the era of the fourth industrial revolution*, to urge IHEs to adapt their curricula and pedagogies to prepare graduates for the 'automation economy,' in which '[n] early everyone will work with artificial intelligence.'

Whereas HE leaders, practitioners, and researchers began to discuss how IHEs should adapt to the AI-driven economy in the context of the 4IR, business leaders and policymakers, especially in Western Europe, started talking about the 5IR or Industry 5.0. This was because they felt that

> the Industry 4.0 paradigm, as currently conceived, is not fit for purpose in a context of climate crisis and planetary emergency, nor does it address deep social tensions. On the contrary, it is structurally aligned with the optimisation of business models and economic thinking that are the root causes of the threats we now face. The current digital economy is a winner-takes-all model that creates technological monopoly and giant wealth inequality' (European Union 2021:5).

As an alternative to the 4IR, they propose the Industry 5.0 paradigm, 'a more transformative view of growth that is focused

on human progress and well-being based on reducing and shifting consumption to new forms of sustainable, circular and regenerative economic value creation and equitable prosperity' (European Union 2021:6). To be sure, the discourse of the 5IR is rather continuous with that of the 4IR in the technological dimension, for both discourses essentially draw on the same set of technologies, including but not limited to AI, the IoT (internet of things), robotics, and biotechnology. Nevertheless, the 5IR adds to the 4IR the strong emphasis on the ethics of human centricity and sustainability for mobilising AI and other technological advances to enhance the wellbeing of workers, customers, societies, and, ultimately, the planet while making the world a more humane, equitable, and sustainable place (European Union 2024; Noble, Mende, Grewal, & Parasuraman 2022; Xu, Lu, Vogel-Heuser, & Wang 2021).

Despite the discursive shift toward the 5IR among business leaders and policymakers, the HE discourse on AI maintained and even consolidated its reactive mode of thinking. In 2019, for example, UNESCO organised the 'International Conference on Artificial Intelligence and Education' in Beijing and published the *Beijing consensus* to offer recommendations regarding the use of AI for multiple aspects of education, including but not limited to management and delivery, teaching, learning assessment, and preparation for life and work. Two of the recommendations specifically targeted HE, focusing on the economic implications of AI as follows:

> Be mindful of the systemic and long-term transformation of the labour market, including its gender dynamics, due to AI adoption. Update and develop mechanisms and tools to anticipate and identify current and future skills needs in relation to AI development, in order to ensure the relevance of curricula to changing economies, labour markets and societies (UNESCO 2019:6).

These recommendations were consistent with the dominant HE discourse that accepted AI, or any other technological innovation, as the external imperative to which IHEs must adapt for their economic survival.

Then, the COVID-19 (Coronavirus disease of 2019) pandemic accelerated the development and deployment of AI systems worldwide, as researchers created new software applications in disease detection and contact tracing, diagnosis and treatment, vaccine development, and so on (Arora, Banerjee, & Narasu 2020; Chang, Zhan, Zhao, You, Liu, Yan, Fu, Liang, & Zhao 2021). Concurrently, UNESCO elaborated on its AI-related guidelines for policymakers. Again, UNESCO (2021a:36) focused on the economic implications of AI for HE and recommended that policymakers '[s]et up plans to help higher education and research institutions build or enhance programmes to develop local AI talent…Develop executive master programmes to reskill engineers in AI, and incentivize engineering companies to invest in retraining their workforces in AI.' Furthermore, UNESCO (2022) emphasised that IHEs also had an important role to play in facilitating the use of AI in K-12 education with the provision of AI concepts and pedagogy in initial educator training and ongoing support for in-service educators.

Finally, the HE discourse on AI exploded in 2023 in response to the rapid popularisation of ChatGPT and other AI tools. Writing for the WEF, Aoun (2023) shared his perspective on the 'generative AI revolution' to reiterate the importance of creating a curriculum for the AI-driven economy and urged HE to place lifelong learning 'at the forefront of its mission, serving nontraditional learners with customized programmes tailored to changing professional needs.' Similarly, Sean Hughes (2023), academic programme manager of the Minerva Project, called for 'a new model of learning…grounded in learning science and primarily focused on teaching students "how to think" through the cultivation of "durable skills"…to cultivate highly effective learners who can transfer skills from the classroom to the real world.'

The Minerva Project (2023:25), which had partnered with Keck Graduate Institute to launch Minerva University in 2013, further elaborated as follows on the importance of 'durable skills' in the AI-driven economy:

> Examples include critical thinking, problem-solving, communication, emotional intelligence, and collaboration.

> Durable skills are transferable, adaptable, and highly resilient against AI advances because they represent many of the tasks that AI systems currently struggle with. Students with durable skills are highly sought after by employers and will find themselves to be 'AI-resilient' in the workforce relative to their peers who don't learn these skills.

Thus, while recognising the continuing relevance of uniquely human skills, the dominant HE discourse on AI ultimately defines these skills as a means for achieving peak economic performance. This focus on the economy is so strong that even those who wish to mobilise AI to provide 'learning that fosters agency, awareness…connectedness, and well-being [end up encouraging] educators, students, parents, and policy-makers to come together to consider what skills our students really need to…shape meaningful futures *in a changing economy*' (Kopp & Thomsen 2023; emphasis added).

This dominant HE discourse is perhaps best summed up by Karim Lakhani (2023), a professor at Harvard Business School, who stated, 'AI is not going to replace humans, but humans with AI are going to replace humans without AI.' Hence, IHEs must educate students-*cum*-future-workers to learn to collaborate with AI for greater economic performance. Here, the dominant HE discourse risks legitimating 'reverse adaptation' through which, 'instead of machines being designed to support human ends, humans are enlisted to do whatever is necessary to augment and adapt to the machine's abilities' (Vallor 2024:88) in facilitating the smooth functioning of the economic system.

The Critical Approach: Addressing the Challenge of AI-Human Bias

While adopting this dominant, economy-focused orientation, UNESCO has also voiced critical concerns about the potential risks and challenges of AI in HE. Because UNESCO supports the use of AI in the pursuit of SDG (sustainable development goal) 4 – equitable and inclusive education and lifelong learning for

all – it duly pays attention to how AI might undermine SDG 4 by exacerbating inequalities and exclusion.

Take, for example, the UNESCO publication *ChatGPT and artificial intelligence in higher education: Quick start guide* (UNESCO 2023a). On the one hand, the publication explains a wide range of roles that AI might play to enhance the quality of teaching and learning: Socratic opponent, collaboration coach, guide on the side, personal tutor, co-designer, exploratorium, study buddy, motivator, and dynamic assessor (UNESCO 2023a:8-9). On the other hand, it critically appraises the potential negative effects of ChatGPT, as well as other AI tools, on academic integrity, privacy, cognitive bias, gender quality and diversity, and accessibility, among other things (UNESCO 2023a:10-11). Similarly, when UNESCO subsequently published *Harnessing the era of AI in higher education: A primer for higher education stakeholders* (UNESCO 2023b), it critically gestured beyond the economy-focused use of AI:

> Now equipped with further knowledge and understanding [of how AI is shaping higher education], the next step is to ask how higher education could or should shape future AI, and the role that higher education could play, together with other stakeholders, in shaping a future that systematically addresses the digital and connectivity divides, as well as the challenges of data bias (UNESCO 2023b:79).

Indeed, *bias* is a key thread in UNESCO's critical discourse on AI. In both the *Quick start guide* and *A primer* (UNESCO 2023a, 2023b) ,UNESCO elaborates on cognitive bias as a main challenge in the educational use of AI: Because any AI system 'collects information from the databases and texts it processes on the internet [and] also learns any cognitive bias found in that information' (UNESCO 2023a:11), it has the power to reinforce 'bias and stereotypes in and beyond data' (UNESCO 2023b:79) as a root cause of gender, racial, economic, and other forms of inequality in society. As political philosopher Mark Coeckelbergh (2022:40) puts it, the challenge is not just that 'a particular AI algorithm is biased in a specific case and has particular consequences…rather the main

problem is that these technologies interact with, and support, existing hierarchical structures in society.'

These critical concerns about bias can also be found in the wider policy discourse on AI. Since algorithms and datasets are known to be biased and capable of perpetuating, amplifying, and disseminating cognitive biases among humans on a global scale (European Union Agency for Fundamental Rights 2022; IBM 2023; Schwartz, Vassilev, Greene, Perine, Burt, & Hall 2022), policymakers and researchers have proposed various strategies for mitigating AI biases by, for example, institutionalising open data science to include data on underrepresented groups and creating an organisational culture that incorporates multiple perspectives and expertise in diverse subjects (especially in the humanities and social sciences) in the development and management of AI systems (Ammanath 2021; Haas School of Business 2020; Seneor & Mezzanotte 2022). Ultimately, all these strategies emphasise the essential role that only humans can play in ensuring accountability, equity, inclusiveness, and transparency of AI systems (UNESCO 2023c), which in turn requires humans to become more aware of their own cognitive biases (McKinsey Global Institute 2019).

It is challenging for anyone, however, to become aware of their own cognitive biases. This is because cognitive biases are mostly 'implicit,' operating at the unconscious level (Greenwald & Banaji 1995; Greenwald & Lai 2020), and hence capable of evading the reinforcement of AI-related ethics, policies, and regulatory frameworks. Take, for example, the EU's (European Union's) so-called AI act. Provisionally agreed in early December 2023, Title 2 of the act prohibits the manipulative or exploitative use of AI systems causing physical or psychological harm to specific individuals and groups. This prohibition extends to 'the social score leading to…detrimental or unfavourable treatment of certain natural persons or whole groups thereof that is unjustified or disproportionate to their social behaviour or its gravity' (European Commission 2021). Any judgement of what is 'unfavourable' or 'unjustified,' however, always presupposes human cognition, which can never be completely free from implicit biases.

To be sure, these cognitive biases might be made conscious with the help of AI tools capable of identifying how an individual's speech and behaviour are patterned in a certain way without their knowledge. Nevertheless, the question remains: Once made aware of their own cognitive biases, how can an individual transform them, especially when they are emotionally invested? In fact, the unwillingness to acknowledge and transform one's own cognitive biases has been the source of polarisation and discrimination around the world (Nichols 2017:40-69), which can be exacerbated by none other than AI's algorithmic biases (Lambrecht & Tucker 2019; Obermeyer, Powers, Vogeli, & Mullainathan 2019).

This critical discussion of bias in both AI and humans illustrates that the former is ultimately a 'mirror' of the latter, as AI ethicist Shannon Vallor (2024) observed. If AI is biased against certain groups of people, that is because humans already are. In this regard, the effort to fix biases in AI systems cannot but presuppose the effort to confront biases in humans themselves, for it is up to the latter to decide what counts as a bias and what needs to be done about it. Put another way, an answer for the question, 'What more could AI and other technologies do for us – or rather, what more could we do for each other with them[?]' (Vallor 2024:210) depends fundamentally on our self-definition of who we are as human beings and what future we want collectively. Only when it is thus recognised that AI is merely a tool for our collective self-actualisation, the real work can begin: How might we notice and transform our own biases in the direction of greater equity, solidarity, inclusiveness, and other ideals that we cherish, and how might AI tools assist us in this endeavour?

Turning to Contemplation as an Internal Technology for Wholistic Human Development

A first step for answering this question, I suggest, can be found in the incipient worldwide movement to promote contemplative studies in HE (Barbezat & Bush 2014; Eaton, Hughes, & MacGregor 2017; Palmer, Zajonc, & Scribner 2010). Simply put, this movement combines the third- and first-person investigations of both religious and nonreligious practices, ranging from chanting

and meditation to music and dance, to explore how contemplative states of consciousness might be attained (Hart 2004:29-30; Roth 2006:1789). The movement envisions HE to be more wholistic in the sense of recognising not only scientific modes of knowing but also non-scientific ones that are grounded in one's inner experience, traditionally known as 'wisdom.'

Today, this vision of more wholistic HE embracing multiple modes of learning about the world *vis-à-vis* oneself is gaining momentum, as evinced by an increasing number of centres and programmes at IHEs that explore the integration of scientific and contemplative investigations – to name but a few, the Contemplative Studies Initiative and Concentration at Brown University, the Center for Contemplative Science and Compassion-Based Ethics at Emory University, the Graduate School of Advanced Integrated Studies in Human Survivability at Kyoto University, the Contemplative Studies Centre at the University of Melbourne, and the Contemplative Sciences Center at the University of Virginia.

While these centres and programmes are located mostly in North America, researchers in European IHEs have also formed a network called 'Mind & Life Europe.' Moreover, even though not using the term 'contemplation,' the Sweden-based initiative 'IDGs' (inner development goals) shares with the contemplative-studies movement the following observation on the importance of the inner world:

> Although we have accumulated much knowledge about the climate crisis, poverty, public health, and other social ills communicated in the SDGs, we seem to lack the inner capacity to deal with our increasingly complex environment and challenges...Fortunately, modern research shows that the inner abilities we require to complement and accelerate our external approaches can be developed (IDGs 2024).

Put another way, if AI is an external technology that enhances human performance, contemplation is an internal technology that cultivates uniquely human capabilities to gain wisdom or insight through one's own experience. However, how might such

an internal technology help to address the issue of AI-human bias? To answer this question, I propose to focus on *mindfulness practice*, partly because its implications for cognitive bias have been extensively documented by researchers in neuroscience, medicine, and psychology (Creswell 2017; Kabat-Zinn 2013; Tang, Hölzel, & Posner 2015), and partly because it is arguably the most commonly used contemplative intervention in HE (Bush 2013; Shapiro, Brown, & Astin 2011).

First and foremost, mindfulness practice is found to improve *metacognition* – the ability to monitor one's thoughts with a degree of psychological detachment. For example, because mindful individuals with higher levels of metacognition can observe their inner experiences non-judgementally or non-reactively, they are less susceptible to stress, depression, and anxiety and obsessive-compulsive disorders (Giluk 2009; Hargus, Crane, Barnhofer, & Williams 2010; Solem, Thunes, Hjemdal, Hagen, & Wells 2015). Given the power of mindfulness to strengthen such metacognition, mindfulness practice has been incorporated into cognitive therapy to help patients change maladaptive thought patterns (Gu, Strauss, Bond, & Cavanagh 2015; Segal, Williams, & Teasdale 2018:44-62). Mindfulness-based interventions have also been developed to help non-clinical populations to reconstruct their thought patterns to create more positive interpersonal relationships (Reb, Allen, & Vogus 2020; Young 2017:ch.1). This growing body of research indicates that mindfulness practice makes it easier for people to recognise their own cognitive biases – specific thought patterns regarding gender, race, politics, and other issues in the world – and reconstruct them.

The benefits of mindfulness practice go beyond improved metacognition. As the UNESCO International Commission on the Futures of Education (UNESCO 2021b:124-125) argues, 'Cognition is not the only way that we learn…As highlighted in earlier chapters on pedagogy and curricula, the complexity of education derives from the fact that it intersects inseparably with all aspects of the world, including its social, economic, environmental, material, and spiritual dimensions.' Indeed, mindfulness practice offers another major benefit that goes beyond the cognitive

dimension of the human mind: An increased level of perspective-taking, active listening, empathy, compassion, and prosocial behaviour (Cheang, Gillions, & Sparkes 2019; Luberto, Shinday, Song, Philpotts, Park, Fricchione, & Yeh 2018). This benefit is reportedly produced by two different kinds of mindfulness practice: Loving-kindness meditation that sends love and positive thoughts to others, and focused breathing that directs attention to bodily sensations, even though not directly concerned about others (Hafenbrack, Cameron, Spreitzer, Zhang, Noval, & Shaffakat 2020). This means that focused breathing, perhaps the most foundational method of mindfulness practice to improve metacognition, also facilitates the cultivation of prosocial emotions and behaviours toward different individuals and groups who hold diverse opinions, beliefs, values, and worldviews.

In this regard, contemplation, exemplified by mindfulness practice, makes a vital contribution to the mission of UNESCO that continues to resonate today: 'Since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed' (UNESCO 2023d). Here, the worldwide movement for contemplative studies in HE shows the potential to facilitate the wholistic cultivation of the inner 'defences of peace,' encompassing cognitive, affective, and behavioural dimensions – and these inner defences of peace are also likely to be effective against AI-human biases.

Indeed, I argue that contemplation and AI are not incompatible but can be combined to create the effective 'defences of peace' against AI-human biases and even help make humans become more fully human. If contemplation as an internal technology and AI as an external technology work together in augmenting humanity, it might become possible to provide positive answers to the following questions: 'Could AI support our capacities for justice in solidarity with one another, even with other planetary life and future generations? Could AI enrich, rather than replace or diminish, our own humane practices of social care, even love?...Could AI one day not merely reflect our intelligence, but enable our *wisdom*?' (Vallor 2024:64; original emphasis). In fact, such a possibility is already emerging in HCI (human-computer interface) that aims to augment the mind and

body with computers, machines, and other relevant technologies (Engelbart 1962; Inami, Kitazaki, Miyawaki, Gowrishankar, Iwata, Sugimoto, Kasahara, & Uriu 2021).

Toward the AI-Assisted Augmentation of Human Capabilities for Collective Wellbeing

Today, the field of HCI is expanding due to rapid advances in neuroscience, AI, metaverse, and wearable devices, as well as the international movement to accelerate the 5IR. To date, much of existing HCI research and technology has been geared toward a 'man-computer symbiosis' (Licklider 1960) and recently, a 'human-AI symbiosis' (Jarrahi 2018), to augment work-related performance – for example, the autopilot on an aircraft, marine craft, and spacecraft, level-3 driving automation, and powered exoskeletons for medical, industrial, and military uses. In this symbiotic HCI, humans and computers or machines remain essentially separate, but they cooperate to perform tasks at a higher level than humans alone can achieve.

While such symbiosis risks exploiting human capabilities for peak economic performance, some of the HCI research and technologies are geared toward 'self-actualisation' rather than symbiosis. The focus of this self-actualising HCI is to help humans become able to do things that they could not do before (e.g., due to injuries or a lack of mastery), so that they can feel happy with their own accomplishments and hence gain the feelings of self-efficacy and self-esteem (Rekimoto 2018:457-459).

In this regard, HCIs have the potential to augment inner human capabilities, such as metacognition and prosocial emotions and behaviours that are conventionally cultivated by contemplation. Take, for example, 'body-sharing' in which people can share their experiences (e.g., bodily sensations), whether synchronously or asynchronously, through wearable devices that recreate similar stimuli in the brain and other parts of the body (Tamaki 2022:ch.2). While the metaverse already allows people to virtually experience the world from the perspectives of others who are different in terms of gender, race, class, and other social dimensions, body-sharing can make this virtual experience feel

more visceral and vicarious. In theory, then, body-sharing enables a person to 'jack-in' (Kasahara & Rekimoto 2014) to other people's bodies and hence augment their perspective-taking, empathy, and even compassion to counteract various biases that they hold toward certain groups – body-sharing therefore advances self-actualising HCI in the direction of collective wellbeing.

In Japan, the government has joined this effort to develop HCIs for collective self-actualisation with its Society 5.0 plan to create 'a society that is sustainable and resilient against threats and unpredictable and uncertain situations, that ensures the safety and security of the people, and that individual to realize diverse well-being' (Cabinet Office 2024a). For example, one of the sub-programmes of the Society 5.0 plan is to create 'a mentally healthy and dynamic society' by developing 'science and technology that enhances human communication and sharing of emotions, and to develop mental support services that enhance the empathy, stability, and creativity of groups' (Cabinet Office 2024b:1-2). Another sub-programme has a more daring goal to create 'cybernetic avatar technology' that would enable people to overcome 'the limitations of the human "body," "brain," and "space and time" [and] apply their capabilities anywhere in the world where such capabilities are needed' (Cabinet Office 2024c:4, 8). Although these sub-programmes are not free from the risk of reverse adaptation of human capabilities to work-related performance, they are in theory oriented toward the full realisation of human potential.

Specifically, VR (virtual reality) space, whether inside or outside of the metaverse, can be used to amplify the effect of contemplation on prosocial emotions conducive to collective wellbeing. Particularly relevant contemplative practices here can be found in the Vajrayāna or tantric lineage of Buddhism that is currently practiced in Tibet, Japan, and elsewhere. Take, for example, Tibetan Buddhism, which inspired the creation of SEE (social, emotional, and ethical) learning at Emory University (CCSCBE 2023). The Tibetan tradition teaches a method of contemplation that combines the visualisation of Avalokiteśvara, the bodhisattva of compassion that is believed to incarnate in the Dalai Lama, with chanting of mantras that describe the

aspirations and virtues of the bodhisattva. This method enables a practitioner to mentally simulate, becoming one with the bodhisattva and embodying infinite compassion toward all beings (Kunchok, Sonam, & Saito 1995:chs.4-5).

The Shingon tradition in Japan, which established Koyasan University in 1926, also teaches another tantric method of contemplation called 'Ajikan' that combines the vocalisation and visualisation of the first vowel of Sanskrit 'a,' symbolic of the cosmic buddha Vairocana. In this contemplation, the practitioner imagines the cosmic buddha as a ball of light and mentally simulates becoming one with it, expanding infinitely to embody oneness with the entire universe encompassing all beings (Oshita 2021). Here, virtual reality space provides fertile ground for augmenting contemplative practices that aim to cultivate compassion and the feeling of oneness, which in turn can facilitate other-oriented behaviours promoting collective wellbeing.[1] Indeed, researchers in the US (United States of America) and elsewhere have begun to mobilise VR space, wearable devices, and other relevant technologies to 'support intimacy, empathy, and enlightenment' at both individual and collective levels (Wildman & Stockly 2021:246). One of these 'spirit tech' innovations deploys VR space for participants to experience the feeling of oneness with other beings and the universe. Another innovation joins 'neurofeedback with advancing knowledge of the physiology of meditation…to guide – and yes, speed up – our meditation practice' (Wildman & Stockly 2021:58).

Importantly, these HCI innovations can be combined with AI to enable the individual optimisation of contemplative training. In Catholicism, Buddhism, and other religious traditions, monastics as well as laypeople typically spend many years training in prayers, chanting, and meditations to attain higher levels of consciousness filled with empathy, compassion, love, and wisdom. This training takes time partly because trainees must learn to calibrate standardised sequences and combinations of training methods according to the unique characteristics of

1 These methods of contemplation can be practised in AR (augmented reality) as well, as the educational use of AR is growing worldwide (Geroimenko 2020).

their minds and bodies. Here, AI and wearable devices can be used to individually optimise standardised training programmes, on the one hand, by creating a data lake that correlates trainee characteristics, a variety of contemplative methods, and their sequences and combinations, and neurological, psychological, and physiological effects, among other things and, on the other hand, by offering synchronous and continuous feedback to trainees.

These potential benefits of AI-assisted augmentation of inner human capabilities for collective wellbeing, however, are accompanied by various ethical questions. For example, how much should humans rely on AI and other relevant technologies to enhance their inner capabilities? Should humans be required to augment their capabilities that are deemed essential for collective wellbeing? The weight of these questions will only increase in the future: While the foregoing discussion has assumed HCIs to be non-invasive (i.e., detachable from the brain and the body), the latest scientific research and technological innovation points to the development of invasive BMIs (brain-machine interfaces) that permanently augment human capabilities through direct modifications of the brain and the body (Konno & Ikegaya 2021; Lebedev & Nicolelis 2017; Musk & Neuralink 2019). To say the least, any BMI research and innovation should be maximally cautious about their unintended consequences, for modern history is rife with cases of scientific and technological 'progress' that produced harmful side-effects to humans, animals, and environment (Beck 1992; Latour 1993).

Equally important, the possibility that 'the brain and the mind aren't the same' (Harari 2018:317) should be taken seriously. In fact, a sizable number of researchers point out a disjunction between neural networks and subjective feelings, reject the transhumanist belief that the mind can be uploaded to machines, and caution against the industry's hype over AGI (artificial general intelligence) becoming more intelligent than humans (Herzfeld 2023; Lennox 2020; Narayanan & Kapoor 2024; Vallor 2024). After all, Rudolf Steiner and other advocates of wholistic education (Japan Holistic Education Society 2005; Miller 2000; Miller, Karsten, Denton, Orr, & Kates 2005) may be right that the working of the mind ultimately eludes and escapes scientific investigations

and technological interventions because it is connected with the spirit or the soul that is believed to exist beyond the empirical dimension. Thus, no matter how much progress AI, HCI, and BMI might make in the future, I suggest that humans trust their own wisdom when deciding how to use these technologies.

Conclusion and Future Directions

To summarise my argument in this chapter, I will offer the following reflections on Yuval Noah Harari's *21 lessons for the 21st century* (Harari 2018). When commenting on the future of education, Harari (2018:268) suggests,

> If, however, you want to retain some control of your personal existence and of the future of life, you have to run faster than the algorithms, faster than Amazon and the government, and get to know yourself before they do. To run fast, don't take much luggage with you. Leave all your illusions behind. They are very heavy.

As a meditator himself, Harari knows well how contemplative practice can help people let go of their 'illusions.' While I fully agree with Harari about the promise of contemplative practice, I also wonder whether we need to 'run faster than the algorithms.' To be sure, we want to run faster than the algorithms intended to hack, manipulate, and exploit our minds, but I believe that some algorithms – and other technologies like self-actualising HCIs – can help us 'run faster' toward wisdom, compassion, and wellbeing.

Put another way, it is always up to humans to decide how to use AI in HE as well as in the wider society. As I have argued, the currently dominant approach does not seem to serve the best interest of humanity because it focuses too narrowly on the economic implications of AI. In fact, the economy-driven use of AI might well harm humanity and their fellow beings on Earth, as indicated by a growing number of studies showing its negative impacts on worker dignity and wellbeing, democracy, and environment (Bashir, Donti, Cuff, Sroka, Ilic, Sze, Delimitrou, & Olivetti 2024; Marcus 2024; Schaake 2024).

The alternative approach that I have briefly sketched above, by contrast, expands the use of AI to facilitate wholistic human development through the augmentation of such capabilities as metacognition, perspective-taking, empathy, compassion, and prosocial behaviours as the preconditions of collective wellbeing. Here, Vallor (2024:219) is right to observe that 'AI is neither replacement nor guide for humanity, but a surplus.'

At first glance, this wholistic approach may seem to have affinity with another alternative approach anchored in liberal arts education that the ancient Greeks developed. The classical liberal arts approach to AI posits that, just as the Greeks did not need to work because their work was done by slaves, future generations may not need to work because their work will be done by AI (Araya & Marber 2023:6). In such a 'post-work' society, according to American philosopher Jon Burmeister (2023), liberal arts education will free humans, not only from the manipulative and exploitative algorithms by helping them acquire self-knowledge and self-regulation, but also toward atelic pursuits in which humans enjoy activities for their own sake, such as contemplation on truths for its own sake, as the highest form of human flourishing.

Nevertheless, this utopian vision risks legitimating post-work society to be 'one based on slavery, albeit one in which the slaves are artificial' and hence perpetuating hierarchical social structures (Coeckelbergh 2022:24). By contrast, the wholistic approach proposes to go beyond simply using AI to replace human labour and allow humans to enjoy atelic activities; rather, it aims to augment humanity itself in the service of greater equity, solidarity, freedom, and inclusiveness, and accelerate learning and flourishing toward collective wellbeing.

Of course, the wholistic approach still needs to be accompanied by laws regulating the use of AI: The internal cultivation of positive human capabilities through AI must be coterminous with the external regulation of negative ones that might be amplified through AI. Nonetheless, as the latter has already been a focal point of extensive policy debates and public discussions around the world, I hope this chapter offers a

refreshing perspective on the former, perhaps the most virtuous contribution that AI might make – to help humanity fully and wholistically actualise their potential.

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