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Emotional AI and the future of wellbeing in the post-pandemic workplace

Peter Mantello[1] · Manh-Tung Ho[1,2,3]

Abstract

This paper interrogates the growing pervasiveness of affect recognition tools as an emerging layer human-centric automated management in the global workplace. While vendors tout the neoliberal incentives of emotion-recognition technology as a pre-eminent tool of workplace wellness, we argue that emotional AI recalibrates the horizons of capital not by expanding outward into the consumer realm (like surveillance capitalism). Rather, as a new genus of digital Taylorism, it turns inward, passing through the corporeal exterior to extract greater surplus value and managerial control from the affective states of workers. Thus, empathic surveillance signals a profound shift in the ontology of human labor relations. In the emotionally quantified workplace, employees are no longer simply seen as physical capital, but conduits of actuarial and statistical intelligence gleaned from their most intimate subjective states. As a result, affect-driven automated management means that priority is often given to actuarial rather than human-centered managerial decisions.

1 Introduction

COVID-19 is radically reshaping how we live and work. Yet many of the social and economic disruptions caused by the pandemic have been tempered by AI-powered platforms. Consider the cathartic counter of social media to the anxieties of social distancing, the easy and convenient workarounds by Amazon shopping and Uber Eats to state-imposed lockdowns, and the online-conferencing lifeline of Zoom to keep educational institutions functioning. Importantly, the shift from the traditional workplace to hybrid and remote practices has seen companies become reliant on AI-platforms to conduct core business. Concomitantly, there is now accelerated demand for AI that can sense, read, and evaluate a workers' emotions. Known by its commercial moniker, Emotional AI, the technology combines affective computing,

big data analytics and machine-learning. Moreover, the range of applications and devices of emotion-sensing technology is expanding every year, including biosensors that measure respiration, heart rate, and skin-conductance levels, speech processors that analyze voice tone, video recognition softwares that track facial micro-expressions, headsets that map brain-activity as well as a mood-sensing wearables (McStay 2018).

Businesses around the globe are now using emotional recognition technology for a variety of purposes. For example, IBM, Unilever, Microsoft, and Softbank are using emotional analytics not only for recruitment purposes (Richardson 2020) but also to monitor employees for engagement, productivity, compliance (Suni Lopez et al. 2019) and increasingly, well-being (Spataro 2020). Additionally, emotion recognition technology once designed to test advertising effectiveness is now used to gauge employee attentiveness and interest in remote meetings. To safeguard against toxic practices in the workplace, the US company, Spot, markets an AI chat-bot that uses natural language processing tools to identify patterns and problems associated with harassment while the US company Humanyze specializes in optimizing the social dynamics of the workplace by monitoring various aspect of employee interactions and conversations through GPS, blue-tooth driven wearables.

✉ Manh-Tung Ho
   tung.homanh@phenikaa-uni.edu.vn

1   Ritsumeikan Asia Pacific University, Beppu, Oita 874-8577, Japan

2   Centre for Interdisciplinary Social Research, Phenikaa University, Ha Dong, Hanoi 100803, Vietnam

3   Institute of Philosophy, Vietnam Academy of Social Sciences, Hanoi 100000, Vietnam

Similar to a growing number of AI 'solutions', emotional AI vendors claim their technologies can help human managers to find better ways of understanding and supervising employees as well as lead to greater workplace satisfaction. They also insist it can help to make objective and unbiased managerial decisions about a worker's performance (Gal et al. 2020). But at a deeper level, we suggest that unbridled acceptance of emotional AI in the workplace is driven by a worsening environment of precarity, namely, job insecurity, economic instability and importantly, increasing dissatisfaction of the traditional workplace. Today, negative emotions (stress, anxiety, frustration, resentment, anger and depression) are the leading cause of work absenteeism, costing the global economy over 1 trillion dollars annually in lost productivity (Pinheiro et al. 2017). Concurrently, recent studies have shown that COVID-19 has only exacerbated this trend (Restauri and Sheridan 2020; Gómez et al. 2020). As a result, employers are rushing to embrace emotion-tracking devices and data-driven wellness programs to combat this cost draining trend and to leverage greater managerial control as hybrid and remote working practices become part of the new normal in post-pandemic society.

Adopting a biopolitical lens, we argue that emotional AI recalibrates the horizons of capital not by expanding outward into the consumer realm (like surveillance capitalism) but rather as a new genus of digital Taylorism, turning inward, passing through the corporeal exterior, extracting greater surplus value from and managerial control over the affective state of labor itself. Thus, this article focuses on three major concerns with affect recognition as a more invasive layer of automated governance. First is the human context. Affect recognition is part of a larger wave in algorithmic governance that measures performance based on established benchmarks of an ideal employee. Yet it can only quantify statistics of productivity; it does not consider human particularities such as attitudinal diversity, racial and gender differences, and cultural idiosyncrasies (Ghotbi et al. 2021). Rather, like other forms of automated management, emotional AI risks diminishing the once valued interpersonal communication and analytical skills of a human resource manager. As a result, empathic surveillance signals a profound shift in the ontology of human labor relations. Employees are no longer simply seen as physical capital but also conduits of actuarial and statistical intelligence gleaned from the extraction of their most intimate subjective states.

This leads to our second major concern: like the uncontested science of phrenology in the nineteenth century, emotional AI is being promulgated as the pre-eminent tool for corporate wellness in the present and post-pandemic workplace. But given the fundamental lack of understanding or consensus by the science community on human emotion (Crawford 2021; Heaven 2020a, b), we contend the current efficacy claims of the emotion-recognition industry are, at best, suspect.

Finally, the erosion of labor relations due to ethical/legal grey issues over workers' rights to access and control of their personal data gathered through automated management systems. Apart from tracking and evaluating a worker's performance, what purpose/s does the data archive or its intelligence serve? Moreover, what kinds of egregious function creep lay in future digital archives when the intimacies of biometric data become an integral component of the quantified workplace?

Thus, the first section of this article examines the emergence of emotional AI as part of a larger biopolitical continuum to optimize productivity of populations by making bare 'life' its referent object, or as Foucault (1978) suggests, "the application of numerous strategies and techniques to subjugate bodies and control populations." The second part addresses some key issues involving current applications of the technology as well as cultural tensions over its implementation in the global workplace.

1.1 Monetizing affective labor in the time of COVID

It is estimated that after the pandemic ends, nearly 20% of full working days will be performed at home (Barrero et al. 2021). According to Chaturvedi and Singh Rathore (2021) the pandemic has already seen an uptick in the adoption of virtual wellness programs. The researchers point out that employers are utilizing affect tools to curb lower rates of productivity by workers due to varying forms of emotional distress spawned by remote working practices. Langvik et al. (2021), for example, found that workers with extrovert personalities were experiencing more stress in the time of COVID-19 due to missing their colleagues. Similarly, Islam (2021) found that working-from-home women experienced heightened levels of stress due to added demands of housework and childcare. Conversely, the impact of COVID has put into sharp relief a declining interest by highly skilled, white-collar workers to return to the traditional workplace. A good example is Google, where a company survey found that over 62% of their staff were willing to return to the office only on a part-time basis while a smaller percentage were prepared to suffer a forced pay-cut to be able to permanently work from home (Hern and Kowelle 2020). Thus, affect-sensing tools present themselves as an opportunity for companies and workers to benefit from the transformative upheavals of COVID-19, since many workers will become de-facto part-time or permanent platform workers.

Proponents of the technology insist real-time access to psycho-physical data can augment managerial judgement but also *timing* of its execution, especially, when it comes to praising, motivating or punishing an employee. This kind of techno-social optimism underscores the growing belief that

monitoring and regulating a worker's affective state lead to greater productivity. However, there is no empirical evidence to support this thesis. Any significant link between workplace wellness programs and lower return on investments in employer healthcare costs has yet to be found. Indeed, a recent study by Song and Baicker (2019) showed wellness programs have little cost-saving benefits for employer. In their survey involving 33,000 people at 160 worksites, the Harvard University researchers found no discernible difference in absenteeism and performance between companies with wellness programs and those without. Rather a growing body of evidence suggests empathic surveillance in the workplace may do more harm than good. For example, far less invasive automated management systems such as those used by Uber and Amazon have already been found to foment higher degrees of anxiety and stress through target settings, time tracking, gamification, ticketing systems, and performance monitoring (Rosenblatt, 2018; La Torre et al. 2019), lower trust levels (Brougham and Haar 2017), and encourage discrimination (Rhue 2019).

Beyond the scope of wellness, quantifying a worker's affective state means emotions are no longer private or personal. Rather they can be transformed into a concrete product of affective capitalism where money and profit can be realized more than costs normally associated with the labor process (Hochschild 2012). It also means that productivity is now intimately tied to expressions in authenticity, positivity, and spontaneity (Cabanas and Illouz 2019; Davies 2015), while feelings of sadness, shyness and ennui may be construed as a liability. As a result, empathic surveillance may lead to a person being unfairly penalized for their lack of 'attitudinal conformity'. When emotions are made transparent, workers cannot 'backstage' which can also lead to increased levels of stress, hostility, and anxiety.

Further aggravating this situation is the fact that employees may never know when their data is being recorded or harvested. Affect tools rely on the collection of non-conscious data. This includes biometric data pulled from a person's heartbeat, pulse, respiration, voice tone, skin perspiration, facial micro-expressions, body temperature, eye and head movement, gait and word choice. Considering that these kinds of data represent some of the most private details about a person, it opens the door to the possibilities of malicious use and abuse. Moreover, like other forms of AI, non-conscious data collection entails profiling workers and placing them into categories which can often lead to bias and discrimination. Being placed in a high-risk or suspect category can have serious consequences for a worker because it means they are being pre-judged based on what others have done before. Regardless of these facts, smaller to medium sized companies are uncritically embracing emotional AI to circumvent the higher investment costs and administrative burden of supplementary wellness programs.

Certainly, the global pandemic has accelerated acceptance of affect-recognition tools in the workplace without any deeper thought for its actual legitimacy.

This brings us to the contested nature of the technology itself. A growing number of critics argue how can emotions be made computable when the science community itself cannot agree on exactly what emotions are. For decades now, the science community has been divided on the fundamental question—are emotions hard-wired into the psycho-physical make-up of the human body or contingent upon social, temporal, environmental and cultural context? (Crawford 2021; Barrett 2017) Central to this debate is Paul Eckman's (1999) now discredited thesis known as the 'universality of human emotions' (Heaven 2020a, b; Barrett 2017; Rhue 2019). The famed sociologist suggested that all cultures and people share six basic expressions of emotions. Yet a growing number of critics have pointed out the empirical shortcomings of such a presupposition. Concomitantly, recent literature on algorithmic bias suggests that machines express systematic biases in reading the emotions of people of color and minority groups (Castleberry and Nolen 2018; Leslie 2019). These same critics argue that what we are seeing with the unconditional acceptance of emotional AI is essentially the same as what took place in the late nineteenth century with the science of Phrenology. But instead of insight into human behavior achieved through measurement and numbers of a person's corporeal exterior – insight about a person is now achieved by making a person's subjective state computable. Regardless of any current criticism, Eckman's emotion templates are still being used by leading emotion-recognition companies such as NEC, RealEyes, Affectiva, Audieering, Empath, as well as in US border security programs such as SPOT (DHS, 2008). Yet this unconditional acceptance may not be so surprising. Emerging technologies have a long history of unconditional embrace by the public, especially, when they are marketed to them as a revolutionary scientific paradigm (Ho et al. 2022). Whether or not emotional AI's current legitimacy rests more scientism than science, an increasing number of businesses is jumping on the bandwagon. In the following section, we map current applications of and tensions over emotional AI's implementation in the global workplace.

1.2 Mapping existing applications and tensions of emotional ai at work

While algorithmic mood-policing in the workplace may seem like a fictional storyline from the dystopian Netflix series *Black Mirror*, precedents are already here. Walmart, for example, has patented a 'performance metric' bracelet that uses ultra-sonic sensors to measure an employee's productivity and eavesdrops on their communication with customers (Davidson 2018). Similarly, the UK company,

Moonbeam, markets a wrist wearable 'happiness' tracker to enhance workplace social dynamics by facilitating greater self-awareness of worker's emotional state, and to later share it with their colleagues. Problematically, for mindfulness to be productive, the makers of these technologies require that emotions be made visible to everyone. The underlying logic here is that 'sharing is caring'. In other words, emotional sentience if made transparent can foster an ethos of 'collective care' whereby co-workers will see each other as 'part of a family' (Divine 2005). Unfortunately, like previous corporate wellness programs, the burden of behavior modification is placed on the worker while neglecting the structural problems within the organization that give rise to such feelings. So, while emotional surveillance may be construed as progressive and objective managerial strategy, ultimately, it reflects a greater neoliberal logic to shift the burden of precarity onto the individual.

Even Amazon has staked its claim in the industrial wellness complex with an array of strategies and technologies. For example, Amazon now sells a voice-activated, wrist wearable biosensor called Halo (Romano 2020). Besides tracking respiration, heart rate and body fat, Halo is equipped with a built-in microphone that captures and analyzes a user's voice tone to measure their 'energy and positivity' levels (Hern 2020). Amazon's promotional literature for Halo claims that the biosensor bracelet if used in the workplace can detect depression, anxiety, and even early signs of mental illness. But given the fact that the retail giant has plans to merge the affective functions of Halo into the kind of hand-held scanners that track productivity that are already used by their warehouse workers, this function creep signals a future era of algorithmic surveillance not only that ensure workers complete their daily task quotas but also that they are *feeling* the 'correct' way (Moore and Robinson 2016). Thus, contrary to its saintly moniker, the implicit function creep of Amazon's 'Halo' represents the presage of a dystopian future where innocent-looking bracelets turn into haptic chains, and the panoptic gaze of electronic dashboards, biosensors, and deep learning algorithms monitor and score the performance and attitudinal disposition of each and every worker, making granular second-to-second assessments that lead to promotion, warning or termination.

Besides leading to the loss of a worker's agency and privacy, affect-driven automated management raises other critical questions and concerns. Namely, apart from tracking and evaluating a worker's performance, how is the data intelligence used in future recruitment endeavors? For example, data analytics can indicate whether a female or male take longer washroom breaks. It may also be able to assess whether married or single individuals are more likely to perform better or churn less. Machine learning algorithms can determine differences in productivity levels between certain age groups or ethnicities. In the case of emotion-recognition systems, the same algorithms could ascertain whether employees of Middle Eastern or Asian descent are more compliant to authority or carry more positive mindset. More finely tuned emotional analytics could make judgements about the trust level of an employee based on their previous work history, education level, and country of origin. Based on any given constellation of these variables, data intelligence can predict whether an employee or perspective employee will excel and rise to become managerial talent (Kakulapati, V., et al. 2020). Yet in the wrong hands, data intelligence can reinforce preconceived or existing prejudices and exacerbate cultural conflicts in the workplace. Far from being statistically 'objective', the datasets themselves can replicate a programmer or even society's innate preconceptions of race, gender or ethnicity (D'ignazio and Klein 2020).

Moreover, it is often the case with deep learning algorithms trained to identify complex patterns, coders themselves are often unsure of how decisions are reached (Leslie 2019). Given the complexity of deep-learning algorithms that think for themselves, there are other reasons why emotional AI companies prefer to give their clients simple explanations. Due to market competitiveness, many emotional AI venders insist on operating with a black-box approach in order to hide the algorithmic design of their technologies (Burrell 2016). Not only has this practice allowed them to avoid regulatory scrutiny, the lack of transparency and explainability means that priority is given to actuarial rather than human-centered managerial decisions validated under a veneer of scientific objectivity (Meacham and Tava 2021). In fact, for many future job seekers the greatest worry is not that AI will make them redundant but rather that AI managers will evaluate their performance and wield decisive influence over career advancement (Mantello et al. 2021). However, in patriarchal cultures such as found in Asia where gender bias is often the norm, women largely favor automated management as they perceive it as an opportunity for a more objective validation of their performance (Islam 2021).

Yet the opacity in machinic decisionism is further problematized by the fact that many multinational corporations using emotional AI are setting up partnerships with local businesses in regions where data privacy regulations and legislation are less stringent (Henning 2019; Vallas and Schor 2020). While the last draft of the European Union's AI bill defines non-conscious biometric data collection as a high-risk activity, many non-Western countries lack regulatory frameworks to safeguard the privacy of workers (Miyashita 2021a, b; Ho et al 2022). Whether employers are transnational or local entities, allowing them to have unregulated access to employee physical and emotional data can heighten power asymmetries, forcing workers into vulnerable positions. Compounding this precarity, as these

technologies cross international borders, the datasets and algorithms used to make decisions are seldom tweaked for gender, race, and cultural differences (Crawford 2021; Castleberry and Nolen 2018). While this issue is relatively unknown in the West, the absence of diversity parameters in emotion-sensing technologies is already causing labor tensions in non-Western workplaces.

For example, Amazon Japan is now embroiled in a series of legal disputes largely due to its culturally insensitive performance improvement plan for errant staff and general hostility toward collective bargaining (Ishibushi and Matsakis 2021). Traditionally, companies in Japan strive to maintain cooperative relations and harmonious partnerships with their unions (Shibata 2022; Makoto 1996). Yet the growth of independent labor organizations in the country makes transparent increasing discord between the two parties. From the traditional Japanese perspective, AI-driven management systems signify a lack of trust in a corporation towards its workers (Streitfield 2021, Ishibushi and Matsakis 2021). Moreover, the fact that Amazon Japan uses temp agencies as intermediaries to hire warehouse workers means they can cancel the contracts of those they deem unfit for their culture. In Amazon, 6–10% of low performance people will be fired (Ishibushi and Matsakis 2021). While this percentage may be common for the company's Western branches, it challenges the traditional work culture in Japan which values loyalty over productivity and instead focuses on solidarity, consensus, long-term trust, and human growth (Shibata, 2021; Ishibushi and Mataskis, 2021). Although the courts are now experiencing an uptick in labor actions, prior to the twenty-first century, Japanese workers rarely engaged in lawsuits or grievances. This reluctance to assert themselves against harassment, unpaid overtime or wrongful dismissal can be attributed to the resilience of Confucian ideals in the nation (Vuong 2023; Vuong et al. 2018; Vuong and Napier 2015), especially, the virtue of collectivism, "viewing the self not as an isolated autonomous individual but a being defined by relationships and reciprocal obligations to others" (Vallor 2016, p. 38). Adherence to Confucianism also helps to explain traditional bonds of trust between employer and employee. A good illustration of this faith concerns employee medical data. Unlike in the West, Japanese workers regularly share their health data with employers because they believe it will be safeguarded to protect their best interests (Miyashita 2021a). Observance of Confucian ethics and Bushido ethics in Japanese work culture also dictates a demonstration of loyalty in the forms of consensus, conformity, and compliance. It also means that cultural protocol dictates that an employee remains patient while striving for harmonious solutions for adversities suffered at work (Dollinger 1988; Horvat 2018). This ethos is personified in the Japanese saying, "出る杭は打たれる", (deru kugi wa utareru – the nail that sticks up must be hammered down) (Sana 1991).

Workers who take legal action against their company face co-worker ostracism and employer recrimination (Reich 1998; Hirata & Warschauer 2014).

2 Conclusion

Although automated management is now regarded as part of the new normal in the quantified workplace, the growth of precarity, worsening global economic situation, coupled with the impact of COVID-19 has accelerated awareness in and demand for emotion-sensing technologies. Certainly, the sudden shift from traditional workspaces to remote and hybrid work practices has encouraged (if not forced) many companies, traditionally, adverse to AI to rethink their adoption of intelligent machines as managerial surrogates. As a result, we observed that emotional AI is uncritically being ushered in as a preeminent tool for combating costly stress-related work absences. Yet emotional AI solutions are derived from precisely the same neoliberal logic and efficiency practices that give rise to these problems. Arguably, the global pandemic has created a perfect storm of opportunity for emotional AI vendors—the confluence of disaster capitalism and surveillance capitalism. Beyond the danger of more egregious forms of function–creep, our findings suggest that before affect tools can play a pivotal role in enhancing employer-employee relations in the post-pandemic workplace three essential steps must be taken. First, the reliability and accuracy of the technology cannot be solved by perfecting a better algorithm. Affective computing engineers need to better understand the complexity of human emotions and incorporate into their designs a greater range of modulators to account for diversity and particularity. Second, in order for workers to have a greater sense of agency, they must be given access and some control over their data. Moreover, the implications of their biometric data as a contribution to the data archive must be made transparent. Finally, as an emerging and yet still nascent technology moving across national borders, emotional AI companies and policy makers would be well advised to consider embracing a more pluralistic approach to devising global and local regulatory frameworks. Such an approach could draw from both East and West value traditions, blending the best of Confucian, Buddhist, and Aristotelian virtue ethic traditions (Vallor 2016). Critically, these are only three of perhaps many more recommendations to be considered in order that emotional AI's future in the workplace ensures the best interests of workers.

would like to express his gratitude toward the SGH Foundation for their support of his doctoral study.

Declarations

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