Future of Work: Should we Design for Productivity or Happiness?

Sowmya Somanath
sowmyasomanath@uvic.ca
University of Victoria
Victoria, Canada

Regan L. Mandryk
reganmandryk@uvic.ca
University of Victoria
Victoria, Canada

In a future where cognitive and affect tracking and analysis is ubiquitous, we have an opportunity to explore alternative design lenses for creating technologies that support knowledge workers. In this abstract, we compare and contrast two such options—we deliberate upon whether we should optimize for productivity gains or prioritize personal and group happiness and flourishing. We propose that applying a happiness lens [3, 4, 10, 21] is likely to offer a more human-centered pathway for engaging knowledge workers, and may not come at the expense of productivity.

Designing for Productivity: Technologies designed to support knowledge workers typically prioritize furthering goals such as productivityas evidenced by the number of such products available today commercially (e.g., [8, 16]). Such products optimize for throughput generated by knowledge workers. For example, consider Sal, an HCI professor. On a typical workday, Sal can use tools that can help her find focused work time (e.g., [20]), block distractions (e.g., [13]), track time (e.g., [12]), and communicate with colleagues and other relevant groups quickly and easily using tools such as Teams and Slack. In service of furthering productivity and measuring success at work, Sal can use such technologies to complete tasks (e.g., writing papers), engage with other people (e.g., assist students via email and chat), learn about self (e.g., via tracked progress), and make decisions about how to operate (e.g., using calendar).

Designing for Happiness: In contrast, consider a scenario wherein the technologies enable Sal to perform her work, but explicitly focus on fostering happiness (i.e., increasing positive affect, increasing life satisfaction, and decreasing negative affect [3]). In such a scenario, technologies can be designed using happiness fostering strategies (e.g., [5, 6, 14]) such as *savouring* [2, 11], wherein a tool can help people step out of an experience to review and appreciate it (e.g., reviewing a year-long research publication process can help people better appreciate their efforts, recognize the barriers they overcame, and reflect on the lessons learned). Similarly, such happiness-fostering technologies can enable cognitive re-framing to improve well-being (e.g., a system designed to dodge triggers that lead to overthinking can help knowledge workers strengthen their identity and improve productivity [14]). Lastly, such technologies may also be able to foster positive behaviour change (e.g., by either thwarting or accelerating how people adapt to a repetitive task, such as teaching, it is possible to renew people's interest in such activities or experiences [15]).

Although happiness is not our only goal, research finds that people across countries, cultures, contexts, and ages want a happy life over other goals such as a meaningful, wealthy, or a psychologically rich life [9, 17, 18, 22]. Tools that foster happiness at work, are thus more likely to align with people's goals. Additionally, when tools are designed using a happiness lens, they are likely to result in outcomes desired in a work context—e.g., happy people are found to be more accomplished, engaged, and motivated [3, 4, 10, 14, 21]—suggesting that happiness may not come at the expense of productivity. Finally, productivity tools that aim to continually increase throughput can cause problems such as burnout (e.g., [7]). Conversely, attempting to *continually* increase happiness would (due to hedonic adaptation [15]) likely result in decreasing people's happiness [18], and thus would not be a design requirement. A desired level of happiness—unlike productivity—does not have moving goalposts.

In comparing the above described scenarios and drawing from the happiness literature related to work (e.g., [1, 4, 10, 19]), we propose that designing cognitive personal informatics tools for work that foster happiness are likely to bring more promising benefits to people. At the workshop, we hope to elaborate on our proposed scenarios for cognitive personal informatics work technologies, and discuss open questions about whether gained happiness will come at a cost to productivity, and how happiness can be operationalized for implementation and evaluation.

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AUTHOR BIOS

Sowmya Somanath is an Assistant Professor of Computer Science at the University of Victoria, Canada. Her work thus far has focused on helping people engage in everyday forms of creativity (such as learning, developing DIY projects, and making mundane decisions) using tangible mediums. She has conducted studies and developed systems that help people co-design their own bespoke blood glucose monitors, communicate information via clothing, fabricated products, and wearable mechanical limbs, learn STEM concepts in an accessible and hands-on ways, facilitate the development of computational thinking via making activities, and helping people make decisions such as crossing a street in the presence of driverless cars. More recently, in thinking about what motivates people to engage in everyday forms of creativity, and inspired by literature and a Yale course she took on the topic happiness, she is excited to explore designing technologies that can explicitly foster happiness.

Regan L. Mandryk is a Professor of Computer Science at the University of Victoria, Canada. Her work focuses on how people use games and immersive social technologies for social, cognitive, and emotional wellbeing, how toxicity and discrimination thwart technology's connection and recovery benefits, and how we can design technologies that benefit—not harm—wellbeing. She has developed many systems that employ physiological sensors (e.g., skin conductance, electroencephalography), non-contact sensors (e.g., facial expression analysis, heart rate as sensed through the webcam), and interaction traces (e.g., pressure on touch gestures, keystroke dynamics, mouse kinematics) in service of sensing cognitive and emotional states. Her Ph.D. research (2005) was about developing computational models of emotional state from physiological sensors and her reflection on how affective computing intersects with surveillance capitalism over the past 20 years provides a unique perspective on the future of cognitive personal informatics.