SPECIAL ISSUE CALL FOR PAPERS

Adapting to Emerging Technologies at Work: Effects on the Nature of Work and Employee Outcomes

Guest Editors

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Technological innovations are being developed rapidly and are revolutionizing a wide array of industries (Parker & Grote, 2020). To give a few examples, take the use of robots to disarm and remove explosives in military operations (Peake, 2017), in medical settings where doctors collaborate with robots to make surgery less invasive and more precise (Pratt, 2018), or in logistic warehouses where robots like Amazon's Kiva retrieve products for order pickers. Other examples are the algorithms which manage Uber drivers (Zwick, 2018) and chatbots that can take care of customer service tasks or certain HR services (Meyer von Wolff et al., 2019). Whether it is to comply with increasing customer demands (in e-commerce for instance) or to mitigate the (future) shortage of labor (in the health care or logistics sector for instance), business motives spur organizations to buy and implement continuously advancing technologies, such as robots or artificial intelligence (AI) systems (Berkers et al., 2019; Parker & Grote, 2020). At the same time, employees seem to have a more ambivalent attitude towards these technologies, some fear to fall behind and while others embrace the opportunities of technology-related change (Berkers et al., 2019; Ulfert & Scherer, 2020).

Currently, many companies seem to invest mainly in the technological innovation itself, instead of focusing on the human side of working with these technologies. These emerging technologies, including for example Smart Technologies, AI, Robotics, and Algorithms (Brougham & Haar, 2018), have been argued to fundamentally change how employees work today and in the future (see e.g. Parker & Grote, 2020). This particularly includes a change in how we interact with technology, involving a shift of agency from the employee to the technology, as systems become increasingly competent in self-learning (Parker & Grote, 2020; Schwab, 2017). Although, the study of technology interaction at work has a longstanding research tradition in psychology (e.g. studying automation in manufacturing settings), the described shift in agency that comes with increasing system capabilities, has not yet been adequately addressed concerning its consequences for organizations and employees. As a consequence, researchers have emphasized the importance of studying both how humans adapt to these technologies as well as how work and technology can be designed to better fit employee needs (Parker & Grote, 2020; Wang et al., 2020). For effective implementation and adoption of emerging technologies at work, it is of pivotal importance to pay attention to the people who work with these technologies. We argue that Work and Organizational psychologists have much to contribute to understanding these technology-related changes in the workplace and to the development of emerging technologies. However, these developments are currently predominantly driven from the technology sectors. Building on accumulated evidence of 100 years of research on how to design jobs that facilitate employee well-being, motivation, and performance (Parker et al., 2017), Work and Organizational psychology can help to make the tech revolution more 'human-centered'.

Our goal with this Special Issue is to stimulate a scientific discussion on (1) the effects of introducing emerging technologies, and especially AI systems, in the workplace as well as (2) the role work and organizational psychologists can play in the development and

introduction of these technologies. This will help to build new theories and sound practices regarding a human-centered development and implementation of emerging technologies at work. We argue that we need to move beyond merely discussing whether technologies threaten jobs and job security (Frey & Osborne, 2013; Parker & Grote, 2020). Rather, we need to examine how technologies will shape work in the future and how we can design high-quality work (Wang et al. 2020). Already today, we experience a technology-related change of work characteristics, such as job demands, autonomy, relational aspects, and job significance (Wang et al., 2020), which has been described to intensify with increasing technology capabilities (e.g. AI; Ulfert & Scherer, 2020). Although theoretical models give a first indication of how the use of emerging technologies, and particularly AI, may change the work environment (e.g. Parker & Grote, 2020; Wang et al. 2020), there is still a lack of empirical studies on the way these technologies shape work today as well as the factors that impact employee outcomes. Therefore, in order to gain a deeper understanding of consequences and influencing factors, we need to further investigate questions such as, how employees appraise these technologies, how jobs and job quality change, and how responsibilities shift from employees to the technology.

We further argue that existing theories and models are too limited to guide both researchers and practitioners. For example, technology acceptance theories and models (Venkatesh & Bala, 2008; Venkatesh et al., 2016) aim to predict acceptance and adoption of technology by individual users. These models are distanced from the reality of the work context, only partially considering the complex and dynamic structures of the organizations in which these technologies are implemented. The organizational change literature on the other hand, points at the key role of human and social (context) factors for successful transitions, such as adequate top-down and bottom-up communication, (opportunities for) participation, and support (see Hayes, 2018, for an overview). However, this tradition hardly considers technology-related change and is less clear about the operational changes to which employees need to adapt.

Furthermore, research in the human computer interaction domain, although very informative about how individuals react to and work with (or against) technology, often miss to address the larger social context (for an exception see Díaz-Boladeras et al., 2015) and do not explicitly focus on the work context.

To develop new theories and sound practices for implementing emerging technologies in organizations, we need to start discussing the topic of emerging technologies, and particularly AI, on a multi-disciplinary level, with a strong perspective from Work and Organizational psychology perspective. That is to say, more in-depth research on human/social context factors affecting the (optimal) implementation of technologies in the workplace, and effects on for example job quality and employee well-being is needed to formulate recommendations for a human-centered implementation of technology in the workplace.

Proposed contributions (field and experimental studies as well as high quality theoretical papers) for the Special Issue could include:

1. Overview and current developments in the use of emerging technologies /AI at work: Multidisciplinary views (combining theories from computer science, Work and Organizational Psychology, and practice) on current trends, applications, and misconceptions. Submissions should particularly focus on how these emerging technologies and AI differ from other technologies used in the work context (e.g. research on automation in factories).
2. Transformation & implementation of emerging technologies and AI at work: How does work change (e.g. how do new types of teams, such as human-agent teaming, interact)? How can these technologies be implemented while taking work context and human factors into account?

3. Consequences of emerging technologies and AI at work: What are positive and negative effects of implementing these systems at work? How does the role of the employee change (e.g. how does a change of agency in human-AI collaboration affect employee outcomes)?
4. AI methods in Work and Organizational Psychology research: How can we use methods of AI in research within Work and Organizational Psychology to understand how we interact with emerging technologies and AI at work? How can Work and Organizational Psychology researchers contribute to building better AI systems?

The timeline for the Special Issue is outlined below.

Timeline

(0) Submission deadline: September 1st 2021

(1) Reviews + decision round 1: December 1st, 2021

(2) Resubmission deadline: February 1st, 2022

(3) Reviews + decision round 2: May 1st, 2022

(4) Final submission round 3: September 1st 2022

(5) Publication of the Special Issue by spring 2023

Submission Instructions

We seek innovative contributions and encourage high-quality theoretical or empirical papers across a range of methodologies and analytical techniques. Please note that the regular author guidelines of EJWOP apply (e.g. no studies with only student samples), for further details, please visit:

https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=pewo20

Full manuscripts should be submitted by September 1st, 2021. Papers should be submitted through the journal's online submissions system via https://rp.tandfonline.com/submission/create?journalCode=PEWO, as a submission for this Special Issue.

For more information or to discuss ideas for the Special Issue, please contact any of the Guest Editors: Anna-Sophie Ulfert (ulfert@psych.uni-frankfurt.de), Sonja Rispens (s.rispens@tue.nl), Pascale Le Blanc (p.m.le.blanc@tue.nl), Sonja Scherer (scherer@psych.uni-frankfurt.de) or Maria Peeters (m.peeters@uu.nl)

References

Berkers, H. A., Rispens, S., & Le Blanc, P. M. (2019). How robots are changing work design. *EAWOP SGM 'Antecedents of work design'*, June 3-4 2019, Vrije Universiteit Amsterdam.

Brougham, D., & Haar, J. (2018). Smart technology, artificial intelligence, robotics, and algorithms (STARA): Employees' perceptions of our future workplace. *Journal of Management & Organization*, *24*(2), 239-257.

Díaz-Boladeras et al. (2015). Evaluating group-robot interaction in crowded public spaces: A week-long exploratory study in the wild with a humanoid robot guiding visitors through a science museum. *International Journal of Humanoid Robotics 1*2(4):1550022

Frey, C.B. & Osborne, M. (2013). *The future of employment*. Oxford: University of Oxford.

Hayes, J. (2018). *The theory and practice of change management, 5th edition*. UK: MacMillan Education.

Meyer von Wolff, R., Hobert, S. & Schumann, M. (2019). How may I help you? – State of the art and open research questions for chatbots at the digital workplace. *Proceedings of the 52nd Hawaii International Conference on System Sciences*, pp. 95-104.

Parker, S.K. and Grote, G. (2020), Automation, Algorithms, and Beyond: Why Work Design Matters More Than Ever in a Digital World. *Applied Psychology*, *0* (0), 1–45. doi:10.1111/apps.12241

Parker, S. K., Van den Broeck, A., & Holman, D. (2017). Work design influences: A synthesis of multilevel factors that affect the design of jobs. *Academy of Management Annals*, *11*(1), 267–308.

Peake, E. (2017). The MoD's new robot can disarm bombs in super-fast time. Retrieved March 28, 2019, from https://www.wired.co.uk/article/bomb-disposal-robots-ministryof-defence

Pratt, E. (2018). How robotic surgery is helping patients, doctors. Retrieved March 28, 2019, from https://www.healthline.com/health-news/how-robotic-surgery-is-helping-patientsdoctors

Schwab, K. (2017). *The fourth industrial revolution*. New York: Crown Business.

Ulfert, A. S., & Scherer, S. (2020). An Integrative Model of Expertise when Introducing Advanced Digital Systems at Work. In *Academy of Management Proceedings.* https://doi.org/10.5465/AMBPP.2020.21442abstract

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, *39*(2), 273-315.

Venkatesh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, *17*(5), 328-376.

Wang, B., Liu, Y., & Parker, S. K. (2020). How does the use of Information Communication Technology affect individuals? A Work Design Perspective. *Academy of Management Annals.*

Zwick, A. (2018). Welcome to the Gig Economy: Neoliberal industrial relations and the case of Uber. *GeoJournal, 83*(4), 679–691. https://doi.org/10.1007/s10708-017-9793-8

Guest Editors:

Anna-Sophie Ulfert is a postdoctoral researcher at the Institute of Psychology at Goethe-University Frankfurt. Her research focuses on technology use at work as well as the use of AI methods in Work and Organizational Psychology. Particularly she works on topics relating to the implementation of and interaction with autonomous systems, human-agent teaming, agent-based modelling, and user-centered AI design. She is currently an ad-hoc reviewer for different journals, for example for Technology, Mind, and Behavior.

Sonja Rispens is an assistant professor in the Human Performance Management Group of the faculty of Industrial Engineering & Innovation Sciences, Eindhoven University of Technology. Her research focuses on effective collaboration processes within organizations as well as with outside partners, in situations of (1) conflict, (2) diversity, and more recently she explores the role of (3) technology in effective collaboration. She is currently an editorial board member of Negotiations and Conflict Management Research (in the past she was associate editor of this journal: 2009-2012), the International Journal of Conflict Management, and Group Dynamics: Theory, Research, and Practice.

Pascale Le Blanc is a Full Professor of Workplace Innovation and Sustainable Employability at the Human Performance Management Group, Faculty of Industrial Engineering & Innovation Sciences at Eindhoven University of Technology. The overarching theme of her research and teaching is the sustainable functioning of organizations and their employees, with a specific interest in the management of change and adaptation processes on the individual, team, and organizational level. Her key areas of expertise are worker sustainable employability, (social) innovation, intervention research, worker health and well-being, and leadership. In her current research and teaching, she particularly focuses on the implementation and adoption of new technologies such as AI and robotics that increasingly impact on many aspects of our work as well as our private lives.

I the past, she has served as Associate Editor of the European Journal of Work and Organizational Psychology (2008-2014). Currently, she serves as Associate Editor for The Career Development International as well as Editorial Board Member of the Scandinavian Journal of Work and Organizational Psychology.

Sonja Scherer is a postdoctoral researcher at the Institute of Psychology at Goethe-University Frankfurt. Her research focuses on technological innovations that foster health and education. Her areas of expertise include digital health interventions and intelligent systems in education. She is an ad hoc reviewer, e.g. for Frontiers in Public Health.

Maria Peeters associate professor at the Department of Social, Health and Organizational Psychology at Utrecht University and a (part-time) full professor at the Human Performance Management Group of Eindhoven University of Technology. Her research focuses on sustainable work performance in times of digitalization. Her areas of expertise include workers' (ill)health and well-being, intervention research (including job crafting), work-life balance and (implementation of) technological innovations.
She is member of the editorial board of Work & Stress and The Dutch Journal of Behaviour in Organizations. She is editor of a leading textbook on "An Introduction to Contemporary Work Psychology" (Wiley Blackwell, 2014) and she is the president of the Dutch Association of Work & Organizational Psychology (EAWOP constituent).

Reviewing Process:

Each submission will initially be screened by teams of two editors to ensure fit with the proposed special issue and quality of the work. After this initial process, the guest editors will inquire for reviewers for the selected submissions from their personal research network. Each article will be assigned one editor and a minimum of two reviewers.