12-12-2021

How AI systems affect physicians' role identity

Franz Strich
Chair for Human Resource Management & Intrapreneurship, franz.strich@uni-bayreuth.de

Anne-Sophie Mayer
University of Passau, anne-sophie.mayer@uni-passau.de

Marina Fiedler
marina.fiedler@uni-passau.de

How AI systems affect physicians' role identity

Franz Strich (franz.strich@uni-bayreuth.de); Anne-Sophie Mayer (anne-sophie.mayer@uni-passau.de); Marina Fiedler (marina.fiedler@uni-passau.de)

Traditionally, medical diagnostics primarily relied on the physician's expertise. Thus, physicians defined themselves in their role identity through patient treatment based on their specialized expertise and their strong focus on patient care. The concept of role identity combines an individual's self-perception with the activation of an occupational role, including goals, values, beliefs, norms, interaction styles, and time horizons link to a hierarchical position. Consequently, a fundamental part of physicians' role identity was patient care, treating each patient with very little external support and referring them to specialists of different fields if necessary.

With technological advancement, a great variety of Artificial Intelligence (AI) systems are increasingly introduced in a wide range of medical fields, resulting in fundamental changes in physicians' work processes. In contrast to previous information systems (IS), AI systems can take over entire work processes, process large amounts of data, and learn from historical events. The autonomous and learning nature of AI systems make these technologies unique in contrast to existing IS, resulting in their potential to fundamentally affect professionals' work processes and role identity to a new extent.

Prior studies showed that changes in physicians' work processes often lead to a perceived threat to their role identity. In response, physicians interacted with the IS and developed protective behaviors to eliminate the threat or adapted their professional role identity over time. However, AI systems provide decisions and solutions without the opportunity to adapt or change the outcome. Consequently, physicians are unable to interact and engage with these autonomous AI systems. Therefore, it remains unclear how physicians react to decision-supportive AI systems and adapt their role identity in response.

To answer our research question, we will conduct a qualitative in-depth multiple case study focusing on decision-supportive AI systems in the medical field. We have already conducted 15 interviews within the fields of radiology and maternal-fetal medicine, both in Germany and Sweden. Furthermore, we also interviewed medical staff from different AI providers tasked with programming different AI systems.

Based on our preliminary findings, our research aims to make three contributions to the IS community: (1) we extend previous research by investigating the effect of recent AI advances concerning physicians' role identity, (2) we provide insights on how physicians react to AI's threat for their role identity and which strategies they rely on to adapt their role identity, and (3) we provide recommendations for practitioners on how to design and implement AI systems to supplement and substitute physicians' work processes and strengthen their role identity.

Presentation at TREO Talks in conjunction with the 42nd International Conference on Information Systems, ICIS 2021
TREO Talks are not peer-reviewed and not a formal part of the ICIS 2021 Proceedings
All TREO Talks are available in the TREO Talks section of the AIS e-Library