MACHINE OVER MIND? THE CLASH OF AGENCY IN SOCIAL MEDIA ENVIRONMENTS.

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Extended Abstract

Underlying many social media platforms are personalization engines designed to give people instant content and social recommendations to keep them engaged. Powered by complex algorithms, these engines animate people's feeds and an array of other features, transforming these information channels into highly personalized experiences tailored to each user's identified tastes.

But what happens to users' agency when they interact with these features that are designed to subtly nudge and redirect them? How do people maintain control and intentional action in the face of a technology that seeks, by design, to architect their behavior? What outcomes result from this clash of mind and machine? And perhaps most consequentially, who prevails?

In interviews and focus groups, a diverse sample of 45 participants offered their experiences with these tools where they reflected on how they responded and reacted to them, and how they felt they preserved their agency or had it eroded by the technology. Participants also reported several outcomes that occurred that they attributed to the tools, including falling down "rabbit holes" where time and conscious thinking appeared to dissolve — outcomes they did not anticipate happening.

Through a critical realist approach, this study sought to move beyond their descriptive accounts to explain how and why some preserved their agency, while others had it eroded with rabbit holes and the like ensuing (Mingers et al., 2013). Utilizing these experiences, this study posits an empirically supported theoretical model that identifies underlining individual-level agentic and behavioral mechanisms that appear to be

activated when users interact with these tools. The model incorporates the agency-centric social cognitive theory, as well as new concepts that emerged from the qualitative data, to explain the twists-and-turns of agency that participants reported (Bandura, 2009). Through the model, their acts and choices became clear, and why the machine or individuals prevail is demystified.

In a critical realist qualitative study of mental health recovery, Lauzier-Jobin and Houle (2021) fit prior psychological theory with data to help identify the mechanisms that caused meaningful recovery for people struggling with mental illness.

Similar to their study, where a mechanism can be located in a middle-range theory that explains events, this study utilized social cognitive theory to shed light on the choices and agentic transformations of users in response to the tools, such as Twitter's feed and Instagram's Explore feature.

Social media's use of algorithms and personalization technologies has prompted numerous accounts and studies examining how the tools can alter user behaviors, with agency either a central concept of investigation or implied. However, and necessitating the need for this study and its approach, there appears to be no empirical, explanatory research examining how users' agency, behaviors, and other processes are influenced.

Despite the widespread use of the technology, with billions of people worldwide immersing themselves to some degree in these environments, and alarm raised by policymakers, journalists, and academics about its potential effects, the literature is largely theoretical, descriptive, or speculative (Andersen et al., 2016; Bucher, 2017; Zuboff, 2019), a gap that this dissertation addresses with its theoretically informed empirical analysis. Empirical work has investigated the ties between agency and social media use, with social cognitive theory serving as a theoretical framework in several studies. But that work predominantly examines user interactions with other social media attributes, not the personalized elements under study here.

Informed by Albert Bandura's social cognitive theory, this research offers an explanatory model that captures the rich array of agency dynamics at play for individuals in reaction to these tools, revealing how they bring intentionality, reflection, and forethought to these environments, as well as how these agentic traits break down during interactions with the tools.

The research also supports the extension of his theory to this study context, the only known study to have done so. Through participants' experiences with the technology, it establishes that a social cognitive process is occurring in this context. This finding, among others, provides a contribution to the psychology and mass communication literature, and offers a framework that can be utilized in future studies, including testing and refinement through quantitative methodologies.

Further, in contrast to the dominant portrayal of "mindless users" under the sway of personalization technologies — as depicted in the widely popular Netflix documentary

The Social Dilemma and other accounts — this research found some participants exercised self-control in these environments, including enacting strategies that helped them preserve and exercise their agency.

As a practical contribution, this work demonstrates that individuals can have the upper hand in these environments, so long as they have a clear understanding of the consequences of use of these tools. The model provides that guidance, building on past social cognitive work that sought to empower individuals to be free, non-constricted agents who can attain any realistic goal they desire, so long as they exercise their internal capacities to achieve it and have an awareness of the environments that may thwart it.

However, knowledge is true power. Without our work, science, and theory, these technologies may continue to dominate us. This is a work-in-progress dissertation. This is also my first submission to the conference.

References

Andersen, J.V., Lindberg, A., Lindgren, R., & Selander, L. (2016). Algorithmic agency in information systems: Research opportunities for data analytics of digital traces. In Proceedings of the 49th Hawaii International Conference on System Sciences (pp. 4597-4605). Washington, DC: IEEE. https://doi.org/10.1109/hicss.2016.571

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*(9), 1175-1184. https://doi.org/10.1037/0003-066x.44.9.1175

Bandura, A. (2009). A social cognitive theory of mass communication. In J. Bryant and M.B. Oliver (Ed.), *Media effects: Advances in theory and research* (pp. 94-124). New York, NY: Routledge.

Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society*, *20*(1), 30-44. https://doi.org/10.1080/1369118x.2016.1154086

Lauzier-Jobin, F., & Houle, J. (2021). Caregiver support in mental health recovery: A critical realist qualitative research. *Qualitative Health Research*, *31*(13), 2440-2453.

Mingers, J., Mutch, A., & Willcocks, L. (2013). Critical realism in information systems research. *MIS Quarterly*, *37*(3), 795-802.

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. New York, NY: PublicAffairs.