Diving Into the Rabbit Hole: Understanding Delegation of Decisions

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Mateus Coimbra
Universidade Federal do Rio de Janeiro, Brazil

Paula Chimenti
Universidade Federal do Rio de Janeiro, Brazil

Roberto Nogueira
Universidade Federal do Rio de Janeiro, Brazil

INTRODUCTION

Experts have expressed concern about the excessive use of social media, with people systematically declaring to enter social networks for a specific purpose but leaving hours later after diving into the "rabbit hole" (The Guardian, 2020). Rabbit holes can also take on more physical contours, such as when a group of tourists accidentally sunk their car in a lake after following Waze's geolocation recommendations (Mail Online, 2018).

What might have seemed like science fiction a few years ago is now an actual part of our everyday lives. Indeed, Artificial Intelligence is increasingly helping and even replacing human decision-making (Adner & Kapoor, 2016). At the heart of this recent transformation is a technological revolution based on two elements: big data and decision-making algorithms (Chae, 2019). Both constitute strategic pillars of multinational corporations, such as Facebook and Google, which structure their business models based on them. These two elements are key pieces of a new world, in which artificial intelligence is gaining relevance.

Applications like Waze, YouTube and Netflix are fed everyday with huge volumes of data from consumer actions and attitudes. In return, they provide services, convenience, and support for decision-making. This increased participation in our lives raises questions about whether machines will make decisions on our behalf in the future. Although paramount for our future, there is a gap in the literature on decision transfer to machines and its logic. The existing decision-making literature focuses on human to human transfer (Otto et al., 2016; Steffel, M., Williams, E. F., & Perrmann-Graham, J., 2016; Steffel & Williams, 2017; Usta & Häubl, 2010), essentially ignoring the effects of people adopting machine decision-making. Meanwhile, the information technology (IT) literature investigating delegation to machines has focused on the benefits and problems of such delegation, with few articles trying to understand the factors that drive this behavior (Gogoll & Uhl, 2018; Goldbach, C., Kayar, D., Pitz, T., & Sickmann, J., 2019; Schneider & Leyer, 2019; Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G., 2019).

Against this backdrop, the present study sought to understand the extent to which people are willing to transfer part of their hedonic decisions to algorithms and what factors motivate that choice. The main questions were as follows: How does this transfer mechanism work? What factors motivate this process? Therefore, this study proposed and tested a model of human delegation of hedonic consumption. The authors tried to understand how human–machine interaction works in a social media environment. The

DOI: 10.4018/978-1-7998-9220-5.ch014

authors started with a comprehensive literature review, proposed a theoretical model identifying the mains drivers of the human-machine interaction mechanism, and then tested the model on YouTube users, using structural equation modeling.

The authors chose YouTube because of its relevance as the leading online video-sharing platform and the second-most popular website in the world, behind Google, reaching more than 2 billion users in 100 countries (Alexa Internet, 2020). Its recommendation system is a key feature, created to assist the platform in retaining users on the platform (Kim & Kim, 2018).

BACKGROUND

In this section, the evolution of the interaction between men and machines is discussed, presenting the theories that have emerged. This evolution was constituted from three main cycles: starting the debate about mechanical models on decision making, the aversion to these models and the adoption boom. This literature review was structured based on articles that discussed the interaction between human and machines. The articles were selected from the Scopus database based on the queries "human-machine interaction" and "human-application interaction." Only articles from peer-review journals were considered. The first cycle covers studies that show that machines are more accurate than humans. The second is characterized by studies that point to the emergence of people's aversion to machines in the decision-making process. The latter features articles that show people incorporating algorithms as a part of their decision-making process.

First Cycle: In his seminal book, *Clinical versus Statistical Forecasting*, Meehl (1954) introduced the debate about the possibility of predictions made by formulas. Subsequently, Meehl (1957) analyzed cases of clinical predictions in psychology, showing that human prediction was not better than statistics. Dawes and Corrigan (1974) discussed the effectiveness of applying linear models in decision-making. Dawes (1979) extended the debate to inappropriate linear models, whose variable weights are obtained intuitively. Dawes, R. M., Faust, D., & Meehl, P. E. (1989) confirmed that formulas are superior to the clinical model due to their greater accuracy and ability to understand the predictive capacity of each variable. Wiggins (1981) discussed the necessity of establishing better criteria for measuring variables and developing procedures that assist clinical forecasting. Grove and Meehl (1996) argued that professionals do not adopt mechanical methods for several reasons, such as a fear of unemployment due to technology, the value of their own image, being tied to old methods, the erroneous perception that automatic models would dehumanize patients, a dislike for computers competing against human minds, and a lack of knowledge. Grove, W. M., Zald, D. H., Lebow, B. S., Snitz, B. E., & Nelson, C. (2000) found that, on average, the mechanical method structured by an algorithm performed 10% better than clinical models based on humans.

Second Cycle: Over time, people's concern that their future would be decided by a mathematical method resulted in an aversion to the models. Studies debated that machines did not have the final say, often due to the perception of a human's ability to improve the expected result (Goodwin, 2000). People chose not to follow the decisions made by the machines and were more confident receiving advice from others (Wærn & Ramberg, 1996). Dietvorst, B. J., Simmons, J. P., & Massey, C. (2014) conducted experiments to analyze whether people trusted more the advice from a machine or an expert, revealing a preference for the latter. These findings were corroborated by Prahl and Van Swol (2017), who confirmed a greater aversion to algorithms after they provided bad advice. Regarding recommendation systems, a study concluded that, despite the greater accuracy of the machine's recommendations, people had an