Why Do People Fear AI? Let's Talk Morality

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ABSTRACT

Artificial Intelligence (AI) may be the best thing to happen to humanity, or it may be the worst thing (Hern, 2016). The negative propaganda and demonization of AI and its many "threats" to humanity have induced certain fears towards AI. The aim of this research is to analyze the fear of AI-which we refer to as AI anxiety-from a moral lens by understanding how an individual's moral foundations led to their AI anxiety. This paper borrows from the moral psychology literature and implements Moral Foundation Theory into Information Systems (IS) research for the first time.

Keywords

Artificial intelligence anxiety, moral foundation theory, AI, IS ethics.

INTRODUCTION

Recent advancements in intelligent technologies and artificial agents have instilled optimism, apprehension, and concern from social critics, economists, global leaders, and the mass public regarding AI. Because AI is not a static technology, but rather an ever evolving frontier of emerging computer capabilities, the domain of AI is laden with uncertainty (Nicholas et al., 2021).We refer to this fear of Artificial Intelligence as AI anxiety. AI anxiety is distinct from CA in that it is a very generalized sociopsychological anxiety rather than a usage case specific state anxiety. Therefore, we propose that AI anxiety be considered from a social psychology lens and suggest that morality is an important player in this context. Morality is an important social and ethical construct which guides decision making of individuals, particularly, in uncertain domains (Bartels et al., 2015).

Researchers have shown relationship between morality and attitude towards computer use in the past (Gattiker & Kelley, 1999). The moral bearing of an individual guides their adoption of AI (Sohn & Kwon, 2020). To date, IS ethics research has mainly considered morality from the purview of subjective norm (Stahl, 2012). We incorporate a richer model of morality to develop a novel theory of the moral aspects of AI anxiety. However, the overall phenomenon of how morality- a salient function of ethics-influences individual decision making remains largely understudied in the IS domain.

In this research, we attempt to introduce a new theory to IS ethics research – Moral Foundation Theory, (Graham et al. 2011) and analyze how an individual's moral orientation impact their perception of AI.

MORAL FOUNDATION THEORY

Moral foundations are classified as the elementary components of an individual's moral character. In its original specification, moral foundation theory contains 5 explicit foundations. (Graham et al., 2011; Haidt & Joseph, 2004). Every individual has a different level of each, and a moral class is represented by a specific combination of these. A person's moral behavior is shaped by the relative amount of these foundations.

The foundations are *care*, *loyalty*, *authority*, *sanctity*, and *fairness*. Care reflects the moral values relative to the physical harm to humans, emotional harm to humans and physical harm to non-human animals; loyalty symbolizes the intention to prioritize community over group; authority reflects adherence to hierarchy; fairness reflects values such as equality; sanctity reflects whether a person finds something contemptuous or repulsive.

Moral foundations have been shown to underlie a variety of social beliefs. For example, liberals tend to be higher on the care and fairness foundations, while conservative tend to be higher on authority, loyalty and sanctity (Graham et al., 2009). Differential profiles of moral foundations have been shown to predict attitudes toward childhood vaccines (Rossen et al., 2019) and predict behavioral compliance with staying at home, social distancing, and mask wearing even after controlling for age, political party, and other demographic characteristics (Tomori et al., 2021). Like AI anxiety, each of these domains is characterized by high uncertainty and social disagreement. We believe that moral foundations are likely to underlie at least some of AI anxiety.

ARTIFICIAL INTELLIGENCE ANXIETY

Several well know individuals including Elon Musk, Bill Gates, and Steven Hawking have suggested that AI is an existential threat to humanity (Johnson & Verdicchio, 2017). While these luminaries and others may be wrong about this, the anxiety that that they and others feel is real.

Scholars have identified several dimensions of AI anxiety: bias behavior anxiety, job replacement anxiety, existential risk anxiety, and artificial consciousness anxiety (Cave & Dihal, 2019; Johnson & Verdicchio, 2017; Li & Huang, 2020; Wang & Wang, 2019). *Bias behavior anxiety* refers to the fear of being discriminated by AI. Bias in AI has been witnessed in several domains such as healthcare (DeCamp & Lindvall, 2020; Nelson, 2019), racial discrimination, gender bias, (Ntoutsi et al., 2020; Osoba & Welser, 2017), and beyond. As AI learns from the training data it receives, the bias present in society manifests in AI algorithms. *Job replacement anxiety* is the anxiety regarding AI replacing and or eliminating human jobs (Li & Huang, 2020; Wang & Wang, 2019). Although optimists argue that AI will create a large array of jobs (Wilson et al., n.d.), it must be noted that such jobs primarily fall within the realms of sophisticated information technology and advanced computer engineering domains. For the rest, AI poses serious risk of job loss. The notion of AI replacing human jobs has thus created an AI job replacement anxiety. The negative fictional dystopian narrative in mass media and science fiction about AI overtaking the world and

INSTRUMENTAL CONTROL VARIABLES

There are many control variables, which might also influence AI anxiety. We discuss each of our proposed controls briefly, but do not offer hypotheses about them.

Sociotechnical blindness is defined as the notion to overlook the human players in AI technologies and attribute the consequences of AI to the technology itself (Johnson & Verdicchio, 2017). Many believe the possibility of AI being misused or AI resulting in harmful outcomes, entirely overlooking the reality that the implementation of AI is dependent on the goals of its programmer. *Personal Innovativeness in IT* reflects and individual's willingness to evolve and tolerate risks in terms of IT usage. Those with higher Personal Innovativeness in IT and more likely to be welcoming to new changes in technologies and are more likely to demonstrate lower computer anxiety (Thatcher & Perrewé, 2002). *Trait anxiety* may be defined as stable personality trait, which reflects an individual's response to stress and anxious situations. Trait anxiety varies between individuals. Previous research has shown that trait anxiety
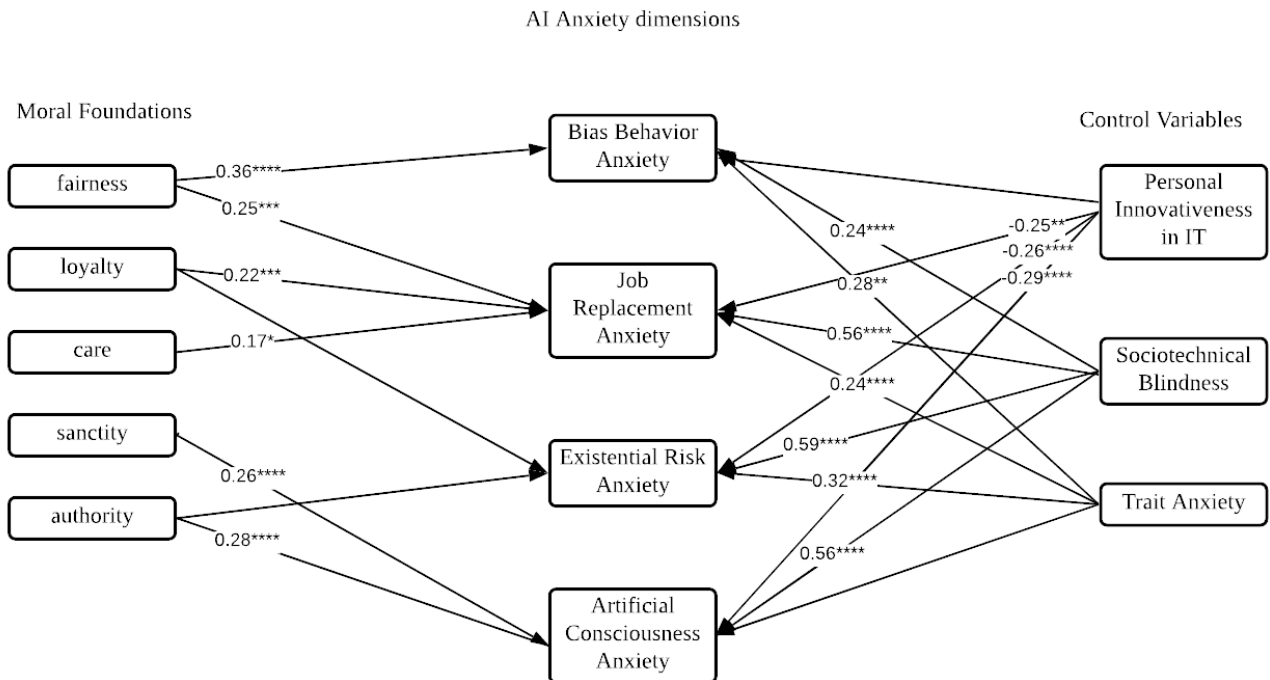

Figure 1. Moral Foundation as predictors of AI Anxiety model.

diminishing human civilization has given rise to *existential risk anxiety* (Li & Huang, 2020). Although this may be untrue of the current stage of AI, future potential of Artificial General Intelligence might allow such outcomes to flourish. *Artificial consciousness anxiety* is the fear that AI will develop its own consciousness and challenge the status of humans as intelligent beings (Li & Huang, 2020).

positively influenced computer anxiety (Thatcher & Perrewé, 2002). Therefore, we hold that trait anxiety will likely have a positive influence in AIA.

RESULTS

We recruited 306 participants from Prolific.com and measured their AI anxiety dimensions (Li & Huang, 2020) and moral foundations (Graham et al., 2011). 51.31% of

the participants were females and the mean age of all participants was 30 years. 84% of the participants had at least some college level education. The proposed hypotheses and the results derived through Ordinary Least Squared regression are presented in Figure 1. Our findings suggest that Moral Foundations are important to consider when trying to understand AI Anxiety.

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