ABSTRACT

Decision-Making under Constraints:
A Behavioral Economics Perspective on Cyber-Related
Heuristics and Biases

Marc Wilczek

The increasing prevalence of cybercrime is a growing concern for organizations worldwide. Cyber-security incidents can result in significant financial and strategic losses, and the systemic nature of cyber-risks means that poor decisions and incidents in one area can quickly spread and impact unrelated entities. To address this danger, it is crucial to adopt a holistic and interdisciplinary viewpoint that includes both technological measures and consideration of human behavior.

The human element of cyber-security is often overlooked, but it is crucial to establishing effective cyber-resilience. Decision-making processes in this context are susceptible to judgmental flaws, leading to suboptimal outcomes with far-reaching consequences. Cognitive biases and heuristics play a significant role in this context, but there is a lack of research on their impact in the field of cyber-security, especially when it comes to subject matter experts.

This thesis will encompass an extensive examination of the existing literature regarding cognitive biases and heuristics within the cyber-security domain. Moreover, it will involve conducting interviews with experts who possess profound knowledge in this field. The primary goal of this thesis is to delve into the extent of cognitive distortions and their influence on decision-making processes concerning cyber-security. The outcome of this study will be utilized to develop practical recommendations that can aid cyber professionals and organizations in mitigating the adverse effects brought about by cognitive biases and heuristics on decision-making in cyber-security. The overarching objective of this thesis is to contribute to the advancement of a more all-encompassing approach to cyber-security that prioritizes the understanding of human behavior. By comprehending the impact of cognitive biases and heuristics on cyber-security decision-