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Social Engineering in Cybersecurity: The Evolution of a Concept

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Abstract:

This paper offers a history of the concept of social engineering in cybersecurity and argues that while the term began its life in the study of politics, and only later gained usage within the domain of cybersecurity, these are applications of the same fundamental ideas: *epistemic asymmetry*, *technocratic dominance*, and *teleological replacement*. The paper further argues that the term's usages in both areas remain conceptually and semantically interrelated. Moreover, ignorance of this interrelation continues to handicap our ability to identify and rebuff social engineering attacks in cyberspace. The paper's conceptual history begins in the nineteenth-century in the writings of the economists John Gray and Thorstein Veblen. An analysis of scholarly articles shows the concept's proliferation throughout the early to mid-twentieth century within the social sciences and beyond. The paper then traces the concept's migration into cybersecurity through the 1960s-80s utilizing both scholarly publications and memoir accounts—including interviews with then-active participants in the hacker community. Finally, it reveals a conceptual array of contemporary connotations through an analysis of 134 definitions of the term found in academic articles written about cybersecurity from the 1990 to 2017.

Keywords: social engineering, cybersecurity, history of computing, definition, taxonomy

Introduction

According to the *Oxford English Dictionary*, the term “social engineering” has two distinct meanings (OED 2017). First, it is “[t]he use of centralized planning in an attempt to manage social change and regulate the future development and behaviour of a society.” Second, it is “[t]he use of deception in order to induce a person to divulge private information or esp. unwittingly provide unauthorized access to a computer system or network.” While both definitions involve one or more individuals inducing behavior on the part of others, the former explicitly finds its application in the area of political and economic management while the latter finds its home uniquely within the domain of cyberspace. This paper endeavors to show that these two uses are both conceptually and semantically interrelated; that they are both expressions of the underlying concepts of *epistemic asymmetry*, *technocratic dominance*, and *teleological replacement*; that knowledge of this interrelation buttresses efforts to thwart social engineering attacks in cyberspace; and that a conceptual array of contemporary connotations of this concept

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