Career Paper: Ethical Hacking and Social Sciences

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Cybersecurity is an interdisciplinary field. A person in the cybersecurity field needs to grasp concepts from almost any other discipline. A cybersecurity professional needs basic knowledge in technical and social fields, like networking, psychology, and criminology to name a few. Ethical hacking is a good example of this versatility. The ethical hacker or white hacker needs a deep understanding of human behavior, as well as technical knowledge. In the following paragraphs we will take a closer look to the ethical hacking field.

Ethical hacking is one of the cybersecurity fields that relies on social sciences the most. They need to understand the principles of science. Some examples are relativism, how humans and technology relate according to the setting. Another example is ethical neutrality, this crucial point is a daily routine for ethical hackers. These examples show how social science is important in the daily routines of ethical hackers.

Another social area that is close to ethical hacking is psychological theories. These theories are divided into four areas, psychodynamic, cognitive, behavioral, and personality theories. Many ethical hackers at one point were black hat hackers or the "bad guys." These individuals were at some point influenced by situations that presented themselves in their early lives. These behaviors are explained by psychodynamic theory of Sigmund Freud. These black hackers change course by an event or decision and become part of the white hacker crowd.

The cognitive theory is one that white hackers use to try and understand motivations. The neutralization theory explains how an individual knows right from wrong but justifies their behavior. Psychodynamic theory is closely tied to behavioral theory, which suggests learned behavior. An ethical hacker needs to do a bit of detective work to understand the environment of their target to effectively do their job. Lastly, personality theories, which classify ethical hacking under the agreeableness personality. This classification is described as cooperative, behaving in an unselfish manner. An ethical hacker works on the right side of the law to help organizations and individuals in cyberspace.

One social technique the white hacker has is the ability to engage in social engineering or human hacking. This technique requires a certain degree of manipulation that can be uncomfortable for a white hacker because they have a keen sense of ethics (Jain, 2023). The key difference between a white hat and black hat hacker is consent. Consent is understood as a critical component, as a necessary but not sufficient condition, for moral uprightness of white hat hacking (Hartfield, 2019). This difference is what separates the good guys from the bad.

Ethical hacking and most others STEM fields are mostly dominated by males. Women have a more difficult path to achieve breakthroughs in this field but bringing more genders and backgrounds into this field is important because hackers can be good team players and different points of view help solve problems faster and more efficiently.

Ethical hackers are needed to help secure many areas of technology that are lacking right now. Their daily routines consist of searching for vulnerabilities in the technology and in the users end (Kranz et al. 2021). Their ability to find vulnerabilities and flaws in the systems are vital to security and society. Bug Bounty programs are on the rise because these experts help save millions of dollars in breaches and provide a vital role (Ethical Hackers, 2019). We are here to stay

and help society close the gap between cybercrime, which is rampant, and cybersecurity, which is needed.

References

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