

Cyber Security Career Paper: Digital Forensics and Social Science

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Introduction

Digital forensic analysts play an important role in finding digital evidence and criminals. They rely on technology to do their jobs but they also depend on social science research and principles to understand human behavior, motivation, and the social impact. Knowing why someone commits a cybercrime, can help investigators solve and predict cases. It also helps them make better decisions when dealing with sensitive cases. This is especially important when working with marginalized groups, who are often targeted online, communities such as the LGBTQ+. Digital forensic professionals must be able to think about the social sides of each case, not just the technical side. This paper will explore how social science connects to the daily work of digital forensics.

How Digital Forensics Depends on Social Science

Digital forensic professionals rely on social science to better understand the behavior and decision making of people involved in cybercrimes. This research helps explain why individuals commit certain crimes and what motivates them. This allows investigators to look beyond the surface and understand the deeper reasons. The types of motivations a criminal can have were discussed during module 5 “Applying Psychological Principles of Cyber Offending, Victimization, and Professionals”. This includes entertainment, politics, revenge, boredom, recognition, money and for multiple reasons.

For example if someone from LGBTQ+ community was a victim of a cyber crime, finding the motive can help find the attacker. Members of the LGBTQ + community are among the most vulnerable populations, as cybercriminals frequently target them due to their perceived vulnerability and marginalised status (Abreu & Kenny, 2017). Without this understanding, digital

forensic analysts might overlook details or misjudge situations. Social science helps digital forensics professionals see the full picture, not just the digital trail.

Marginalized Groups in Digital Forensics

Digital forensics professionals often work with victims from marginalized groups who are affected by online crimes such as harassment, scams, identity theft, and exploitation. Abreu and Kenny (2017) found that these victims may belong to communities that had been historically discriminated against or were treated unfairly, for example the LGBTQ+ community. Social science principles help digital forensic experts approach these cases with better understanding of these marginalized groups. Investigators must also consider that victims from certain communities may be less likely to report cybercrimes due to shame, or previous negative experiences with authorities. By applying social science concepts to marginalization and social dynamics, digital forensics professionals can build stronger trust with victims. This approach leads to more accurate results and a justice system that everyone can trust.

Cognitive theory and Digital forensic

Cognitive theory plays an important role in helping digital forensic professionals understand how offenders think and why they make certain choices. This theory focuses on how people perceive, interpret, and process information, which directly affects their behavior. In cybercrime, offenders often rely on biased beliefs to justify their actions. For example, a hacker might convince themselves that stealing information is harmless because the victim is a large corporation. Digital forensics professionals use this understanding to interpret digital behavior and recognize the psychological reasoning behind it. By applying the cognitive theory, investigators can identify the warning signs. This helps them not only build stronger cases but also understand the processes behind online criminal activity.

Conclusion

Digital forensics is not only about uncovering digital evidence. It's about understanding human behaviors, social dynamics, and ethical challenges. Professionals in this field depend on social science research too interpret criminal behavior and communicate effectively with victims. Cognitive theory offers valuable tools for analyzing how offenders think, justify their actions, and perceive consequences. Also a deeper awareness of how cybercrime impacts marginalized groups allows investigators to approach their work more efficiently.. By integrating social science into daily practice, digital forensic professionals are better equipped to serve both justice and society as a whole.

References

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