

Computer Criminal Taxonomy: A Critical Analysis

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Abstract

Despite the rise in computer related crimes throughout the last decade, there have been only limited empirical attempts to profile computer criminals. In 1995, the FBI developed the Computer Crime Adversarial Matrix (CCAM). Unfortunately, the CCAM is now out of date and full of statistical and methodological problems. This study is a critical analysis of the CCAM model. The findings will be combined with other classification models (Rogers, 2000 & Taylor, 1990) and the results used to develop the foundation for a new computer criminal taxonomy based on better empirical/statistical support.

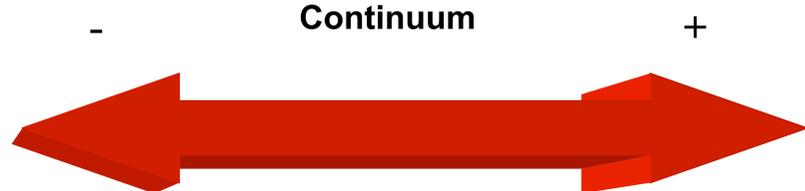
Taylor Taxonomy (1990)

- Characteristics
 - Relatively young (14-25)
 - White males
 - Middle class environment
- Not socially integrated
 - Tend to be loners except when communicating online
 - Tend not to associate with age-peer group
 - Tend not to engage in peer group behavior (e.g. dating school activities)
- Thrill seeking behavior online
- Although smart, hackers tend to be underachievers in school

Rogers Taxonomy (2000)

- Hacking is a generic term
- Need to operationalize
- Most studied low end of the continuum

Hacking Behavior Continuum



Script Kiddies Cyber-punks Hacktivists Thieves Virus Writers Old Guard Professionals Cyber-Terrorists/ Info War

FBI Computer Crime Adversarial Matrix (1995)

- Simple taxonomy based on presumed motivation
 - Crackers - access to the system
 - Computer Criminals - criminal gain
 - Vandals - damage
- 4 categories:
 - Organizational Characteristics
 - Operational Characteristics
 - Behavioral Characteristics
 - Resource Characteristics

BEHAVIORAL CHARACTERISTICS			
CATEGORIES OF OFFENDERS	MOTIVATION	PERSONAL CHARACTERISTICS	POTENTIAL WEAKNESSES
CRACKERS			
Groups	Intellectual challenge; peer group fun; in support of a cause.	Highly intelligent individuals. Counterculture orientation.	Do not consider offenses crimes. Talk freely about actions.
Individuals	Intellectual challenge; problem solving;	Moderately to highly intelligent.	May keep notes and other documentation of actions.
CRIMINALS			
Espionage	Money and a chance to attack the system.	May be crackers operating in groups or as individuals.	Becomes greedy for more information and then becomes careless.
Fraud/Abuse	Money or other personal gain; power.	Same personal characteristics as other fraud offenders.	Becomes greedy and makes mistakes.
VANDALS			
Strangers	Intellectual challenge; money;	Same characteristics as crackers.	May become too brazen and make mistakes.
Users	Revenge against organization; problem solving; money.	Usually has some computer expertise.	May leave audit trail in computer logs.

Discussion

More empirical research is required in order to develop meaningful taxonomies. This would require significantly larger data sets from different cultures. We need to move from stereotyping to better scientific support for our models.

Selected References

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