

# Psychology of Computer Criminals & Insider Crime

CSH5 Chapter 12: "The Psychology of Computer Criminals."  
Q. Campbell & D. M. Kennedy

CSH5 Chapter 13: "The Dangerous Information Technology Insider: Psychological Characteristics and Career Patterns."  
J. M. Post

## Topics

- Hacker Psychology
- Moral Development
- Why Study Perpetrators?
- Social Engineering
- Self-Reported Motivations
- Psychological Perspectives on Computer Crime
- Social Distance, Anonymity, and Aggression
- Individual Differences and Computer Criminals
- Classifications of Computer Criminals
- The Dangerous Insider
- Stress and Attacks on Computer Systems
- Typology of Computer Criminals
- Conclusions & Implications

### CSH5:

Chapter 12: Campbell, Q. & D. M. Kennedy (2009). "The Psychology of Computer Criminals."

Chapter 13: Post, J. M. (2009). "The Dangerous Information Technology Insider: Psychological Characteristics and Career Patterns."

## Why Study Perpetrators?

- Detection
  - Knowing how criminals function (*modus operandi*, "m.o.") helps teach us how to spot attacks
  - E.g., recognize social engineering
- Response
  - Know what to avoid
  - E.g., baiting / insulting hackers
- Investigation
  - Focus on likely patterns
  - E.g., look for boasting in hacker groups

## Why Study Perps (cont'd)

- Prevention
  - Identify and reduce childhood factors likely to twist children into hackers
  - Spot pre-criminal attitudes and behaviors leading to involvement in hacker groups and provide counseling
  - Challenge hacker propaganda
  - Provide attractive alternatives to hacking

## Social Engineering

- Detection
  - Knowing how criminals function (m.o.) helps teach us how to spot attacks
  - E.g., recognize social engineering by providing role-playing games
- Response
  - Know what to avoid
- Investigation
  - Focus on likely patterns
  - E.g., look for boasting in hacker groups

## Self-Reported Motivations

- Paul Taylor's research:
  - Addiction
  - Curiosity
  - Boredom
  - Power
  - Recognition
  - Politics
- Orly Turgeman-Goldschmidt's findings:
  - Curiosity
  - Thrill seeking
  - Need for power
  - Ideological opposition to information restrictions

## Psychological Perspectives on Computer Crime



- Self-reported motivations may be incomplete or inaccurate
- Behavior often controlled by unconscious factors
- So beware facile explanations and generalizations about criminal hacking



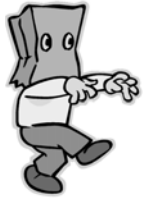
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## Social Distance, Anonymity, and Aggression



- Many criminal hacking activities are aggressive
  - ❑ Likelihood increases when perpetrators can remain anonymous and
  - ❑ When likelihood of retaliation low
- Milgram's landmark work on depersonalized obedience showed how powerful deindividuation could be in fostering unethical, immoral or illegal behavior
- Bandura showed that criminals justify their acts by minimizing their significance and blaming their victims
  - ❑ Thus some hackers blame people they hack



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## Individual Differences and Computer Criminals



- DSM IV suggests possibility that *some* computer criminals have personality disorders (PD)
- Antisocial PD
  - ❑ Insincerity, dishonesty
  - ❑ Superficial charm, enhanced intellect
  - ❑ Require little or no reward
  - ❑ Ignore threats of punishment
  - ❑ Self-justification, blaming victims
- **NOT A UNIVERSAL DIAGNOSIS – JUST THAT SOME OF THE CRIMINALS MAY FIT PROFILE**



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## More About Personality Disorders



- Narcissistic PD
  - ❑ Attention seekers
  - ❑ Inflated sense of entitlement
  - ❑ Lack of empathy for victims
  - ❑ Rationalization to justify behavior
- **AGAIN: NOT A UNIVERSAL DIAGNOSIS – JUST THAT SOME OF THE CRIMINALS MAY FIT PROFILE**



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## Asperger's Syndrome



- Mild form autism
- Reduced social relations and skills
  - ❑ Low affect,
  - ❑ Reduced interest in interaction, awkward interactions
  - ❑ Prone to repetitive, intense interests & behaviors
  - ❑ Obsessive or extremely focused area of intellectual interest
- **NO EMPIRICAL EVIDENCE LINKING CRIMINAL HACKING TO ASPERGER SYNDROME**
  - ❑ Most Asperger victims extremely honest
  - ❑ Asperger may be higher in computer enthusiasts than in general population



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## Computer Addiction and Computer Crime



- Some computer criminals may have behaviors akin to addiction
  - ❑ Concentration on computer use
  - ❑ Mood dependence on usage / hacking
  - ❑ Increased dependence over time
  - ❑ Withdrawal effects upon deprivation
  - ❑ Conflict over habits
  - ❑ Relapse when attempting to stop
- Some computer criminals report intense feelings (“rush”) when engaging in criminal hacking – and depression when stopped



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## Ethics and Computer Crime

- Some researchers suggest computer criminals have underdeveloped moral maturity
- “Information Wants to be Free”
- Deviant attitudes toward unauthorized use of computing / network resources
- Justifications of intellectual-property theft highly deviant if applied to physical property
- Blaming victim commonplace
- Frequently unaware of consequences of actions
- May see actions as entertainment in a playground: deny existence of real victims or real effects

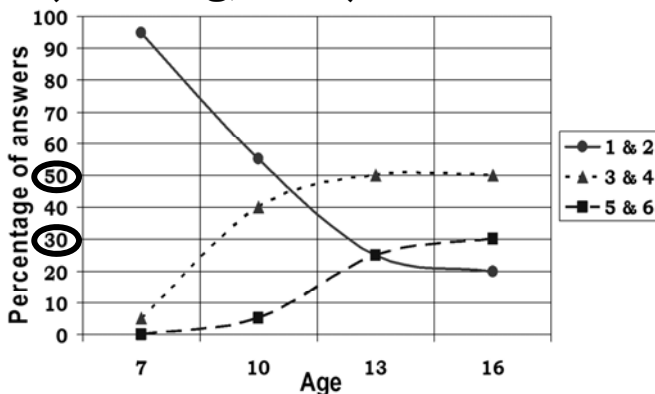


## Moral Development

Kohlberg's Stages of Moral Reasoning

Stage of moral reasoning	Level	Moral behavior perceived as that which ...
Preconventional	Level 1	Avoids punishment
	Level 2	Gains reward
Conventional	Level 3	Gains approval and avoids disapproval of others
	Level 4	Is defined by rigid codes of "law and order"
Postconventional	Level 5	Is defined by a social contract generally agreed upon for the public good
	Level 6	Is based on abstract ethical principles that determine one's own moral code

## Moral Reasoning By Age (Kohlberg, 1963)



## Classifications of Computer Criminals

- Many different frameworks used over years
  - Novices / Students / Tourists / Crashers / Thieves
  - Lamers / Neophytes / Elite
  - Pranksters / Hacksters / Malicious Hackers / Personal Problem Solvers / Career Criminals / Extreme Advocates / Malcontents, Addicts & Irrational Individuals
- Roger' New Taxonomy
  - Newbie / Cyber-punk / Internals / Coders / Old Guard / Professional Criminals
- Class Apart: Virus Creators

## The Dangerous Insider

- Predominantly introverts
  - More interested in ideas than in social relationships
  - Internalize stress
  - Express themselves online
- Research by Dr Jerrold Post on computer technology insiders
  - Reviewed > 100 cases computer crime
  - Interviewed many security professionals
  - Results follow on next slides



## Characteristics of Dangerous Computer IT Insiders

- Social & Personal Frustrations
- Computer Dependency
- Ethical Flexibility
- Reduced Loyalty
- Entitlement
- Lack of Empathy



## Social & Personal Frustrations



- History of frustrations in relationships
  - Personal
  - With coworkers
- Prefer predictability & structure of work
  - Like computers
- Propensity for anger toward authorities
- Some display *revenge syndrome*
  - Getting even for perceived injury
  - May have chosen computer work with explicit or implicit intention of striking back at unfair society



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## Computer Dependency



- Unusual emphasis on computer-mediated activity
- May replace face-to-face interactions by virtual-world contacts
- May use online persona as mechanism for
  - Influence
  - Manipulation
  - Recruitment
- May become so involved in computer work as to be classified as addicted



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## Ethical Flexibility



- *Small proportion* (<10%) approve of illegal acts
  - Criminal hacking
  - Sabotage
  - Espionage
- Believe that
  - Inadequate security fully justifies penetration, unauthorized exploitation
  - Computers = toys
  - Data not real
  - Consequences not serious



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## Reduced Loyalty



- Little sense of long-term involvement
  - High turnover in field
  - Sense of being peons rather than collaborators
  - Ties into sense of entitlement (see next slide)
- Loyalty more towards peers
  - IT professionals
  - Non-criminal hackers
  - Criminal hackers



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## Entitlement



- Feeling of being special
- Entitled to corresponding
  - Recognition
  - Privileges
  - Exceptions
- Fragile egos
  - Easily offended
- Prone to anger
  - Enraged by failure to recognize them as special
  - Seek revenge for slights



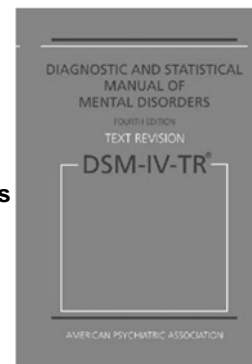
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## Lack of Empathy



- Little or no regard for effects of their actions on others
- Incapable of recognizing consequences of their actions
- Overall, the entire set of observations fit two related personality disorders:
  - Avoidant/schizoid
  - Antisocial/narcissistic/paranoid



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## Stress and Attacks on Computer Systems



- Course of insider computer crime shows gradual increase in severity of incidents
- Starts with minor infraction
  - ❑ Often overlooked
  - ❑ Fear of upsetting valuable employee
  - ❑ But intervention could prevent slide into further infractions
- Moderate infraction is next
  - ❑ Again, often not dealt with by management
  - ❑ Should take appropriate action
    - ✓ Suspension or termination of employment



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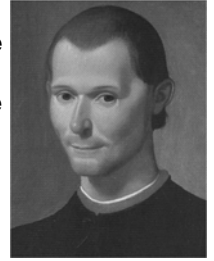
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## Typology of Computer Criminals



See *CSH5* §13.6 for full detail; only a few types discussed here.

- Machiavellians
  - ❑ Hack to advance careers
  - ❑ Frame rivals or superiors to rise in status
  - ❑ E.g., consultants who plant time bombs; one case where specialist caused problems in systems around world to get free travel to exotic locations
- Proprietors
  - ❑ Feel that they own the systems they work on
  - ❑ Sequester information to maintain power



Niccolò Machiavelli  
(1469-1527)  
Image from Wikipedia

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## Conclusions & Implications



- Use effective hiring practices
  - ❑ See *CSH5* Chapter 45 on “Employment Practices and Policies”
  - ❑ Background checks
- Effective monitoring & detection systems
- Provide *online* support services as part of Employee Assistance Program
- Formal termination procedures
- Include human factors in IT security audits



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# DISCUSSION



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