Social Engineering & Physical Security

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Goals for Today

- Social Engineering
- Physical Security
Social Engineering
Social Engineering

- Art or science of skillfully maneuvering human beings to take action in some aspect of their lives
  - From *Social Engineering: The Art of Human Hacking* by Christopher Hadnagy
  - (Also see: *The Art of Deception: Controlling the Human Element of Security* by Kevin Mitnick and William Simon)

- Used by
  - Hackers
  - Penetration testers
  - Spies
  - Identity thieves
  - Disgruntled employees
  - Scam artists
  - Executive recruiters
  - Salespeople
  - Governments
  - Doctors, psychologists, and lawyers
“No information is irrelevant”

Example:

- Know that company executive collects stamps (see forum post related to stamp collecting)
- Call executive, mention recently inherited a stamp collection
- Send follow-up email, with a link (behind which is malware)
- Information used: email address, phone number, information about interest in stamps
Information to Collect

About a company
- The company itself
- Procedures within the company (e.g., procedures for breaks)

About individuals
Elicitation

- To bring or draw out, or to arrive at a conclusion by logic. Alternately, it is defined as a stimulation that calls up a particular class of behaviors
  - Being able to use elicitation means you can fashion questions that draw people out and stimulate them to take a path of behavior you want.
  - (From Social Engineering: The Art of Human Hacking by Christopher Hadnagy)
- NSA definition: “the subtle extraction of information during an apparently normal and innocent conversation.”
Why Elicitation Works

- Most people have the desire to be polite, especially to strangers
- Professionals want to appear well informed and intelligent
- If people are praised, they will often talk more and divulge more.
- Most people would not lie for the sake of lying
- Most people respond kindly to people who appear concerned about them.
Example

- Them: I’m the CEO...
- You: Wow, you’re the person with the big bucks.... What do you do?

- Them: We make X, Y and ..
- You: Oh, you’re the company that makes Z. I *love* Z! I read that it reached record sales
- Them: Yeah, did you know ...

- ....
- You: You know, this is an odd question, but my boss asked me to look into new RFID security systems for our doors. I suspect you might know something about that, given your position...
Strategies

- Appeal to Someone’s Ego
- Express a Mutual Interest
- Make a Deliberately False Statement
- Volunteer Information
- Assume Knowledge
- Use the Effect of Alcohol
Pretexting

- The background story, dress, grooming, personality, and attitude that make up the character you will be. Everything you would imagine that person to be.
  - Another definition: creating an invented scenario to persuade a targeted victim to release information or perform some action.
  - (From Social Engineering: The Art of Human Hacking by Christopher Hadnagy)
Principles and Planning

- The more research you do, the better chance of success
- Involving your own personal interests will increase success
- Practice dialects or expressions
- Phone can be easier than in person
- The simpler the pretext, the better the chance of success
- The pretext should appear spontaneous
- Provide a logical conclusion or follow-through for the target
Now on to physical security

◆ Relate physical security to computer security
  • Locks, safes, etc

◆ Why?
  • More similar than you might think!!
  • Lots to learn:
    – Computer security issues are often very abstract; hard to relate to
    – But physical security issues are often easier to understand
  • Hypothesis:
    – Thinking about the “physical world” in new (security) ways will help you further develop the “security mindset”
    – You can then apply this mindset to computer systems, ...
  • Plus, communities can learn from each other
The following slides will not be online

But if you’re interested in the subject, we recommend

- Blaze, “Cryptology and Physical Security: Rights Amplification in Master-Keyed Mechanical Locks”
- Blaze, “Safecracking for the Computer Scientist”
- Tool, “Guide to Lock Picking”
- Tobias, “Opening Locks by Bumping in Five Seconds or Less”