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# The Other Insiders

Exploring the Coercion Trade-Off in Systems using Multi-Person Control

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# About Me

- Kelsey Applegate from the ~~fishbowl~~ <sup>icebox</sup>
  - Branson, MO
  - Senior year at USAFA
  - CS-02 “Delta Tau Deuce”
  - Behavioral Science
  - Interning with 8118
  - ESET instructor
  - Intel?



# Heist Study

- Brink's-Mat Heist
  - November 1983, Heathrow
  - Outer doors – 2 keys
  - Inner doors – 2 combos
  - Coerced two guards
  - £26 million worth of gold bullion
- Northern Bank Heist
  - December 2004, Belfast
  - Coerced two keyholders
  - Threatened their families
  - £1.2 million in cash

Defeated Two-  
Person Systems  
Coerced Insiders

# Research Hypothesis

- Research process
  - Literature review
  - Survey
- Big picture considerations
  - Two-person control may create a competing effect

## Hypothesis

Security Against Insider Threat



as

Distribution



Security Against Coercion Threat



as

Distribution



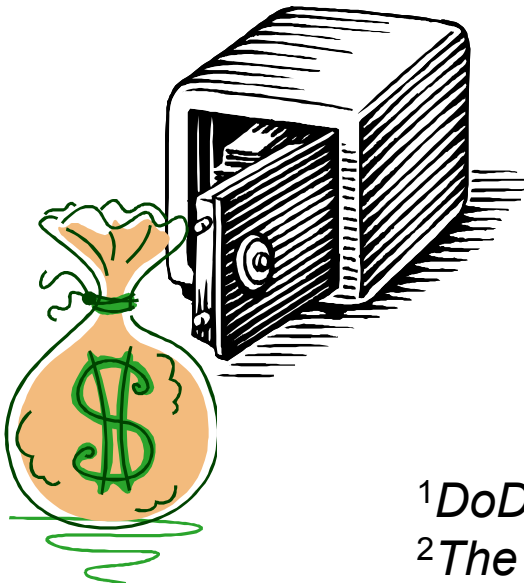
# Starting Point



# Insider Threat – One-Person Control



- Insiders abuse authorized access<sup>1</sup>
  - “Theft, sabotage, or other malevolent human attacks”<sup>2</sup>
  - Unauthorized use



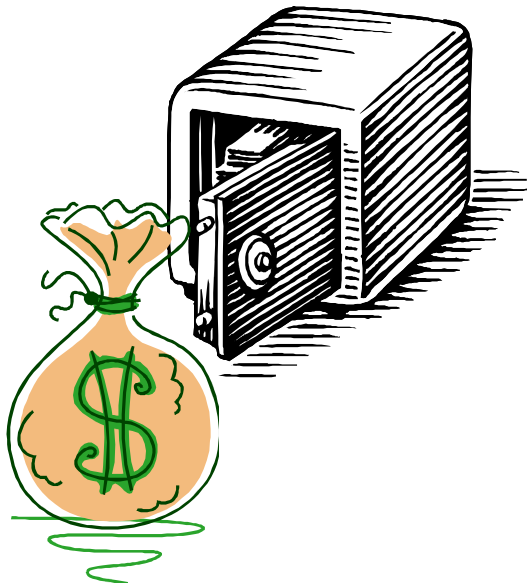
<sup>1</sup>*DoD Insider Threat IPT*

<sup>2</sup>*The Design and Evaluation of Physical Protection Systems*  
(Garcia, 2008)

# Insider Threat – Two-Person Control



- Prevent<sup>1</sup>
  - “inadvertent errors”
  - “malicious activity”



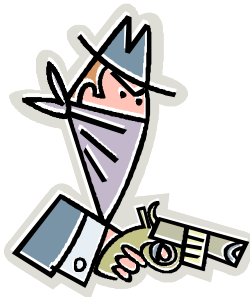
- *Two-person control*- method of distributing security measures to two or more people, where all components must be used to gain access
  - *Assumptions: all sectors, all assets*

<sup>1</sup>*Final Report of the Insider Threat Integrated Process Team, DoD (2000)*

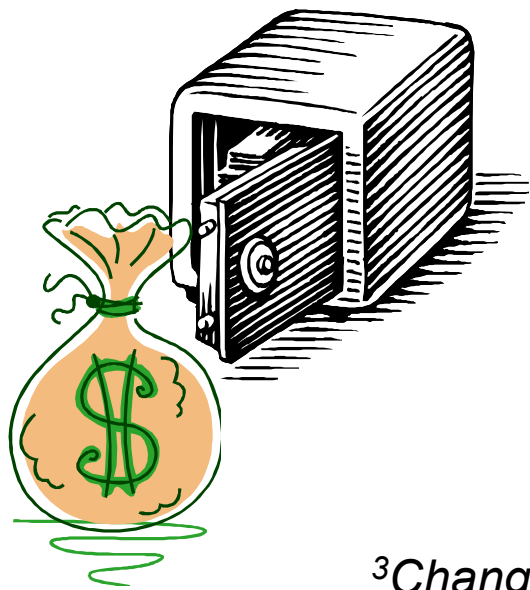
# Coerced Insiders



- Insiders:
  - Planted
  - Recruited
  - Opportunistic
  - Unwitting
  - **Coerced**



- Current trends in physical security against insiders
  - “proactive countermeasures”<sup>3</sup>



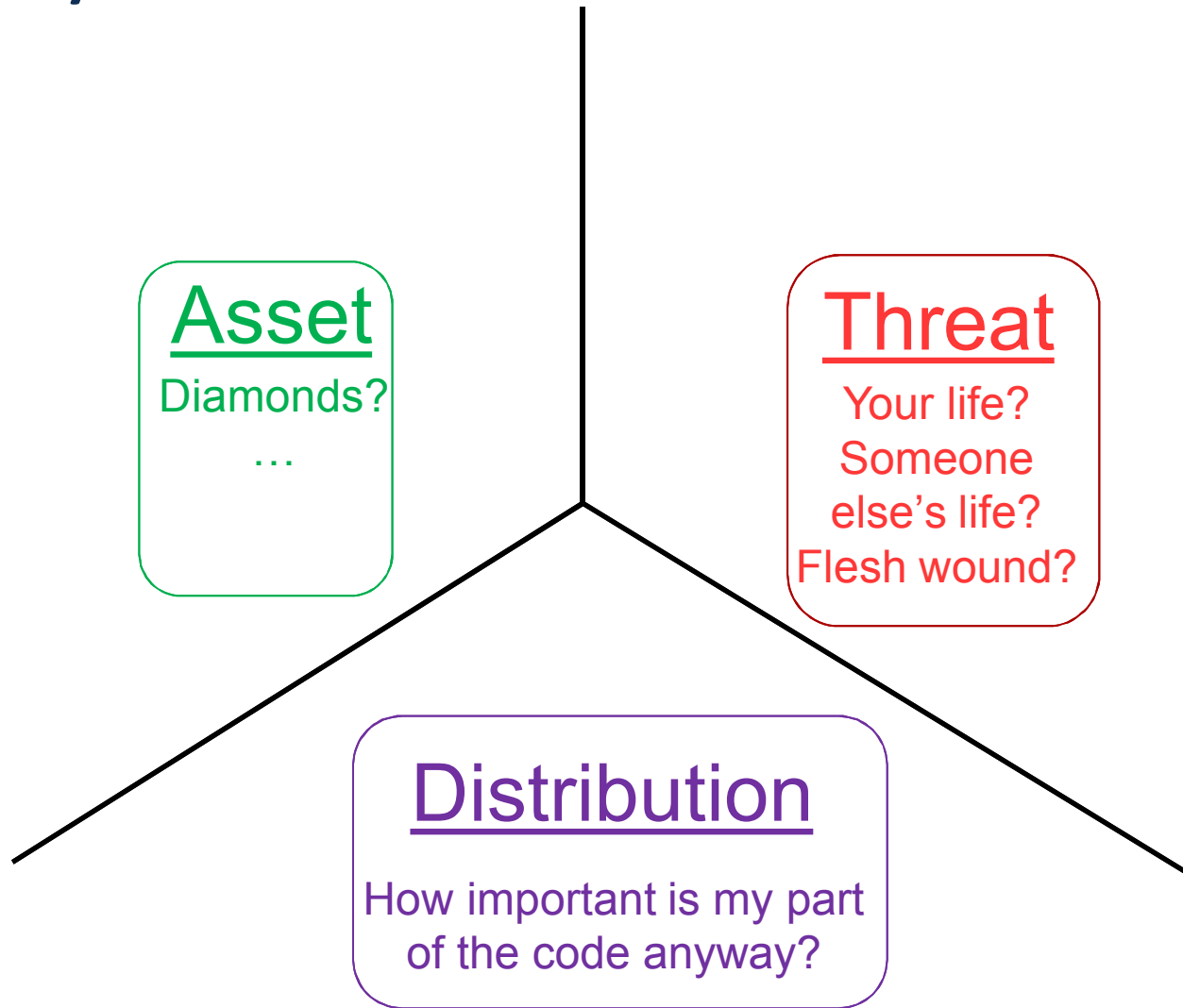
<sup>3</sup>*Changing Security Paradigms* (R. Johnston, 2010)



# Research Design

- Literature review
- Hypothesis: Two-person control may have an unintended effect by increasing vulnerability to coercion threats
  - Greater effect if there are even more divisions
- Survey
  - Test runs
  - Approval process
- Predictions

# Survey – Variables



# Survey – Scenarios

- Degree of Distribution

- 1-Person Control
- 2-Person Control
- 5-Person Control

- Asset

- \$50 million
- ...

- Threat

- Injury
- Life
- Co-worker's life
- Family's lives

# Survey – Scenarios

## Scenarios

**Part 1.** In the first group of scenarios, a system of **one-person control** is used, meaning that **you have the only code needed to access and use an asset**. An assailant is trying to get through to the asset you are protecting. Consider each scenario and respond to the following question:

**Will you provide the code?**

**Situation 1:** You are protecting **\$50 million** in a bank vault.

ONE-PERSON CONTROL

- (a) The assailant is holding a baseball bat and yelling at you. He threatens to injure you if you do not provide the code.
- (b) The assailant has his gun pointed at your head. He threatens to kill you if you do not provide the code.
- (c) The assailant shows you proof that he has your family held hostage, and threatens to kill them if you do not provide the code.
- (d) The assailant threatens to kill a coworker if you do not provide the code.

Definitely not  
Probably not  
Maybe  
Probably  
Definitely

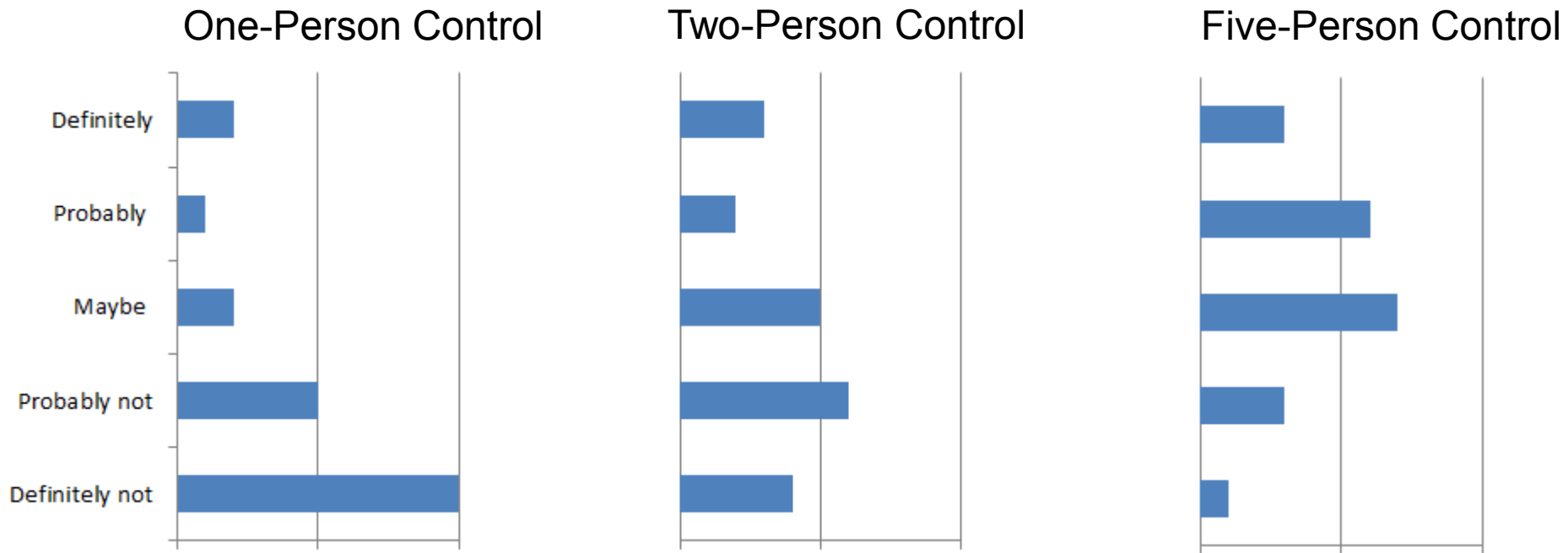
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# Survey – Initial Analysis Framework



# Big Picture – Aggregate Security



# Thanks!

- 8118
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  - Lorraine Sadler
  - Paul Nielan
  - Plus more!
- Staci Dorsey
- New friends

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