

Lessons Learned from 30 Years of Awareness Efforts

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Seminal Hasn't Changed Much...Sigh

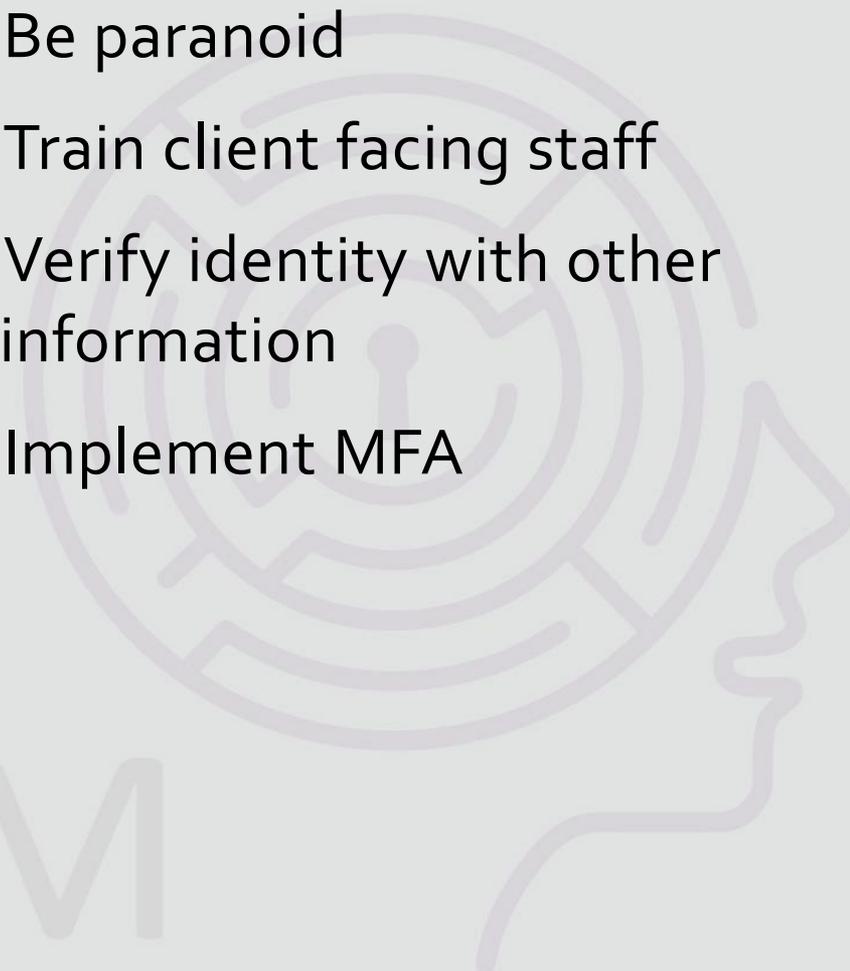
1995 USENIX UNIX Security Symposium

- Do not rely upon common internal identifiers
- Implement call-back procedure for information disclosure
- Implement security awareness program
- Identify direct computer support
- Create a security alert system
- Perform social engineering to test security

2018 Social Engineering Webinar

- Be paranoid
- Train client facing staff
- Verify identity with other information
- Implement MFA

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HOW I BECAME CYNICAL, AND MAYBE AN EXPERT

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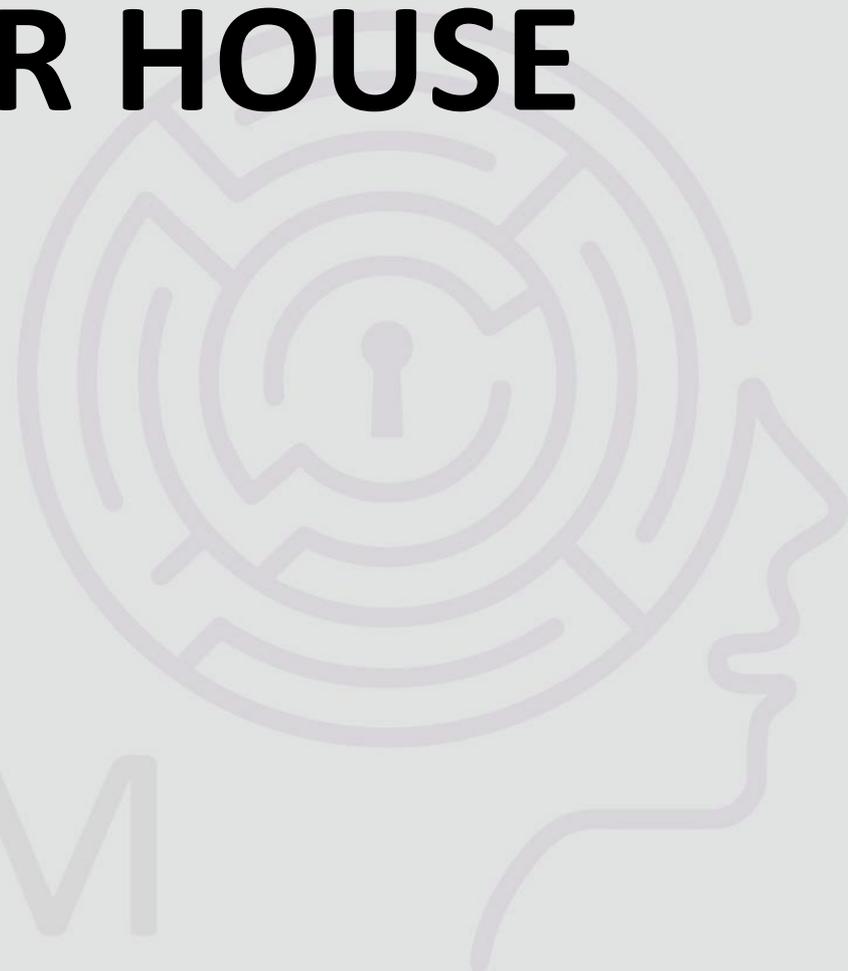
The Good



- There are some really screwed up people there
- Despite a couple disasters, there are relatively few significant security problems
- People do accept security procedures when expected to

THE SACRED COW SLAUGHTER HOUSE

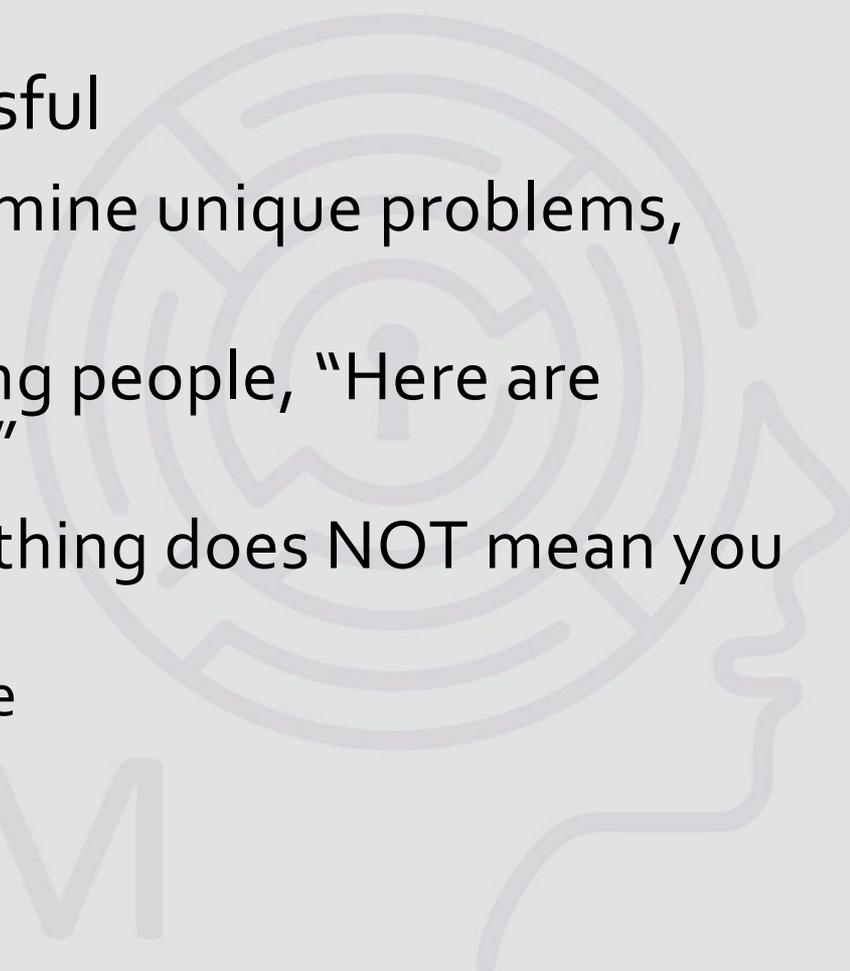
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Social Engineering Doesn't Qualify You as an Awareness Expert

- I know first hand
- Social Engineering is easy
 - Amateurs are easily successful
- Social engineering can determine unique problems, and possibly the scope
- Awareness is more than telling people, "Here are problems; Don't fall for that!"
- Knowing how to break something does NOT mean you know how to fix it
 - It's a completely different science

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Corollary: An NLP Course is Not a Substitute for Real Human Elicitation Training

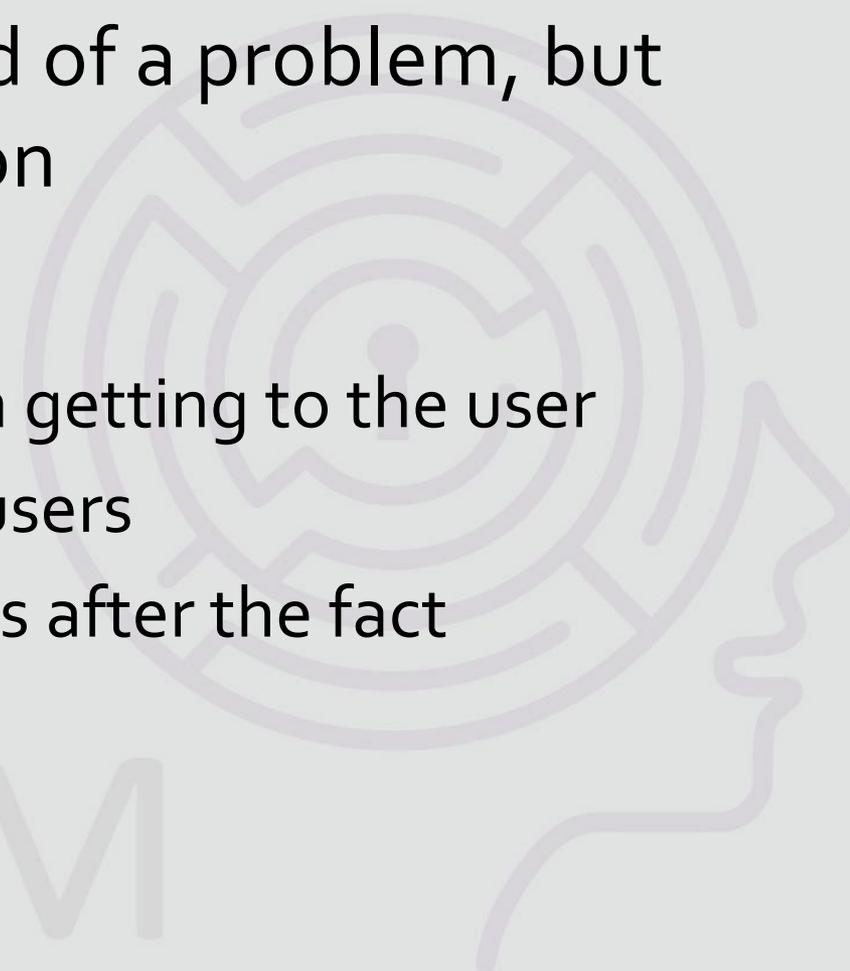


- Good spies seem to have a 6th Sense
- Their lives depend on it
- Intelligence operatives have years of training
- NLP is good background, but not the same
 - Maybe it's usually enough
 - 90% successful with just the nerve
- Give up a password vs Betray country under penalty of torture and death

Yes, You Can Patch Stupid

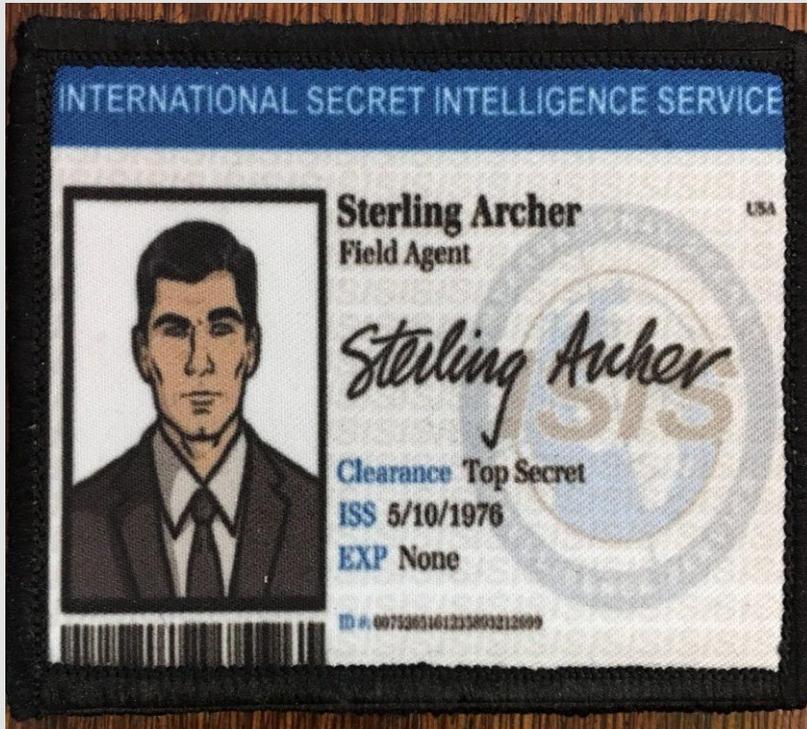
- You better expect users to make mistakes
- Patching is not getting rid of a problem, but implementing a protection
- More later, but...
 - You can prevent attacks from getting to the user
 - Taking decisions away from users
 - Proactively mitigating attacks after the fact

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Weakest Link

(Behind Every Stupid User is a Stupider Security Professional)



- Users are a part of the system you are there to protect
- If you can't secure a critical part of the system, it's your fault
- Calling the user the weakest link abdicates responsibility
- If the user can ruin

Users Are NOT the First (or Last) Line of Defense



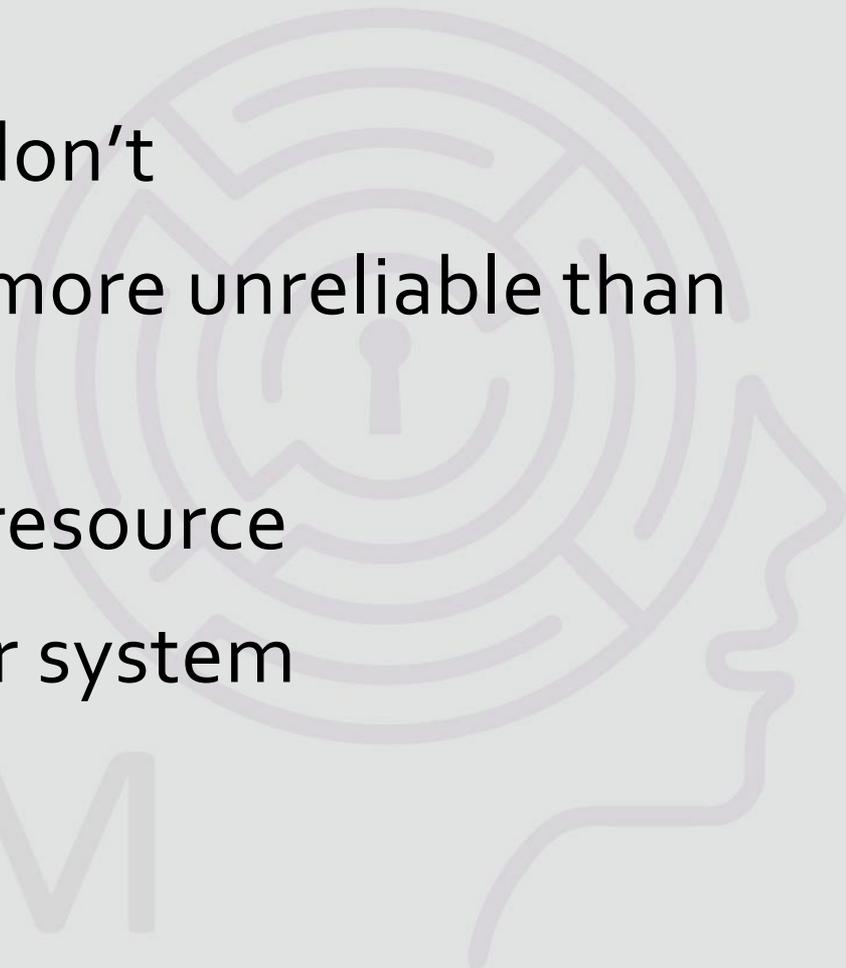
- Grandiose terms about users are as bad as disparaging terms
- The users are part of the system
- They are not a resource to the security team
- They are not the first line of defense
- You facilitate the attacks getting to them
- They are really not a reliable line of defense

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The Human Firewall Sucks

- In the first place, technical firewalls fail miserably
- In the second place, just don't
- A human firewall is even more unreliable than a real one
- Users are again not your resource
- Humans are a part of your system

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Yes, You Can Blame the User

- Well, as long as the user should know what to do
- Not following policies and ruining the network/organization should be punished
- It is literally done with every other business function in an organization
- Remember the NSA contractors who gave Snowden their passwords
- When you have no enforcement, you have no security program

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Stop. Think. Connect. Just. Don't. Do. It.

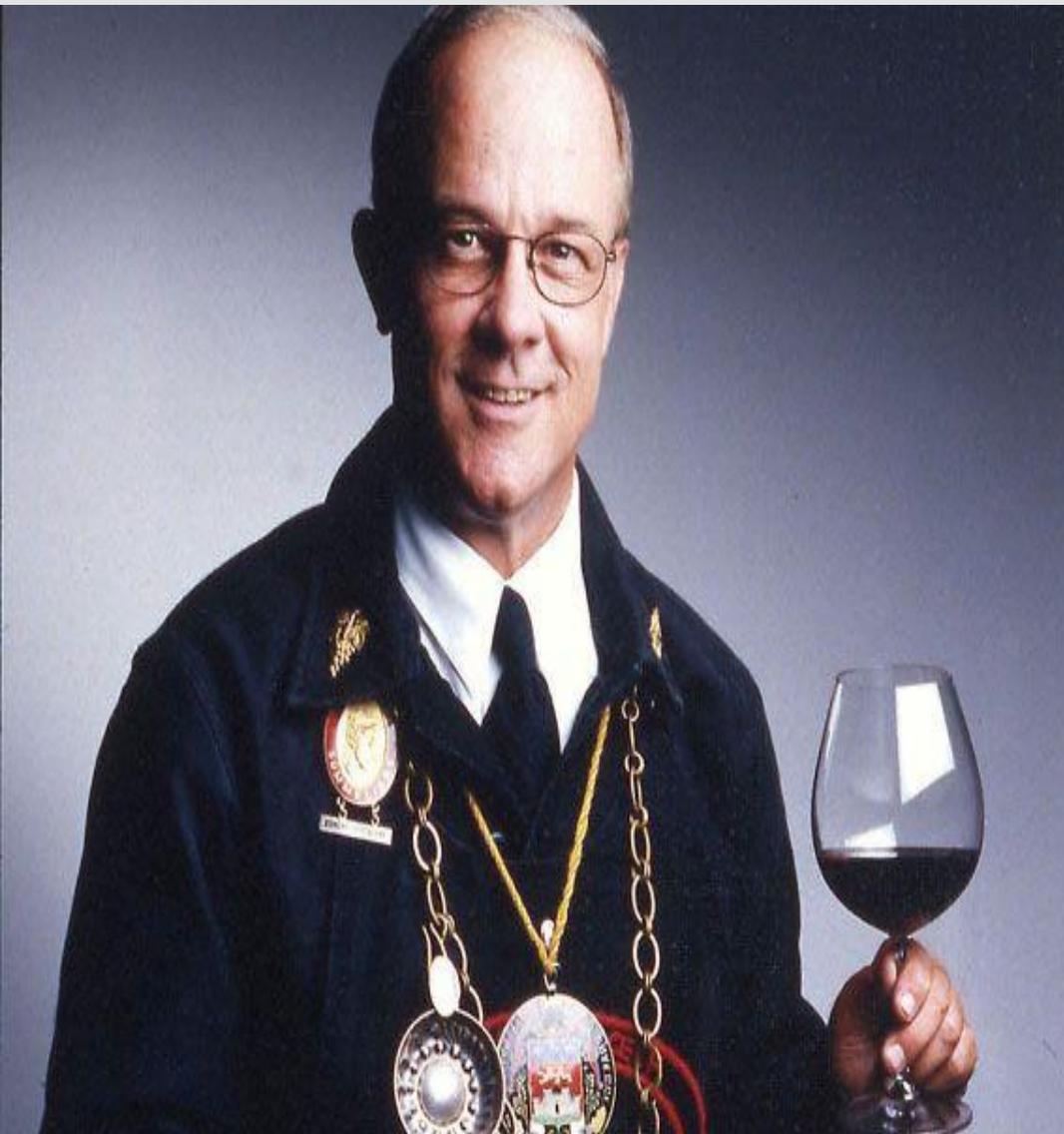


- STC is a popular campaign
- Novices vs Skilled Sociopaths
- It's a losing equation
- Training people to be on the lookout for the Wascally Wabbit

Gamification Does NOT Mean a Game...



Sommelier Vs Grandma



Awareness Programs Should All Over People



Likability is **NOT** a Valid Awareness Metric

- Whether or not people like your training is not a valid measure of effectiveness
- There must be motivation to practice the desired behaviors
- It doesn't matter if people know why they're doing something
- It doesn't matter if it's funny
- They just have to do it

Does it change the behavior?

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Why Awareness?

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Awareness is a Business Function

- Awareness is there to reduce business losses
- If it's just a Check the Box, it doesn't matter
 - You might as well do anything
- The only thing that matters is that you return more investment than the cost of the awareness program



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Security efforts get the budgets
they deserve, not the budgets
that they need

*Learn to deserve
more!*

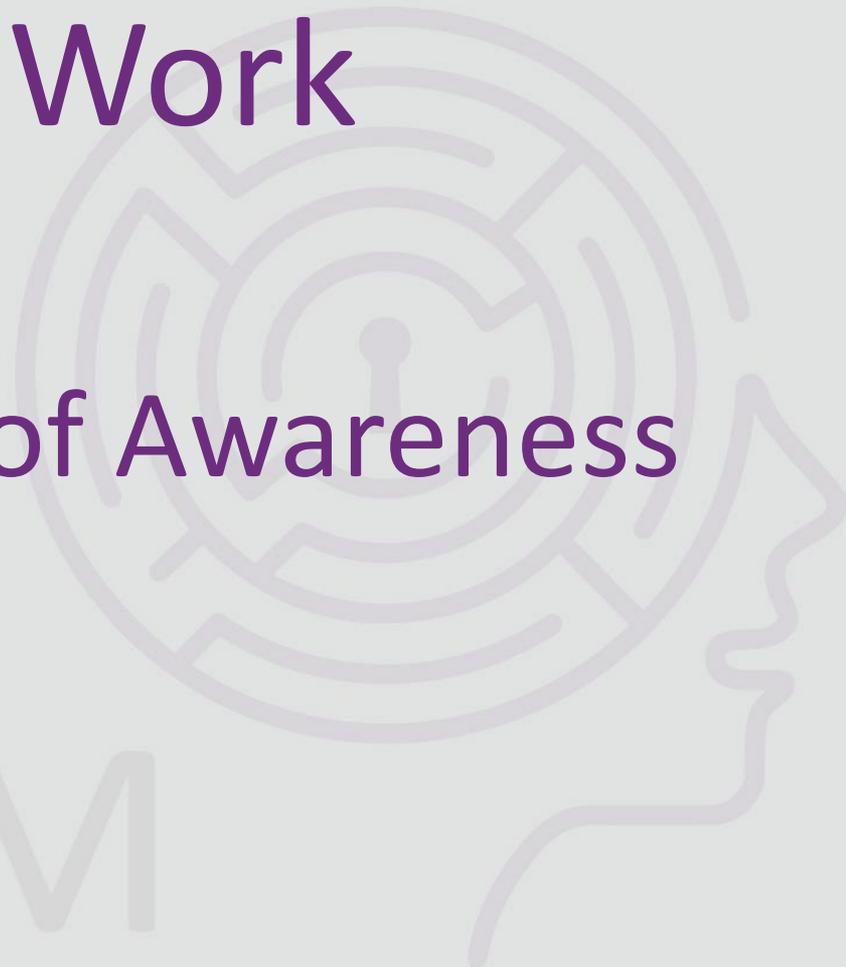
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Sciences That Don't Seem to Work

The Bro-Science of Awareness

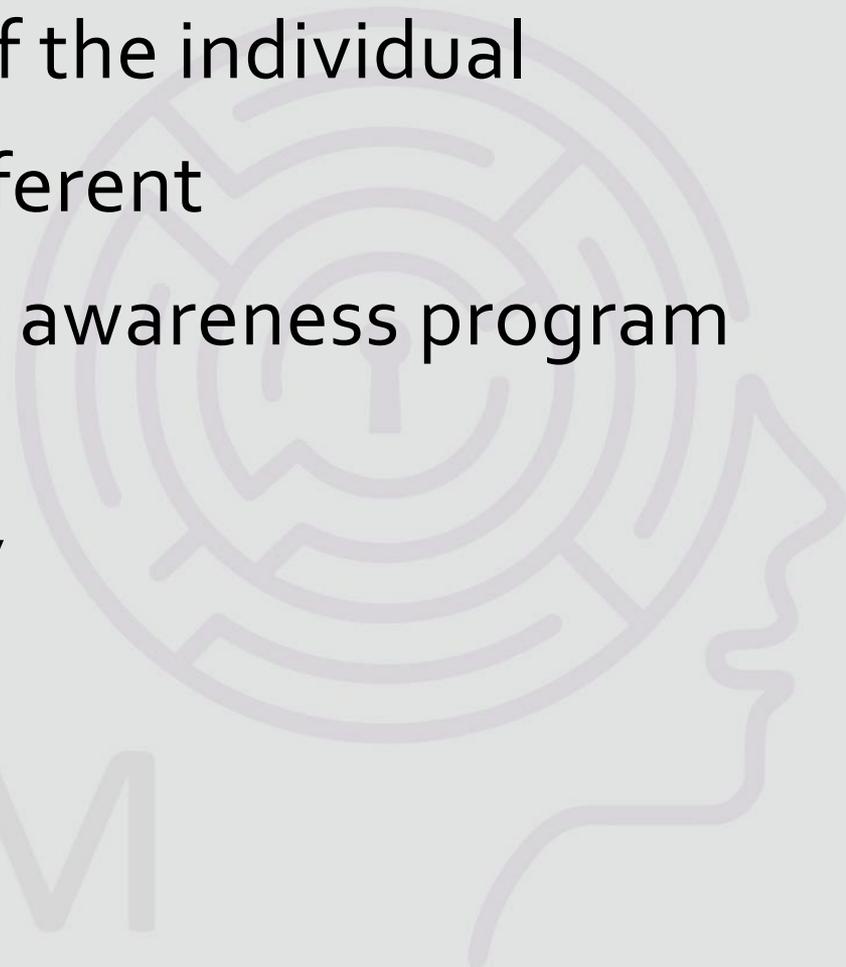
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Psychology

- I realize it's counterintuitive
- Psychology is the study of the individual
- Individuals are mostly different
- You can't have a different awareness program for every person
- It helps, but it is too fluffy

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Neuro-Linguistic Programming (NLP)

- And generally the science of influence
- Fundamentally, it makes Security behaviors a should
- Influence is about how to manipulate an individual
 - You are trying to create behaviors, not convincing people to take a specific action at a given time
- Can try to incorporate it into awareness
- Fundamentally Hacking \neq Security

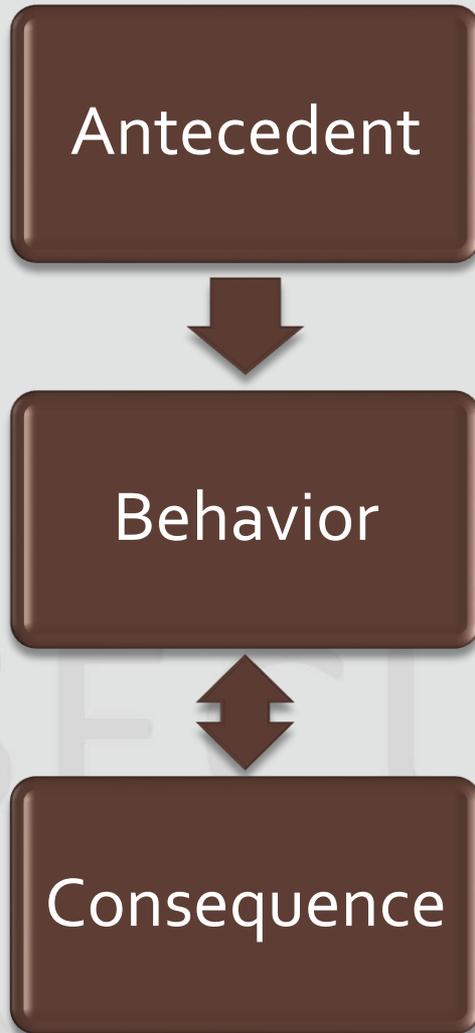
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A Bit of Science That Works

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ABCs of Applied Behavioral Science

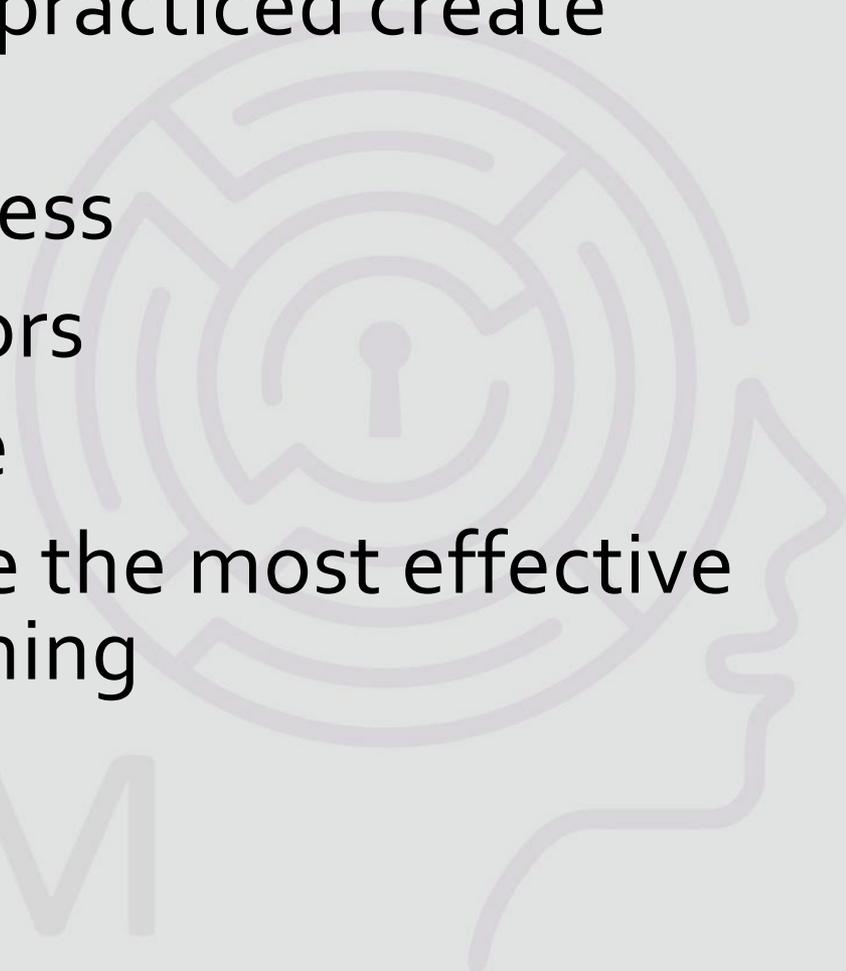


- Antecedent might create up to 20% of behaviors
- Consequences create 80%+ of possible behaviors
- Consequences can be positive, negative, or neutral
- Positive consequences can reinforce bad behaviors and vice versa

ABCs of Awareness

- Awareness creates behaviors
- Behaviors consistently practiced create culture
- Culture creates awareness
- Culture creates behaviors
- Culture is peer pressure
- Peer pressure should be the most effective form of awareness training

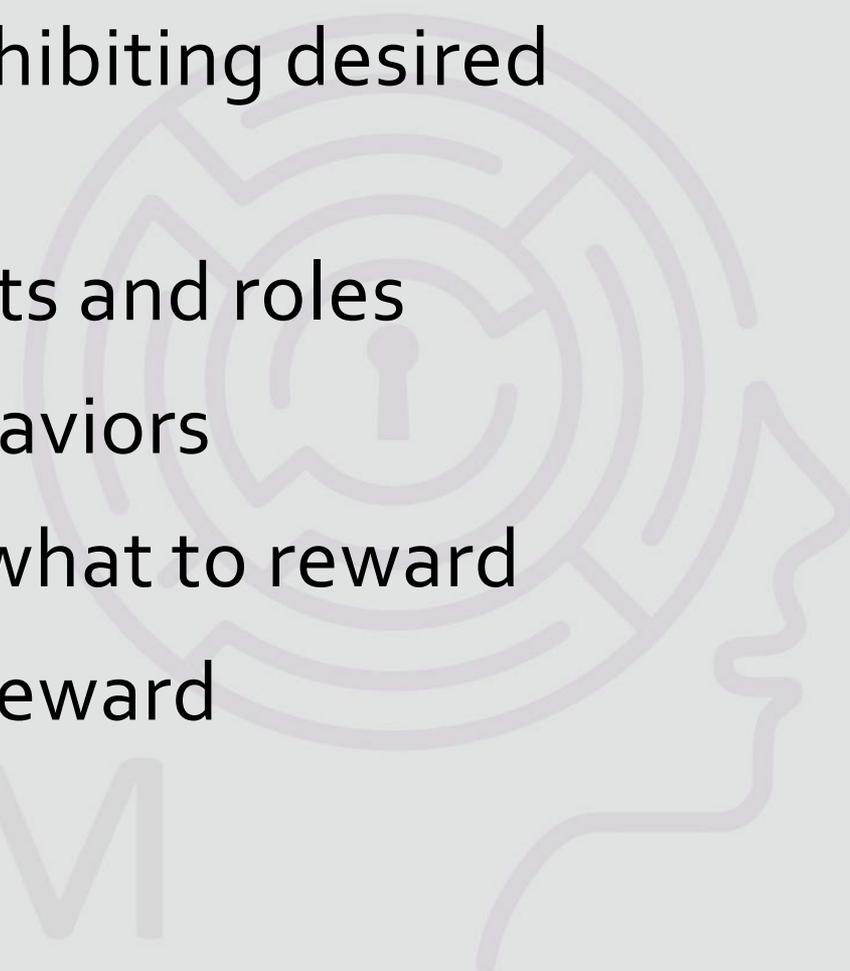
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Gamification

- When implemented properly
- A reward structure for exhibiting desired behaviors
- For the right environments and roles
- Tactically for specific behaviors
- Business drivers tell you what to reward
- Culture tells you how to reward

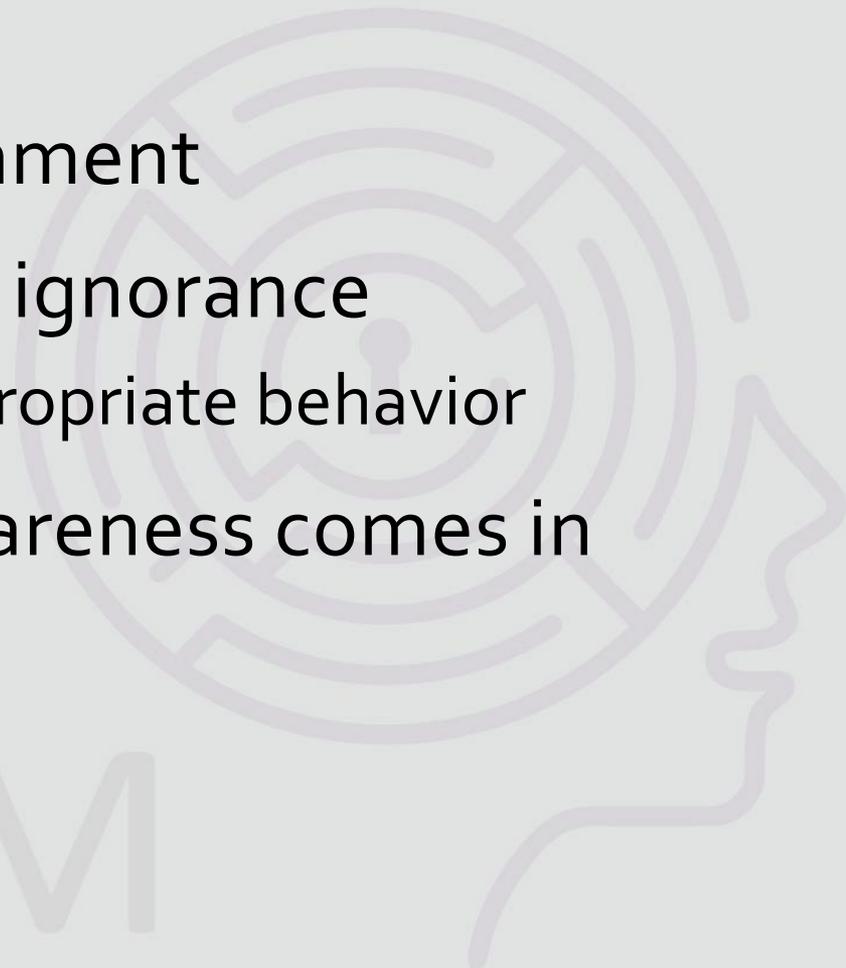
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Safety Science

- Critical financial motivation
 - Injuries cost a lot of money
- 90% injuries from environment
- 10% from carelessness or ignorance
 - Assuming they know the appropriate behavior
- The last 10% is where awareness comes in

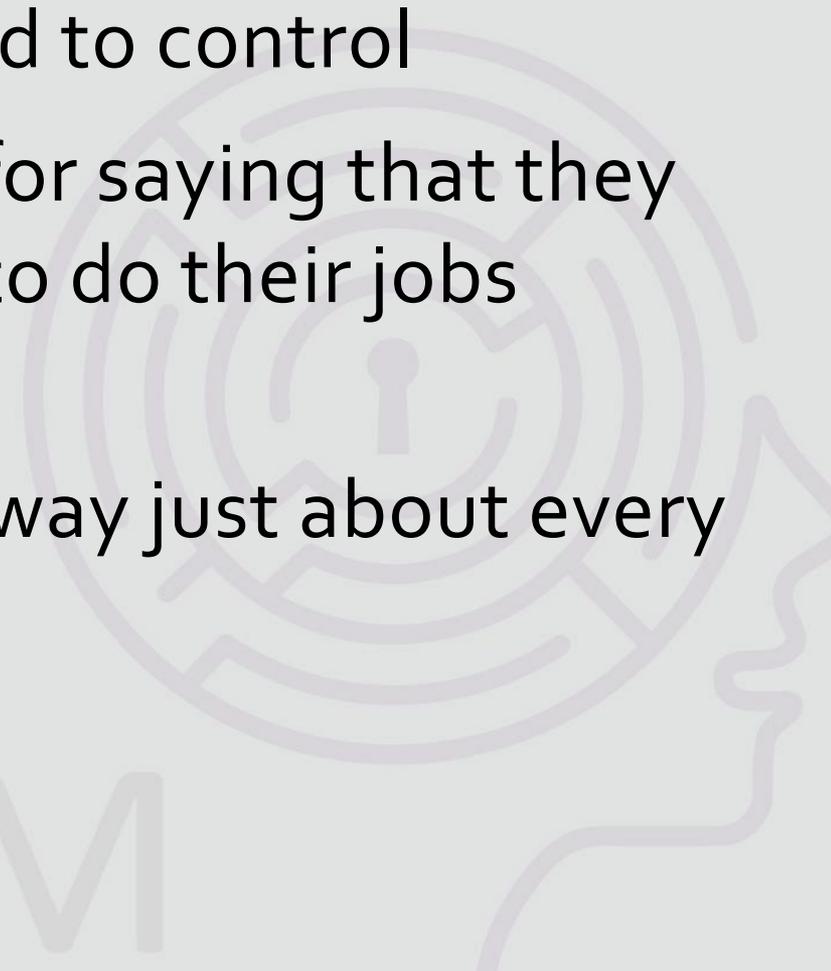
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Just About Every Other Business Function

- The CFO would be fired for saying people-related losses are too hard to control
- The COO would be fired for saying that they can't get the employees to do their jobs properly
- McDonald's automates away just about every employee decision

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What Should an Awareness Program Look Like?

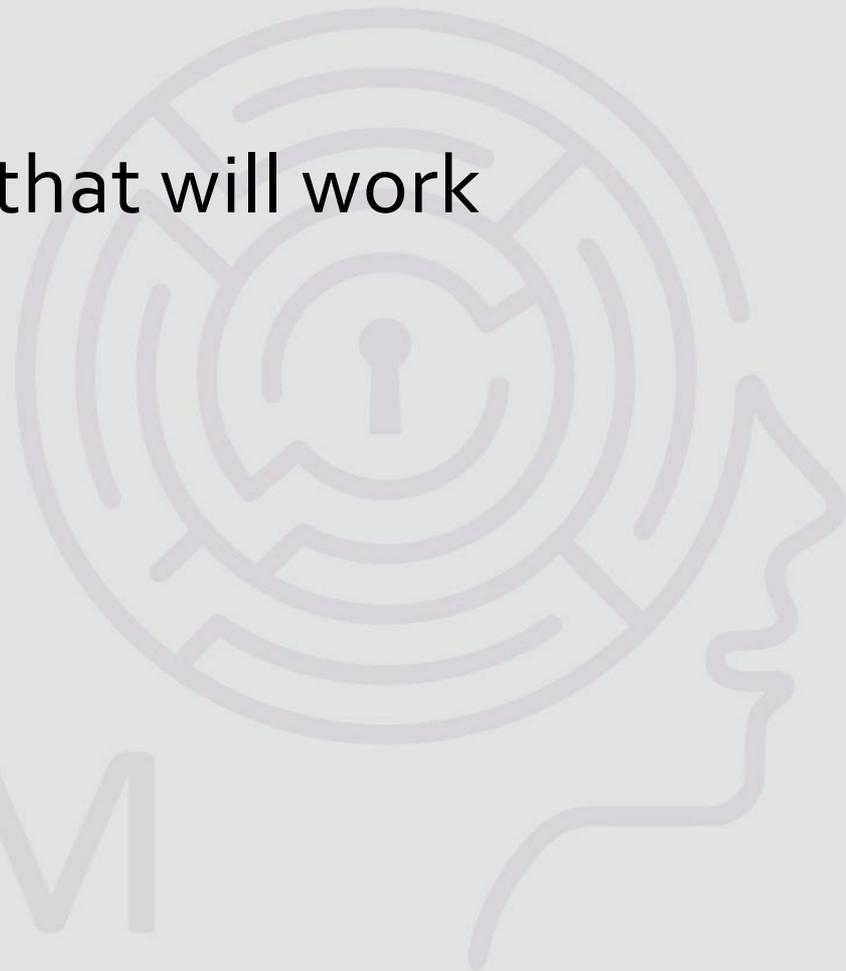
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It's More than Phishing and CBT

- Pervasive
- You are creating a culture
- Any communication tool that will work
 - Speakers
 - Newsletters
 - Coffee cup sleeves
 - Anything

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The Two Basics

- Culture
- Business Drivers

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The Components of an Awareness Program

- Topics driven by business drivers
- Communications tools driven by culture
- Metrics driven by
 - Business drivers to measure what's important
 - Culture to determine what is easy and available to measure

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About Metrics

- Should measure the root behavior
 - Not the symptoms
 - Reports of phishing messages
 - Anti-malware reports
 - Calls to the Help Desk
 - Stopping strangers
- Should be real business practices

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What You Really Need to Do

Create Grandma's
House

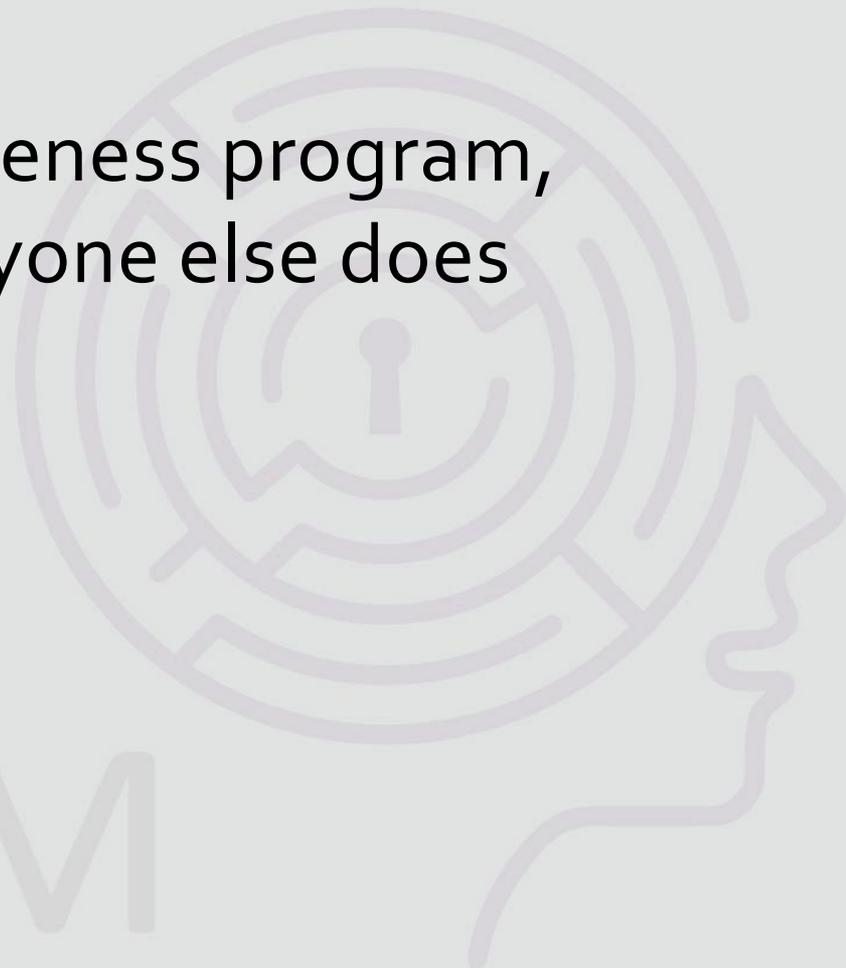
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Culture is the Best Awareness Tool

- When everyone does the right thing everyone will do the right thing
- With or without an awareness program, everyone does what everyone else does

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Address Security Like Every Other Business Process

- Remove decision making process from users
- Governance to determine process specifically
- Technology to implement process
 - Eliminate decisions where possible (passwords, MFA)
- Governance defines behavior
 - Specifies how decisions are to be made
- Exception handling

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Which One Are You Creating?



The Big Question

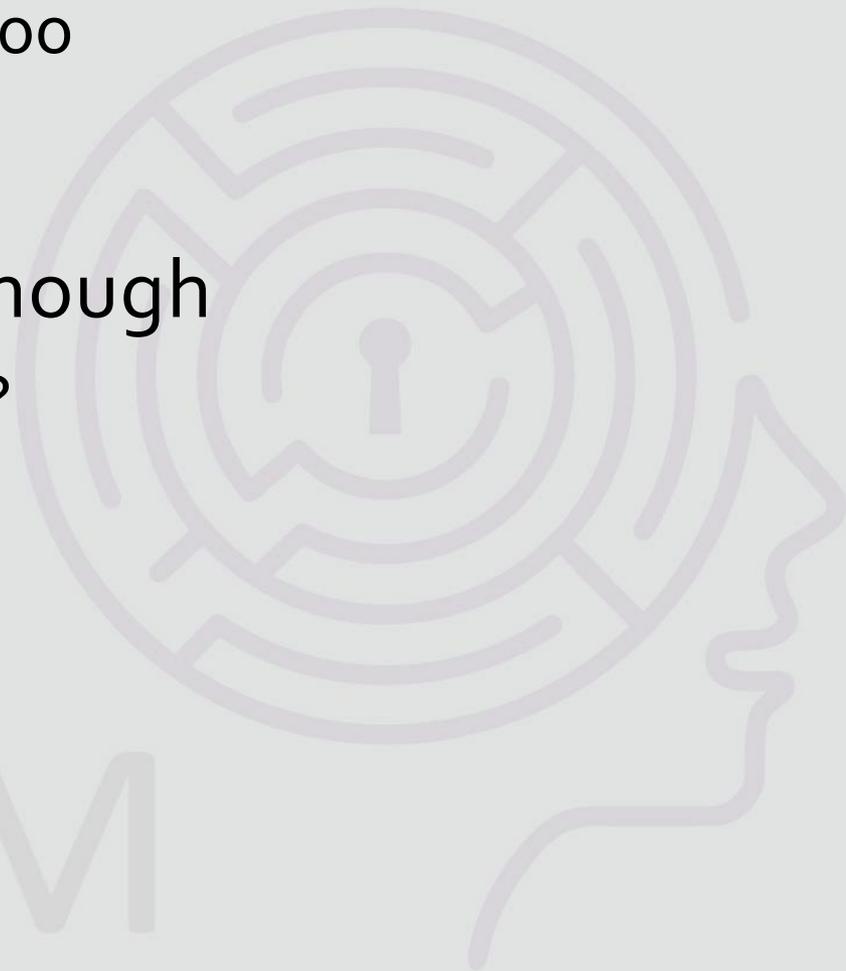
- What Are You Trying To Accomplish?
- An Aware User or Mitigating User Related Losses?

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Awareness is Valuable, But...

- Generally 1 in 20 users will fail
 - That's 50 people for every 1,000
- All it takes is 1
- Risk reduction is critical though
 - Is it better to have 5 in 20 fail?

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...You Need to Reduce Need for Awareness

- Take away need for user action
- Take away the need to Think.
- Define decisions
- Force decisions

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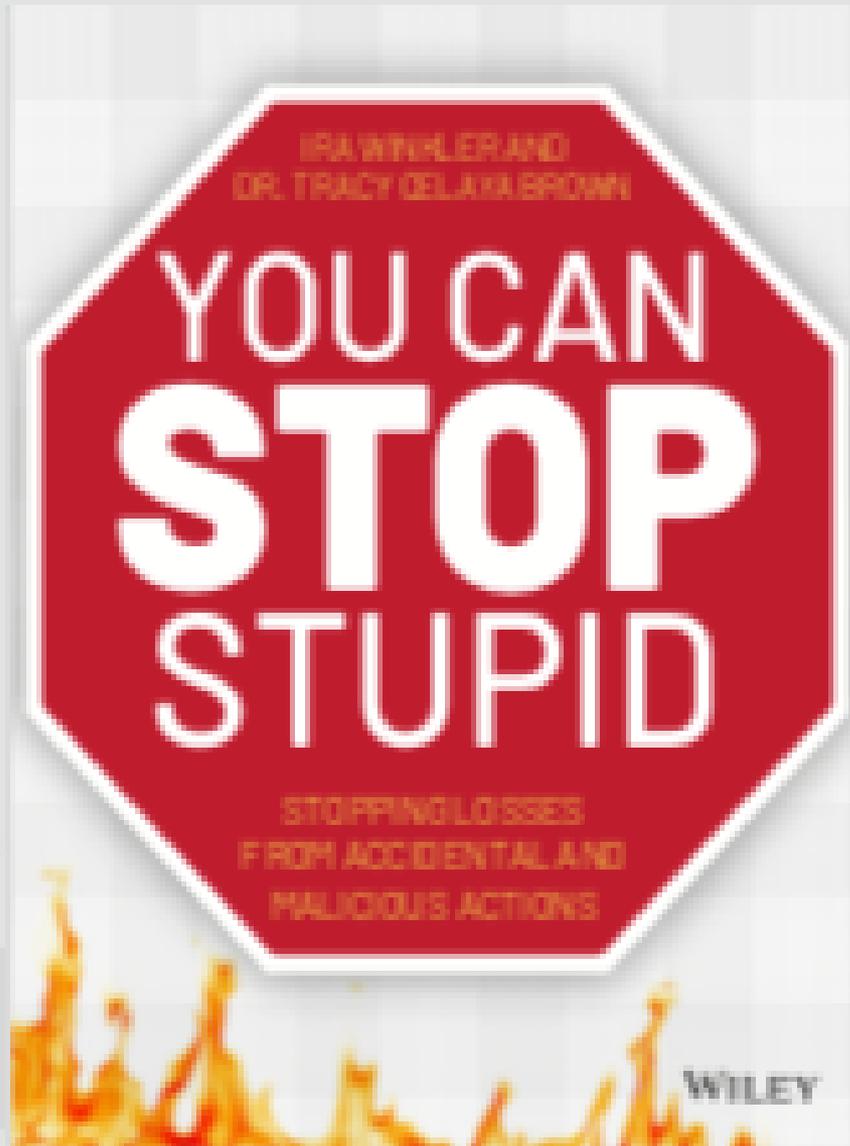




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<https://tiny.cc/StupidBook>



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