EAGER: Integrating Cognitive and Computer Science to Improve Cyber Security

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Personality Traits vs. Insecure Cyber-behavior of End-users

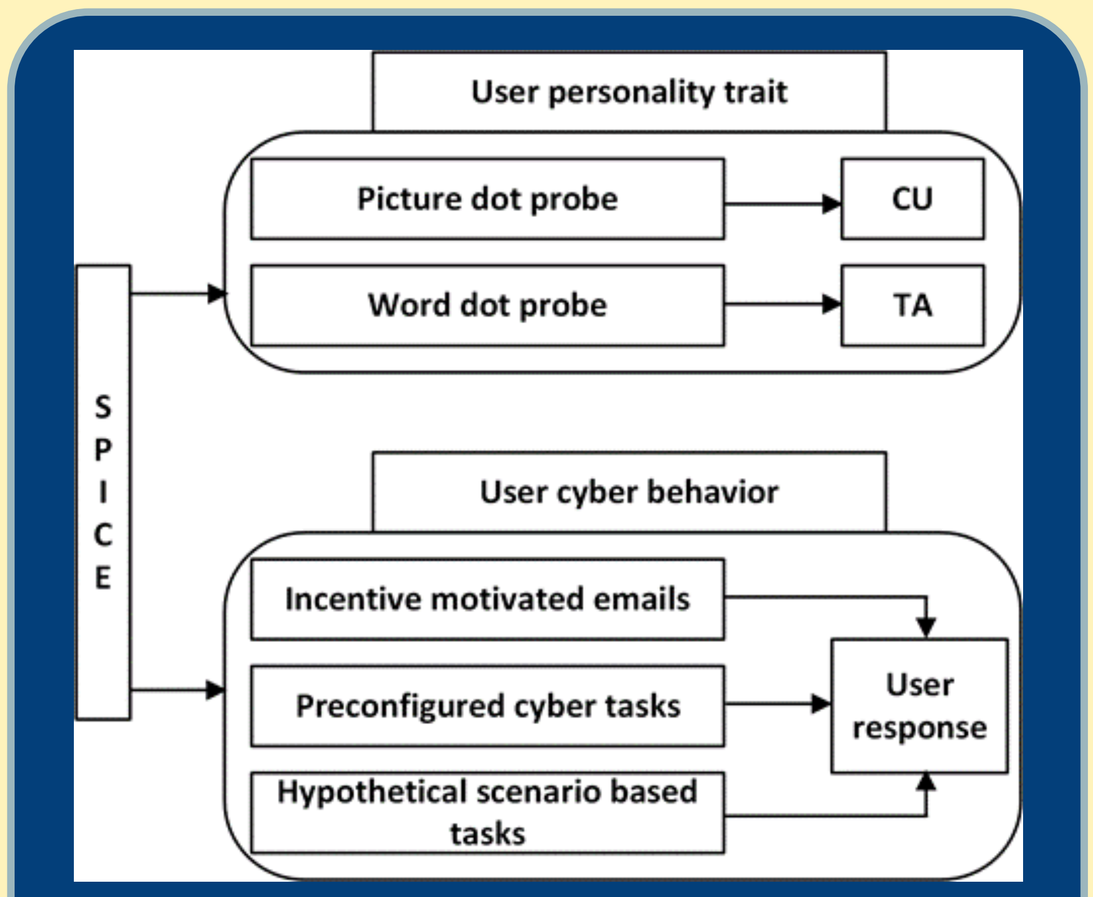
The objective of this project is to improve the understanding of personality, behavioral, and cognitive factors in cyber security

Specific Goals

•Examine links between personality traits and susceptibility of end users to cyber threats
- Trait Anxiety, Callous Unemotional traits etc.

•Generate data that may be useful to improve
- user attentiveness,
- alerting systems, and
- attack mitigation strategies in cyber security

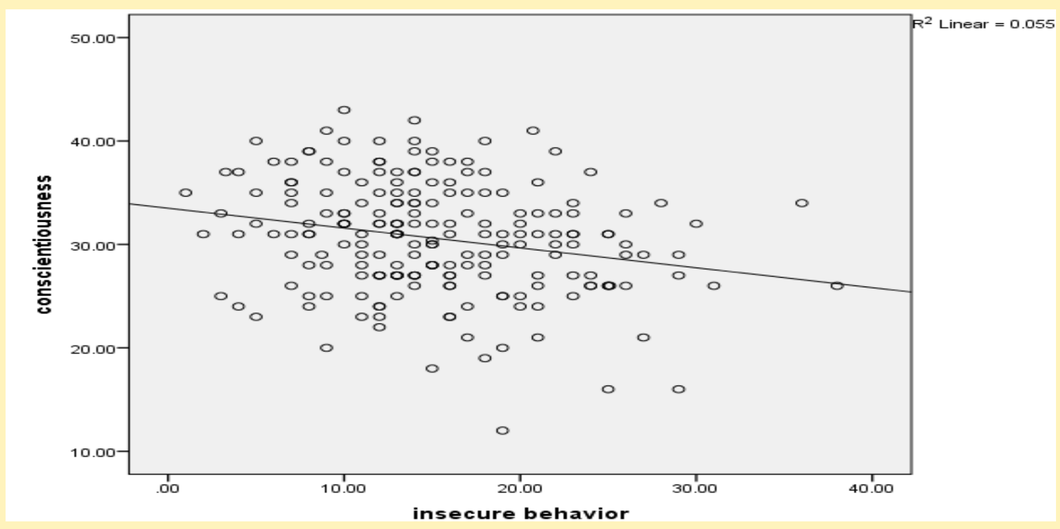
•Design and develop a software architecture that fosters testing the theories on end user's insecure cyber behavior

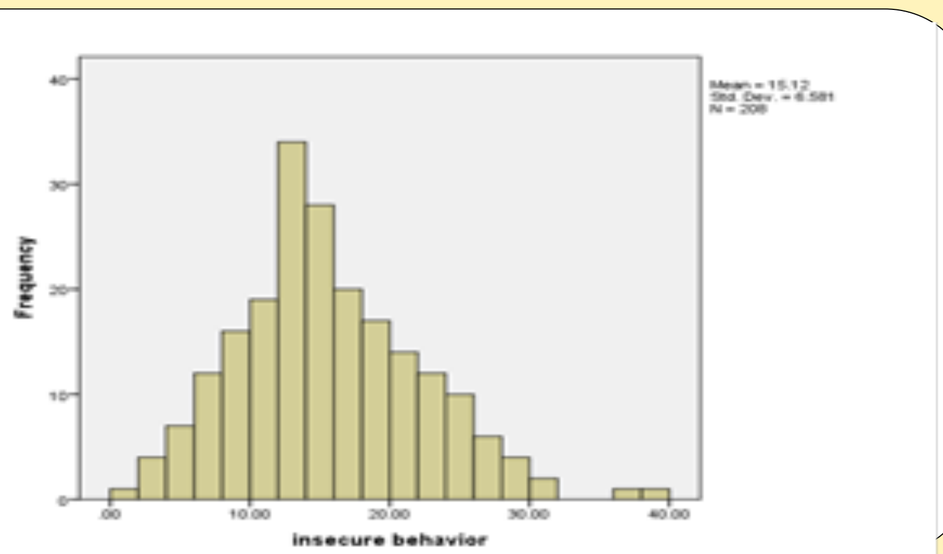


SPICE Software Design

Approach

- The dot probe methodology for selective attention and personality traits
- Simulations to create realistic cyber scenarios for evaluating end-user's behavior
  - Secure versus insecure behaviors
- Self report assessment for testing and validation
- Human subjects are the samples of technology users from the community





- Negative association of Conscientiousness with insecure cyber behavior
  (*above diagram*)
- Insecure behavior is normally distributed with a few individuals possibly at extreme risk
  (*diagram at right*)

- Our pilot sample data suggest that the secure behavior scale is significantly negatively correlated with neuroticism and existential anxiety.
- suggesting that the more you have a positive sense of your place in the world and are generally happy the more likely you are to engage in secure cyber behavior

Interested in meeting the PIs? Attach post-it note below!

National Science Foundation
WHERE DISCOVERIES BEGIN

The 3rd NSF Secure and Trustworthy Cyberspace Principal Investigator Meeting
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