

BEHAVIOR CHANGE USING SOCIAL INFLUENCES

Cori Faklaris, PhD researcher, Carnegie Mellon University



SocialCybersecurity.org



**Social
Cybersecurity**



Human-
Computer
Interaction
Institute

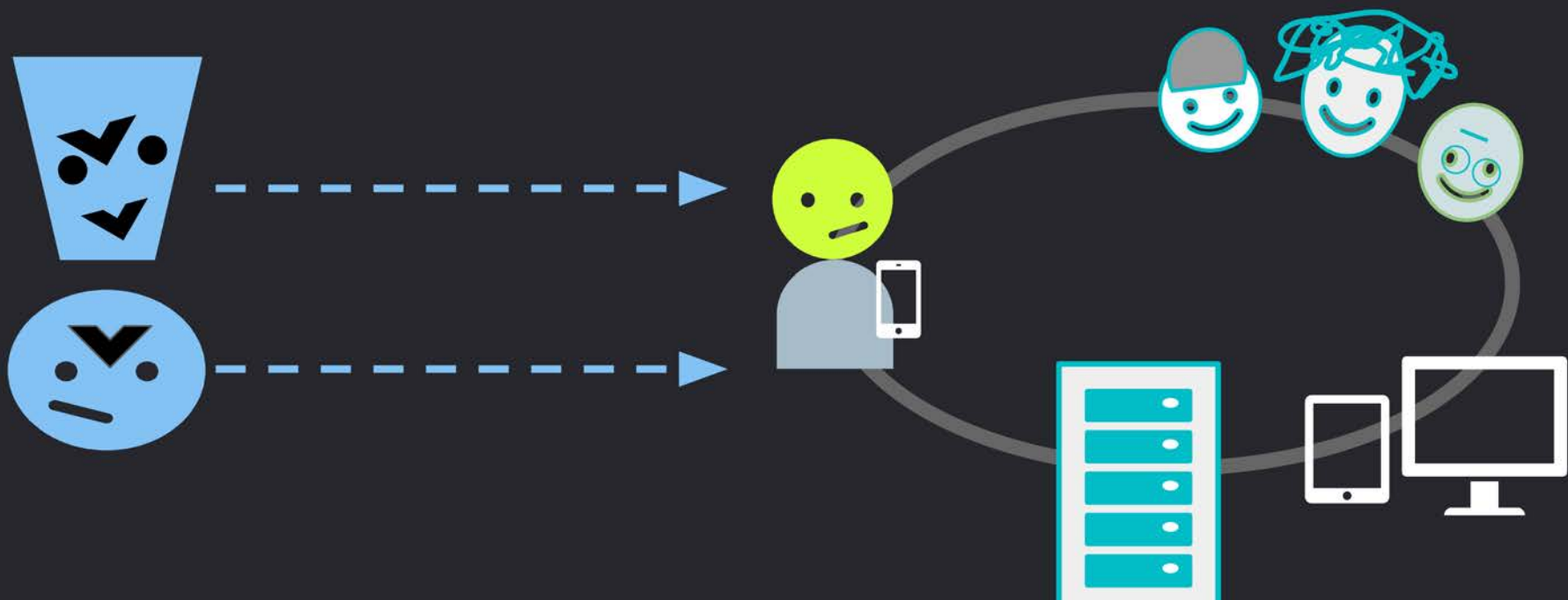
CyLab



Cori Faklaris | @heycori

MAJOR TAKEAWAYS

- ✓ **Unintentional insider threat (UIT)** can arise because security tools or infrastructure does not account for social needs.
- ✓ **Social influences** can be used to motivate security behaviors.
- ✓ **Join forces with us!** We are looking for external collaborators.

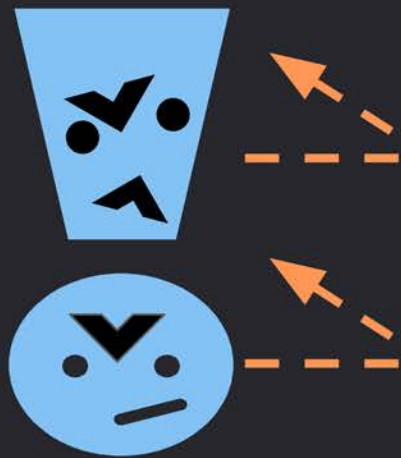


“THE UIT” – LEGITIMATE USER WHO ACCIDENTALLY JEOPARDIZES SECURITY THROUGH LEAKS OR ERRORS

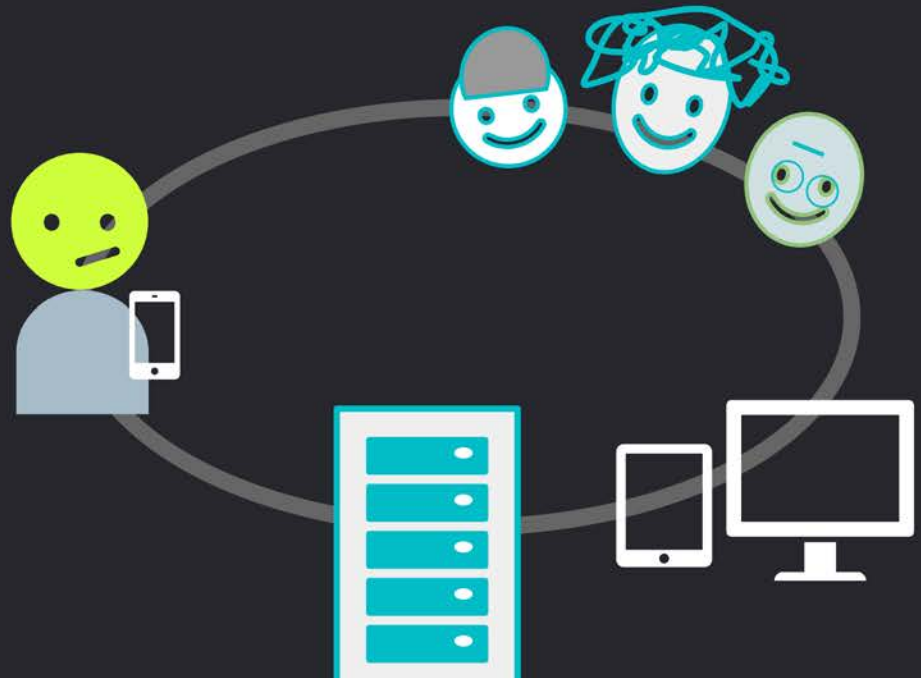
Frank L. Greitzer, Jeremy R. Strozer, Sholom Cohen, Andrew P. Moore, David Mundie, and Jennifer Cowley. 2014. Analysis of Unintentional Insider Threats Deriving from Social Engineering Exploits. In 2014 IEEE Security and Privacy Workshops, 236–250. [Read online here.](#)

SocialCybersecurity.org

Cori Faklaris | @heycori



Multi-factor authentication
Up-to-date software
Alertness for scams & hoaxes
Long, unique passwords



THIS HUMAN-IN-THE-LOOP IS A CRITICAL DEFENSE POINT

SA-6 MEASURES SECURITY ATTITUDE

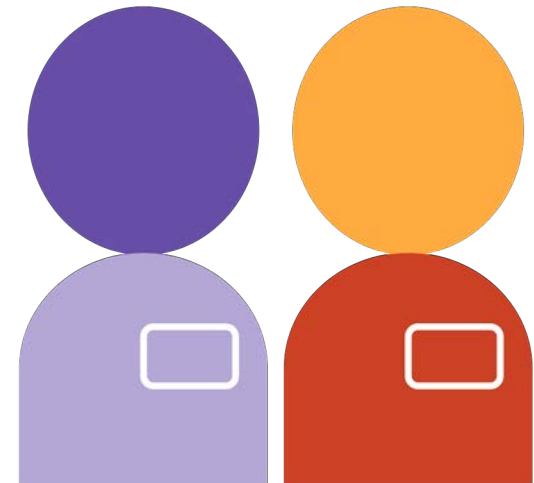
On a scale of 1=Strongly Disagree to 5=Strongly Agree, rate your level of agreement with the following:

- Generally, I **diligently follow** a routine about security practices.
- I **always pay attention to experts' advice** about the steps I need to take to keep my online data and accounts safe.
- I am **extremely knowledgeable** about all the steps needed to keep my online data and accounts safe.
- I am **extremely motivated** to take all the steps needed to keep my online data and accounts safe.
- I **often am interested in articles** about security threats.
- I **seek out opportunities to learn** about security measures that are relevant to me.

Cori Faklaris, Laura Dabbish and Jason I. Hong. 2019. **A Self-Report Measure of End-User Security Attitudes (SA-6)**. In Proceedings of the Fifteenth Symposium on Usable Privacy and Security (SOUPS 2019). USENIX Association, Berkeley, CA, USA. Available [to read online here](#)

SOCIAL CONTEXTS ARE INFLUENCE

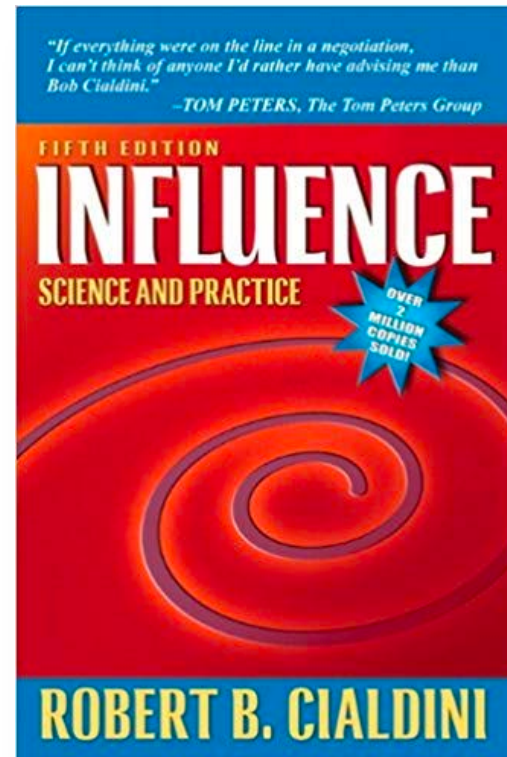
- **Workplace cybersecurity:** Sharing accounts and devices to collaborate on tasks and to keep costs down.
 - Workarounds are norm (ex: password taped to PC)
 - Difficult to share and to control access with systems that presume one user at a time
 - Lack of accountability and awareness of one person's activities by others



Yunpeng Song, Cori Faklaris, Zhongmin Cai, Jason I. Hong, and Laura Dabbish. 2019. **Normal and Easy: Account Sharing Practices in the Workplace.** In Proceedings of the ACM: Human-Computer Interaction, Vol. 3, Issue CSCW, November 2019. ACM, New York, NY, USA. [Available to read online here.](#)

'WEAPONS OF INFLUENCE'

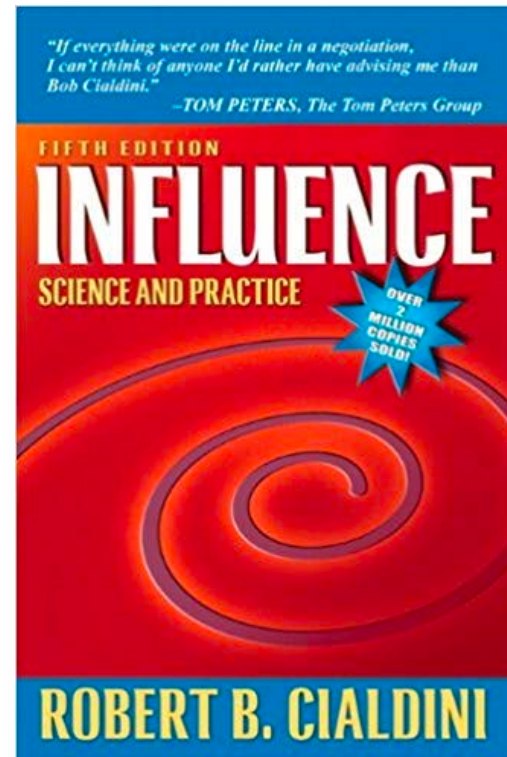
- **Reciprocity:** People are driven to repay acts in kind and to share resources in a network of obligation
- **Liking:** People pay attention to the opinions of those they admire or who are similar to themselves



Robert B. Cialdini. 2008.
Influence (5th Edition). A.
Michel Port Harcourt.
ISBN-10: 9780205609994

'WEAPONS OF INFLUENCE'

- **Authority:** People tend to follow the guidance of others presented as authority figures or experts
- **Social Proof:** People look to those around them for guidance on how they should behave



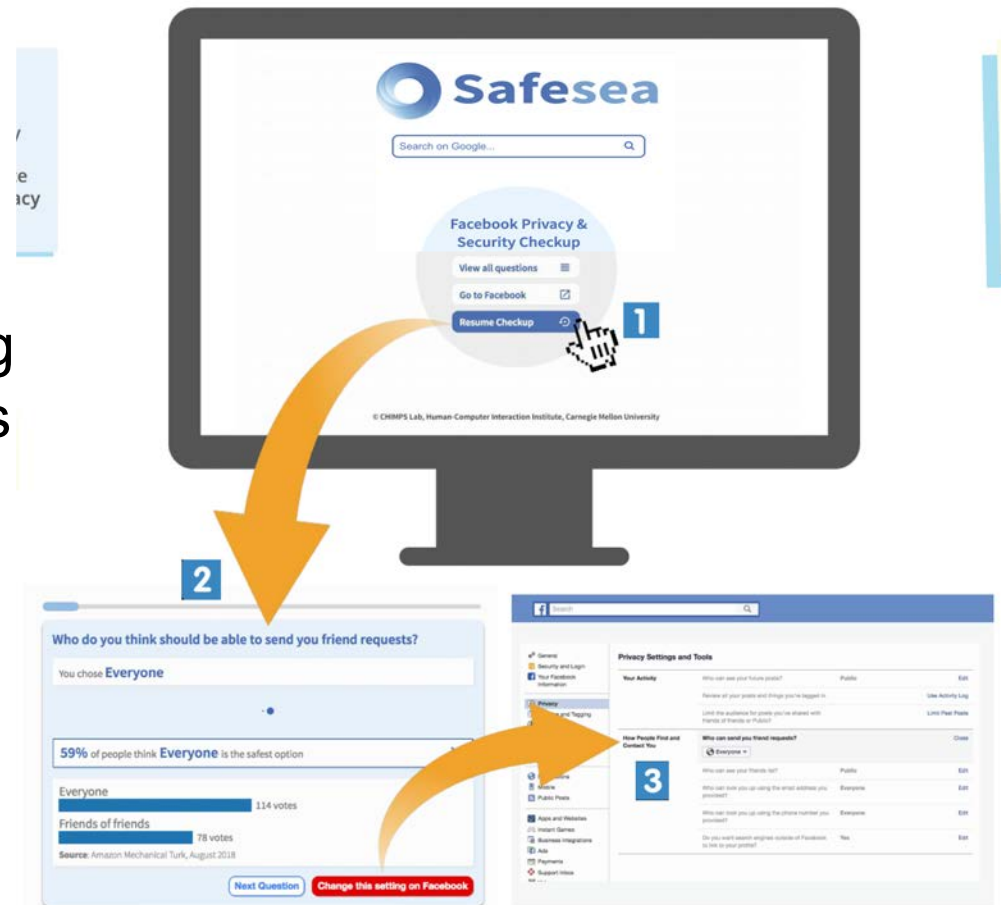
Robert B. Cialdini. 2008.
Influence (5th Edition). A.
Michel Port Harcourt.
ISBN-10: 9780205609994

SAFESEA BROWSER PLUGIN FOR GOOGLE CHROME

- Helps Facebook users navig privacy and security settings
- Displays **crowd** and **expert** suggestions for settings.

Gustavo Umbelino, Rosie Sun, Cori Faklaris, Jason I. Hong, and Laura Dabbish. 2019. Safesea: A Chrome Plugin to Crowdsource Privacy Settings. Poster presentation for CMU Privacy Day at Carnegie Mellon University, Feb. 1, 2019. Available at: [Available to read online here.](#)

SocialCybersecurity.org



1. Use downtime to proceed through the "Facebook Privacy Checkup." 2. Choose which option you think is safest for your account privacy needs and see how other people answered the same question. 3. Take advantage of the API integration to go to Facebook and double-check or change the privacy setting on your account.

FREE RESEARCH IDEA

- Pay people or give them freebies to **share cybersecurity memes** with your website URL on their social media accounts
- **Use SA-6** along with system stats and social media metrics to measure effectiveness

SocialCybersecurity.org



[Image source here.](#)

Cori Faklaris | @heycori

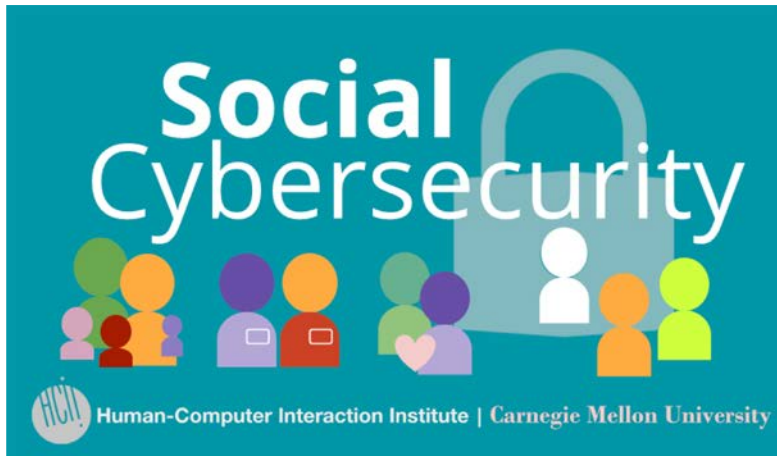
FREE RESEARCH IDEA

- Create a **cybersecurity social event** such as a game night, a movie night or a scavenger hunt
- **Use SA-6** along with other scales/survey items to test whether participants' attitudes, intentions or reported behaviors improve



[Image sourced from Amazon here.](#)

MAJOR TAKEAWAYS



TWITTER: @heycori

EMAIL: heycori [at] cmu.edu

SocialCybersecurity.org

- ✓ **Unintentional insider threat (UIT)** can arise because security tools or infrastructure does not account for social needs.
- ✓ **Social influences** can be used to motivate security behaviors.
- ✓ **Join forces with us!** We are looking for external collaborators.

Cori Faklaris | @heycori