Replication: Stories as Informal Lessons about Security

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Replicating Rader study

- Rader et al. (2012):
  - 301 undergraduate students
  - Aim: Determine the characteristics in stories that lead to changes in thinking and behavior

- Replication:
  - 299 participants from all age groups and educational backgrounds
  - Aim: Test whether results are replicable 10 years later and include broader population
Questionnaire

• Original questionnaire was taken over
• 7 Open-ended and 38 closed questions
  o General questions
  o Participants had to **choose one story**
  o Multiple choice and open questions
  o Finally: Participants had to tell story
Analysis

• Qualitative
  o Inductive coding for full stories and open questions

• Quantitative
  o Regression models
Behavior changes

• Security awareness and caution (215)
• Change password security practices (50)
• Update software (15)
• Monitor accounts/ credit card charges (12)
• Back up data (6)
• Quit Facebook or credit card usage (4)
• Stop connecting to insecure WiFis (2)
Tools/services participants started using

- Antivirus/ secure software
- 2FA
- VPN
- Firewall
- Browser Extension
- Password Manager/generator
- Spam Filters
- Ad blocker
Qualitative results: Distrust and education

• Distrust
"Even though you think your data is undoubtedly secure, there is always a chance it could be compromised."

• Education
"I ended up reading more about scams as well as watching videos on the topic."
Stories likely change thinking/behavior when...

- containing a *lesson*
- containing *serious threats*
- making the participants feeling *anxious or angry*
- being *autobiographical*
- coming from a *knowledgeable source*
Demographic differences

• **Younger** people are less likely to
  o rate the seriousness of threats severe
  o get angry about stories

• **Higher educated** people are less likely to
  o report a change in thinking
  o be emotionally effected by stories
Take aways and advices

• Rader study results are **still largely valid** today

• Media articles and security trainings should focus on stories with **concrete actions** and **serious threats**

• Make people share security incidents

• Security stories should be considered as important sources of security advice

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