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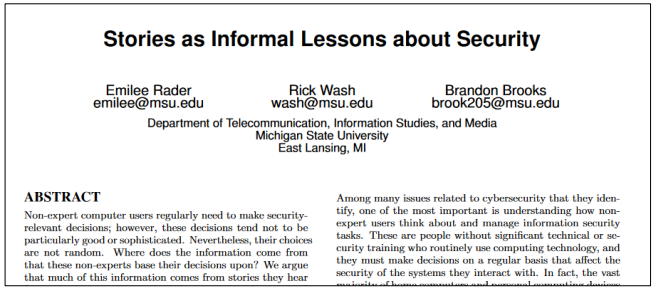
Replication: Stories as Informal Lessons about Security

Katharina Pfeffer, Alexandra Mai, Edgar Weippl, Emilee Rader, Katharina Krombholz

Replicating Rader study



Stories as Informal Lessons about Security

Emilee Rader
emilee@msu.edu

Rick Wash
wash@msu.edu

Brandon Brooks
brook205@msu.edu

Department of Telecommunication, Information Studies, and Media
Michigan State University
East Lansing, MI

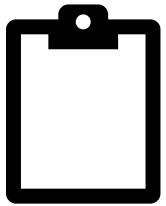
ABSTRACT

Non-expert computer users regularly need to make security-relevant decisions; however, these decisions tend not to be particularly good or sophisticated. Nevertheless, their choices are not random. Where does the information come from that these non-experts base their decisions upon? We argue that much of this information comes from stories they hear

Among many issues related to cybersecurity that they identify, one of the most important is understanding how non-expert users think about and manage information security tasks. These are people without significant technical or security training who routinely use computing technology, and they must make decisions on a regular basis that affect the security of the systems they interact with. In fact, the vast

- 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

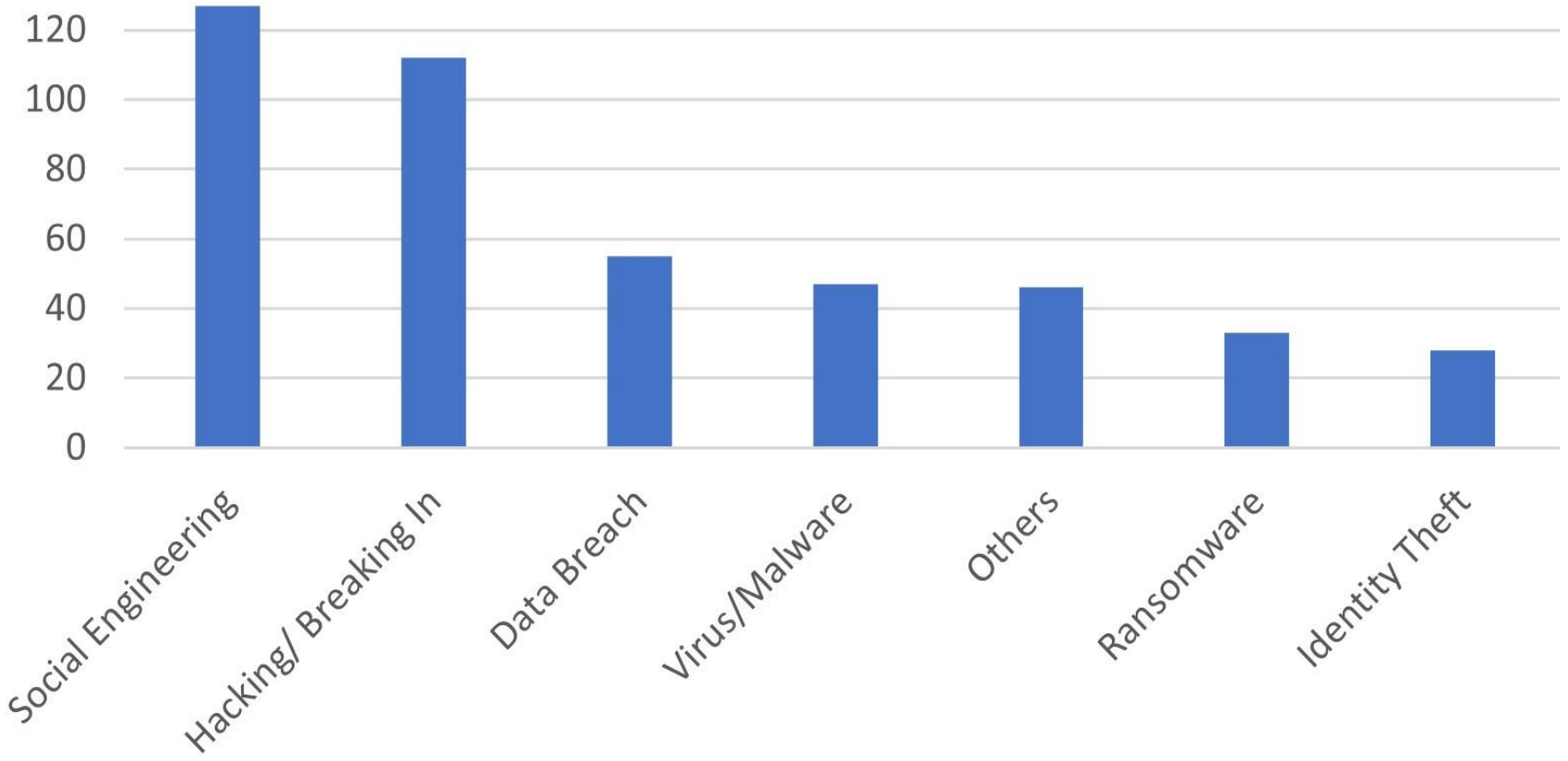


- Original questionnaire was taken over
- 7 Open-ended and 38 closed questions
  - General questions
  - Participants had to **choose one story**
  - Multiple choice and open questions
  - Finally: Participants had to tell story

Analysis

- Qualitative
  - Inductive coding for full stories and open questions
- Quantitative
  - Regression models

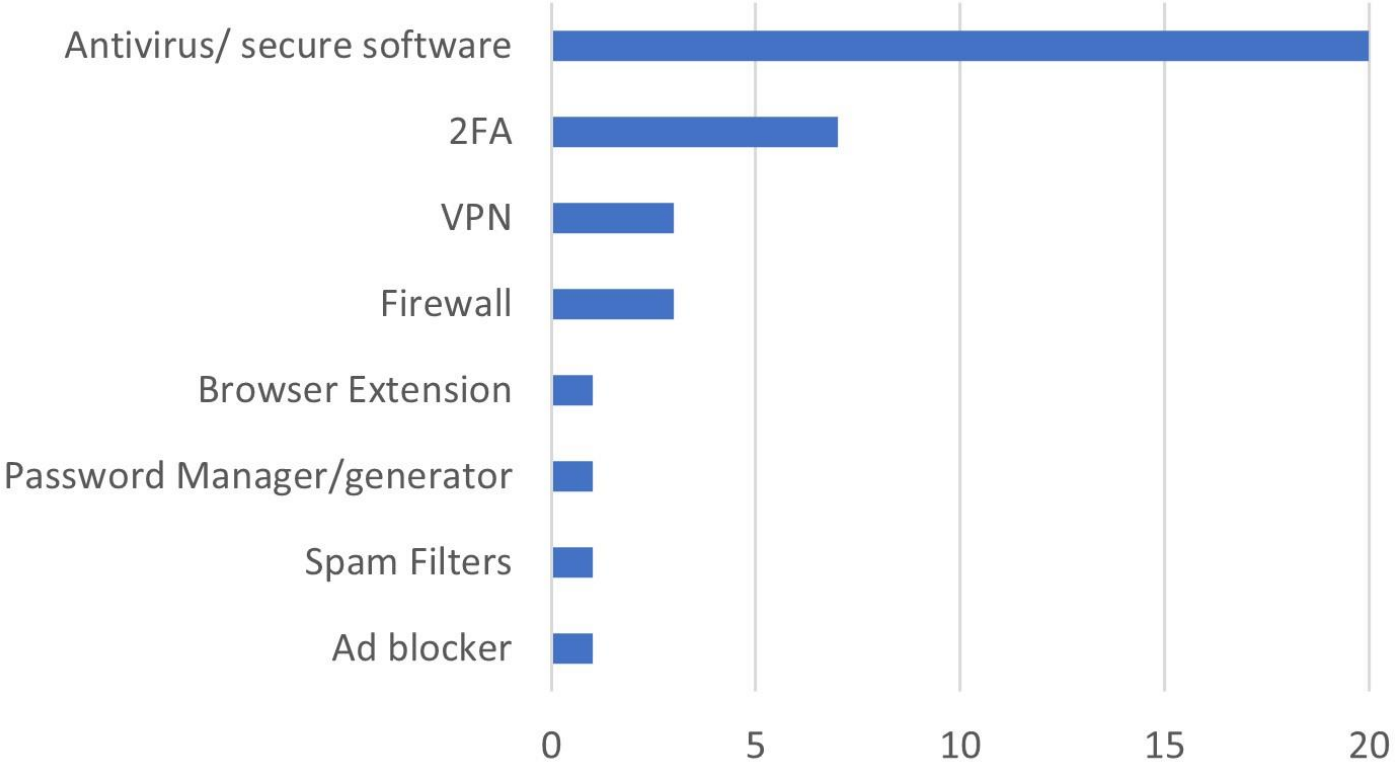
Threat categories of stories



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



Qualitative results: Distrust and education

- Distrust

> *"Even though you think your data is undoubtedly secure, there is always a chance it could be com-promised."*

- Education

> *"I ended up reading more about scams as well as watching videos on the topic."*

Stories likely change thinking/behavior when…

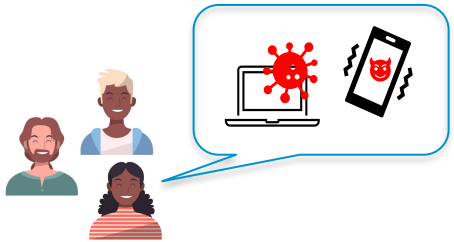
- containing a **lesson**
- containing **serious threats**
- making the participants feeling **anxious or angry**
- being **autobiographical**
- coming from a **knowledgeable source**

Demographic differences

- **Younger** people are less likely to
  - rate the seriousness of threats severe
  - get angry about stories
- **Higher educated** people are less likely to
  - report a change in thinking
  - 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



Katharina Pfeffer
SBA Research GmbH
https://www.sba-research.org/
kpfeffer@sba-research.org