



Of Mothers and Managers

The Effect of Videos Depicting Gender Stereotypes on Women and Men in the Security and Privacy Field

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MOTIVATION

A group of four diverse people are seated around a wooden conference table in a modern office. From left to right: a woman with short dark hair wearing a black hoodie with a bright green lining; a man with dark hair and a beard wearing a black button-down shirt; a woman with long, thick brown braids adorned with gold beads, wearing glasses and a light pink knit sweater; and a man with curly brown hair wearing a blue and green plaid shirt. They are all looking towards the woman with braids, who appears to be speaking. Laptops are open on the table in front of them. The background shows a large window with a view of a city building and a potted plant.

S&P field suffers from gender imbalances and stereotypes



Stereotype threat effect might affect women



RQ1: Do videos that depict gender stereotypes influence S&P attitudes and intentions?

RQ2: Do videos that depict gender stereotypes influence (self- assessed) S&P knowledge?

METHOD

- Between-subject online experiment (N=933)
- Selection of commercial videos on YouTube based on pre-study (N=92)
- Recruitment on Prolific
 - 465 women, 468 men



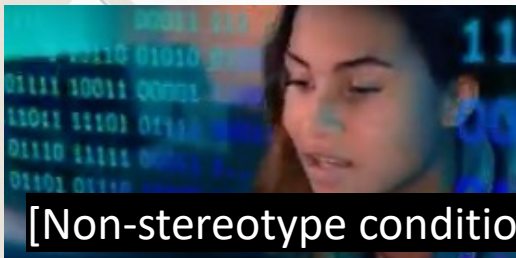
VIDEOS



[Stereotype women condition]



[Stereotype men condition]

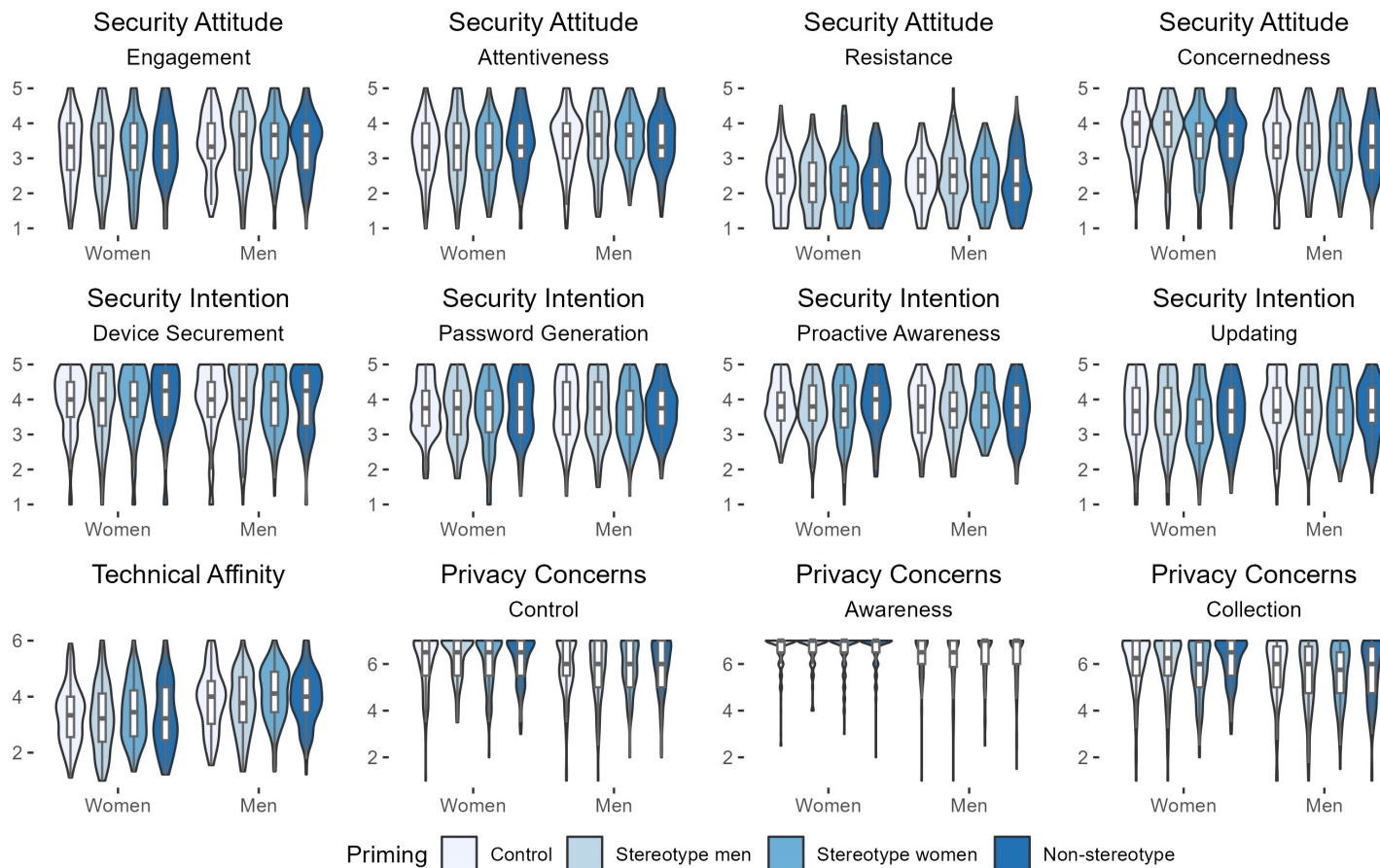


[Non-stereotype condition]



RQ1: DO VIDEOS THAT DEPICT GENDER STEREOTYPES INFLUENCE S&P ATTITUDES AND INTENTIONS?

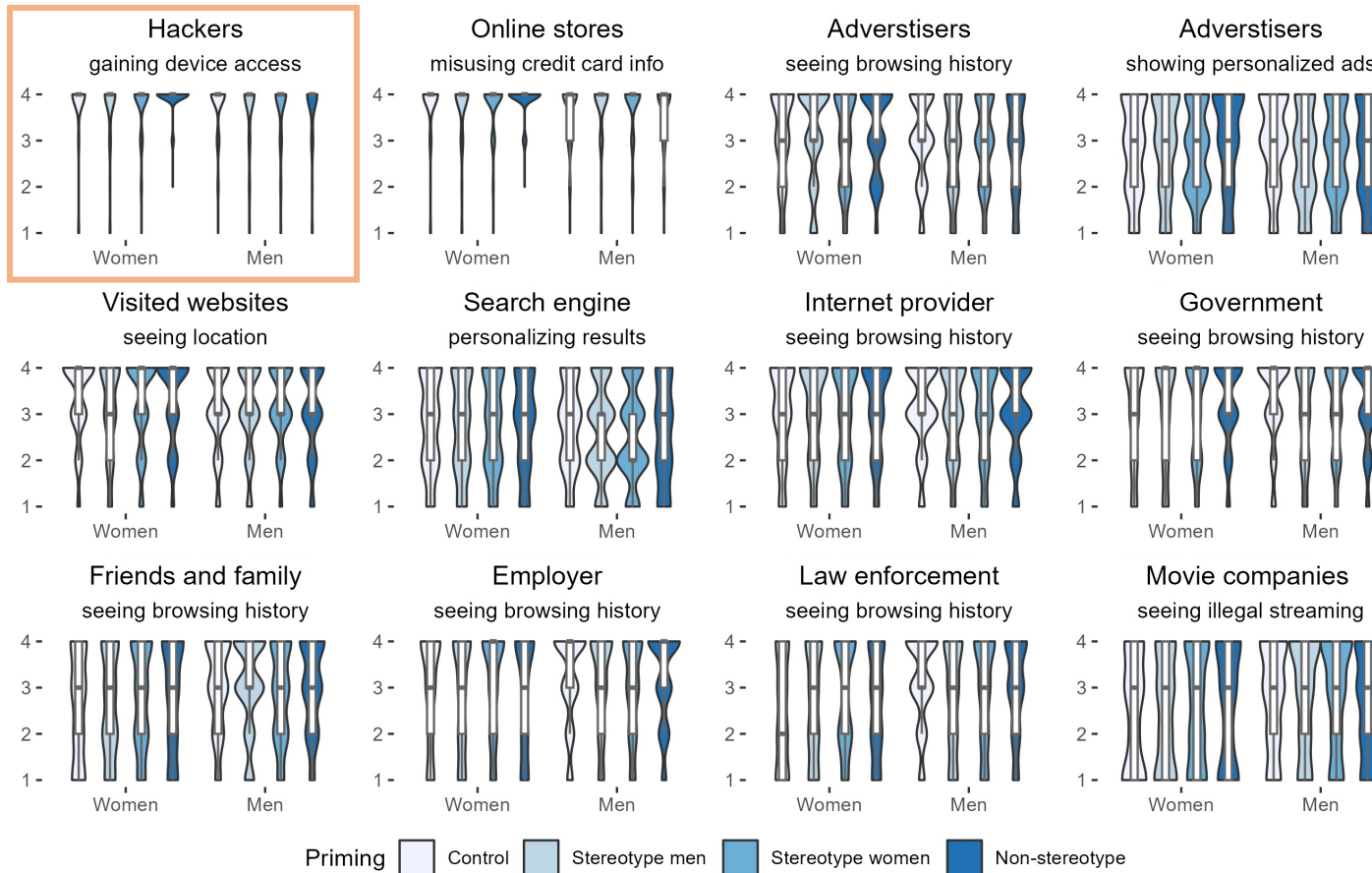
RESULTS



- Analyzed with set of ANOVAs
- No sig. differences ($p > .05$) in...
 - Security attitude (SA-13)
 - Security Intention (SeBIS)
 - Technological affinity (ATI scale)
 - Privacy Concerns (IUIPC-8)

RQ1: DO VIDEOS THAT DEPICT GENDER STEREOTYPES INFLUENCE S&P ATTITUDES AND INTENTIONS?

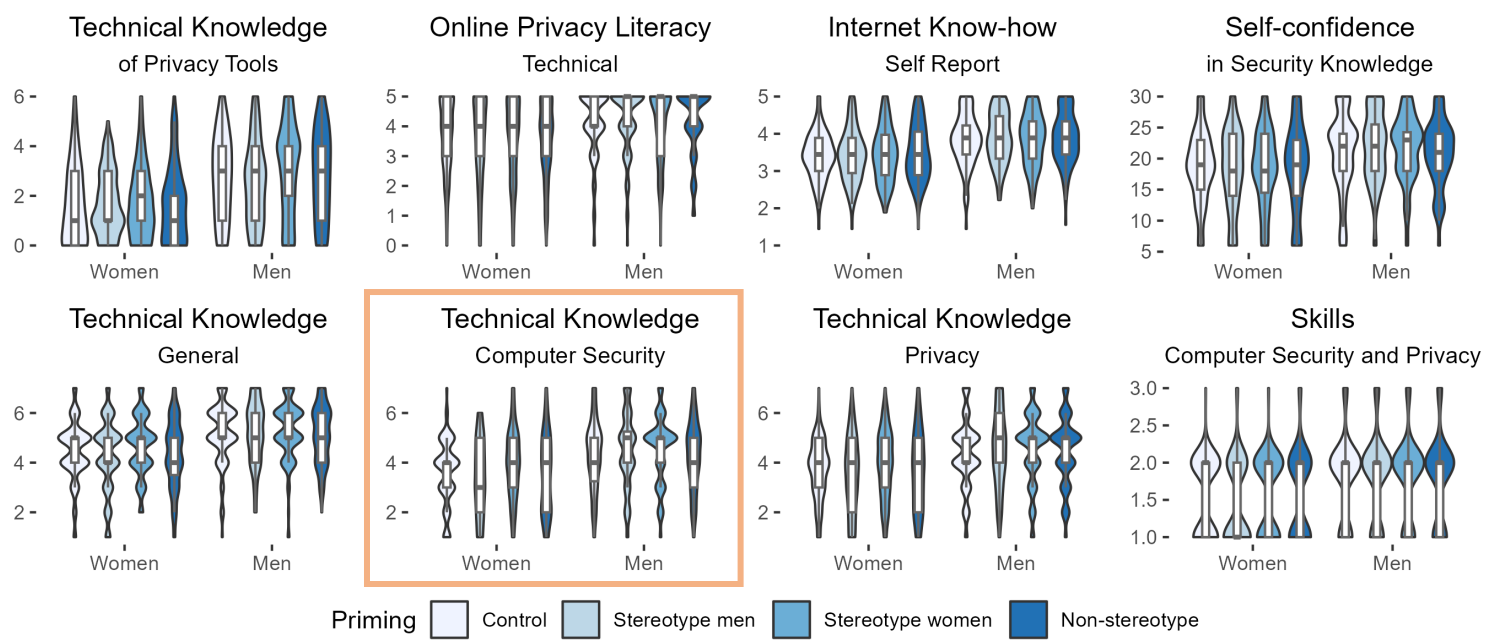
RESULTS



- Analyzed with Kruskal-Wallis and Wilcoxon rank-sum tests
- Items from Story et al.
- Women in the *Non-stereotype* condition sig. more interested to **prevent hacker access** to their device than women in the *Stereotype women* ($Z=-3.008$, $p=.003$, $r=.197$) and *Stereotype men* condition ($Z=-2.988$, $p=.003$, $r=.197$)

RQ2: DO VIDEOS THAT DEPICT GENDER STEREOTYPES INFLUENCE (SELF- ASSESSED) S&P KNOWLEDGE?

RESULTS



- Analyzed with Kruskal-Wallis and Wilcoxon rank-sum tests
- Women in the *Stereotype women* condition reported higher levels of **computer security knowledge** than women in the *Stereotype men* condition ($Z=-2.693$, $p=.007$, $r=.176$)

WOMEN

- Security attitude
 - Concernedness
- Privacy concerns
 - Control
 - Awareness
 - Collection

MEN

- Technical knowledge
 - of privacy tools
 - privacy literacy
- Security attitude
 - Engagement
 - Attentiveness
 - Resistance
- Technological affinity
- Familiarity with internet tools & concepts
- Confidence in security knowledge
- Self-assessed knowledge
 - technical
 - security
 - privacy
- Self-assessed S&P skills

DISCUSSION

Overall, our results do not confirm the stereotype threat effect



Gender norms might have been adopted early on



Acknowledge the gender-imbalance in today's ads



Address self-concepts of children



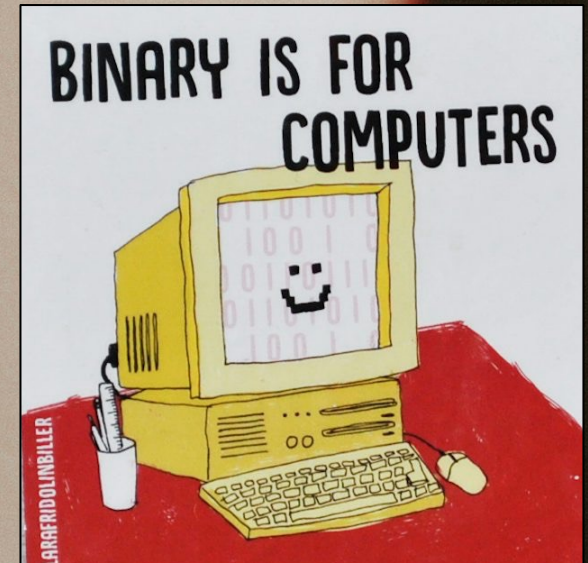
Adopt S&P content in curricula



Improve gender representations at large scales

CHALLENGES & FUTURE WORK

- Include participants from multiple gender groups
- Identify appropriate priming stimuli
- Use objective metrics instead of self-report



CONCLUSION

- Few priming effects
- Women in non-stereotype condition more interested in preventing hacker access
- Variety of gender differences
- Solution for considering multiple gender groups needed

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