Cooperative Privacy and Security: Learning from People with Visual Impairments and Their Allies

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Researcher Self Disclosure

1. Diverse team: variety of backgrounds/identities
2. Do not self-identify with visual impairments
3. Learned from our participants
4. Limited understandings of visual impairments
Take-aways

1. Multifaceted disability identities need to be considered
2. Interactions with allies important for privacy/security
3. Designs for cooperative privacy & security
Background and Motivation

1. Existing privacy solutions lack support for people with visual impairments
2. Long-term goal: design inclusive privacy solutions
3. Focus on people with visual impairments & allies

www.inclusiveprivacy.org
Research Questions

RQ1: What are the everyday privacy/security challenges and practices of people with visual impairments?

RQ2: How do people with visual impairments interact with their allies? What are the privacy or security implications of such interactions?
Methodology

- Ethnographic study (shadowing/observation)
- Semi-structured interviews with scenarios/tasks
- Total 13 sessions (observed participants for 2 days)
- Studied interactions with allies
Participant Recruitment

- 8 participants (4 male, 4 female)
- 3 blind, 2 low vision, 3 allies
- Age range 30-80+
- P1 to P5 (blind or low-vision)
- A1-P1, A2-P2, A3-P5 (allies)
Data Analysis

1. Memoing, affinity diagrams, coding
2. Meeting with research team to discuss codes
3. Inspired in part by critical disability literature
Results: self-perceptions of disabilities

Selective disclosure of visual impairment

“They are not astute enough to know that I can’t read it. And what I am gonna have to do is to contact the people I really want to hear from [...]” (P3)
Results: self-definitions of privacy

1. Ownership and control of personal information
2. Privacy as right of property to personal information
3. Degree of agency to disclose personal information
Results: everyday privacy/security practices

- **Work settings**: Private information stolen due to enlarged screens
- **Public settings**: Accidental leaking of personal information in public
- **Home settings**: Technology based deceptive practices
Home settings

P1 unaware of fake warning

He asked “what’s wrong?”

Screen reader unable to read
Results: social relationships and interactions

- Family Relationships
- Romantic/Dating Relationships
- Professional Relationships
- Strangers
- Friends
- Allies’ Perspective
Family relationships

“If I’m filling out a camp scholarship form and my daughter is helping me and it starts asking for salary [...] , I don’t. It’s mostly because I’m in a divorce situation and I don’t want her to accidentally tell her father.” (P4)
Allies’ Perspectives

“If he [P1] asks for help, then I help but otherwise laundry is his private belongings and he knows how to handle that himself.”
## Implications for Research and Design: Cooperative Privacy and Security

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<thead>
<tr>
<th>Existing Tools:</th>
<th>Proposed Solution:</th>
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<tbody>
<tr>
<td>1. Designed for individuals</td>
<td>1. Cooperative privacy assistance tools</td>
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<tr>
<td>2. Independence focused</td>
<td>2. Interdependence in tech design</td>
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<td>3. Lacks accessibility</td>
<td>3. Accessibility in cooperative privacy designs</td>
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Example of cooperative privacy design:

1. Mobile app/ web-based service
2. Users invite allies
3. Real-time chat requests by user
4. User has full control of personal info
Implications for Research and Design: Multi-faceted and marginalized identity

1. Design for marginalized groups
2. Participatory action/design research
3. Inclusive, socio-technical approach
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Questions?