Moving beyond a "one-size fits all" approach: Exploring Individual Differences in Privacy

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Abstract
As our lives become increasingly digitized, how people maintain and manage their networked privacy has become a formidable challenge for academics, practitioners, and policy-makers. A shift toward people-centered privacy initiatives has shown promise; yet many applications still adopt a "one-size fits all" approach, which fails to consider how individual differences in concerns, preferences, and behaviors shape how different people interact with and use technology. The main goal of this workshop is to highlight individual differences (e.g., age, culture, personal preference) that influence users' experiences and privacy-related outcomes. We will work towards best practices for research, design, and online privacy regulation policies that consider these differences.

Author Keywords
Networked privacy; Privacy; Social interaction; Ethics; Usability; Design; Information disclosure

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

Introduction
Networked privacy research has often focused on increasing transparency and users' control over their

Past ACM SIGCHI Networked Privacy Workshops:

• **CHI 2011:** Privacy for a Networked World: Bridging Theory and Design

• **CSCW 2012:** Reconciling Privacy with Social Media

• **CSCW 2013:** Measuring Networked Social Privacy

• **CSCW 2015:** The Future of Networked Privacy: Challenges and Opportunities

• **CHI 2016:** Bridging the Gap Between Privacy by Design and Privacy in Practice

• **CSCW 2017:** In Whose Best Interest? Exploring the Real, Potential, and Imagined Ethical Concerns in Privacy-Focused Agenda

digital information [5,20]. For instance, a common privacy solution involves telling users how their data is used and giving them some degree of control by asking for their explicit consent [7,28]. This focus on providing visibility is often to combat informational privacy concerns, but does not address a broader range of social privacy concerns that people face online, such as interactional (e.g., accessibility) and psychological (e.g., self-presentation) privacy concerns [8,25].

Because privacy is a highly normative construct [29], individual differences have been shown to play a key role in shaping attitudes related to these various privacy concerns (e.g., interactional preferences on social media [21]) and influence subsequent on- or offline behaviors [17] An individual's digital privacy behavior and preferences are influenced by personal factors such as: [3] time available [6],recipient [4], age [14,16], gender [10,14,16], personality [33] network compositions [30,31], social norms [2,19], culture [13], and previous experiences [14,16,32]. Research suggests that privacy preferences vary drastically from individual to individual, change over time, and is based on context [18]. However, it is not clear the extent to which we should prioritize certain personal attributes over others, and in what contexts. The goal of this workshop is to understand and design for the role of individual differences in influencing privacy-attitudes and related behaviors. We aim to go beyond the "one-size fits all" privacy approach that is often used today [26].

Background

Privacy can be conceptualized as "an interpersonal boundary process by which a person or group regulates interaction with others" by dialectically altering the degree of openness of the self to others [1]. This suggests that privacy is truly an interpersonal and social construct that goes beyond simple information disclosure decisions. Individuals have different privacy preferences that are influenced by contextual factors (e.g., [3,13,19]) that significantly affect their privacy decisions and their interaction with others online [3,6,37]. Despite recent research on individual differences in privacy, this scholarship has yet to make a major impact on product design and software development [23]. The disconnect between academic research and the work of practitioners suggests a need for collaborative conversations to help ensure that research on individual privacy differences is taken into consideration in the design of networked platforms.

Workshop Themes

This workshop merges two major research streams surrounding individual privacy differences: 1) Understanding the role of individual differences in privacy, and 2) Designing for individual differences in privacy.

Understanding the Role of Individual Differences in Privacy

The networked privacy research community has studied the type of information people share online and the factors that influence what they share [9,21]. However, privacy is not limited to what people share online. It also involves the management of interpersonal boundaries that help regulate users' interactions, both positive and negative [11]. These are heavily influenced by individual factors, especially when considering diverse populations. For example, communication style, which has been a strong predictor of behavior in the offline world, also influences online privacy behaviors. Recent research shows how an "FYI

Communication Style" trait strongly predicts privacy attitudes and resulting behaviors in social media [22].

Generally, privacy behaviors and levels of privacy feature awareness vary among end users along both informational and interactional boundaries (e.g., blocking other users or hiding one's online status to avoid unwanted chats on social networks), and territorial boundaries (e.g., untagging posts or photos or deleting unwanted content posted by others on social networks) [12,36]. Users can therefore be categorized by their disclosure styles, management strategies, and proficiency. However, there is a need to further unpack the most important contributing contextual factors that lead to individual privacy differences, thereby allowing us to better design for them and offer more personalized user privacy support.

Designing for Individual Differences in Privacy

Recent research on people's privacy attitudes and behaviors [36] has shown the potential of addressing individual privacy differences among populations and groups. However, this approach is yet to be fully adopted by designers, as there is a lack of awareness and consensus on the important individual differences that influence users' privacy-related experiences [38]. Designing privacy features to optimally meet the needs of individuals with varying needs is tricky at best.

Recent research has focused on applying user-centered principles to privacy research and design, such as helping users achieve a level of privacy relative to their own desires [35]. Given the complexity of modern information systems, though, putting users in control of their own privacy management (even when implementing the principles of notice and choice) seems unrealistic. Privacy Nudging provides a solution that is less demanding of the user, but generally fails to take individual differences into account [26,27].

A more recent paradigm is that of "user-tailored privacy" [15,24,34] which provides nudges (e.g., automatic initial default settings) that are tailored to users' individual differences. In this approach, the user is no longer solely responsible for their own privacy management; instead, an algorithm will support this practice, taking individual differences (e.g., the context, the user's known characteristics, their decision history, and the decision history of like-minded other users) into account. Several researchers have developed "intelligent" privacy designs to meet users' privacy needs in light of their individual differences, but they are yet to be fully utilized in the information system we use in our daily lives.

Workshop Goals

Building on past ACM CHI and CSCW networked privacy workshops (listed in side bar), this workshop brings together researchers from different disciplines to address challenges involved with supporting individual privacy differences. This workshop will contribute to the HCI community by:

- Understanding the role of individual's differences in shaping privacy attitudes and behaviors
- Identifying the implications for design and research
- Discussing and co-creating best practices for research, design and online privacy regulation policies that consider these differences.

The long-term goal of this workshop is to contribute to the broader research community by offering viable solutions to individual privacy differences, and making the resulting materials easily accessible through the

Program Committee:

- **Solon Barocas**, Cornell University
- **Jessica Bodford**, Facebook
- **Marshini Chetty**, Princeton University
- **Sauvik Das**, Georgia Institute of Technology
- **Michael Dickard,** Drexel University
- **Maximilian Golla**, Ruhr-University Bochum
- **Roberto Hoyle,** Oberlin College
- **Patrick Gage Kelley**, Google
- **Jennifer King**, UC Berkley
- **Lorraine Kisselburgh**, Purdue University
- **Airi Lampinen**, Stockholm University
- **Karen Levy**, Cornell University
- **Heather Lipford,** UNC Charlotte
- **Arunesh Mathur**, Princeton University
- **Hoda Mehrpouyan**, Boise State University
- **Sameer Patil**, Indiana University

workshop website, social media, as well as other informal and formal channels.

Workshop Website

We will host the website for this workshop at individualprivacy2018.wordpress.com, and it will be linked to the Network Privacy community's permanent website: networkedprivacy.com. Any information related to the workshop will be made available on the website, and all resulting materials will live on this site.

Pre-Workshop Plans

Workshop participants will be recruited from the CHI community, previous attendees of the CHI and CSCW privacy workshops and the extended research networks of the workshop organizers which includes those working in industry. To ensure a balanced mix of participants from the HCI community, social sciences, and other disciplines, the organizers will actively advertise the workshop using the workshop website, relevant listservs, and social media. This effort will also be assisted by the workshop's program committee (see list on the left). In addition, the organizers will be collaborating with industry professionals and academics to host a privacy summit in November, which can be used as an excellent venue to recruit attendees to this workshop.

Workshop Structure

We will host a one-day workshop with approximately 20 participants from the HCI community, social sciences and other disciplines. The activities of the workshop are structured as follows:

- **Welcome and Introductions (45 minutes)**
  The workshop organizers will outline the agenda and overall goals of the workshop to the participants. There will be a moderated lightning round of talks introducing participants and their perspectives.
- **Large Group Discussion (30 minutes)**
  Participants will discuss the influences that help to shape an individual's mental model of privacy and identify ways users' privacy concerns and preferences differ.
- **Coffee Break (15 minutes)**
- **Panel Discussion (60 minutes)**
  Privacy scholars (see sidebar on the next page) will engage with the audience to discuss the implications for design and research when considering variance between users in privacy concerns and preferences.
- **Lunch (60 minutes)**
- **Break-out activity: Designing for Individual Differences (90 minutes)**
  Participants will be given design prompts and asked to work in small groups to design prototypes of solutions and best practices to account for individual differences. The goal of this activity is to have participants organize around similar interests and actively brainstorm for viable solutions.
- **Reporting Outcomes (60 minutes)**
  After developing solutions in small groups, participants will present their ideas and work with groups where there are synergies to strengthen proposed guiding principles.
- **Next Steps (30 minutes)**
  The workshop will conclude with discussions about opportunities for collaboration to continue building on the solutions proposed during the workshop.

Program Committee cont'd

- **Elissa Redmiles,** University of Maryland
- **Vance Ricks**, Guilford College
- **Josh Rosenbaum**, Facebook
- **Florian Schaub**, University of Michigan
- **Luke Stark**, Dartmouth College
- **Blase Ur**, University of Chicago
- **Jessica Vitak**, University of Maryland
- **Yang Wang,** Syracuse University
- **Emanuel von Zezschwit**, University of Bonn

Workshop Panelists:

- **Bart Knijnenburg,** Clemson University
- **Xinru Page,** Bentley University
- **Jen Romano-Bergstrom**, Facebook/Instagram
- **Pam Wisniewski**, University of Central Florida

Post-Workshop Plans

At the conclusion of this workshop, participants will work collaboratively to produce a special journal issue describing:

- the main challenges to creating the optimal balance between providing standard privacy solutions and accounting for individual differences, and
- how this could be applied in practice and in research.

In addition, a collaborative effort will be made to create a collection of best practices for designers to support individual differences in privacy. We will ensure the materials are easily accessible by hosting it on the workshop's website and networkedprivacy.com. The workshop outcomes may also contribute to a planned effort to develop a standard for user-tailored privacy.

Call for Participation

The goal of this one-day workshop is to promote important discussions in the CHI community around the varied privacy needs and expectations of users, and rethink the "one-size fits all" approach to privacy. These issues are especially important for diverse populations, including people from different cultural backgrounds and users of various age ranges. We will invite leading researchers from the HCI community, social sciences and other diverse backgrounds to work collaboratively to develop viable solutions that will support users' individual differences in privacy.

To encourage a diverse set of participants, we will accept either one of the following:

1. Potential participants are asked to submit 2 to 4 page position papers in CHI extended abstracts format that highlights their relevant background to address the workshop themes and highlighted topics provided in the call.
2. Alternatively, we will also accept an extended bio that highlights research related to the workshop themes submitted with a CV (CV is optional).

Papers and bios will be peer-reviewed, and submissions will be accepted based on the relevance and development of their chosen topic, as well as their potential to contribute to the workshop discussions and goals. Topics of interest include, but are not limited to:

- Identification of under-researched populations or sub-groups with special/unique privacy attitudes or behaviors
- Identification of individual or contextual factors that influence privacy attitudes or behaviors
- Ethical questions for segmenting users
- Design guidelines for implementing user-tailored privacy solutions
- Empirical studies that explore methods that integrate privacy solutions into online systems/applications or investigate possible policy implications
- Methodological considerations for privacy researchers that supports individual privacy needs

Organizers

Daricia Wilkinson (Clemson University) is a PhD student in Human-centered computing at Clemson University. Her research focuses on understanding online privacy-decisions making, exploring more usable solutions for privacy and security and developing more efficient recommender systems.

Moses Namara (Clemson University) is a Facebook Scholar and PhD student in Human-centered computing at Clemson University. His research focuses on user-tailored privacy and human factor issues related to the design of privacy-enhancing and social media technologies.

Karla Badillo-Urquiola (University of Central Florida) is a McKnight Fellow and PhD student in Modeling and Simulation at the University of Central Florida. Her research explores immersive and experiential learning environments for the online safety of teens, especially those underrepresented and at-risk.

Pamela Wisniewski (PhD, UNC Charlotte) is an Assistant Professor at the University of Central Florida in the College of Engineering and Computer Science. Her research interests are situated at the juxtaposition of Social Computing and Privacy.

Xinru Page (PhD, UC Irvine) is an Assistant Professor of Computer Information Systems at Bentley University. Her research explores technology adoption and non-use, social media, individual traits, and privacy.

Bart Knijnenburg (PhD, UC Irvine) is an Assistant Professor in the School of Computing at Clemson University and co-director of the Humans and Technology (HAT) Lab. His research focuses on privacy decision-making, user-tailored privacy, and the user-centric aspects of recommender systems.

Eran Toch (PhD, Technion-Israel Institute of Technology) is an Assistant Professor in the Department of Industrial Engineering, The Iby and Aladar Fleischman Faculty of Engineering at Tel Aviv University. His research focuses on usable privacy and security, human-computer interaction and data mining.

Jen Romano-Bergstrom (PhD, Catholic University of America) is User Experience Researcher at Facebook/Instagram. In addition to being a skilled User Experience Researcher, Jen also specializes in eye tracking, survey design, experimental design, and cognitive aging.

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