

Problem: Privacy choice schemes struggle to attain both (1) usability and (2) active choice.

(1) **Usability** is important because disrupting the user experience is unfavorable. Banner permission notices, such as the ones widely used with cookie permissions have lower usability compared to other permission schemes.

(2) **Active choice** is important because schemes that give users little active choice, e.g., browsers sending privacy signals without the users making any decision beyond installing the browsers, are often critiqued as not facilitating the user's actual decision regarding the respective privacy permission.

Solution: Develop a privacy choice scheme that is both usable and effective by generalizing the user's privacy choice. For example, if a user wants to opt out from one site their choice be generalizable for all sites or a particular set of sites.

Background

Practical impact: give web users the ability to opt out of third-party tracking and protect their privacy

- Third-party tracking: if a website other than the one you directly visit collects your data, e.g., for advertising purposes
- California Consumer Privacy Act (CCPA): a new law that gives California residents the right to opt out of the sale of their personal information, i.e., opt out from tracking, that requires technical implementation to be enforceable
- Global Privacy Control (GPC): specification we develop at the W3C standards organization to opt out of third-party tracking

Considerations for Implementing a privacy choice scheme

- Usability
- Active choice
- Generalizability: global vs. individualized settings for different sites
- Implementation level (e.g., browser vs. site)

Research Methodology

- Schemes are implemented in a browser extension and tested in a usability study
- Users for the study will be recruited and directed to install the browser extension
- Through the browser extension users will be assigned a scheme and continue their normal browsing activity with their assigned scheme running as though it is part of the browser itself
- Data will be collected on the user, their browsing history, how they interact with ads, how they interact with the privacy permission scheme etc.
- An exit survey on the user experience will be conducted

Privacy Choice Schemes Being Developed

1. Generalizing Individual Privacy Choices

- Popup permission banner (Figure 1) will appear on new domains visited and users can apply global settings via "apply to all" option to avoid banner fatigue



Figure 1 (above): popup permission banner

2. Automatic Learning of Privacy Choices

- User's preferences will be learned automatically and generalized based on web browsing activity during learning period

3. Questionnaire-based Privacy Choices

- On installation users are asked from what types of sites they would like to be opted out of tracking
- Choice will be applied to future website visits

4. Profile-based Selection of Privacy Choices

- On installation users are asked to select a profile depending on how much they value privacy
- Tracking permissions will be based on this profile