"It's a scavenger hunt": Usability of Websites' Opt-Out and Data Deletion Choices

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Privacy choices are increasingly mandated

European Union

GDPR

The United States

California Consumer Privacy Act (CCPA)

CAN-SPAM Act

COPPA
Children's Online
Privacy Protection Act

DIGITAL
ADVERTISING
ALLIANCE

Three commonly mandated types of choices are...

Email opt-outs

EMAIL PREFERENCES

Unsubscribe

Email Address:

Unsubscribe if you no longer wish to receive email updates from Lord & Taylor.

UNSUBSCRIBE

Targeted advertising opt-outs

Submit Your Preference

○ Personalize Ads from Amazon
◉ Do Not Personalize Ads from Amazon for this Internet Browser

Submit

And account deletion mechanisms

I would like to request the following regarding my personal information: *

○ Update it
Make changes described in comments field.

○ Limit its processing
Use it only for the services I requested.

○ Port it
Show me what I have shared and posted.

○ Access it
Show me what I have shared and posted, as well as what's been collected about me.

○ Restrict processing it
Stop using my personal information, which will end my ability to use the respective service(s).

◉ Delete it
Remove my personal information, which will end my ability to use the respective service(s).

Past research has shown that privacy choices are not usable

Leon et al., CHI'12

Why Johnny Can't Opt Out: A Usability Evaluation of Tools to Limit Online Behavioral Advertising

Degeling et al., NDSS'19

We Value Your Privacy ... Now Take Some Cookies: Measuring the GDPR's Impact on Web Privacy

Komanduri et al., ISJLP'11

AdChoices? Compliance with Online Behavioral Advertising Notice and Choice Requirements

Internet Society, 2017

2017 Email Marketing & Unsubscribe Audit

Libert, WWW'18

An Automated Approach to Auditing Disclosure of Third-Party Data Collection in Website Privacy Policies

Habib et al., SOUPS'19

An Empirical Analysis of Data Deletion and Opt-Out Choices on 150 Websites

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We expand on existing work by testing privacy choices on **websites** with **real users**

How many clicks does it take to get to Amazon's email opt-out? (A lot.)

(1) Find account settings

(2) Navigate to the correct page

Your Account

Your Orders
Track, return, or buy things again

Login & security
Edit login, name, and mobile number

Prime
View benefits and payment settings

Gift cards
View balance or redeem a card

All things Alexa
Get the most out of your Alexa-enabled devices

Your devices and content
Manage your Amazon devices and digital content

Ordering and shopping preferences
Your addresses
Your Payments
Your Amazon profile
Archived orders
Manage your lists
Download order reports
1-Click settings
Amazon Fresh settings
Language preferences
Manage saved IDs
Coupons
Product Vouchers

Digital content and devices
Manage content and devices
Your apps
Prime Video settings
Amazon Music settings
Manage Amazon Drive and photos
Digital games and software
Twitch settings
Audible settings
Amazon Coins
Digital gifts you've received
Digital and device forum

Memberships and subscriptions
Kindle Unlimited
Prime Video Channels
Music Unlimited
Subscribe & Save
FreeTime Unlimited
Audible membership
Dash buttons
Magazine subscriptions
Other subscriptions

Communication and content
Messages from Amazon and sellers
Email subscriptions
Advertising preferences
Communication preferences
Shipment updates via text
Alexa shopping notifications
Deals Notifications
Videos you've uploaded

Shopping programs and rentals
Third Party Credit Card Installment
Rentals by Amazon
Amazon Household
Pantry
Shop the Kids' Store by age
No-Rush rewards summary
Teens Program
Allowances
Pet Profiles
Shop with Points
Amazon Second Chance

Other programs
Amazon credit cards
Your seller account
Login with Amazon
Amazon Pay
Manage your trade-ins
Amazon Business registration
Amazon Web Services
Amazon tax exemption program

What's the difference between emails and communications?

(4) Scroll past ~90 checkboxes

(3) Find correct section

Communication Preferences Center

We'd like to stay in touch, but only in ways that you find useful.

Mail Preferences

Marketing Information by Post	You are currently subscribed to receive newsletters for deals and personalized product recommendations. ⌄

Email Preferences

General Settings	Email is currently being sent to spearman@cmu.edu in HTML (Text and Images). ⌄
Promotional Emails	You're receiving emails for 90 departments. ⌄

Promotional Emails ⌃

Send me notifications from the following categories and new categories as they become available.

- ☐ Amazon Cloud Cam
- ☐ Amazon Invites
- ☐ Alexa
- ☐ Amazon Appstore
- ☐ Amazon Books - physical stores
- ☐ Amazon Dash Button
- ☑ Amazon Echo
- ☐ Amazon Family
- ☐ Amazon Fresh
- ☑ Amazon Home Services
- ☐ Amazon Marketplace
- ☐ Amazon Move
- ☑ Amazon Music Unlimited
- ☐ Amazon News
- ☐ Amazon Outfit Compare
- ☑ Amazon Partners
- ☐ Amazon Pop-Ups
- ☑ Amazon Prime Marketing Communications
- ☑ Amazon Returns
- ☐ Amazon Seller App
- ☐ Amazon Trade-In
- ☑ Amazon Video
- ☑ AmazonSmile
- ☐ Associates
- ☐ Automotive
- ☐ Baby
- ☐ Beauty
- ☐ Books
- ☑ Certified Refurbished on Amazon
- ☐ Clothing & Accessories
- ☑ Cloud Drive
- ☐ Computer & Accessories
- ☐ Courses
- ☐ Credit Card Offers
- ☐ Customer Relationships

- ☐ Electronics
- ☐ Friends & Social Networks
- ☐ Furniture
- ☐ General Off...
- ☐ Grocery
- ☑ Health &...
- ☑ Home, Ga...
- ☐ Industrial...
- ☐ Jewelry
- ☐ Kindle &...
- ☐ Kindle Bo...
- ☐ Local Services
- ☑ MP3 Downloads
- ☐ Magazine Subscri...
- ☑ Movies & TV
- ☑ Music
- ☐ Musical Instruments
- ☑ News
- ☐ Office Products & Supplies
- ☐ Prime Music
- ☐ Prime Now
- ☐ Prime Student
- ☑ Restaurants
- ☐ Seller Communications
- ☐ Seller Feedback
- ☐ Shoes
- ☑ Software
- ☐ Sports & Outdoors
- ☐ Subscribe and Save
- ☑ Subscribe with Amazon
- ☐ Subscribe with Amazon Education Consumer
- ☑ Surveys & Feedback
- ☐ Tools & Home Improvement
- ☐ Toys & Games
- ☐ Treasure Truck
- ☐ Twitch Prime
- ☐ Video Games

Do I really have to uncheck ALL of these??

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(5) Click opt-out box
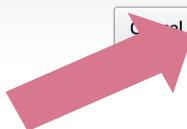
Audiobooks

☐ Certified Refurbished on Amazon

☑ Clothing & Accessories

☑ Computer & Accessories

☑ Courses

☑ Credit Card Offers

☑ Customer Relationships

☑ Delivery Programs

☐ Twitch Prime

☐ Vendor Support

☐ Video Games

☑ Watches

☑ Whole Foods Market on Amazon

☑ Wolfgang

☑ **Do not send me any marketing email for now**

Check this box to stop receiving all Amazon marketing communications. Note that you will still receive subscription emails you explicitly opted to receive. We will still send you messages related to your orders, listings, updates about products or services you have purchased from us, or information about your account. You will also continue to receive emails about programs you are enrolled in, such as Amazon Associates and Amazon Services. If you wish to opt-out of marketing communications from another Amazon company, please visit the company's website or follow the opt-out instructions they provide in their marketing communication.

Cancel   Update

(6) Make sure to click "Update"!

We wanted to evaluate common practices for offering privacy choices that we observed in our prior work

Habib et al., SOUPS'19

An Empirical Analysis of Data Deletion and Opt-Out Choices on 150 Websites
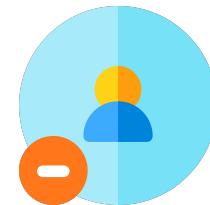
We conducted an in-lab usability study of common practices used to offer privacy choices
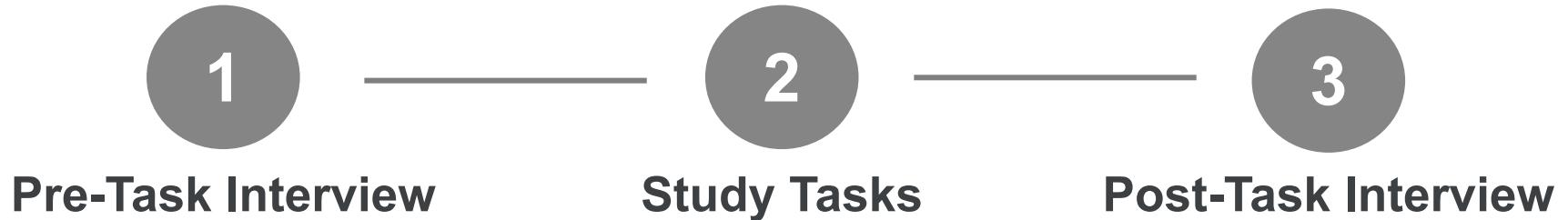
Opt-outs for **email communications**
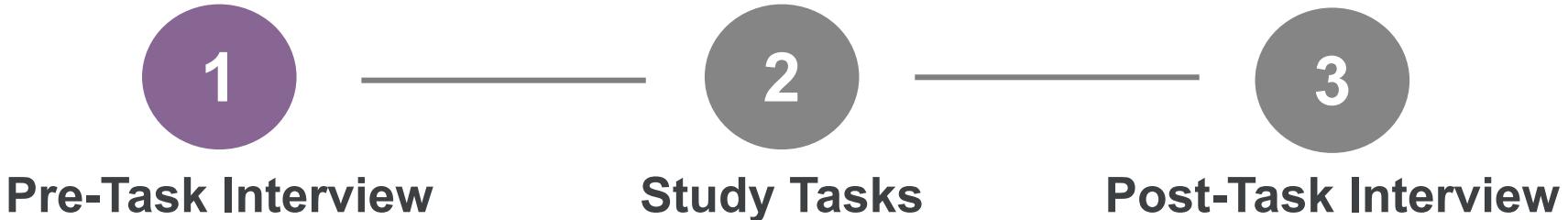
Opt-outs for **targeted ads**
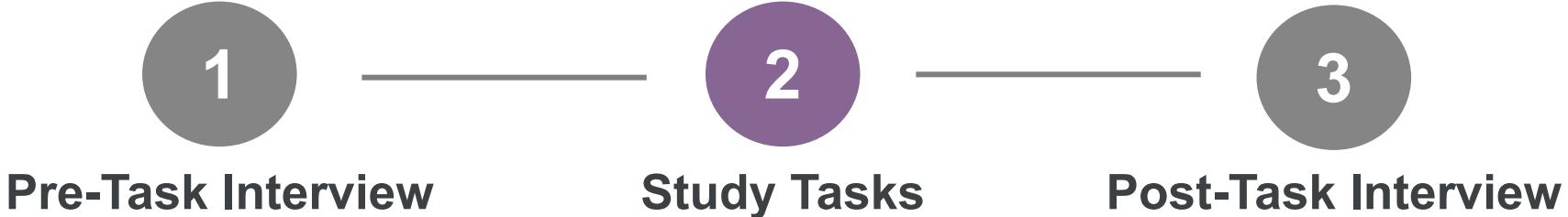
Choices for **data deletion**

1 Pre-Task Interview   **2** Study Tasks   **3** Post-Task Interview

1 —— **2** —— **3**

Pre-Task Interview   **Study Tasks**   **Post-Task Interview**
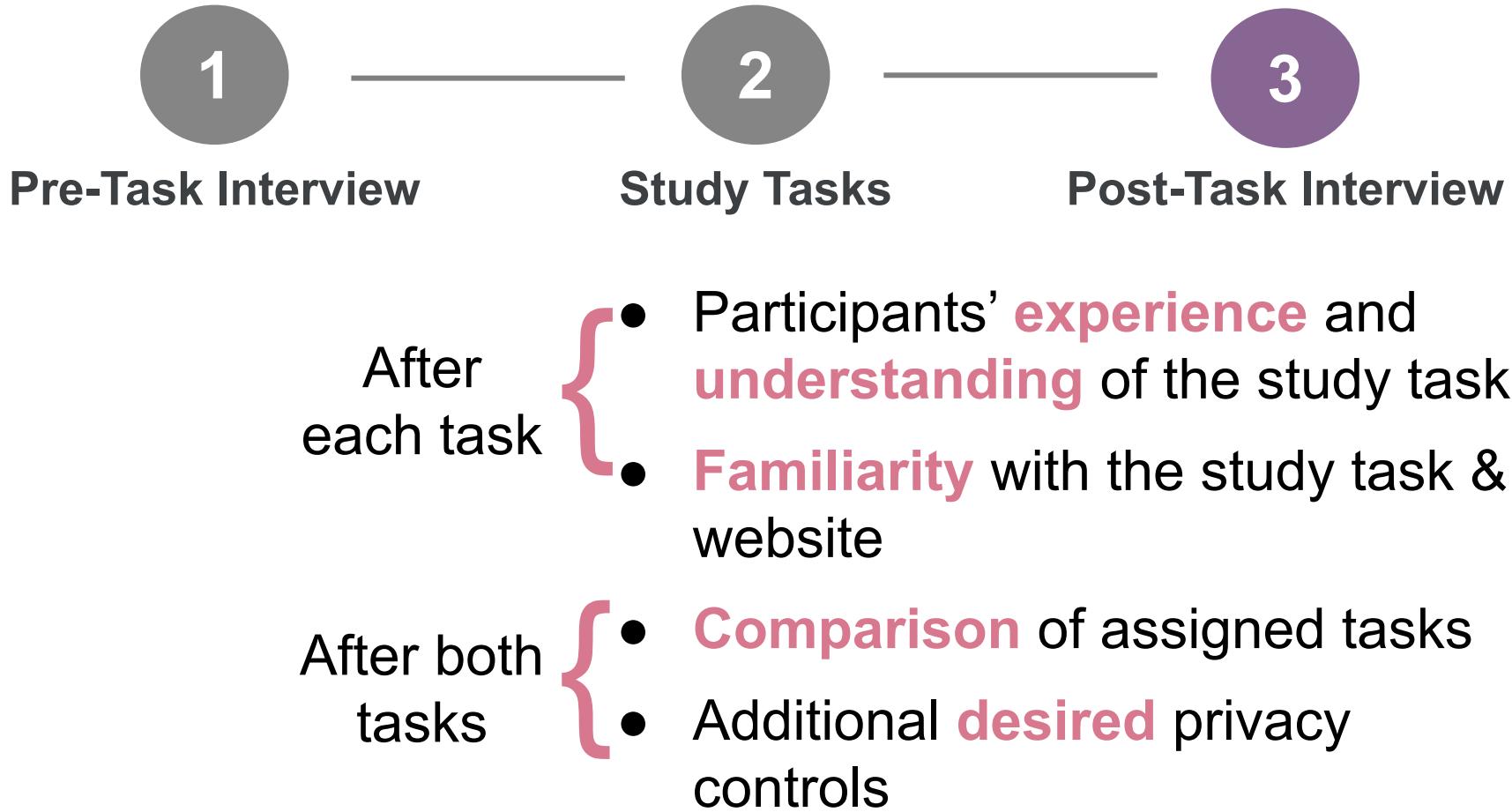
- **Data collection** on websites

- **Available controls** for how companies can use data

- Controls **specific** to email marketing, targeted advertising, and data deletion

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1 ——— **2** ——— **3**

Pre-Task Interview   **Study Tasks**   **Post-Task Interview**
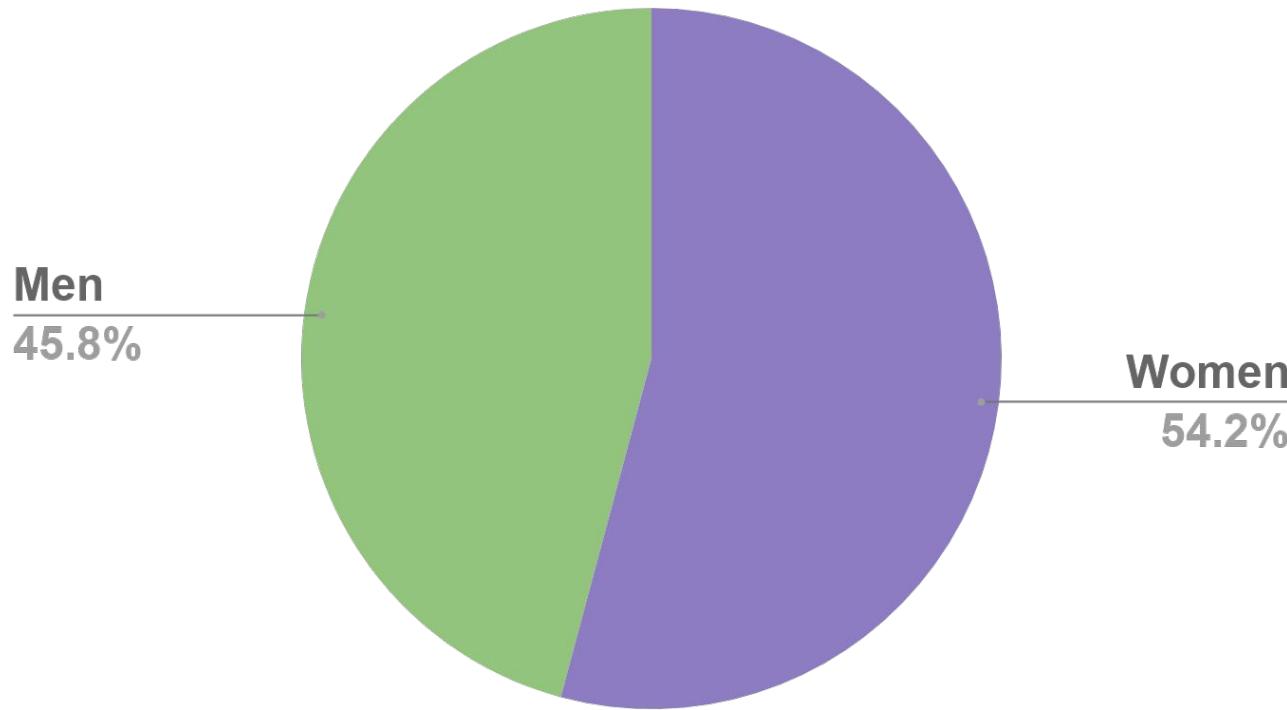
- We gave users scenarios and asked them to complete tasks as they would in the real world

  ○ Some tasks required visiting the **account settings** or **privacy policy**

  ○ Policy mechanisms were **links** or described in **text**

- Each user was given **two** tasks with **counterbalanced** & **stratified** task assignments

1 Pre-Task Interview — **2** Study Tasks — **3** Post-Task Interview

After each task {
- Participants' **experience** and **understanding** of the study task
- **Familiarity** with the study task & website

After both tasks {
- **Comparison** of assigned tasks
- Additional **desired** privacy controls
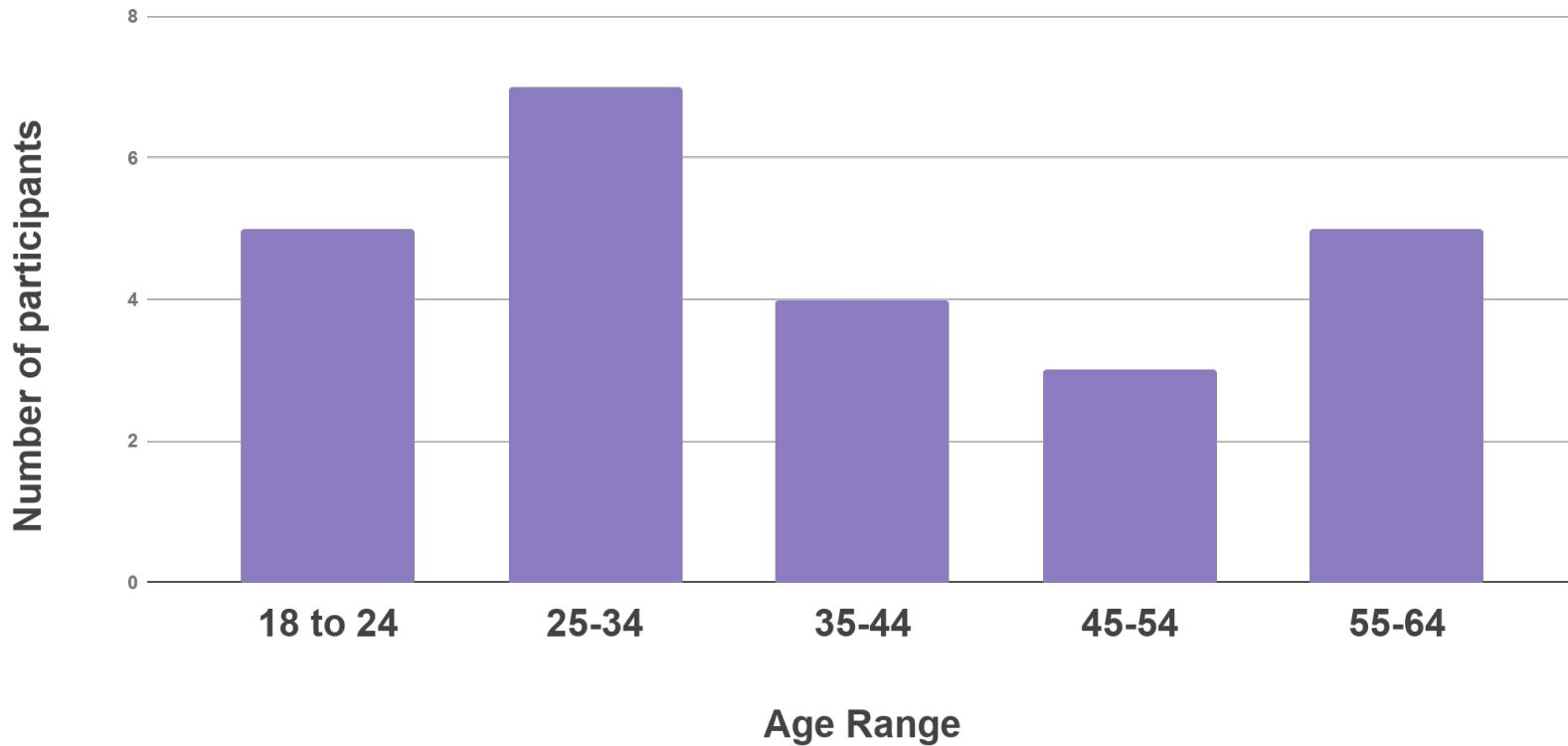
Who were our participants?
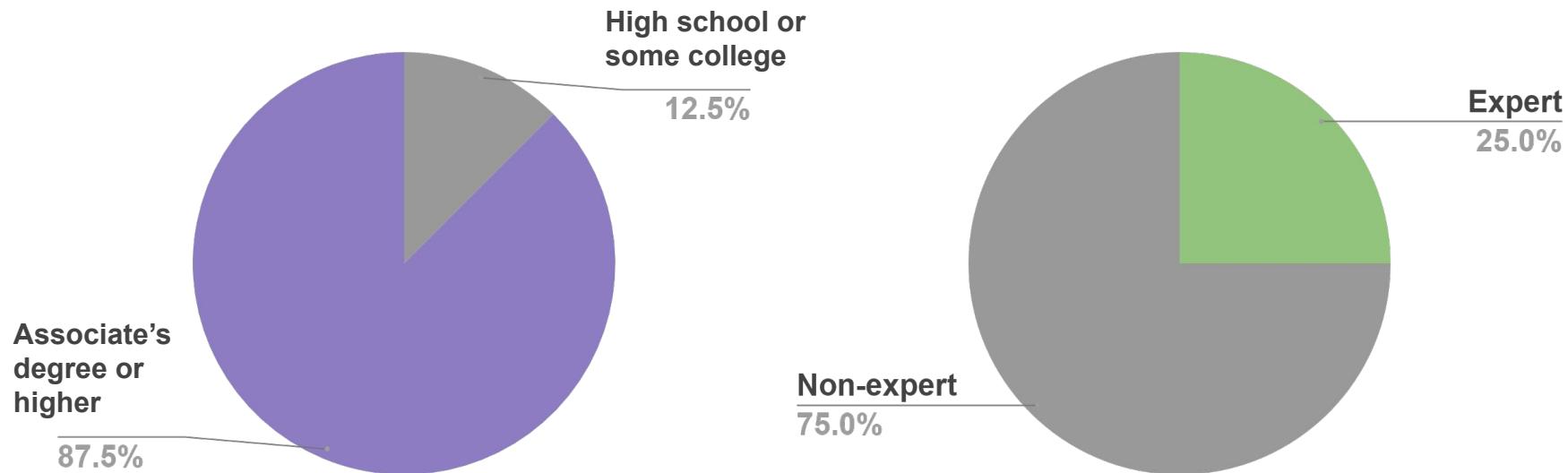
About half of participants identified as women and about half as men

Men
45.8%

Women
54.2%

The most common age range was 25-34 (n=7), but participants were a wide range of ages

Our 24 participants were mostly highly educated, but only 25% reported technical expertise

High school or some college
12.5%

Associate's degree or higher
87.5%

Expert
25.0%

Non-expert
75.0%

What did we find?

Results Outline

Planning   **Finding** privacy choices

Translation   **Learning** privacy choices

Physical action **Using** privacy choices

Assessment   **Understanding** privacy choices

Andre et al. The user action framework: A reliable foundation for usability engineering support tools. *International Journal of Human-Computer Studies*, 54(1):107–136, 2001.

Results Outline

Planning

Translation

Physical action

Assessment

Finding privacy choices

Expectations & strategies dependent on choice type
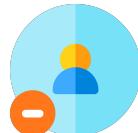
Email opt-outs ➡️ **Unsubscribe links within emails**

Advertising opt-outs ➡️ **No dominant mechanism**
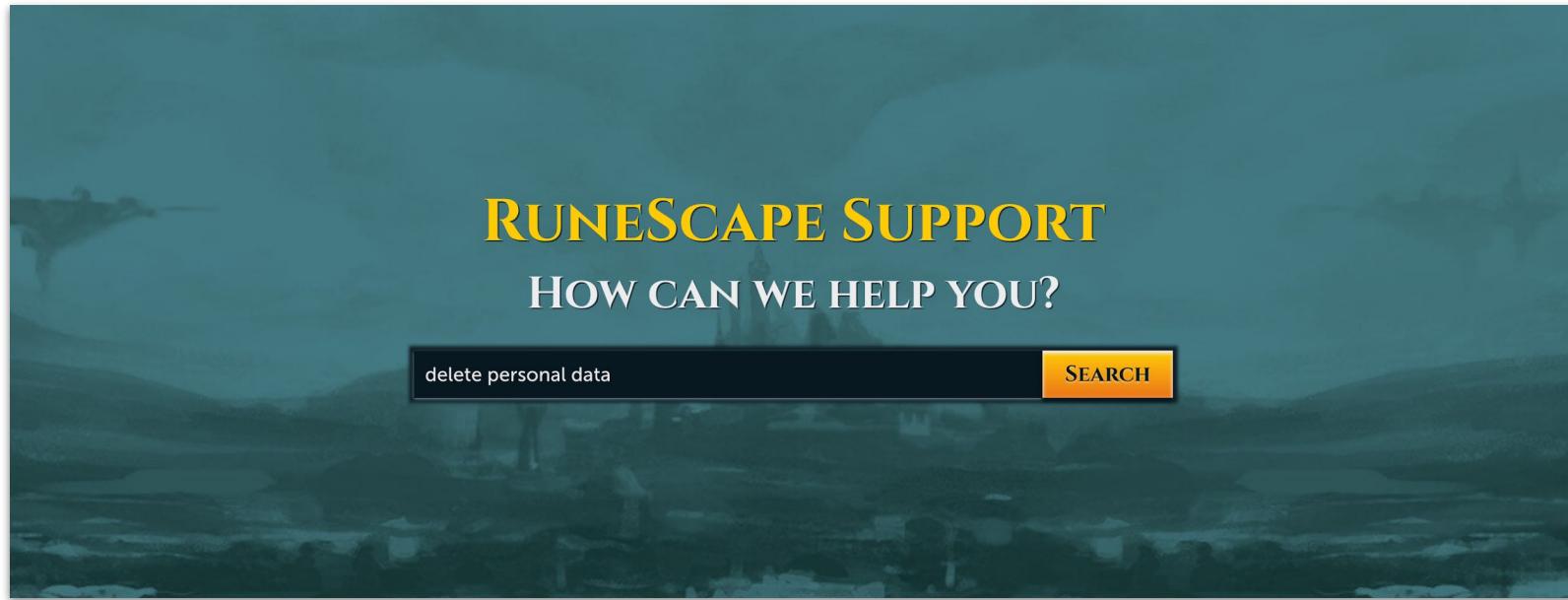
Deletion choices ➡️ **User account settings**

Multiple paths made choices easier to find

Assigned choice mechanism: **policy text**

Multiple paths made choices easier to find

Results Outline

Planning

Translation   **Learning** privacy choices

Physical action

Assessment

Formatting and text caused confusion

Cookies and Web Beacons

A cookie is a small amount of data, which often includes an anonymous unique identifier, which is sent to your browser from a Website's computers and stored on your computer's hard drive. Cookies are required to use some CoinMarketCap services. CoinMarketCap and its ad management partners ("Ad Partners") use cookies to record current session information.

Our Ad Partners may also from time to time use web beacons (also known as Internet tags, pixel tags, and clear GIFs). These web beacons are provided by our Ad Partners and allow Ad Partners to obtain information such as the IP address of the computer that downloaded the page on which the beacon appears, the URL of the page on which the beacon appears, the time the page containing the beacon was viewed, the type of browser used to view the page, and the information in cookies set by the Ad Partners. Web beacons enable our Ad Partners to recognize a unique cookie on your web browser, which in turn enables us to learn which advertisements bring users to our Website.

With both cookies and web beacon technology, the information that we collect and share is anonymous and not personally identifiable. It does not contain your name, address, geographic location, telephone number, or e-mail address.

You can opt-out of Google Analytics data collection with the Google Analytics Opt-out Browser Add-on.

You may also wish to refer to this website for additional information about disabling cookies from your browser: http://www.allaboutcookies.org/manage-cookies/.

} Ad partners use **cookies** and **web beacons**

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Formatting and text caused confusion

Cookies and Web Beacons

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You can opt-out of Google Analytics data collection with the Google Analytics Opt-out Browser Add-on.

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Not an advertising opt-out link

Formatting and text caused confusion

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You may also wish to refer to this website for additional information about disabling cookies from your browser: http://www.allaboutcookies.org/manage-cookies/.

Info about
disabling cookies

Results Outline

Planning
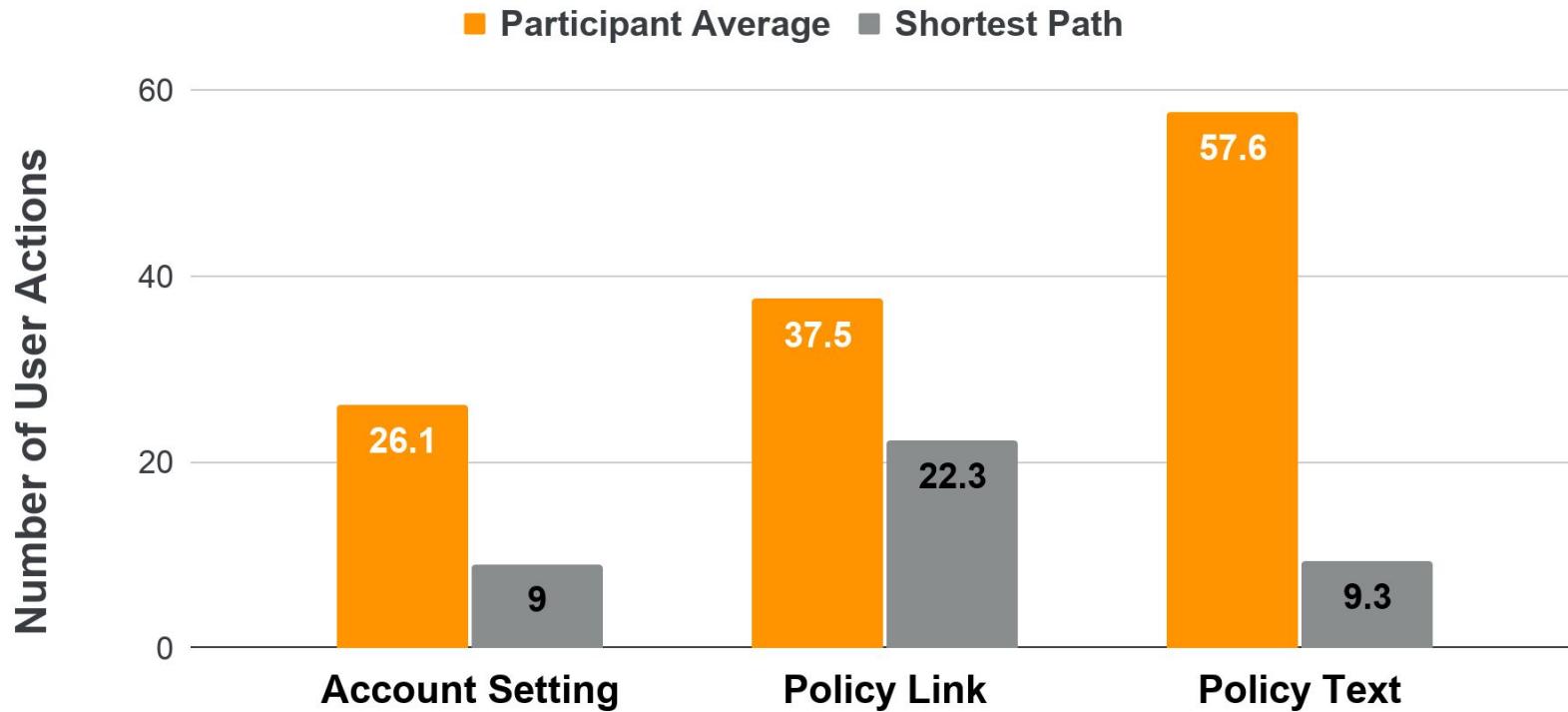
Translation

Physical action   **Using** privacy choices

Assessment

Using choices required high numbers of user actions

Legend: ■ Participant Average ■ Shortest Path

Number of User Actions

Category	Participant Average	Shortest Path
Account Setting	26.1	9
Policy Link	37.5	22.3
Policy Text	57.6	9.3

Choices required unnecessary effort

Submitting written requests or complicated forms

The New York Times

Request Form

Please use this form to initiate processing your personal data request.

To unsubscribe from any marketing or newsletter emails from the New York Times, please select the 'unsubscribe' link at the bottom of each email.

To change or cancel your subscription, please contact Customer Care

I would like to request the following regarding my personal information: *

○ Update it
    Make changes described in comments field.

○ Limit its processing
    Use it only for the services I requested.

○ Port it
    Show me what I have shared and posted.

○ Access it
    Show me what I have shared and posted, as well as what's been collected about me.

○ Restrict processing it
    Stop using my personal information, which will end my ability to use the respective service(s).

○ Delete it
    Remove my personal information, which will end my ability to use the respective service(s).

Please select the New York Times Company products and services for which you would like to us to review and apply your personal data request towards: *

Choose the area to which your request applies:

Comments / Feedback

Specify any further detail and other email addresses that you would like this request to include.

Show me what I have shared and posted, as well as what's been collected about me.

○ Restrict processing it
    Stop using my personal information, which will end my ability to use the respective service(s).

○ Delete it
    Remove my personal information, which will end my ability to use the respective service(s).

Please select the New York Times Company products and services for which you would like to us to review and apply your personal data request towards: *

Choose the area to which your request applies:

Comments / Feedback

Specify any further detail and other email addresses that you would like this request to include.

I confirm that:

☐ Under penalty of perjury, I declare the above information is true, correct and that I am the person, or the parent or guardian of the person, whose name appears above. *

☐ A request to delete or restrict my personal information is irreversible and will result in termination of services with the New York Times Company. *

☐ I understand that I will be required to validate my request by email and I may be contacted to complete this request. *

☐ I understand and agree that this request will be processed in accordance with applicable law(s), and therefore I may not receive a response. *

[reCAPTCHA I'm not a robot]

Submit

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Choices required unnecessary effort

Submitting written requests or complicated forms

"How can I delete a specific webpage that is contacting me?"

Choices required unnecessary effort

Choosing from multiple links

How to Opt Out of Remarketing and Advertising

If you do not wish to participate in our Google AdWords Remarketing, you can opt out by visiting Google's Ads Preferences Manager. You can also opt out of any third-party vendor's use of cookies by visiting www.networkadvertising.org/choices/ or http://www.aboutads.info/choices/.

Results Outline

Planning

Translation

Physical action

Assessment   **Understanding** privacy choices

Skepticism about effectiveness

It's like the door open/close on the elevator. It's just there to make you feel like you have some power. **But I really don't think it does anything.**

I think that I could like go through the motions of deleting the information, but I feel like **it might still be there even if I tried to delete it.**

How do we improve website privacy choices?

Provide unified settings

Website account settings → Meets current user expectations

Web browsers → Could be machine readable

Provide unified settings

The New York Times

| NEWS	OPINION	ARTS	LIVING	MORE
Home Page	Today's Opinion	Today's Arts	Automobiles	Reader Center
World	Op-Ed Columnists	Art & Design	Crossword	Wirecutter
U.S.	Editorials	Books	Education	Live Events
Politics	Op-Ed Contributors	Dance	Food	The Learning Network
Election 2020	Letters	Movies	Health	Tools & Services
New York	Sunday Review	Music	Jobs	N.Y.C. Events Guide
Business	Video: Opinion	Pop Culture	Love	Multimedia
Tech		Television	Magazine	Photography
Science		Theater	Parenting	Video
Sports		Video: Arts	Real Estate	Newsletters
Obituaries			Recipes	NYT Store
Today's Paper			Style	Times Journeys
Corrections			T Magazine	Manage My Account
			Travel	✓✗ **Privacy Options**

Supplement with additional paths
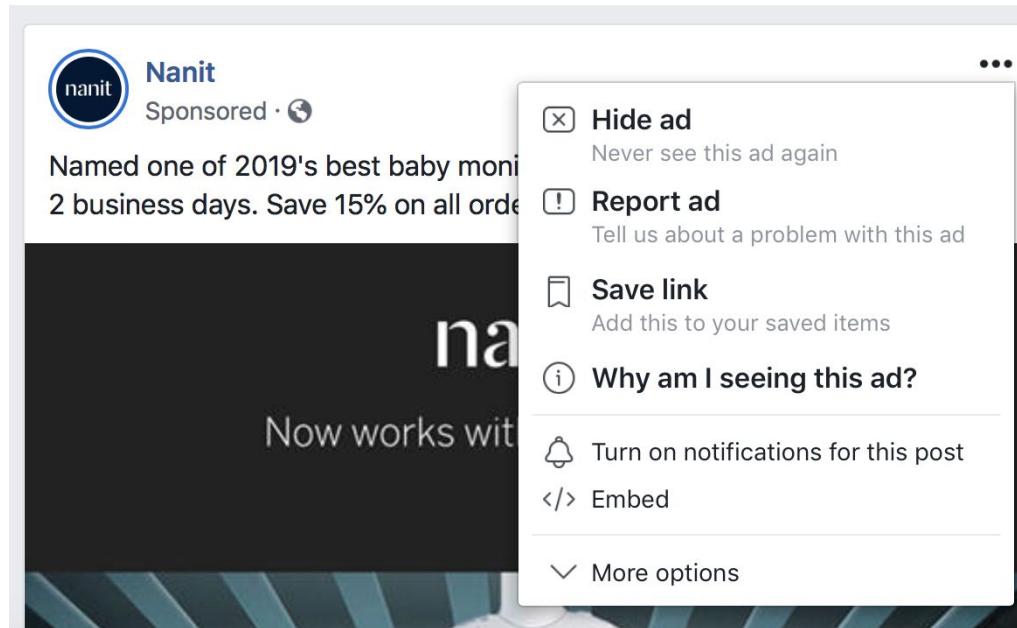
Additional routes to privacy policy

Privacy settings

Visit our Privacy Policy to learn more about how to manage your personal data with The New York Times.

Supplement with additional paths

Controls within the context of data collection

Regulation should have explicit usability requirements

- Where controls are located

- How controls should be presented

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CAN-SPAM Act

Thank you!

- We conducted a 24-participant in-lab usability evaluation of **email opt-out controls**, **targeted advertising controls**, and **data deletion mechanisms**
- The **location** and **functionality** of choices should be better aligned to **user expectations**
- Interface changes such as **unified privacy settings** and **multiple paths** to those privacy settings could help users
- **Standardization** of choices via regulation could improve usability

For more information about our ongoing work on usable privacy choices, please visit: **cups.cs.cmu.edu/optout.html**

This research was conducted as part of the Usable Privacy Policy Project.

USABLE **PRIVACY.**ORG
the usable privacy policy project