

Lecture 21: Privacy Icons

CS 181W

Fall 2022

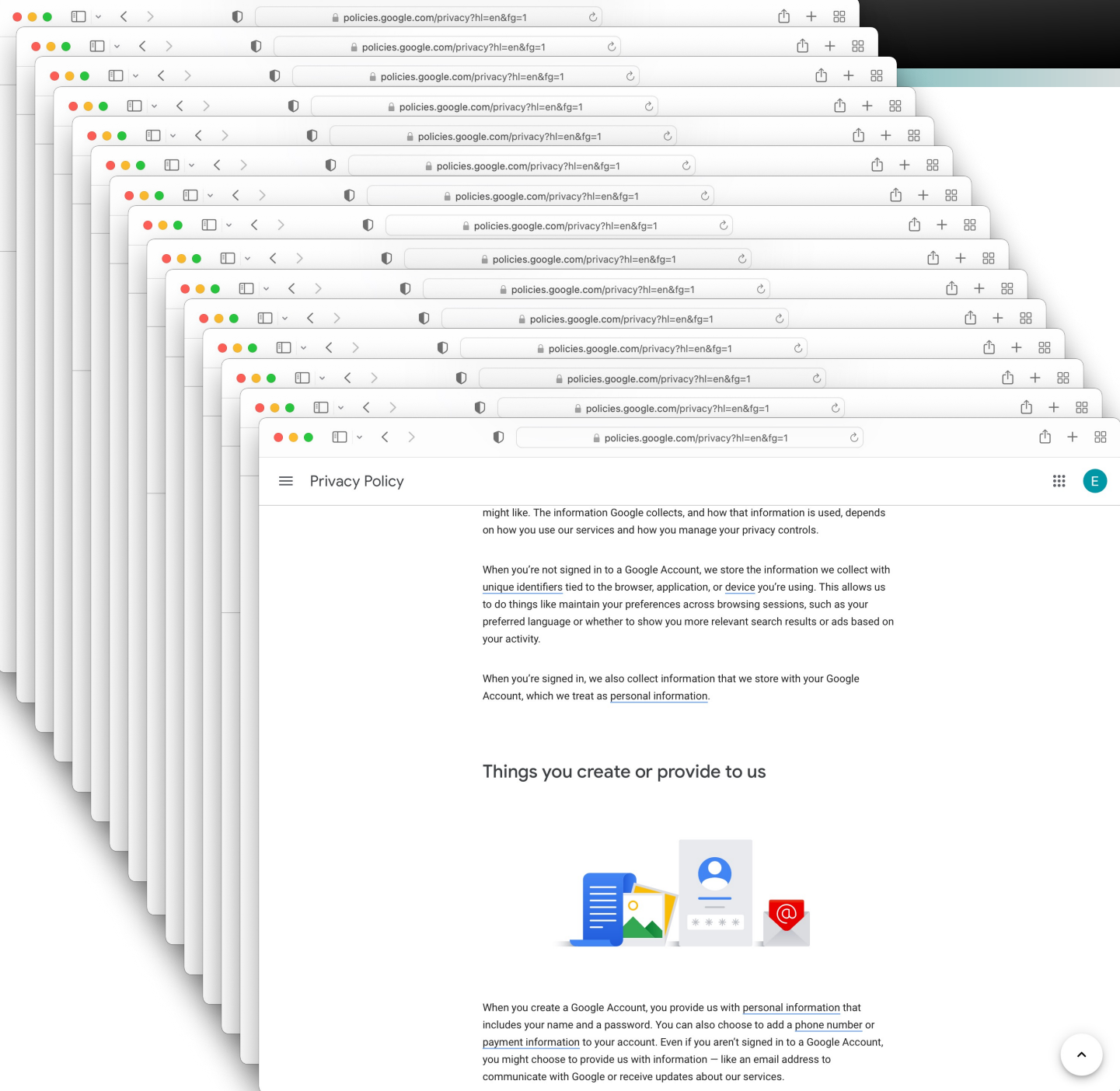
Recall: Privacy as Control

Privacy is the claim of individuals, groups or institutions to determine for themselves what extent information about them is communicated to others.

Informed Consent

– Alan Westin

Privacy and Freedom, 1967



Privacy Policy

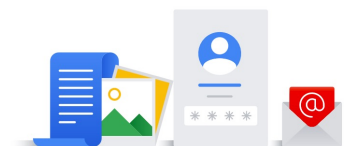


might like. The information Google collects, and how that information is used, depends on how you use our services and how you manage your privacy controls.

When you're not signed in to a Google Account, we store the information we collect with unique identifiers tied to the browser, application, or device you're using. This allows us to do things like maintain your preferences across browsing sessions, such as your preferred language or whether to show you more relevant search results or ads based on your activity.

When you're signed in, we also collect information that we store with your Google Account, which we treat as personal information.

Things you create or provide to us



When you create a Google Account, you provide us with personal information that includes your name and a password. You can also choose to add a phone number or payment information to your account. Even if you aren't signed in to a Google Account, you might choose to provide us with information — like an email address to communicate with Google or receive updates about our services.



Improving on Privacy Policies

- ~~Idea #1: Improve how information is communicated~~
- Idea #2: Give people choices
- Idea #3: Legally-mandate absolute protections

Choice Interfaces: Cookie Banners

Taste the Ultimate Buy Whole Foods Online Experience

We want to give you the very best service during your search for the highest quality foods.

By clicking “Accept All Cookies”, you agree to the storing of cookies on your device to enhance site navigation, analyse site usage, and assist in our marketing efforts.

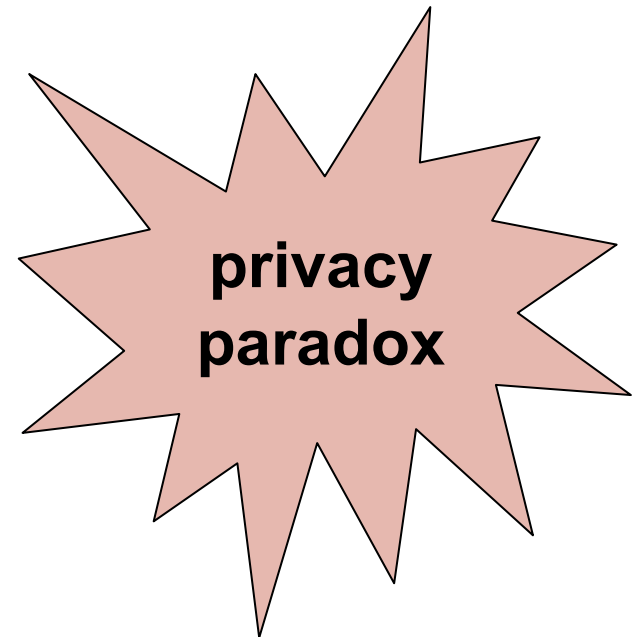
Don't worry, all of our cookies are made from the best quality organic ingredients!

[Cookies Settings](#)

[Accept All Cookies](#)

Limitations of Cookie Banners

- Information asymmetry
- Resignation
- Bounded rationality
 - Nudging



Choice Interfaces: CCPA opt-out of sale

Are you sure you don't want to allow these partners?

We and our advertising partners collect personal information (such as the cookies stored on your browser, the advertising identifier on your mobile device, or the IP address of your device) when you visit our site or use our app. We, and our partners, use this information to tailor and deliver ads to you on our site or app, or to help tailor ads to you when you visit others "sites or use others" apps. To tailor ads that may be more relevant to you, we and/or our partners may share the information we collect with third parties.

To learn more about the information we collect and use for advertising purposes, please see our [Privacy Policy](#). If you do not wish for us or our partners to sell your personal information to third parties for advertising purposes, select the applicable control from the "Do Not Sell My Info" link provided. Note that although we will not sell your personal information after you click that button, we will continue to share some personal information with our partners (who will function as our service providers in such instance) to help us perform advertising-related functions such as, but not limited to, measuring the effectiveness of our ads, managing how

I'm sure

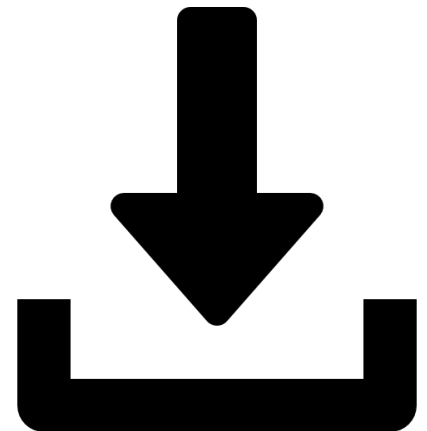
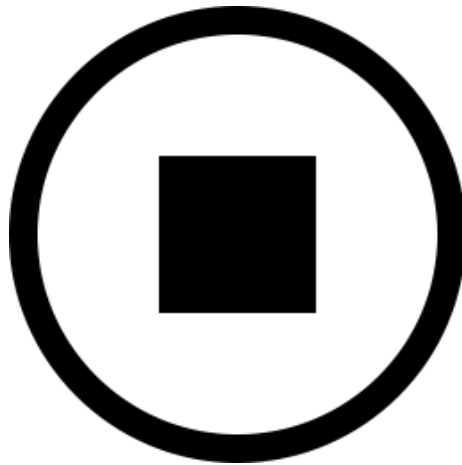
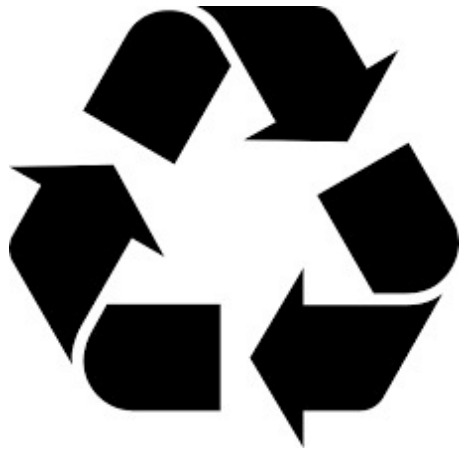
Ok, allow all

[C. Precise geographic location data](#)

[Do not sell my info](#)

Allow all

Icons



Mozilla Privacy Icons



Mystery Icon #1

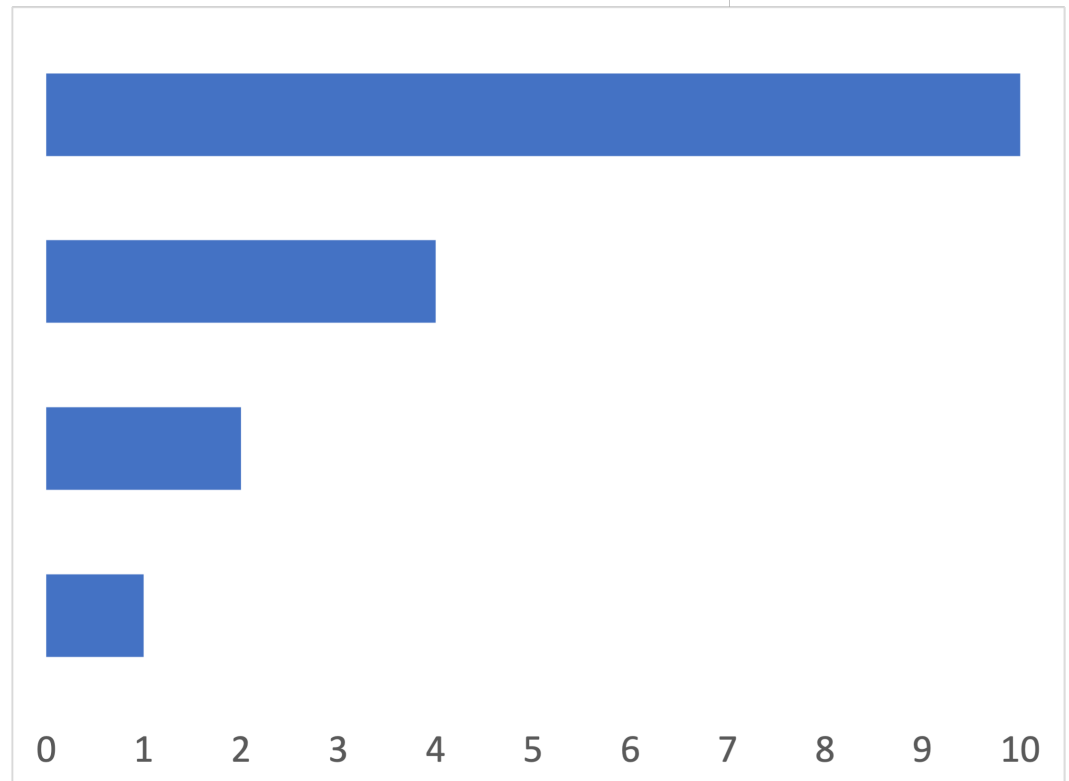
- What does this icon mean?
- What happens if you click on it?



Information/More information

Play video/media

Something about ads



Los Angeles Times

LISTEN NOW

NOV. 15, 2022

COVID-19 FOR SUBSCRIBERS CALIFORNIA POLITICS ELECTION RESULTS GIFT GUIDE 75 GREATEST LAKERS

ADVERTISEMENT

LEVEL
Fly your way

YOU DESERVE SPAIN

Direct flights to Barcelona round trip from **\$445**

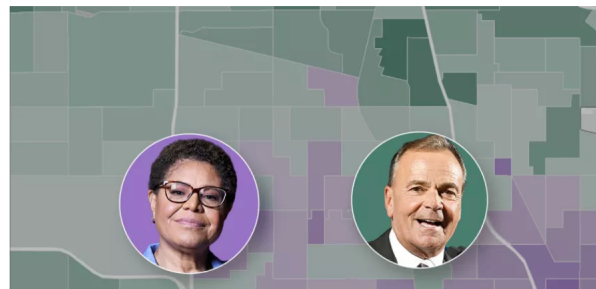
BOOK NOW



MIDTERM ELECTIONS 2022

Find out how your neighborhood voted for Los Angeles mayor

- Bass now leads Caruso by 36,000 votes in L.A. mayor's race as margin



OPINION >



Jonah Goldberg: Will the GOP finally do something about its Trump problem?

Editorial: Trump doesn't want your vote in 2024. Just your obedience while he trashes the U.S. again



Los Angeles Times

LISTEN NOW

NOV. 15, 2022

- COVID-19
- FOR SUBSCRIBERS
- CALIFORNIA POLITICS
- ELECTION RESULTS
- GIFT GUIDE
- 75 GREATEST LAKERS

ADVERTISEMENT

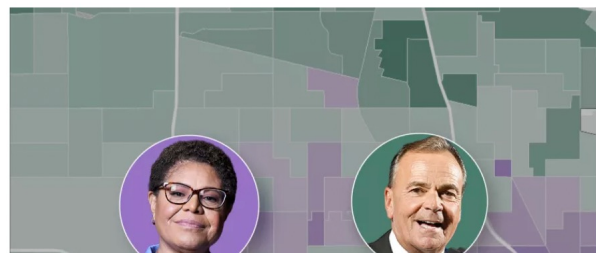
←

Ads by Google

Send feedback Why this ad? ▶

MIDTERM ELECTIONS 2022

Find out how your neighborhood voted for Los Angeles mayor



OPINION >



Jonah Goldberg: Will the GOP finally do something about its Trump problem?

Editorial: Trump doesn't want your vote in 2024. Just your obedience while he

AdChoices icon study

- 1,505 participants
- Recruited through Amazon Mechanical Turk
- Between subjects online survey



Why did I get this ad?



The New York Times

Tuesday, October 25, 2011 Last Update: 11:21 PM ET

Why did I get this ad?



Search

CLICK HERE

Follow Us



Subscribe to Home Delivery Personalize Your Weather

Switch to Global Edition >

- JOBS
- REAL ESTATE
- AUTOS
- ALL CLASSIFIEDS

- WORLD
- U.S.
- POLITICS
- NEW YORK
- BUSINESS
- DEALBOOK
- TECHNOLOGY
- SPORTS
- SCIENCE
- HEALTH
- OPINION
- ARTS
- Books
- Movies
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- Television
- Theater
- STYLE
- Dining & Wine
- Fashion & Style
- Home & Garden
- Weddings/

Europe Faces New Hurdles in Crisis Over Debt

By STEVEN ERLANGER and RACHEL DONADIO 20 minutes ago

On the eve of a European Union summit meeting, crucial financial measures were still unresolved.

• Tempers Flare as European Meeting Nears

I.B.M. Names Virginia Rometty as New Chief Executive

By STEVE LOHR 22 minutes ago

The selection of Ms.

Rometty, a senior vice president at I.B.M., will make her one of the highest-profile women executives in corporate America.



Archive Offers

THE WORLD SERIES



Dilip Vishwanat for The New York Times

Baseball's Game of Telephone

By PAT BORZI 3 minutes ago

Monday night's bullpen debacle by the Cardinals has put a new spotlight on baseball's reliance on landlines.

New Poll Finds a Deep Distrust of Government

By JEFF ZELENY and MEGAN THREE-BRENAN 3 minutes ago

With Election Day just over a year away, a deep

OPINION »

OP-ED | CLIFFORD WINSTON Are Law Schools and Bar Exams Necessary?

The barriers to entry for the legal industry exist to protect lawyers from competition with non-lawyers.

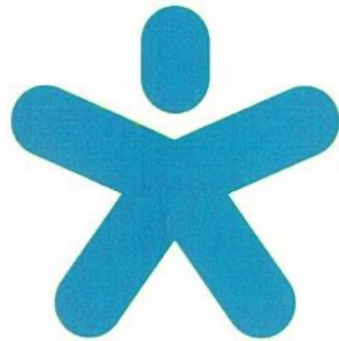
- Brooks: The Fighter Fallacy | Comments
- Nocera: Jobs's Biographer
- Cohen: Defending the E.U.
- Bruni: Have Glock
- Editorial: Refinancing
- Room for Debate: Will Amazon Kill Off Publishers?

Why did I get this ad?



Varied Icons and Taglines

Icons



Taglines

- Why did I get this ad?
- Interest based ads
- AdChoices
- Sponsor ads
- Learn about your ad choices
- Configure ad preferences
- No tagline

What would happen if you clicked on the icon?



57%	More ads will pop up
27%	Will take you to a page where you can buy advertisements on this website
20%	Will take you to a page where you can opt out of tailored ads

% who agreed with each statement; some participants agreed with multiple statements

What would happen if you clicked on the icon?



56%	More ads will pop up
45%	Will take you to a page where you can buy advertisements on this website
27%	Will take you to a page where you can opt out of tailored ads

% who agreed with each statement; some participants agreed with multiple statements

What would happen if you clicked on the icon?

Configure Ad Preferences
~~AdChoices~~ 

42% 56%	More ads will pop up
15% 45%	Will take you to a page where you can buy advertisements on this website
50% 27%	Will take you to a page where you can opt out of tailored ads

% who agreed with each statement; some participants agreed with multiple statements

CHAPTER 20. CALIFORNIA CONSUMER PRIVACY ACT REGULATIONS

PROPOSED TEXT OF REGULATIONS

§ 999.315. Requests to Opt-Out

- (a) A business shall provide two or more designated methods for submitting requests to opt-out, including, at a minimum, an interactive webform accessible via a clear and conspicuous link titled “Do Not Sell My Personal Information,” or “Do Not Sell My Info,” on the business’s website or mobile application. Other acceptable methods for submitting these requests include, but are not limited to, a toll-free phone number, a designated email address, a form
- (e) Opt-Out Button or Logo
- (1) The following opt-out button or logo may be used in addition to posting the notice of right to opt-out, but not in lieu of any posting of the notice. [BUTTON OR LOGO] TO BE ADDED IN A MODIFIED VERSION OF THE REGULATIONS AND MADE AVAILABLE FOR PUBLIC COMMENT.]

Icon development and evaluation

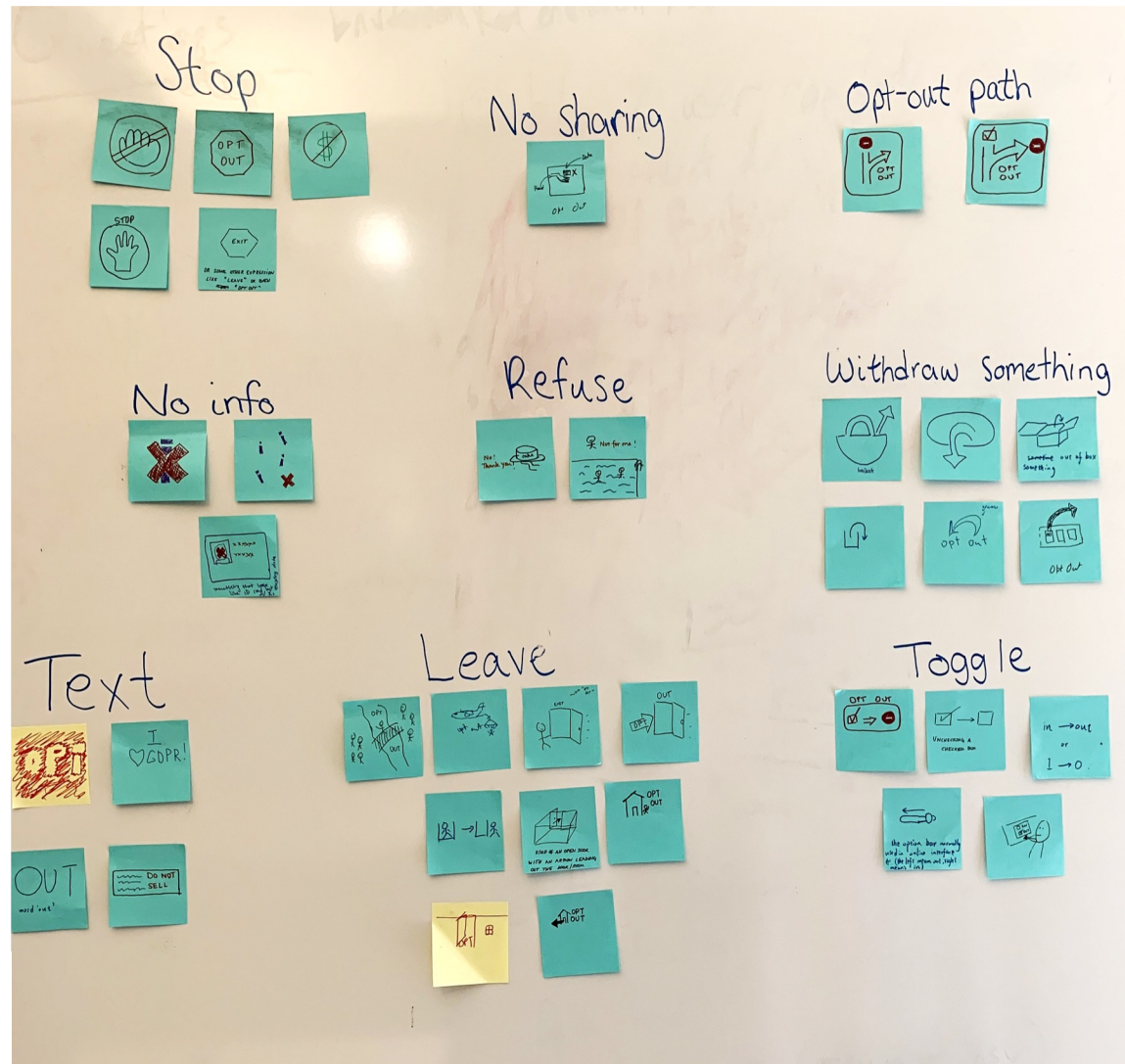
1. Icon ideation
 2. Preliminary icon evaluation
 3. Refinement of most promising icons
 4. Testing of refined icons
 5. Link text ideation
 6. Link text evaluation
 7. Combined icon and link text evaluation
- (but had < 3 months to meet CalAG's public comment deadline)

<https://cacm.acm.org/magazines/2021/3/250700-informing-california-privacy-regulations-with-evidence-from-research/>

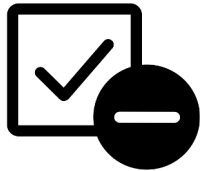
Hana Habib, Yixin Zou, Yaxing Yao, Alessandro Acquisti, Lorrie Cranor, Joel Reidenberg, Norman Sadeh, and Florian Schaub. 2021. Toggles, Dollar Signs, and Triangles: How to (In)Effectively Convey Privacy Choices with Icons and Link Texts. CHI 2021, Article 63, 1–25. <https://doi.org/10.1145/3411764.3445387>

Icon ideation focused on 3 concepts

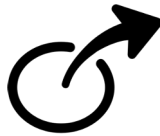
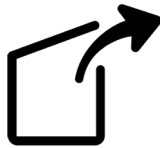
- Choice/consent
- Opting out
- Do-not-sell



Choice/consent



Opting out



Do not sell (personal info)



DAA Privacy
Rights

digitaladvertisingalliance.org

DigitalAdvertisingAlliance.org | License the Privacy Rights Icon

RESOURCES FOR CONSUMERS ≡

DIGITAL ADVERTISING ALLIANCE
Powered By YourAdChoices

ABOUT PRINCIPLES PARTICIPANTS ENFORCEMENT RESOURCES BLOG NEWS

search

Home >> [License the Privacy Rights Icon](#)


License the Privacy Rights Icon

The Digital Advertising Alliance's (DAA) Privacy Rights icon and associated text is the visual representation of a link presented to consumers that provides access to information about how to opt-out of personal information sale as required by the California Consumer Privacy Act (CCPA), effective January 2020. Consistent and proper usage of the Privacy Rights icon and associated text will reinforce the application of consumer-friendly standards for transparency across the Internet.

To whom does this information apply?

All entities—publishers and third parties—that collect and sell personal information through a website or mobile app.

Implementation for Publishers



Do Not Sell My Personal Information

Fees

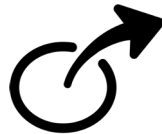
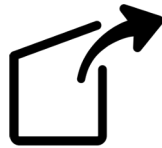
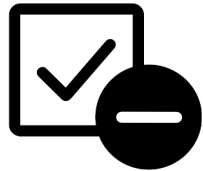
The certification and licensing fee for the Privacy Rights icon is complimentary for both existing and first-time participants in the DAA Program. Only a signature on a Privacy Rights icon licensing agreement is required.

New participants can “bundle” the YourAdChoices Icon and Privacy Rights Icon

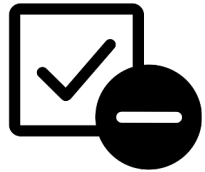
First icon evaluation

- 240 Mturk participants
- Tested 12 icons with and without “Do Not Sell My Personal Information” tagline
- Displayed 1 icon
 - Asked what the icon means and what would happen if you click on it
- Displayed all 12 icons
 - Asked which best conveyed Do Not Sell and Privacy Choices concepts

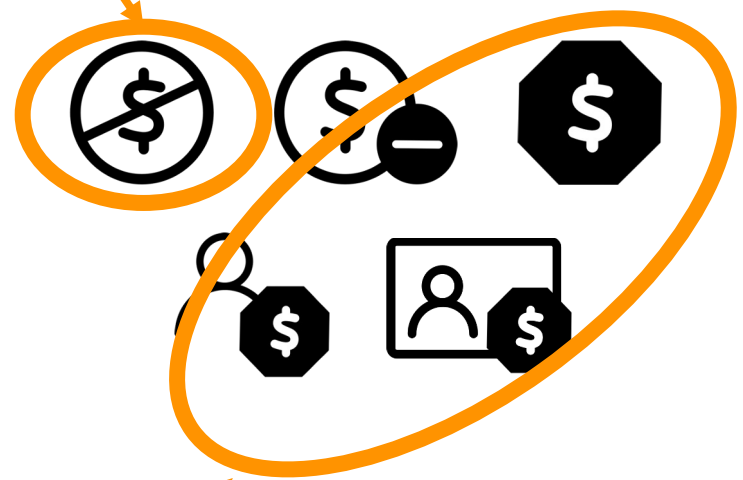
Icons difficult to interpret without words



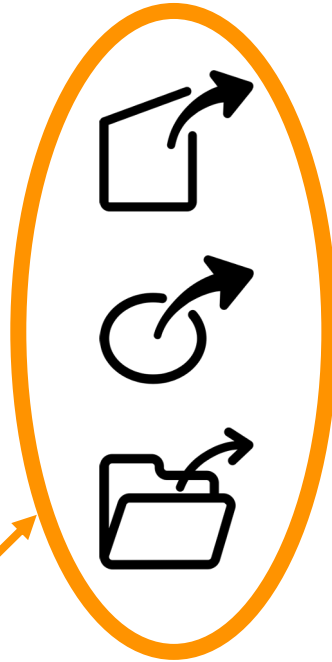
best conveys choices about personal info



best conveys do not sell my personal info, but also conveys payments



mostly confusing



people didn't recognize stop sign



Refined icons for evaluation

ID-Card



Slash-Dollar



Stop-Dollar

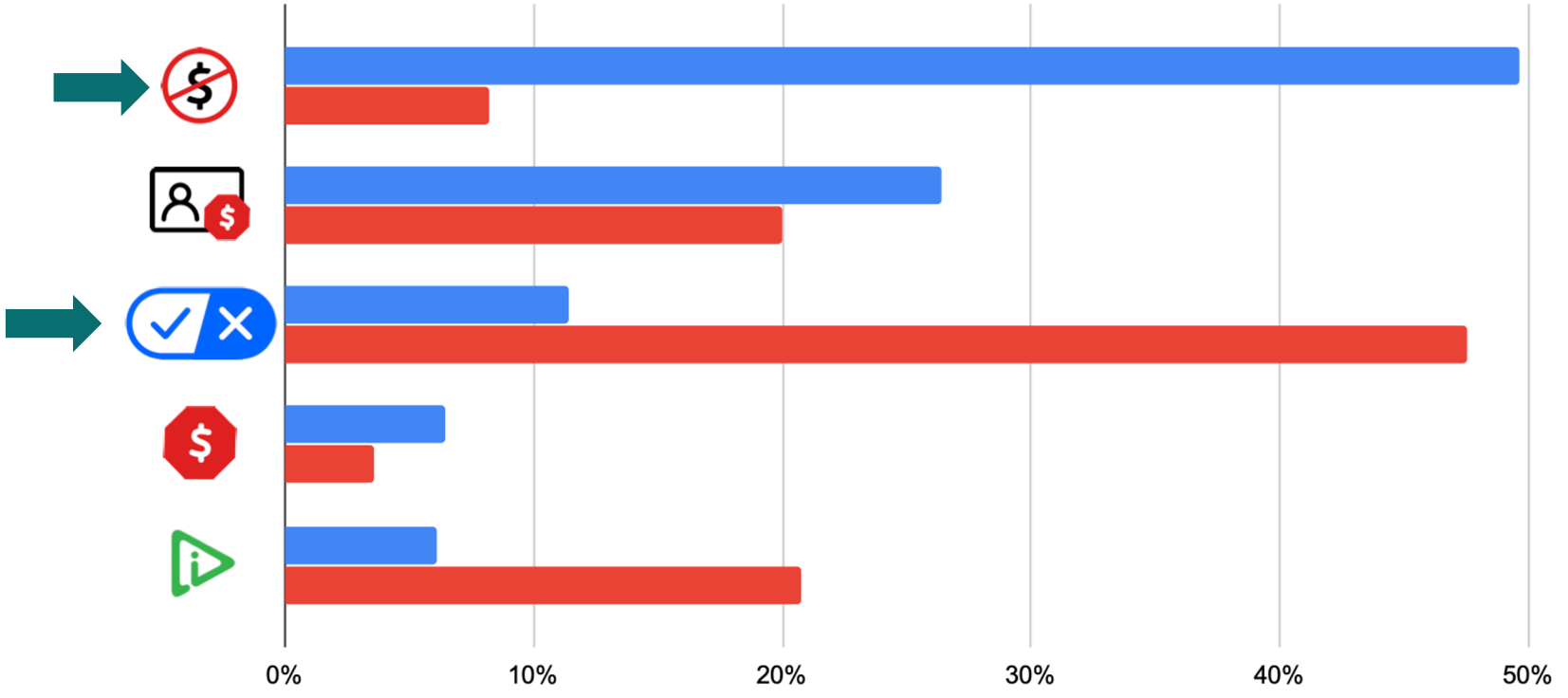


Toggle






DAA





 Best conveys **do not sell my personal information**

 Best conveys **choices about the use of personal information**

Icon	Common Interpretations without tagline (# of participants)
Toggle 	<ul style="list-style-type: none"> accept/decline something (11) activate/deactivate something (5) • okay/exit options (4) • mark as true/false (4) <p style="text-align: right;">17</p>
DAA 	<ul style="list-style-type: none"> • get more information (15) • start audio/video content (7) • denotes website is safe or private (3) • move forward or next (2) something about ads (0) <p style="text-align: right;">10 4 2</p>
Slash-dollar 	<ul style="list-style-type: none"> • something is free or requires no money (12) • cash/dollars not accepted (7) • money (4) • does not sell data opt-out of sale (1) <p style="text-align: right;">3 4 7 2</p>

correct interpretation • **misconception**




Tagline ideation

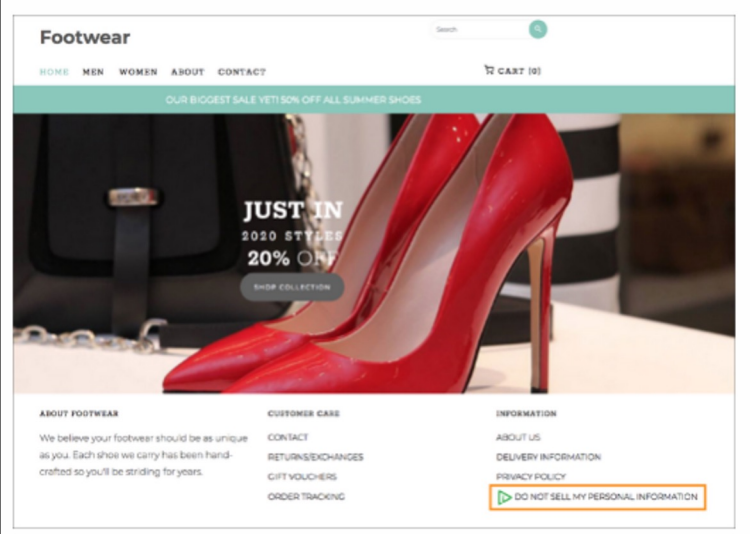
- Do Not Sell My **Personal Information**
- Do Not Sell **My Info**
- Don't Sell **My Info**
- Do Not Sell
- Don't Sell
- Do-Not-Sell **Choices**
- Do-Not-Sell **Options**
- Do-Not-Sell **Opt-Outs**
- **Privacy Choices**
- **Privacy Options**
- **Privacy Opt-Outs**
- **Personal Info Choices**
- **Personal Info Options**
- **Personal Info Opt-Outs**
- **Do Not Sell My Info Choices**
- **Do Not Sell My Info Options**

Tagline testing

- 540 Mturk participants
- “Sell” often misunderstood without “personal information” or “info”
- “Do not sell my personal information” and “Do not sell my info” conveyed narrow choice effectively, but did not convey general privacy choices
- “Options” and “choices” more effective than “opt-outs”
- Most promising new taglines:
 - Privacy choices, Privacy options, Personal info choices
 - These could be used to indicate all privacy choices not just “Do not sell”


Combo testing

- Mturk study with 1,416 participants
- Tested 3 icons + no icon
 - 
 - 
 - 
- Tested 5 taglines + no tagline
 - Do not sell my personal information
 - Do not sell my info
 - Privacy choices
 - Privacy options
 - Personal info choices
- 23 combinations tested




The screenshot shows a website for 'Footwear' with a navigation bar (HOME, MEN, WOMEN, ABOUT, CONTACT) and a search bar. A banner for 'JUST IN 2020 STYLES 20% OFF' is visible. The footer contains three columns of links: 'ABOUT FOOTWEAR', 'CUSTOMER CARE', and 'INFORMATION'. The 'INFORMATION' column includes 'ABOUT US', 'DELIVERY INFORMATION', 'PRIVACY POLICY', and a highlighted link 'DO NOT SELL MY PERSONAL INFORMATION' with a play button icon.

Close up of highlighted area:



DO NOT SELL MY PERSONAL INFORMATION

What do you think would happen if you clicked on the symbol and link in the highlighted area on this web page?



Combo testing results

- Misconceptions
 - “Personal info choices” conveyed info about shoe sizes, site settings, payment methods, etc.
 - Slash-dollar icon sometimes suggested payment options and encrypted payments (42 participants)
 - Toggle icon occasionally suggested it was a real toggle (6 participants)
- None of the icons were very good without a tagline
 - Slash-dollar was especially bad
- Icons didn't have much impact on interpretation of taglines

Recommendations to OAG

Privacy Options

- This allows consumers to look for one button
- Prevent the proliferation of buttons

Do Not Sell My Personal Information

- Complies with CCPA as written

Recommended icon



iOS toggle switch



OAG's revised proposed regulations

- (1) The following opt-out button or logo may be used in addition to posting the notice of right to opt-out, but not in lieu of any posting of the notice of right to opt-out.



- (2) When the opt-out button is used, it shall appear to the left of the “Do Not Sell My Personal Information” or “Do Not Sell My Info” link, as demonstrated below, and shall be approximately the same size as other buttons on the business’s webpage. [BUTTON OR LOGO TO BE ADDED IN A MODIFIED VERSION OF THE REGULATIONS AND MADE AVAILABLE FOR PUBLIC COMMENT.]



Twitter responds



Alex Stamos  @alexstamos · 14h 

Quick, tell me what that button indicates in its current state. Are you opted into your data being used or out? Red X next to "Do Not", so does that cancel out the not?

The California AG's office is now mandating really bad interaction design. Great job everybody



Aaron Alva @aalvatar · 2h 

This is terribly confusing. Was this disclosure user tested to make sure users' expectations align with what you're trying to convey? (Likely not)

We expect companies to do user testing; we should expect governments to do same.

one resource: ftc.gov/news-events/ev... #CCPA

So they ran another study

Stylized toggle



CalAG toggle



CalAG-X toggle



+ swapped colors

- Insignificant difference between the big and small X
- Small differences based on color
- Big differences between the CalAG icon and recommended icon
- CalAG icon more likely to be misinterpreted as actual toggle
- **Some small changes can sometimes make a big difference and you won't know unless you test with users**

Then the OAG removed the icon

- Icon completely removed from regulation
- OAG will design a uniform and recognizable opt-out button in the future

Former subsection (f), regarding the proposed opt-out button, has been deleted in response to the various comments received during the public comment period. The OAG has removed this subsection in order to further develop and evaluate a uniform opt-out logo or button for use by all businesses to promote consumer awareness of how to easily opt-out of the sale of personal information.

Then they tested more icons from the OAG!

- Which of these icons, paired with the “Do Not Sell My Personal Information” link text performs best
 - standing out to users on a website?
 - communicating the presence of a do-not-sell choice?
 - motivating users to click?
- ... and only recruit participants from CA



tl;dr; None of the icons were very effective

- Showing the link text **without any icon resulted in the highest percentage (64%) of correct expectations**
- Adding any of these icons to the link text introduced misconceptions
- Adding an icon made users more likely to notice link (increased from 31% to 38% - 52%) but did not create a significantly higher intention to click



CCPA PRIVACY OPTIONS ICON



CPRA Privacy Options Icon

- CPRA maintains right to opt-out of sale
- Adds right to limit use of sensitive personal information
- Can have two opt-out links or one "alternative link"

A business that chooses to use an Alternative Opt-out Link shall title the link, "Your Privacy Choices" or "Your California Privacy Choices," and shall include the following opt-out icon adjacent to the title. The link shall be a conspicuous link that complies with section 7003, subsections (c) and (d), and is located at either the header or footer of the business's internet Homepage(s). The icon shall be approximately the same size as other icons used by the business in the header or footer of its webpage.



CPRA: Signal Processing

- Required to treat automated signals (e.g., GPC) as valid opt-out requests

The business should display whether or not it has processed the consumer's opt-out preference signal as a valid request to opt-out of sale/sharing on its website

- **Exercise:** design an icon for businesses to use for this signal

CPRA: Signal Processing

- Required to treat automated signals (e.g., GPC) as valid opt-out requests

The business ~~should~~ **may** display whether ~~or not~~ it has processed the consumer's opt-out preference signal as a valid request to opt-out of sale/sharing on its website

Privacy Icons

