

Lecture 2: Introduction to Privacy

CS 181W

Fall 2022

What does Privacy Mean to You?


- Draw a picture that represent privacy to you
- Or feel free to jot down some words, phrases, or a poem



Contribute | Privacy Illustrated

cups.cs.cmu.edu/privacyillustrated/?page_id=445

Contribute | Privacy Illustrated




Privacy Illustrated ABOUT US BLOG **CONTRIBUTE** IMAGES OF PRIVACY

CONTRIBUTE

What does privacy mean to you?

Contribute to the dialogue by submitting your own picture.

Please draw a picture of what privacy means to you and then upload it below. You can either draw the picture on paper and then take a picture of it to upload or scan it for upload. Alternatively, you can draw it using a tablet or other electronic medium and then upload it.



RECENT POSTS

- [The making of Privacy Illustrated: Kids with their drawings](#)
January 14, 2015
- [Privacy Illustrated in the Pittsburgh Post-Gazette](#)
January 12, 2015
- [Join us for CMU Privacy Day on January 28](#)
January 12, 2015
- [Privacy Illustrated appears in new Deep Lab book](#)
December 23, 2014
- [Privacy Illustrated Book Chapter](#)
December 13, 2014

<http://cups.cs.cmu.edu/privacyillustrated/>

alone home solitude
house nature diary shower

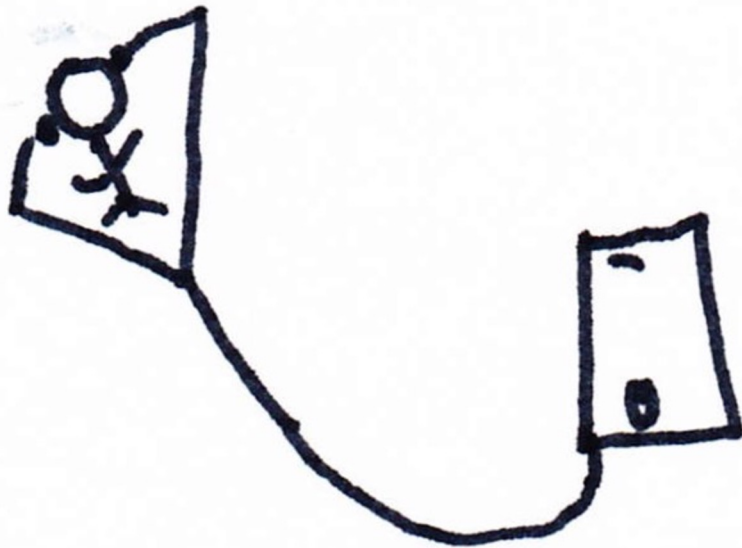
PERSONAL SPACE

personal bubble bathroom thoughts
away from family bedroom



Privacy
is being
by
myself.

– Emma, age 5



Listening to
music and
being alone.

– Jayla, age 13



Privacy is
the right to
be by
yourself.
Privacy is
isolation.

– Kevin, age 28

This is me in my privacy room in my basement. I go in there when I want to be alone. I can calm down and breathe.



This is me in my privacy room in my basement. I go in there when I want to be alone. I can calm down and breathe.

- Elena, age 5



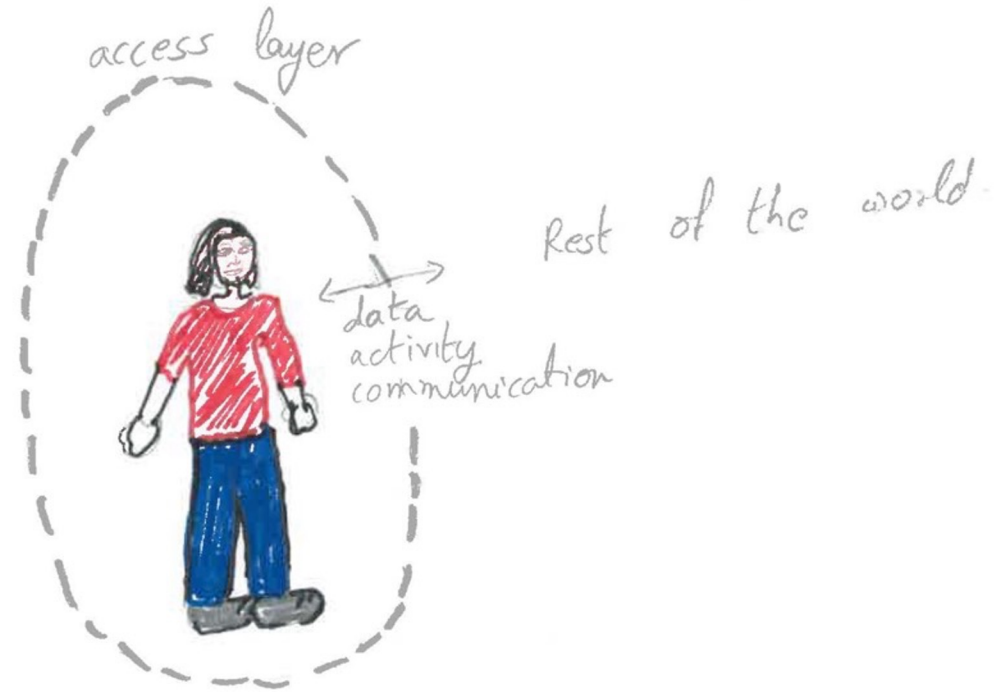
Privacy for me is like a place with a one-sided mirror. I can see outside but no one can see in unless I open the door. Also an extra wall on the outside just in case.

– Kim, age 21

invisible shield.



Age 24

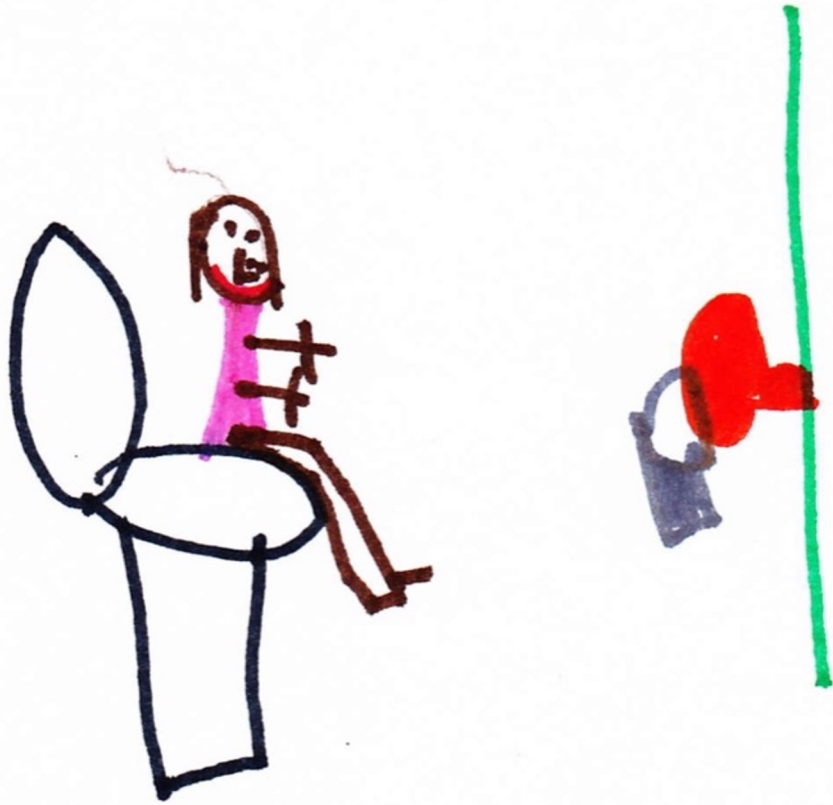


Age 27



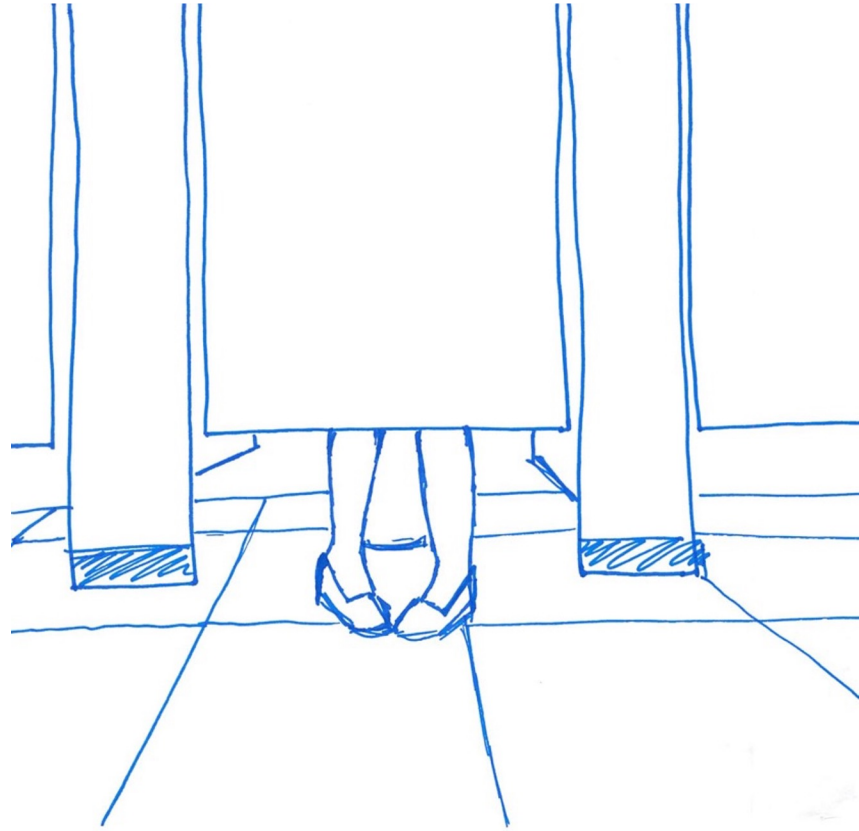
Your
room is
private.

–Alexia, age 11



No one come in when I am in
the bathroom!

– Sydney, age 7



– Rachel, age 20

eavesdrop

camera

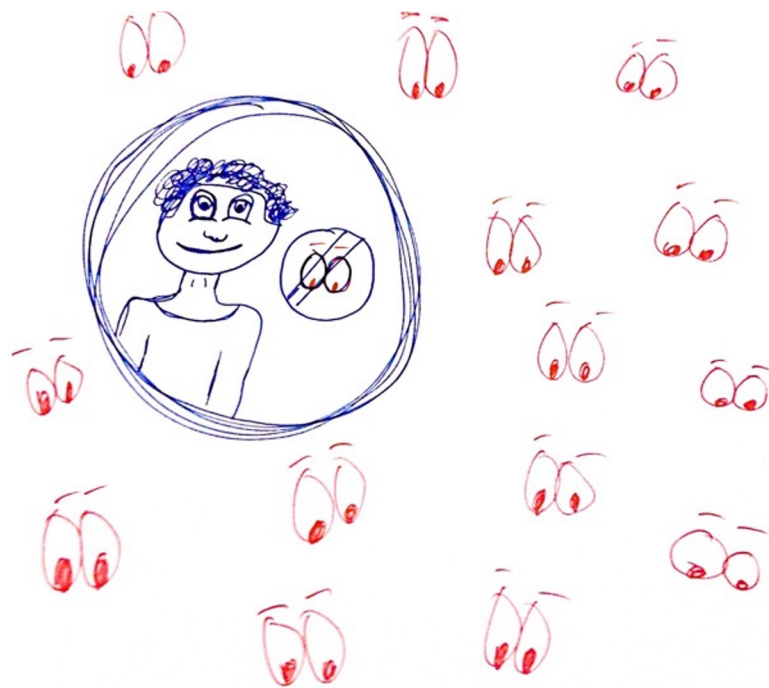
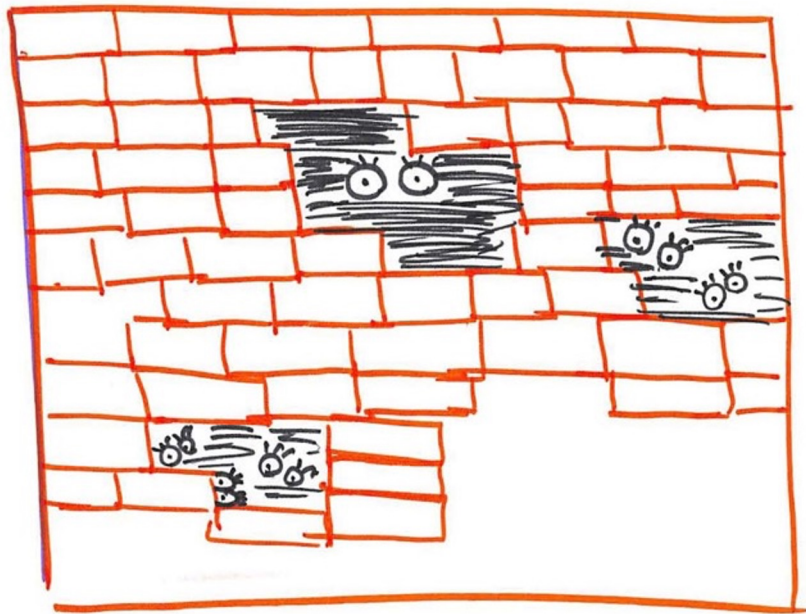
NSA

SURVEILLANCE

government

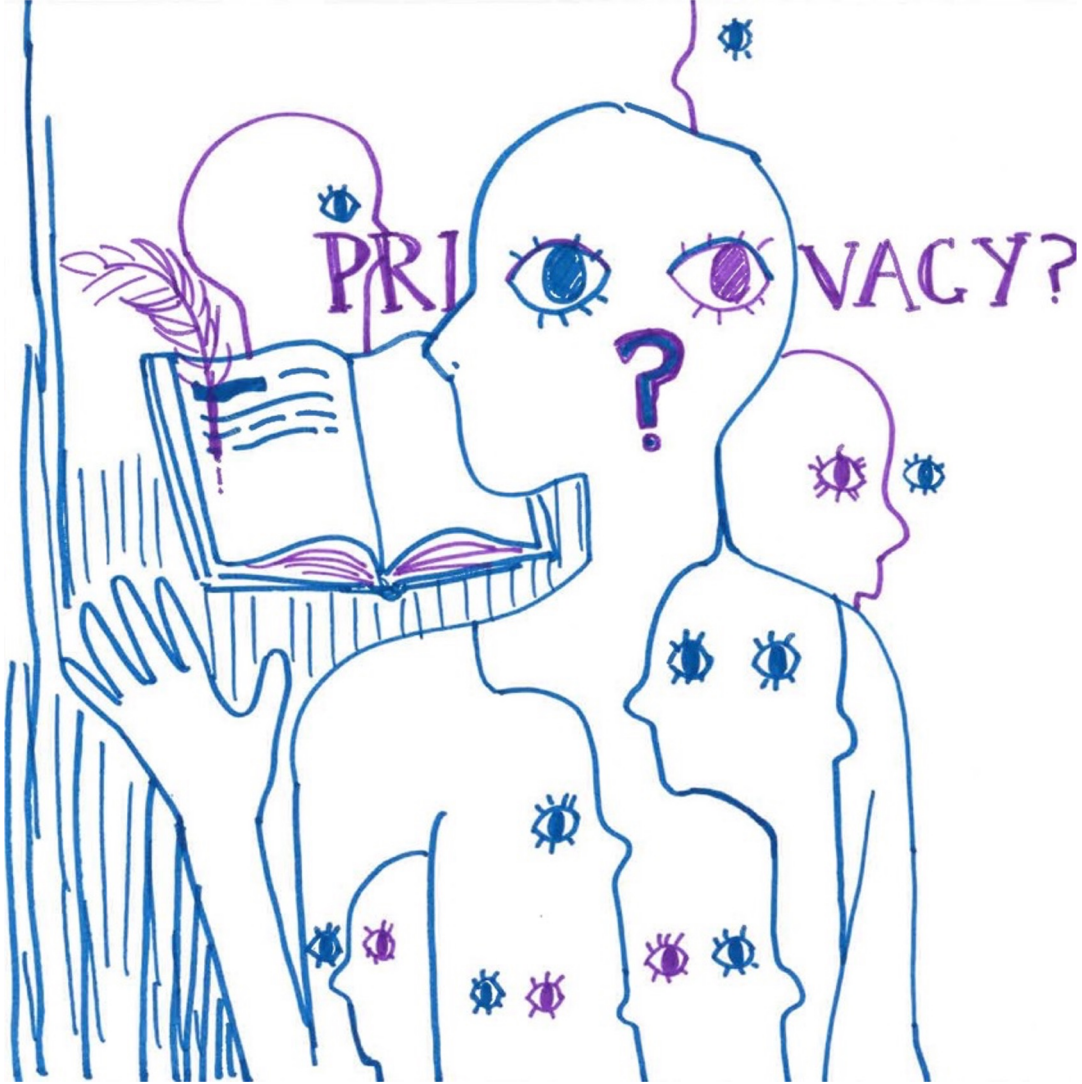
tracking

eyes

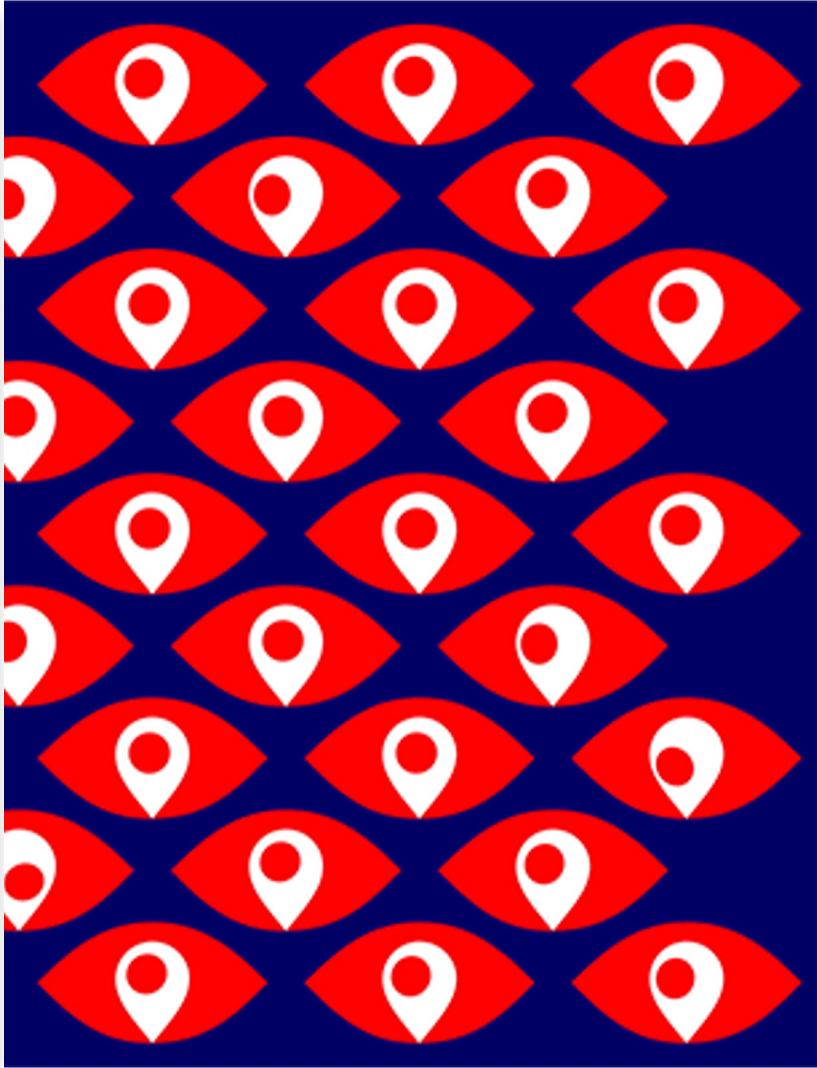
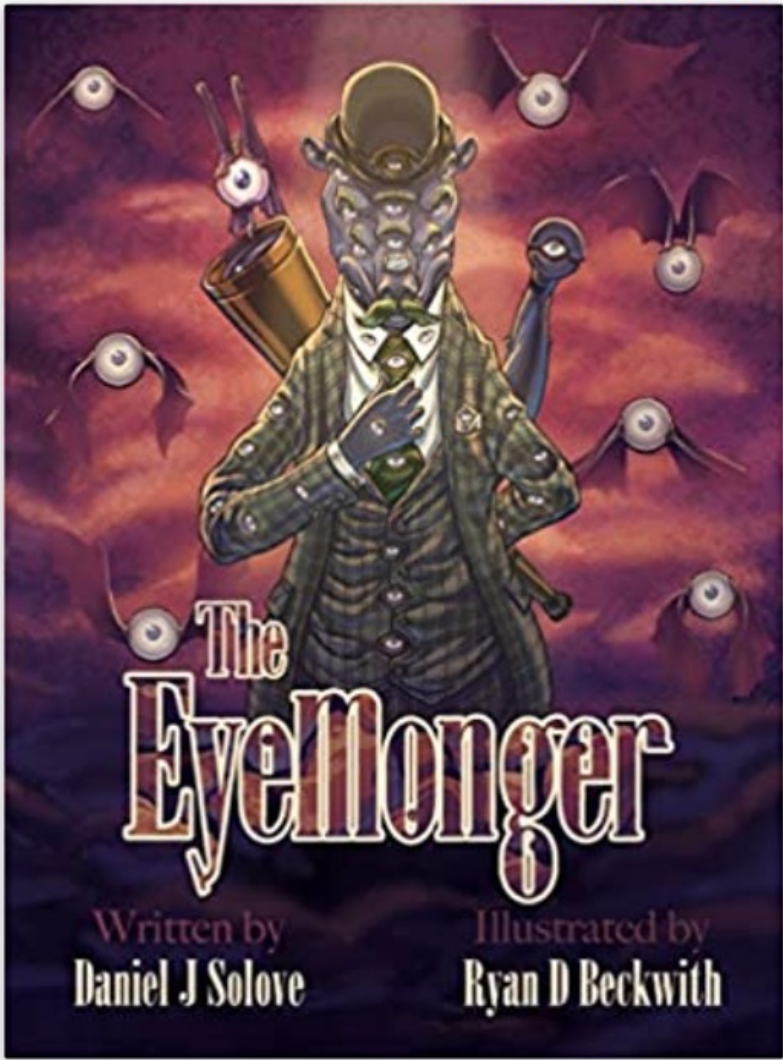


To me privacy means being able to get away from unwanted eyes.

- NotAnArtist, age 19



- C, age 20



By Daniel Wenzel
The New York Times
November 18,
2020

LOCKS and BARRIERS

oyster

wall

curtains

password

turtle

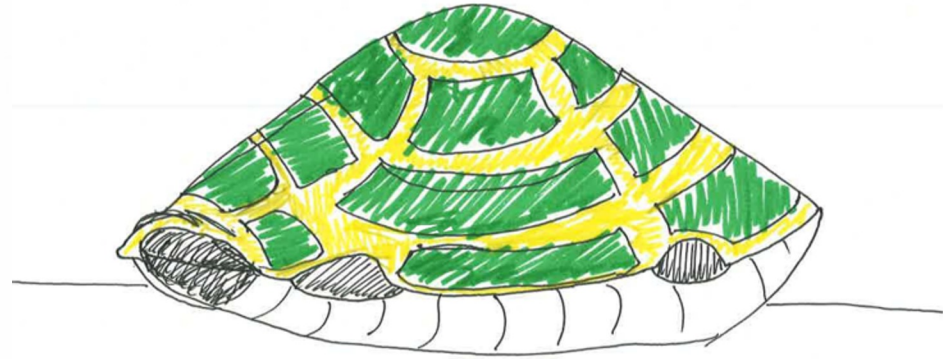
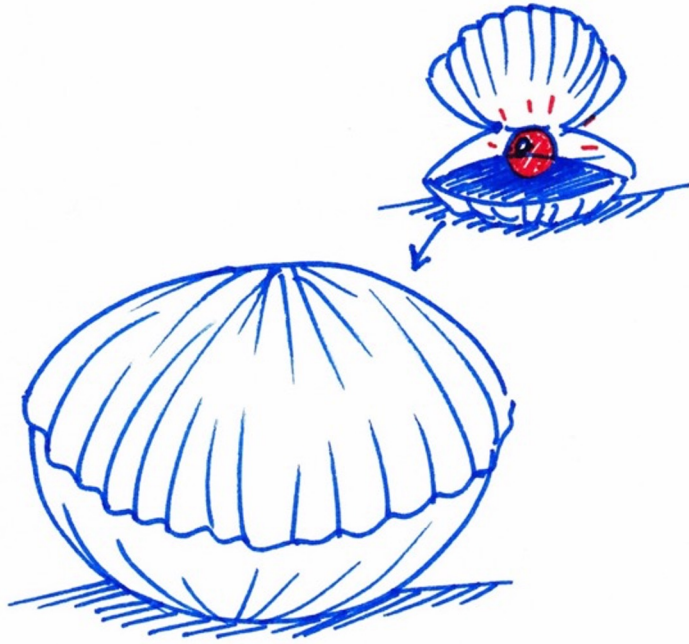
door

window

fence

key

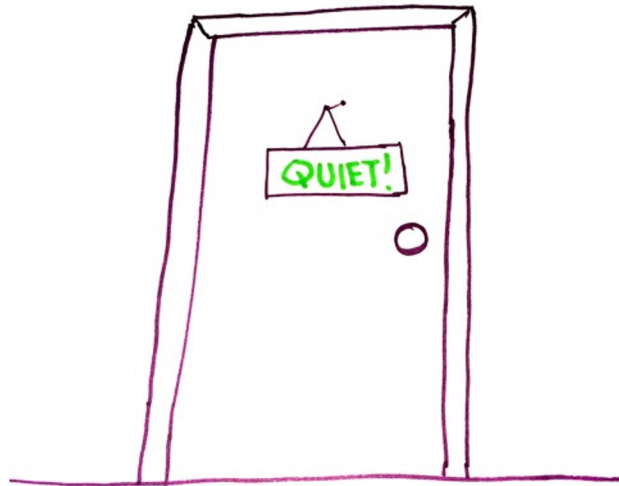
sibling



PEARL OYSTERS HAVE SOMETHING VALUABLE
TO PROTECT - THE PEARL.

THEY CAN DO SO BY SIMPLY 'CLOSING THE LID.'
IF ONLY SAFEGUARDING THE DATA IN MY
LAPTOP WERE THAT SIMPLE!

Madeline Age 11



I feel privacy is behind this closed door. No one can hear you or see you and you can be alone with your thoughts.

– Tracy, age 34

Privacy Protects Whats

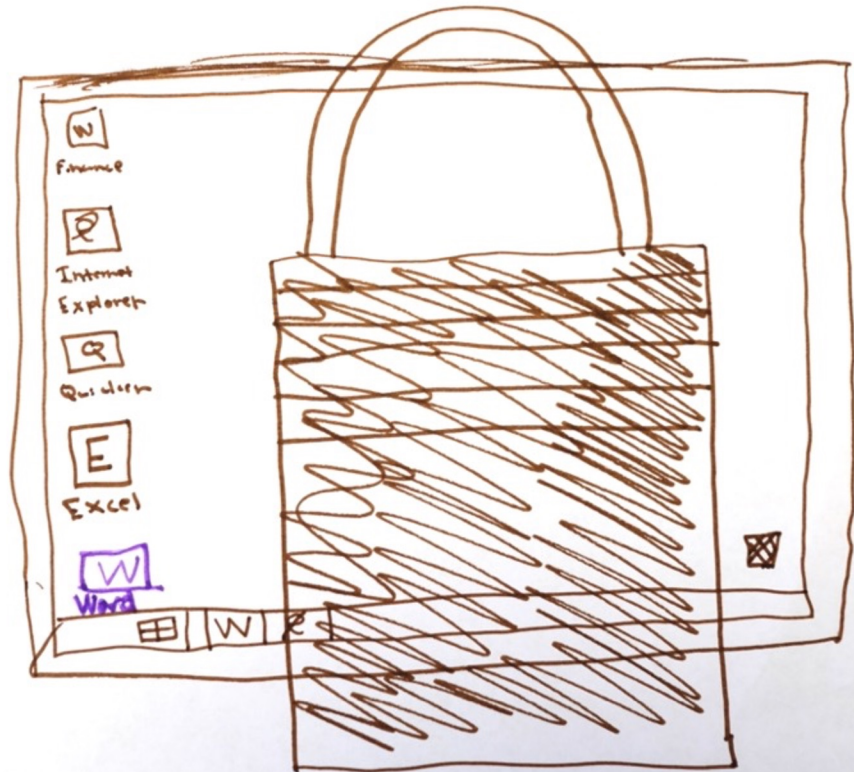


Behind Closed Doors
Pericia 16



My room. Door is closed.

L
O
R
A
E
L
E
I
J



Jason, 15



Privacy means that the thoughts
in my brain are locked away.

– Thomas, age 19



I believe a fence is a sign of privacy. This picture shows enough of my house to show that I don't mind some people to see me, but I prefer a barrier when it comes to some things.

– Shanna, age 32



**Laptop
Compbody
Sock**

Becky Stern, 2008
Knitted wool,
laptop computer

*For privacy,
warmth, and
concentration in
public spaces*

CONTROL

red-green

permission

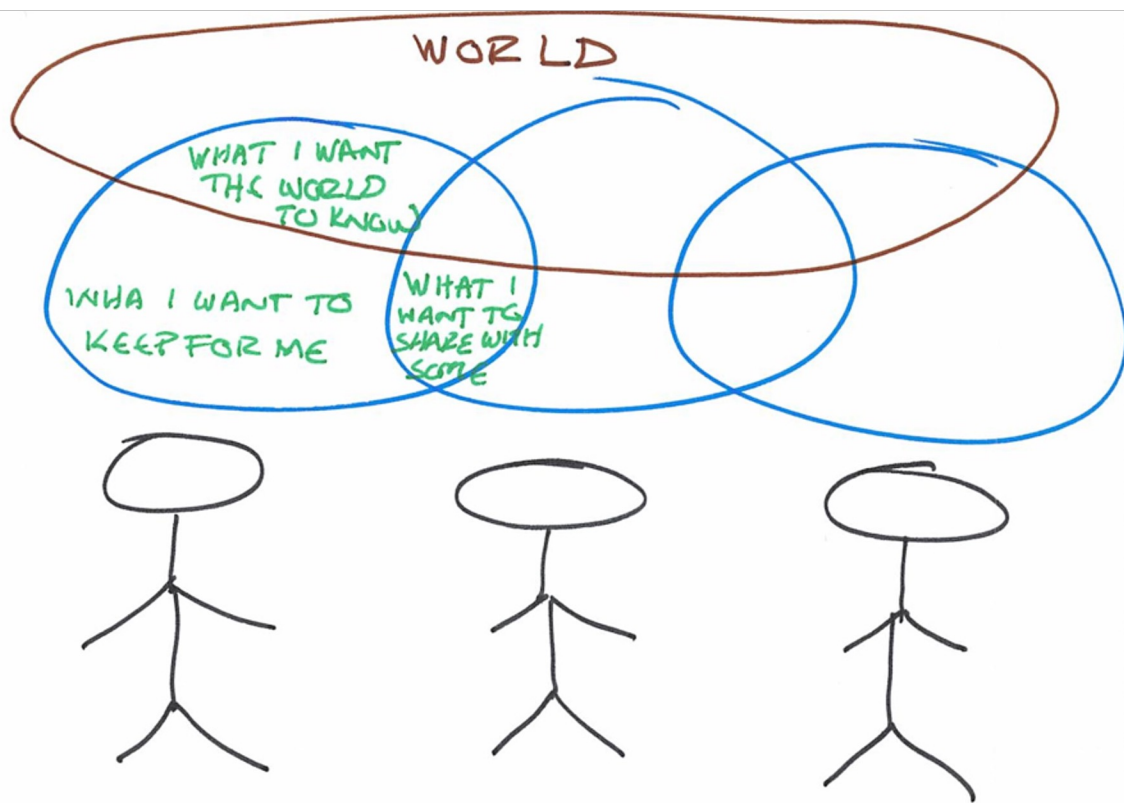
rules

preferences

consent

encryption

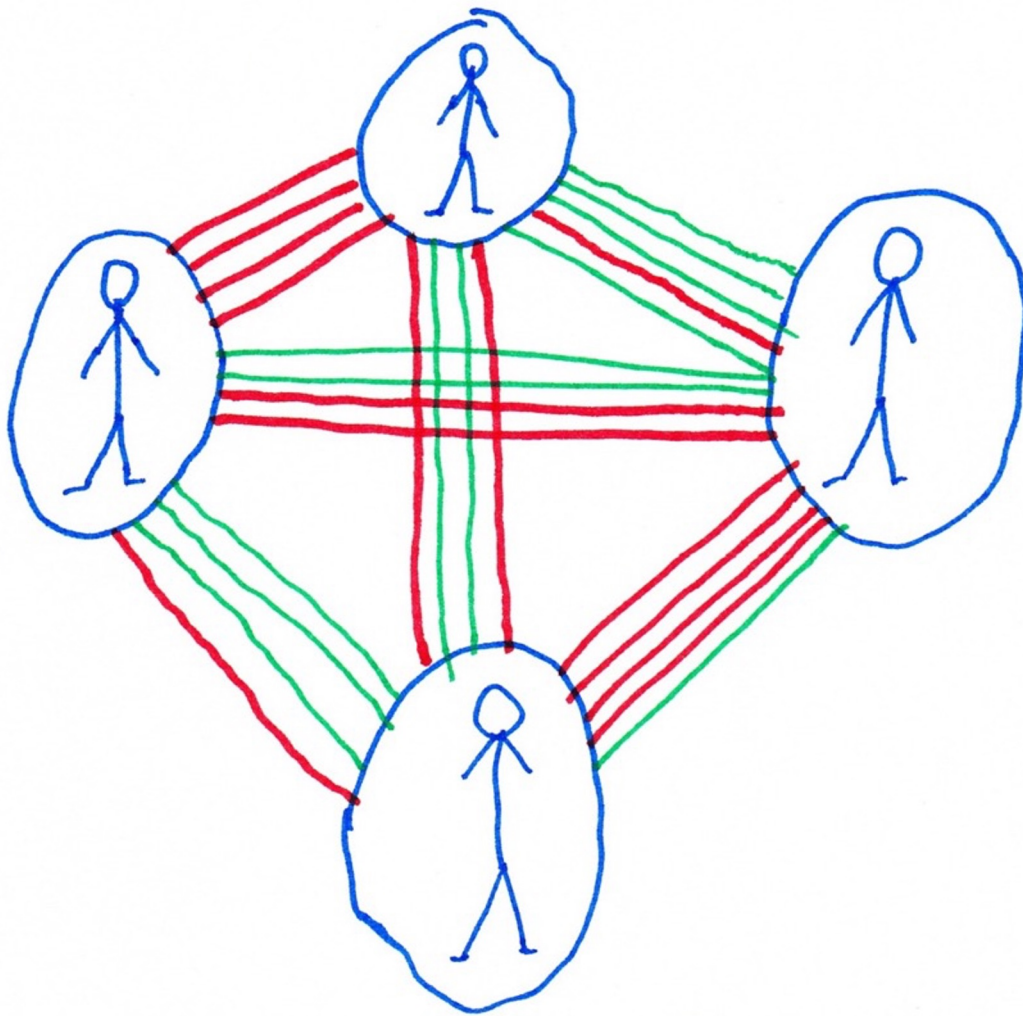
protection



PRIVACY IS PERSONAL, CONTEXTUAL,
AND UNIVERSAL

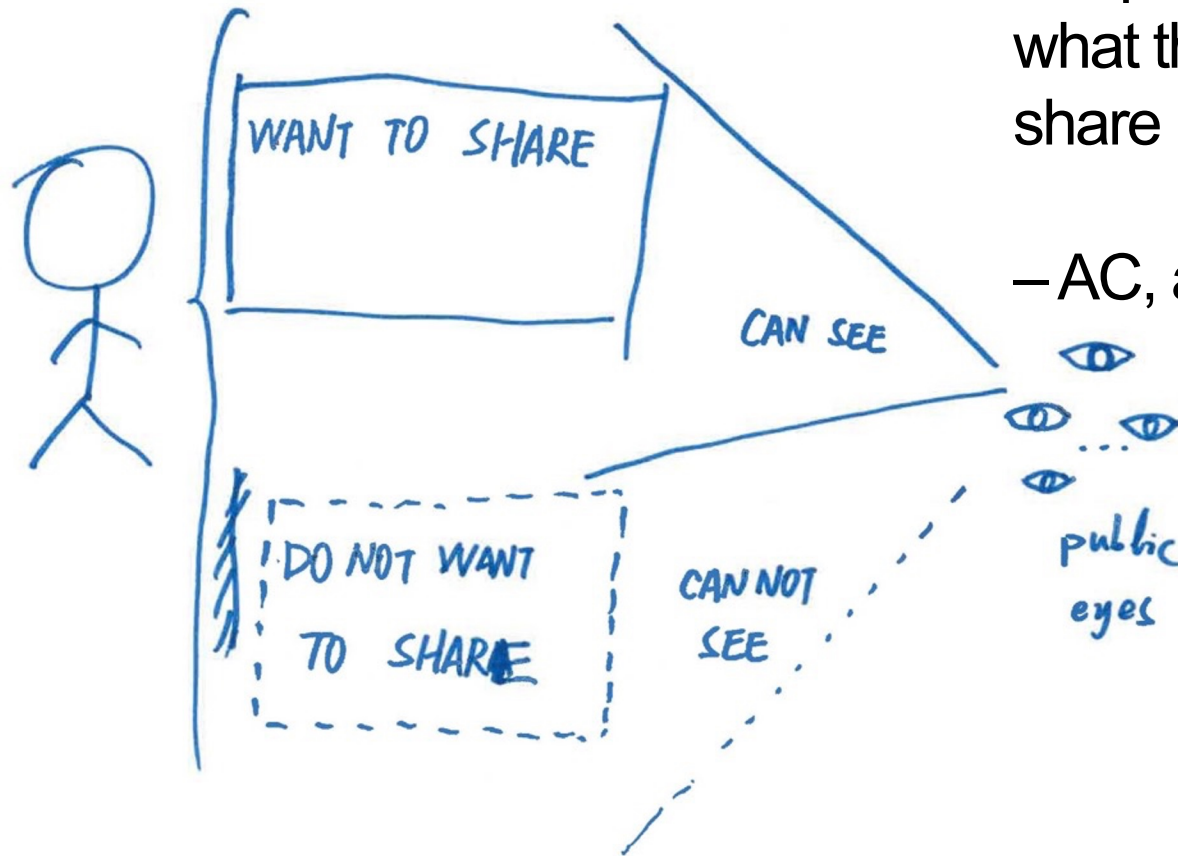
Privacy is a value that is very important to have in a society to work and progress

– Pedro, age 35



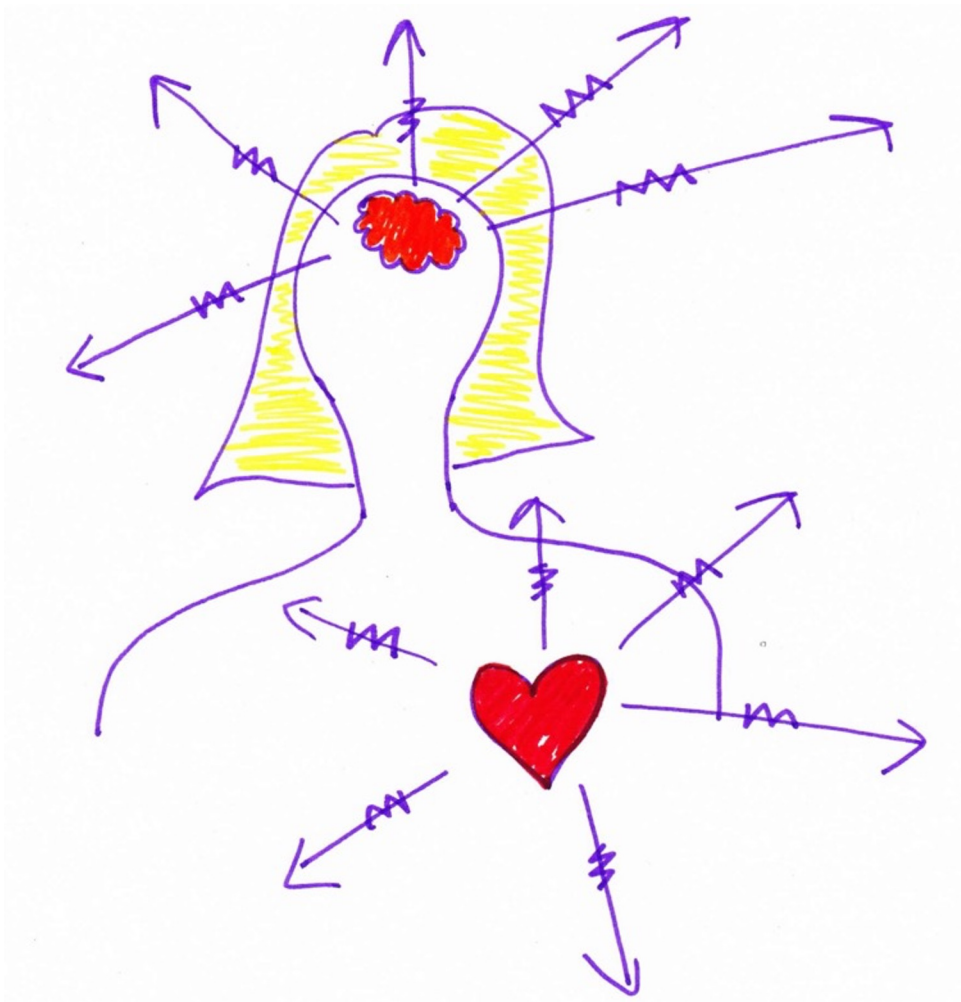
Privacy is a network: I share what I want with whom I want and trust and what matches with those in the network....

Green = share.
Red = don't.



People have right to keep what they do not want to share invisible.

–AC, age 24



Privacy is about control –
controlling what is shared
about your thoughts and
preferences, the things
that make you you.

– KRB, age 39

Defining Privacy

“Being alone.”

– Shane, age 4

“the right to be let
alone”

– Samuel D. Warren and
Louis D. Brandeis,
The Right to Privacy,
4 Harv. L. Rev. 193 (1890)

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

– Alan Westin
Privacy and Freedom, 1967

Contextual Integrity



- defines privacy relative to appropriate context
- considers information type, time, location, purpose, principals involved (subject, sender, receiver)
- dependent on social norms
- norms can change over time

Privacy as Vulnerabilities



- limitations of norms for protecting privacy
- vulnerable populations
 - more likely to be susceptible to violations
 - harms are higher impact
- draws on feminist and queer theory

How privacy is protected

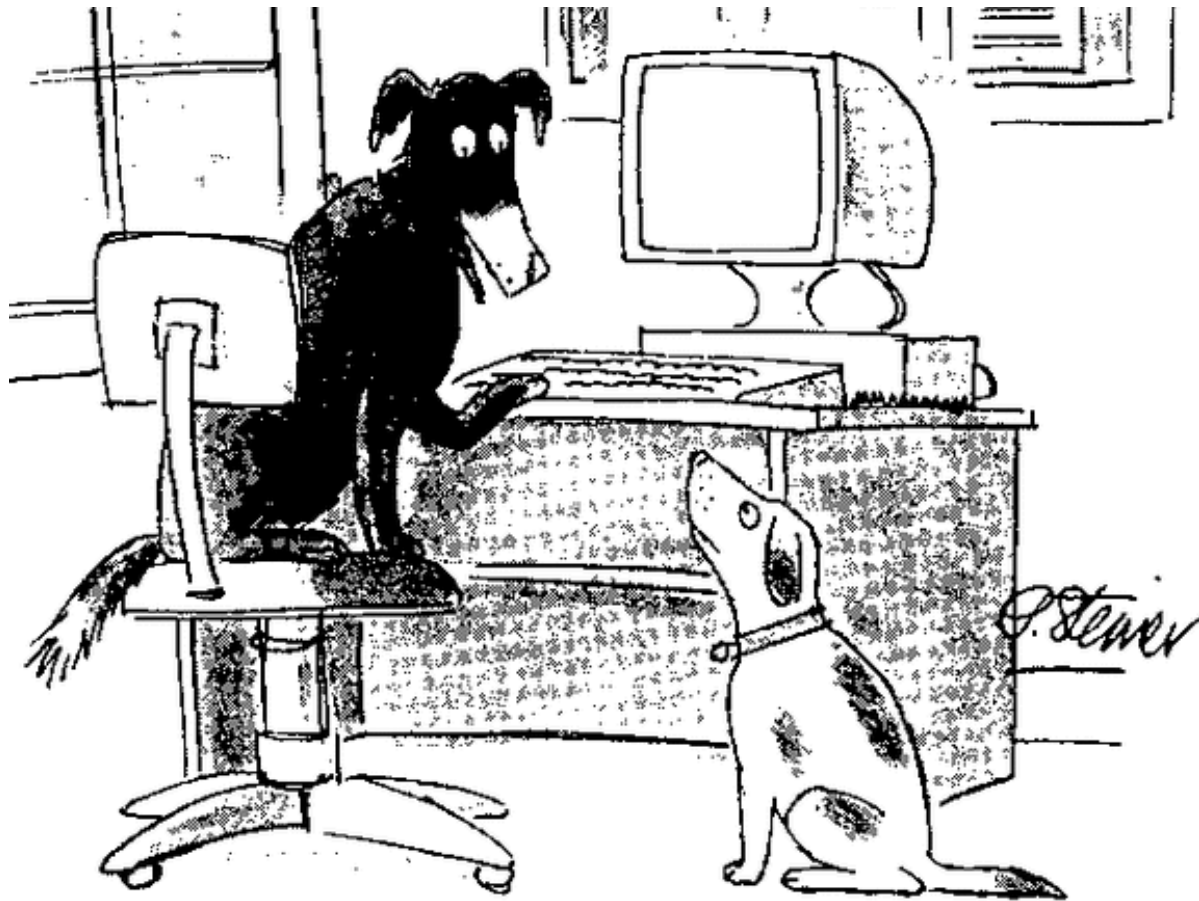
- Self regulation
- Laws
- Technology

OECD fair information principles

- Collection limitation
- Data quality
- Purpose specification
- Use limitation
- Security safeguards
- Openness
- Individual participation
- Accountability

<http://www.oecd.org/sti/ieconomy/oecdguidelinesonthe protectionofprivacyandtransborderflowsofpersonaldata.htm>

Internet Privacy



"On the Internet, nobody knows you're a dog."

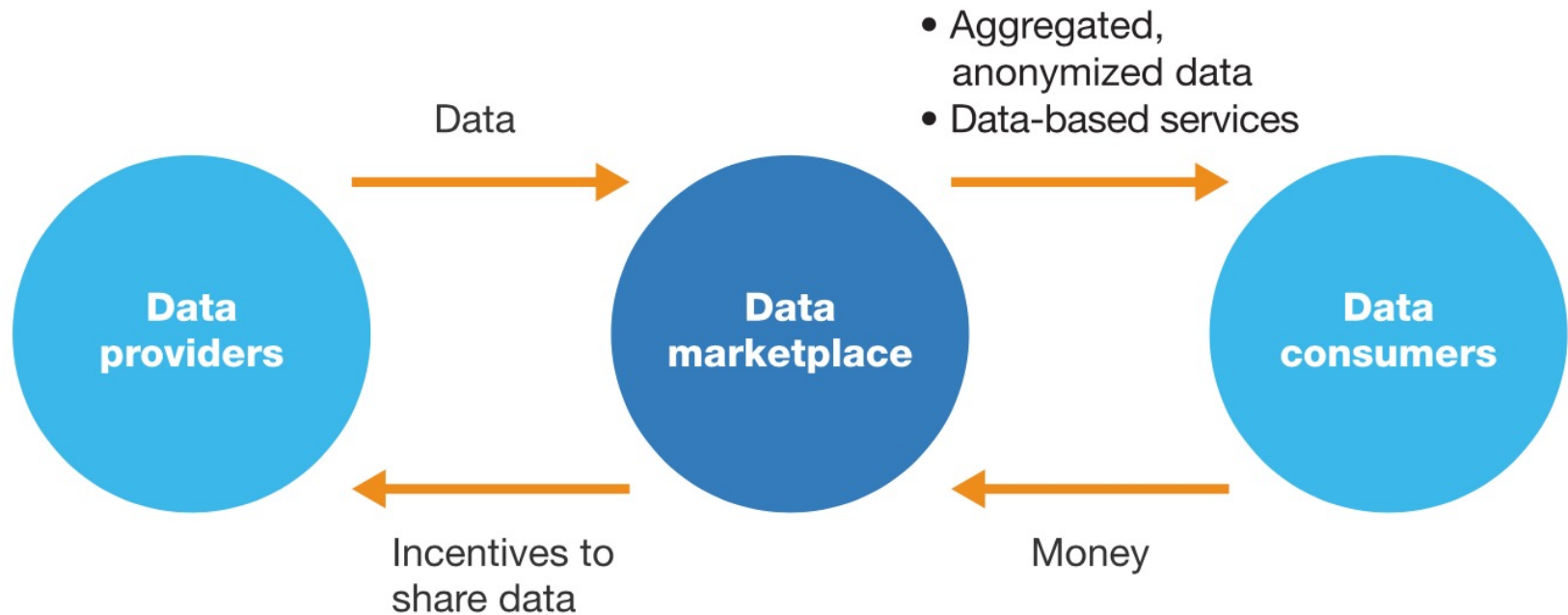
Ad Settings

- If you have a google account, check your ad settings. If personalized ads are enabled, take a look at the categories associated with you:
<https://adssettings.google.com/>
- How accurate are these categories? Are there any that bother you?

Targeted Advertising



Data Marketplace



Internet Privacy

The Joy of Tech™

by Nitrozac & Snaggy



© 2013 Geek Culture

joyoftech.com

Privacy laws around the world

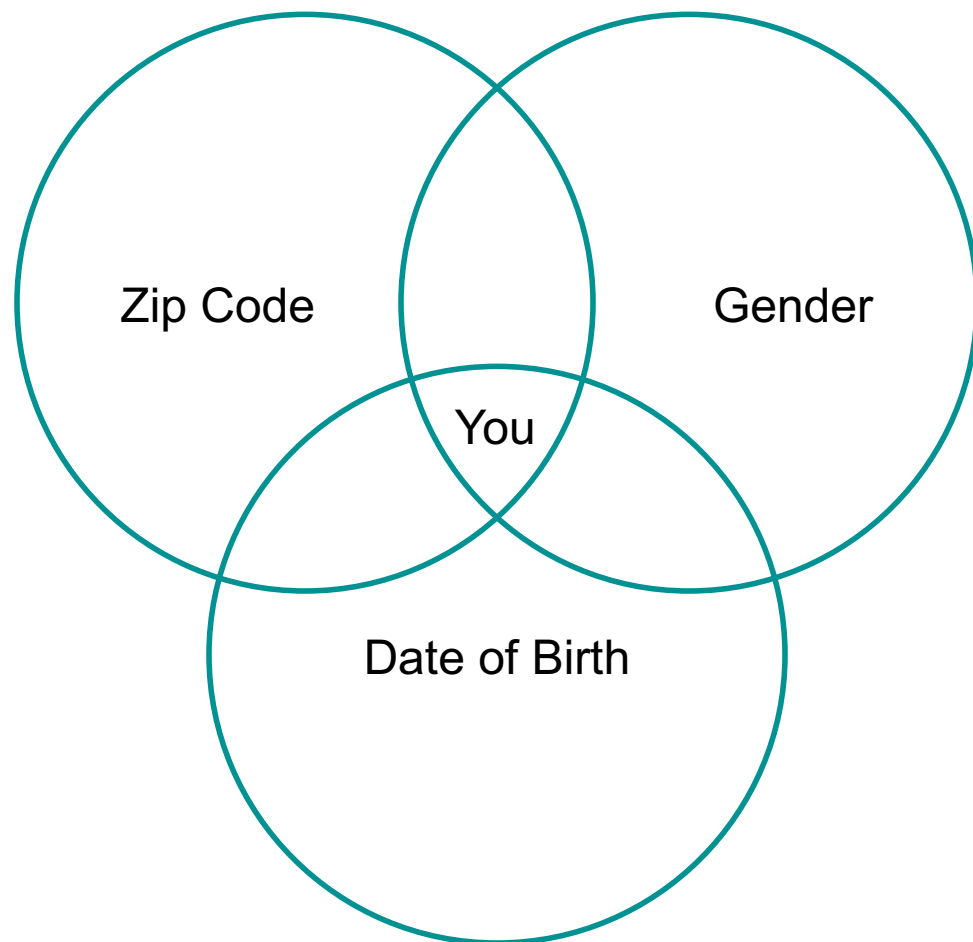
- US has mostly sector-specific laws, minimal protections, often referred to as “patchwork quilt”
 - No explicit constitutional right to privacy or general privacy law
 - Narrow regulations for health, financial, education, children, etc.
 - Federal Trade Commission jurisdiction over fraud + deceptive practices
 - Some state and local laws and regulations for specific industry sectors
 - California laws: CCPA and CPRA
- Europe has comprehensive privacy laws (GDPR) and data protection commissioners in every country

Privacy laws require usability

- Clear and plain language
- Concise, transparent, intelligible and easily accessible
- Clear and conspicuous
- Easy to find, read, and use notices and choices
 - Use of data
 - Access data that organization has collected
 - Request data deletion

Do privacy laws work?

Deanonymization



Deanononymization



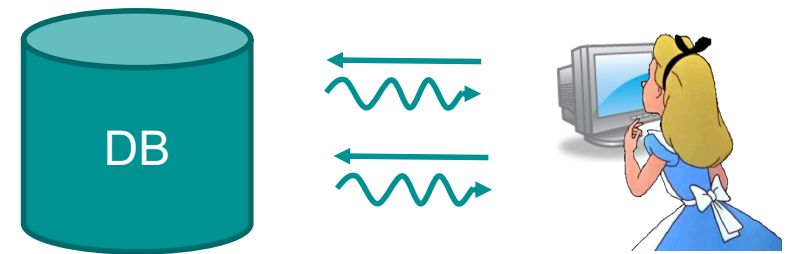
NETFLIX

Database Privacy

Offline Privacy

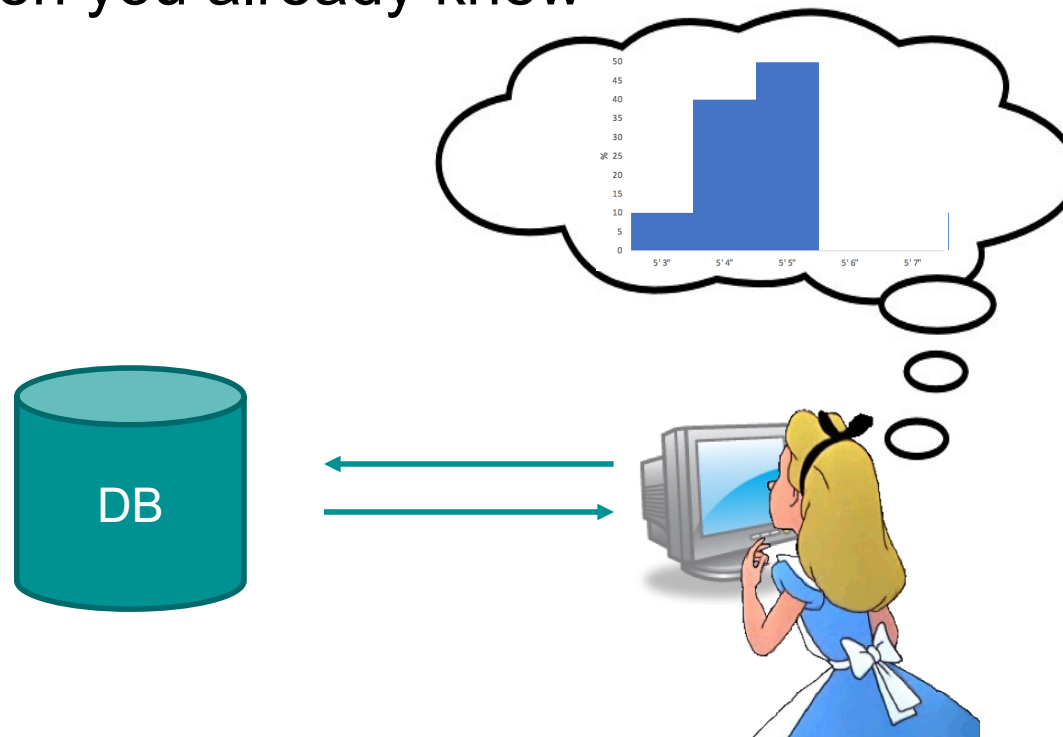


Online Privacy

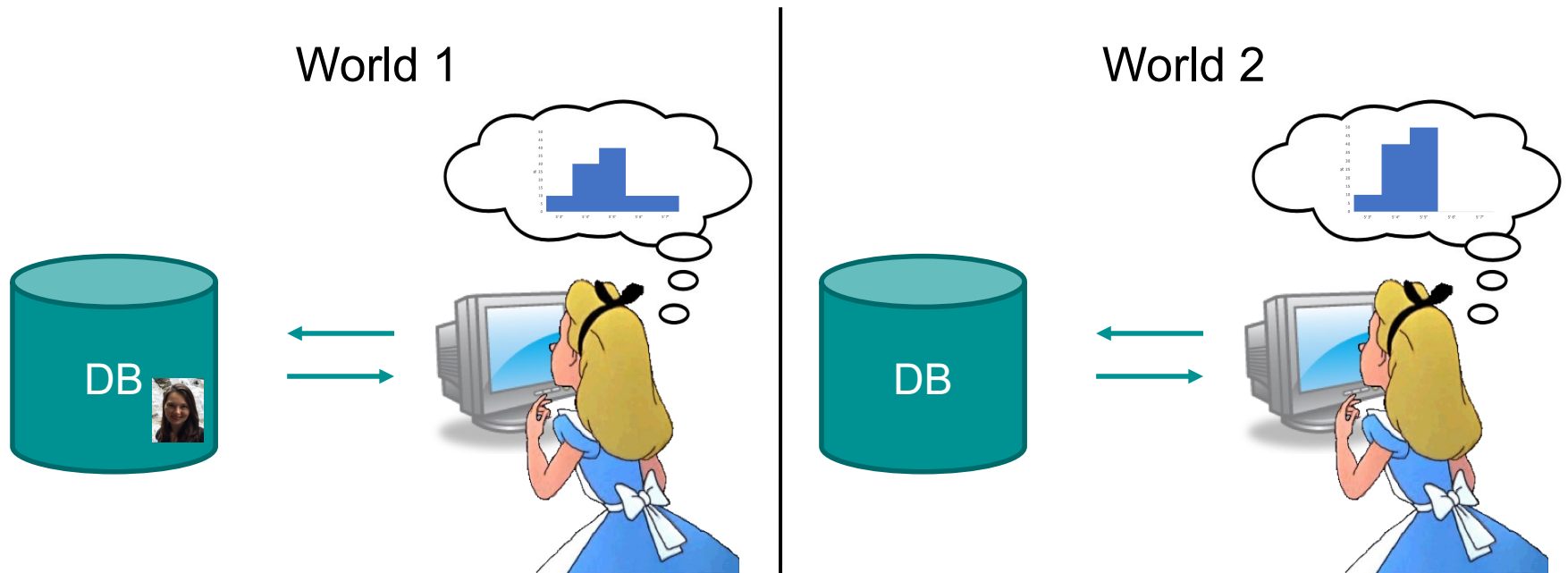


Defining Privacy: Try #1

- You don't know anything more after interacting with the database than you already knew



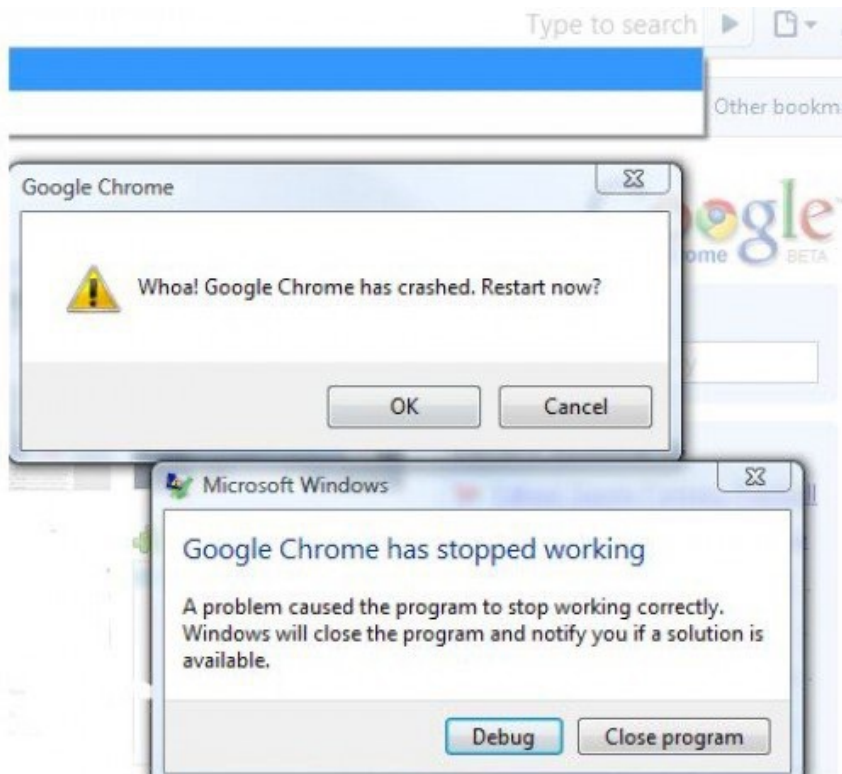
Differential Privacy



A query Q is ϵ -differentially private if $\forall D, r \in D,$
 $\Pr[Q(D) = x] \leq e^\epsilon \cdot \Pr[Q(D - r) = x]$



DP in action...



404 drawing

not found

That's a private drawing and
my idea is my privacy. :)

– XCY age 23