

Privacy and Threat in Practice: Mobile Messaging by Low-Income New Yorkers

USENIX Security 2016

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Simply Secure

Privacy & Threat in Practice

Introduction

User Study

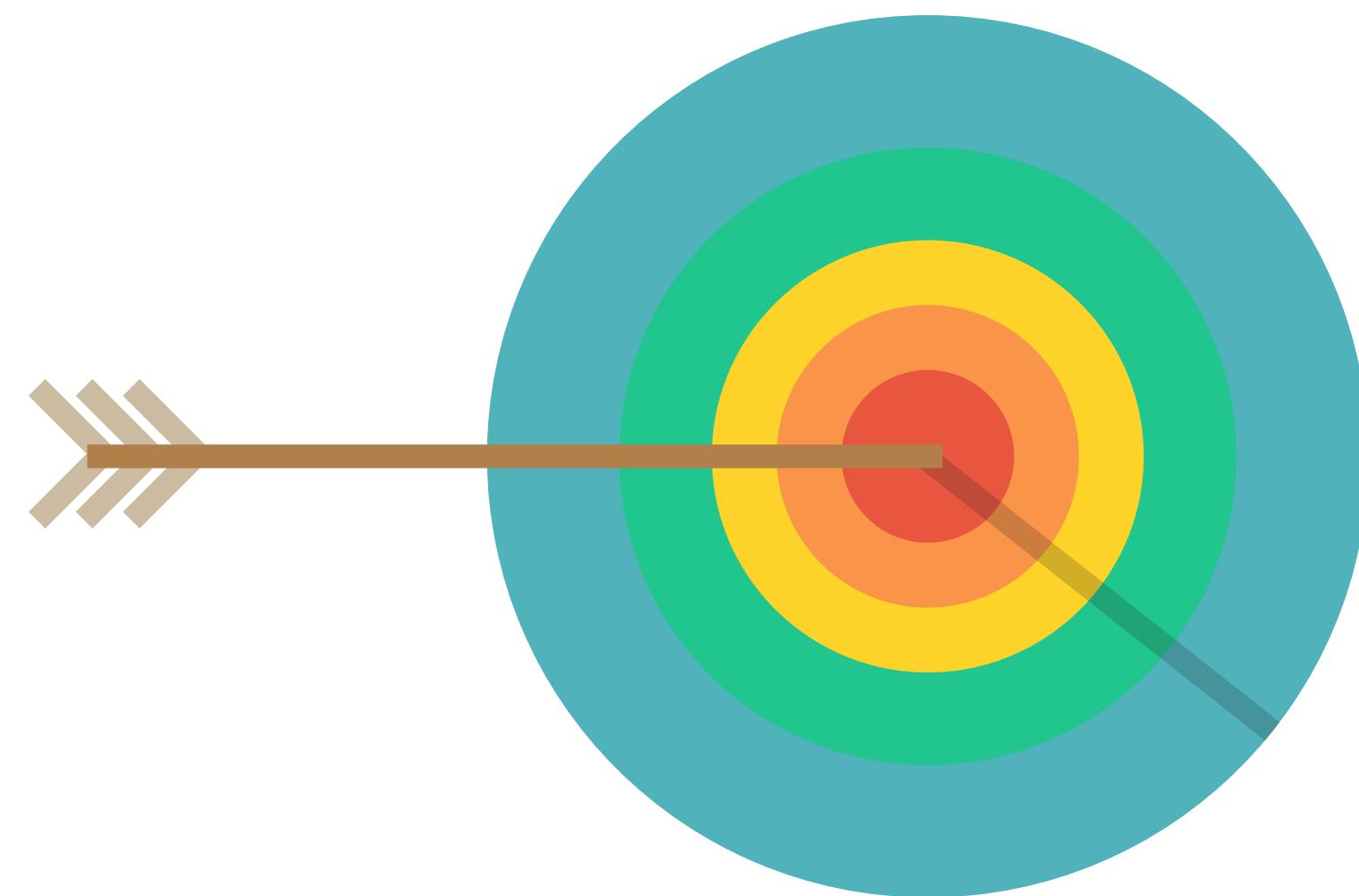
Findings

What to Do

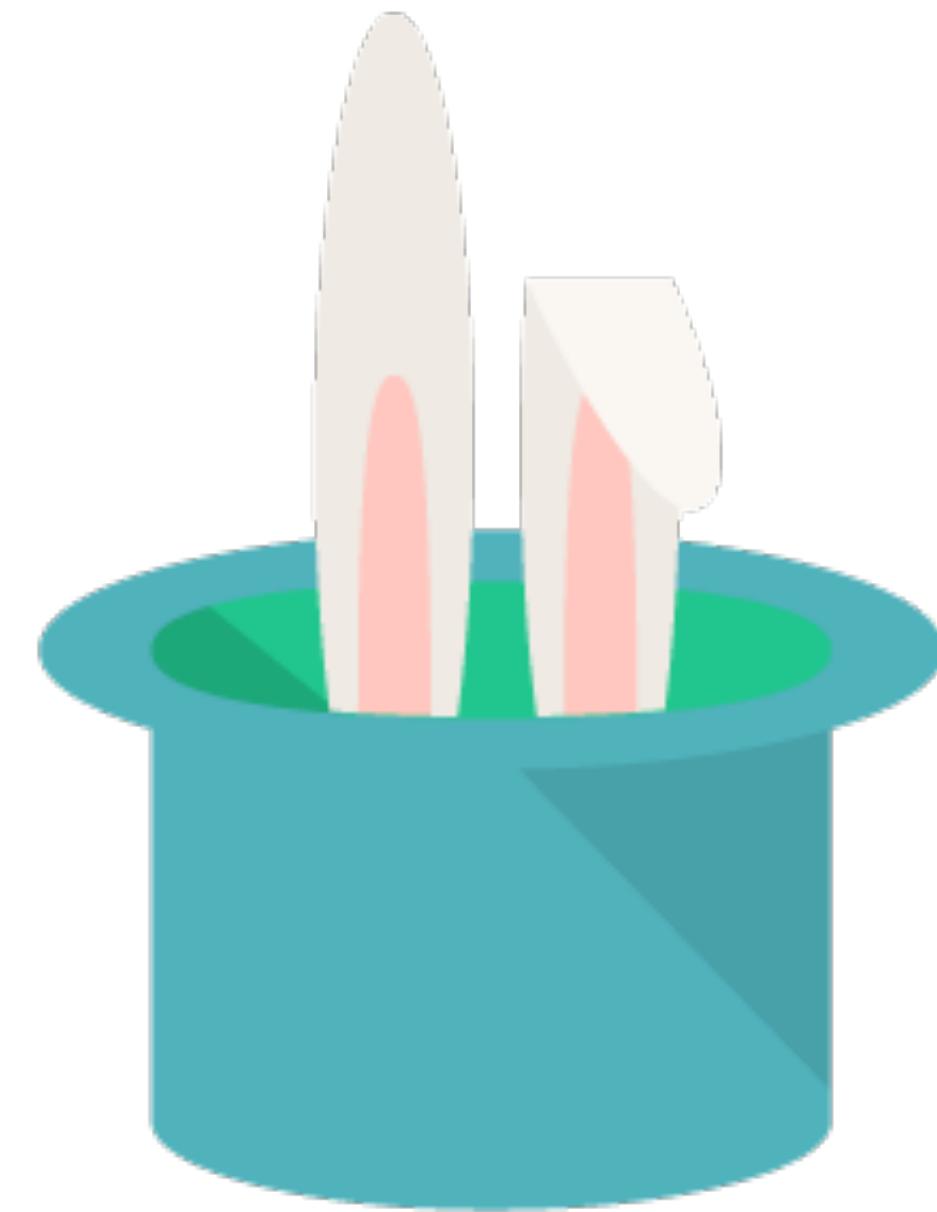
Conclusion

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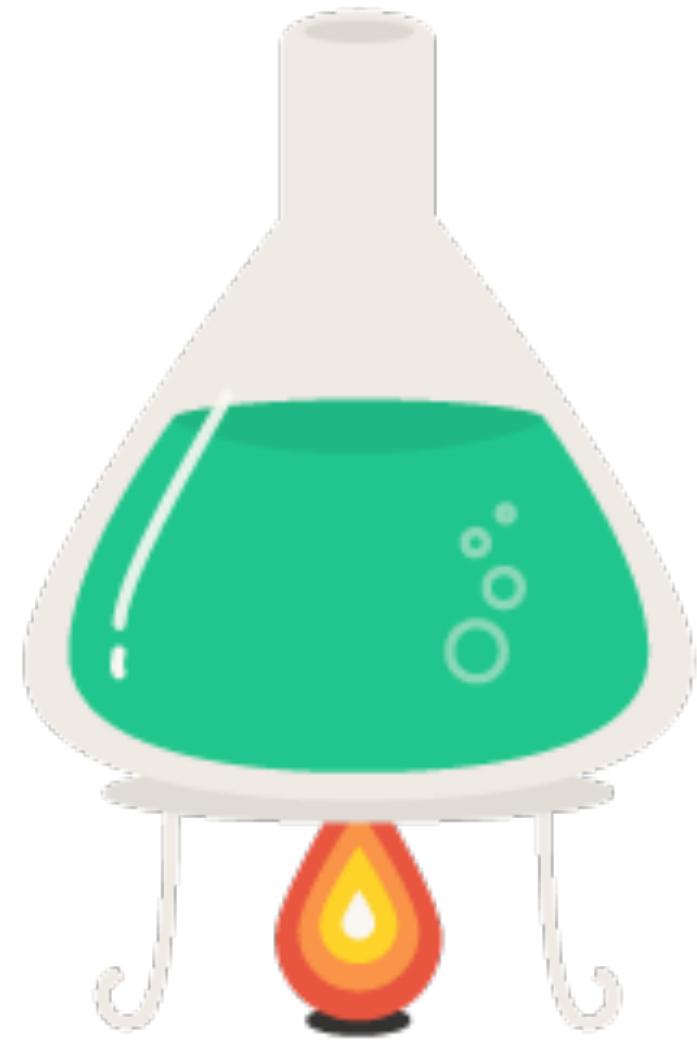
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DESIGNERS



DEVELOPERS



RESEARCHERS



USERS

I'm Ame Elliott
from Simply Secure
@ameellio

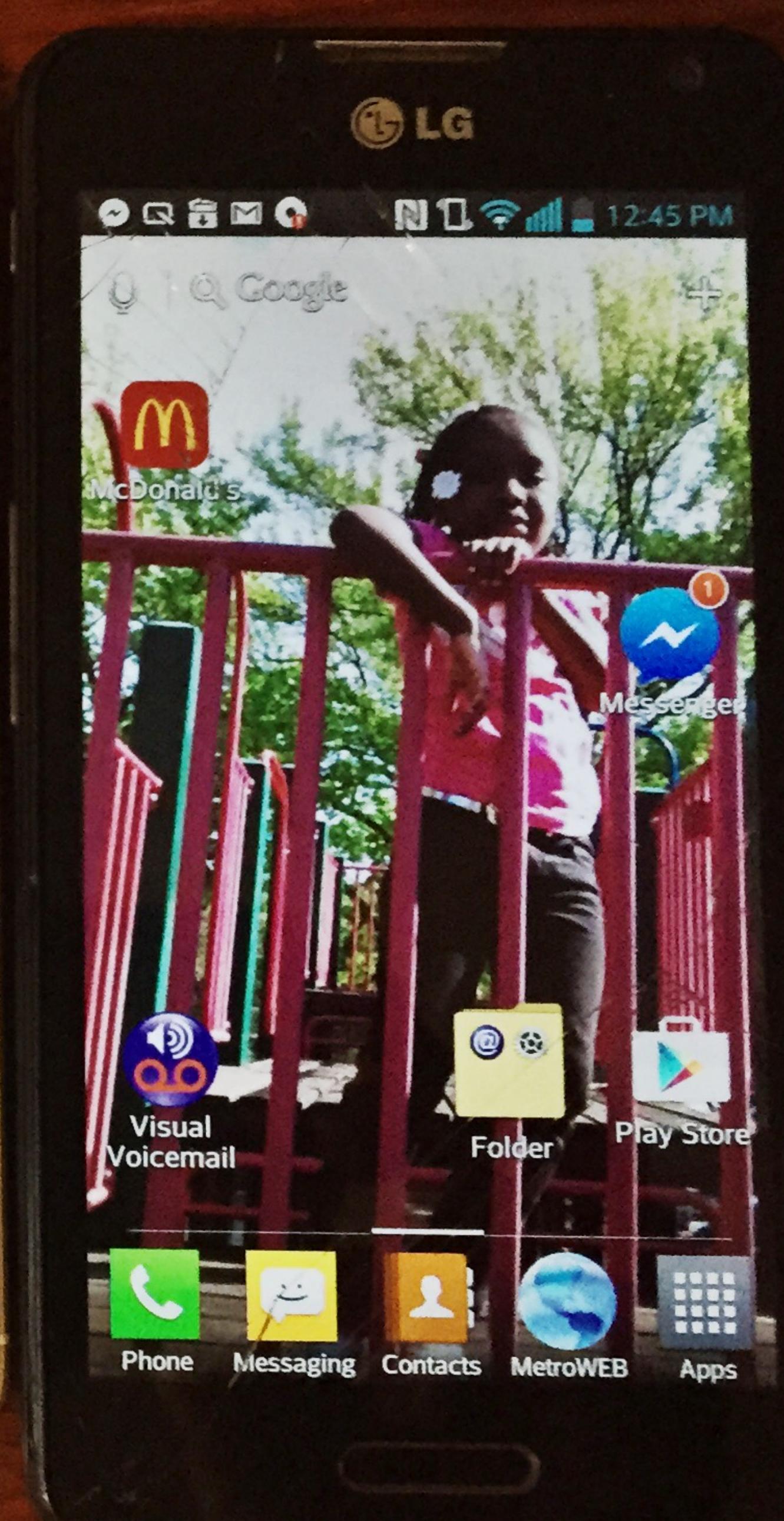
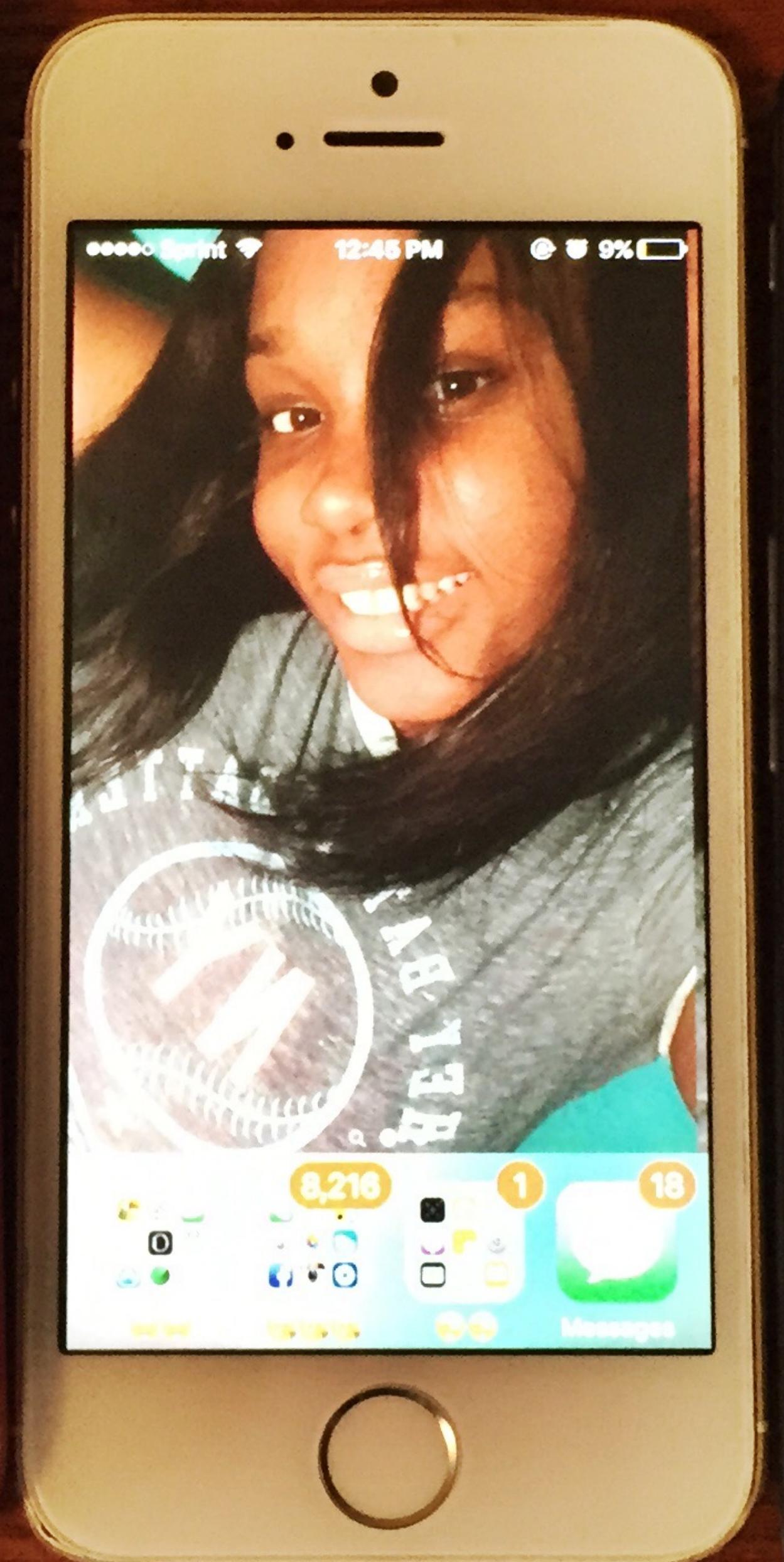
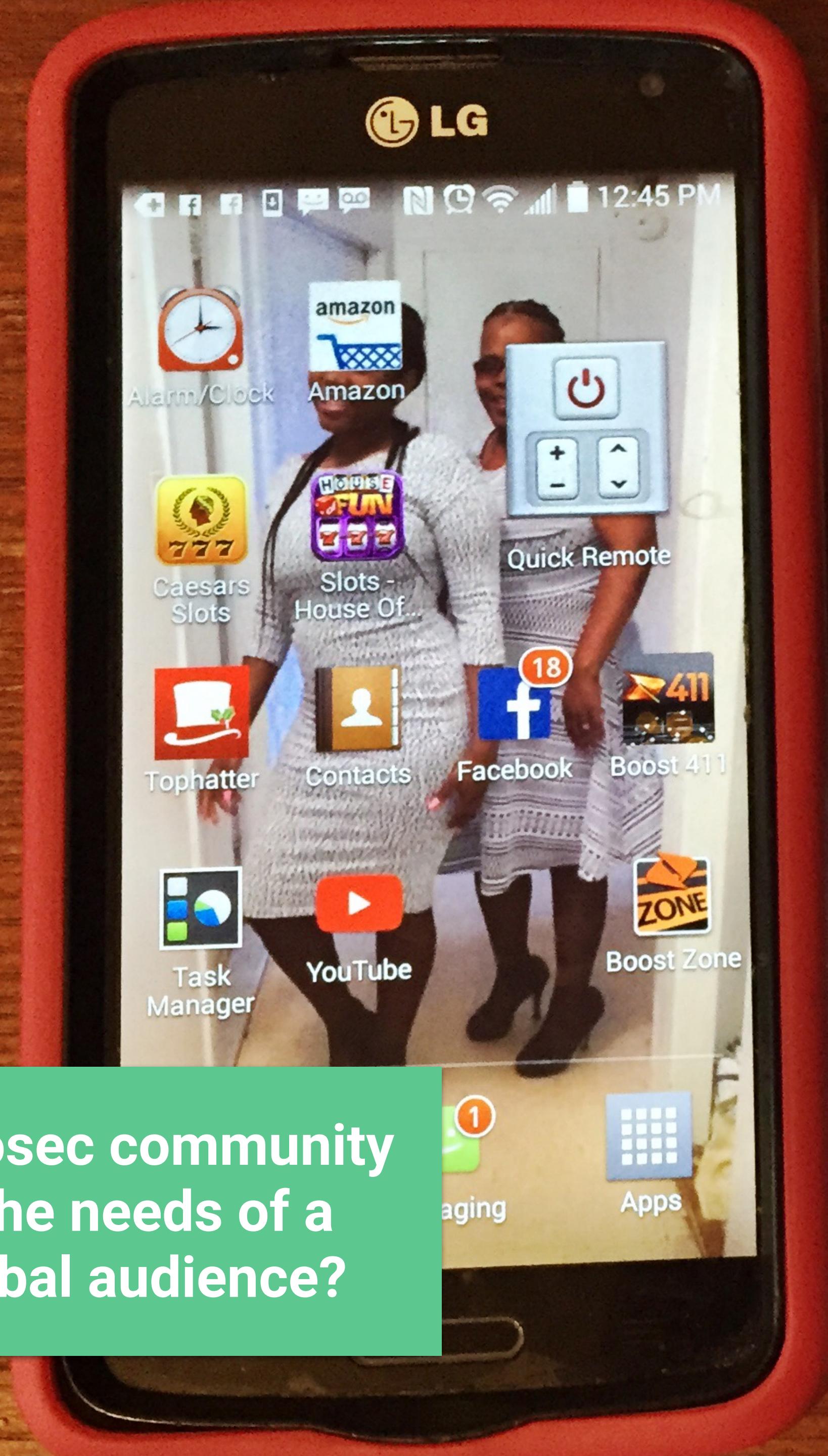


I'm a designer.

A photograph of a person with dark hair and glasses, wearing a light blue t-shirt, sitting on a brown wooden bench. They are looking down at a black smartphone with a blue case, which has the LG logo on it. The background shows a black metal fence and some yellow flowers.

Is a theoretically secure
system any good if it isn't
secure in practice?

Is the infosec community
meeting the needs of a
mass, global audience?



A photograph of two women sitting on a brownstone stoop. The woman on the left has blonde hair and is wearing a dark quilted jacket over a striped shirt. The woman on the right has dark hair and is wearing a teal and white long-sleeved top. They are both looking at a blue smartphone held by the woman on the right. The background shows a black wrought-iron fence and a brick building.

How do we understand
what people really want
and need?

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User Study - December 2015

Goal: Insights into privacy needs of low-income people of color

What's similar/different from other populations?

- Pew Internet study of Americans' attitudes to privacy and surveillance
- Needs of privacy-aware InfoSec OSS contributors

Better understand end-user needs for secure messaging

Why Focus on Mobile Messaging?

Cuts across personal and professional use cases

- 68% of American adults own smartphones
- Ownerships cuts across races and incomes (Pew Internet Survey)

Essential communication technology both in the US and internationally

Next billion online are mobile-first and will not consider the desktop experience the default

Recruiting Participants

12 African-American New Yorkers from Brownsville and Harlem

- All had smart phones and were enthusiastic messagers
- Not activists

Partnership with Blue Ridge Labs, focus on economic inclusion

- Strong existing community connections

Research Description

Activities

- 1 focus group of 4 young men
- 4 in-context interviews in homes, restaurants, and libraries with families (mothers and daughters, cousins)

Semi-structured interviews

- Ice-breaker, rapport builder
- Current messaging practices, apps used, and why
- Thoughts on privacy, surveillance
- Feedback on app store descriptions for secure messaging apps

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There's a gap in priorities
between infosec
community & participants





Giving away your data for
the price of a cup of
coffee



Key Findings from Straight-Talking New Yorkers

- 1) Concerns about physical device security
- 2) Negative consequences of family plans
- 3) Renter's mindset of an adversarial carrier

physical device security



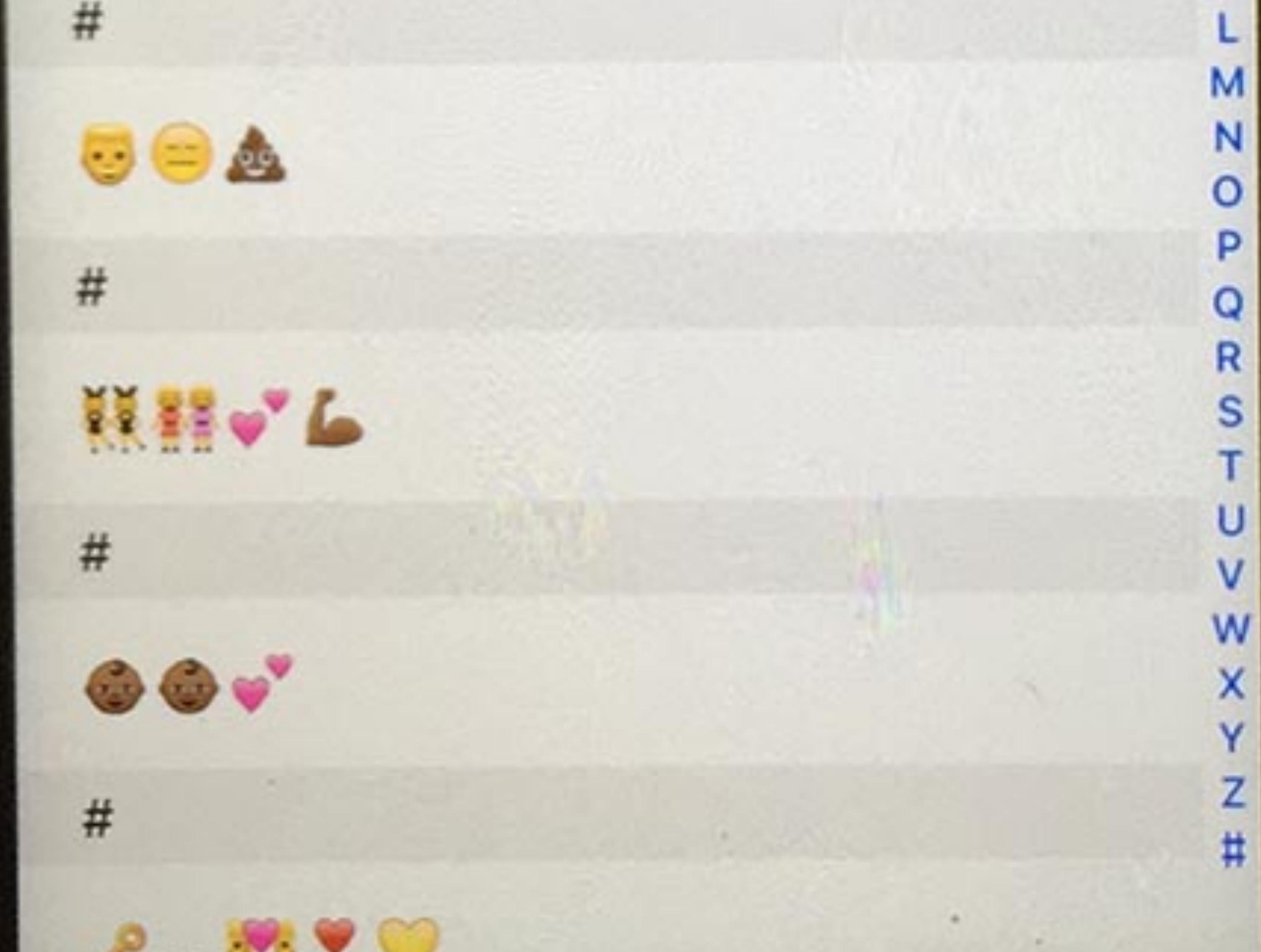
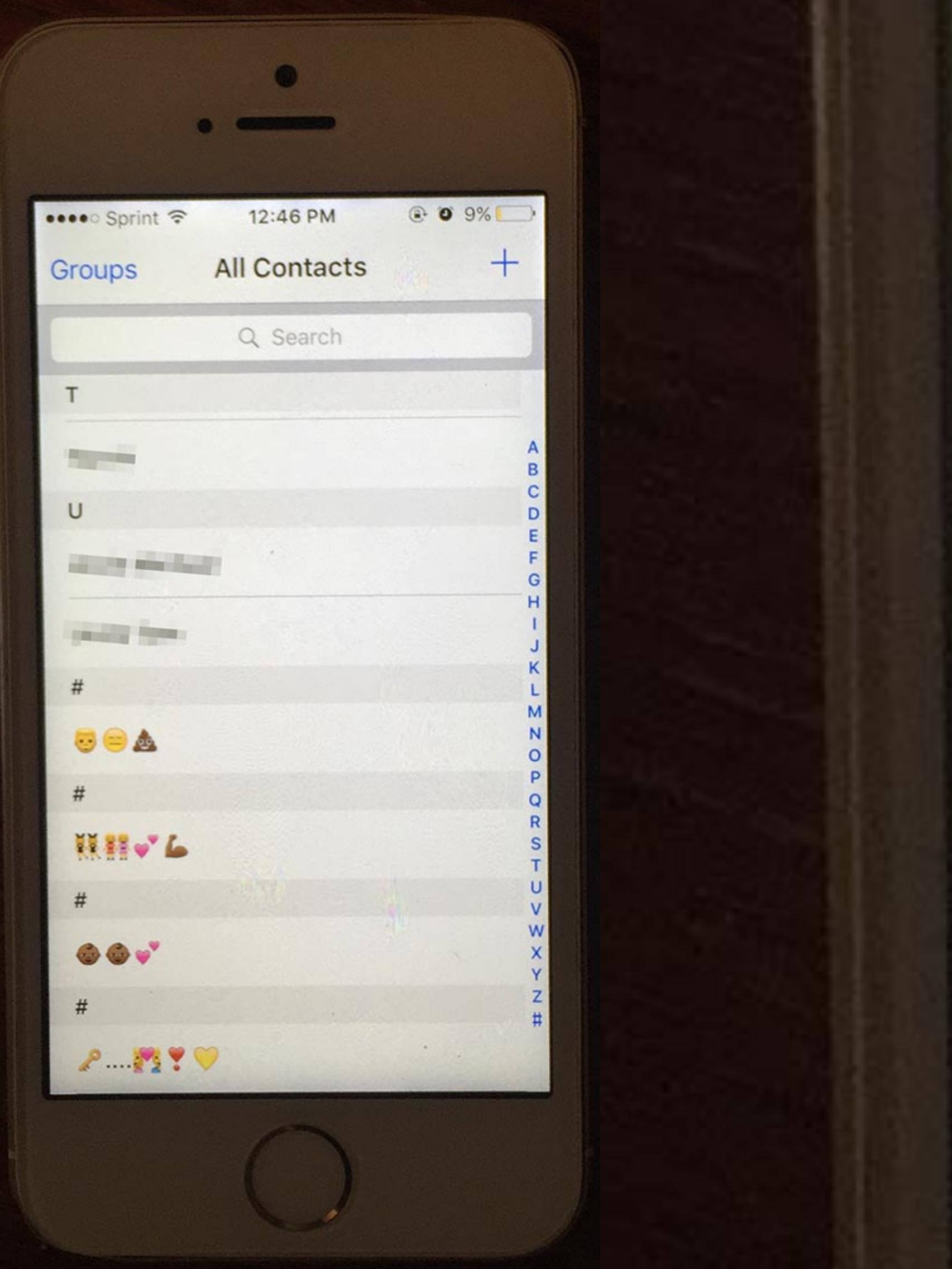
Surveillance is inevitable and privacy is impossible

If you're poor and Black and work at Chipotle or Best Buy, everything you do is suspect. You're always on camera and that's the only way to prove your innocence.



Racial profiling, frequent interactions with the police

Sure, I get pulled out of the car,. Just like how “the Feds” read all the messages to see if something’s up. That’s just how it is.



Physical device security matters
Emoji contact lists - strategy for thwarting shoulder surfing, also subverts corporate surveillance.

consequences of family plans



**Family plans save money, and let crazy people hurt you.
Estranged partners track you via your phone, impersonate you to the phone
company to get all your messages, and turn off your phone just to mess with you.**



Your social network is a liability

“Don’t talk to me about your Dominican situation on the phone. Do it in person.”



Cops are cat-fishing people in Facebook
“If you click on the wrong link – BAM they got you. They take over your account and get your friends.”

renter's mindset



You rent your phone from a “landlord” with the keys
You’re in a relationship with Cricket, or Metro PCS, and they’re trying to get money
from you. They own your device and content and there’s no way to hide from them.



Storage space, glitches, and crashes

New apps must earn their way on since something has to come off to make space.
Apps can make your phone glitch, so rush to delete before your phone crashes.

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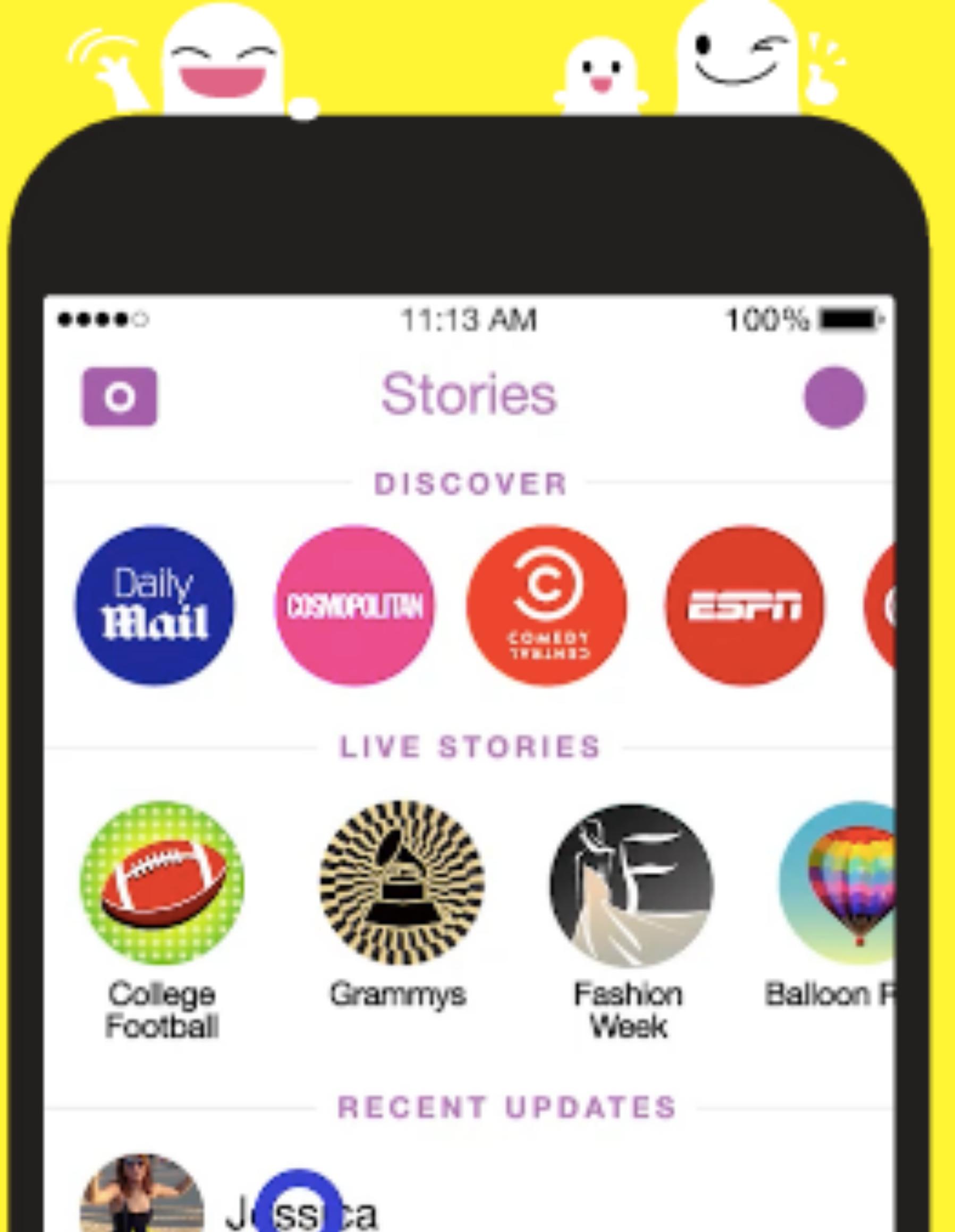
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make messaging better



Download now.



Learn from SnapChat

Value proposition of deleting local messages is well understood

Explain the value in human-centered language

These participants take privacy violations for granted.

Their reaction to current secure-messaging apps in the Play Store?

- “Meh.”

More than any particular features, we need to understand how to communicate value to these users.

Or, more fundamentally: understand what these users value, and make sure that we are creating tools that match their wants and needs.

It's easy in security to say “you should want this”. We need to instead listen when people say “this is what I need”.

do foundational research



In-context user research is key
Listen and learn.

[Code](#) [Issues 0](#) [Pull requests 0](#) [Wiki](#) [Pulse](#) [Graphs](#)

No description or website provided.

[26 commits](#)[2 branches](#)[0 releases](#)[1 contributor](#)

Branch: master ▾

[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download ▾](#)

 scuttle committed on GitHub Merge pull request #9 from simplysecure/scout-resource-adding	...	Latest commit d0b680d 16 days ago
 Conference-Publications/HotPETS-2016	Adding HotPETS paper and slides	16 days ago
 Research	Add files via upload	3 months ago
 UI_text_assets	adding multicultural names	4 months ago
 LICENSE	Initial commit	9 months ago
 README.md	Update README.md	9 months ago
 Shmoocon2016-user-are-people-too.pdf	adding shmoocon 2016 slides	7 months ago
 StyleGuide.sketch	Adding Style Guide source file	9 months ago
 style-guide-v1.pdf	Adding v1 of the Style Guide	9 months ago

Resources on github/simplysecure

Build user research skills

Participating in research shouldn't harm people

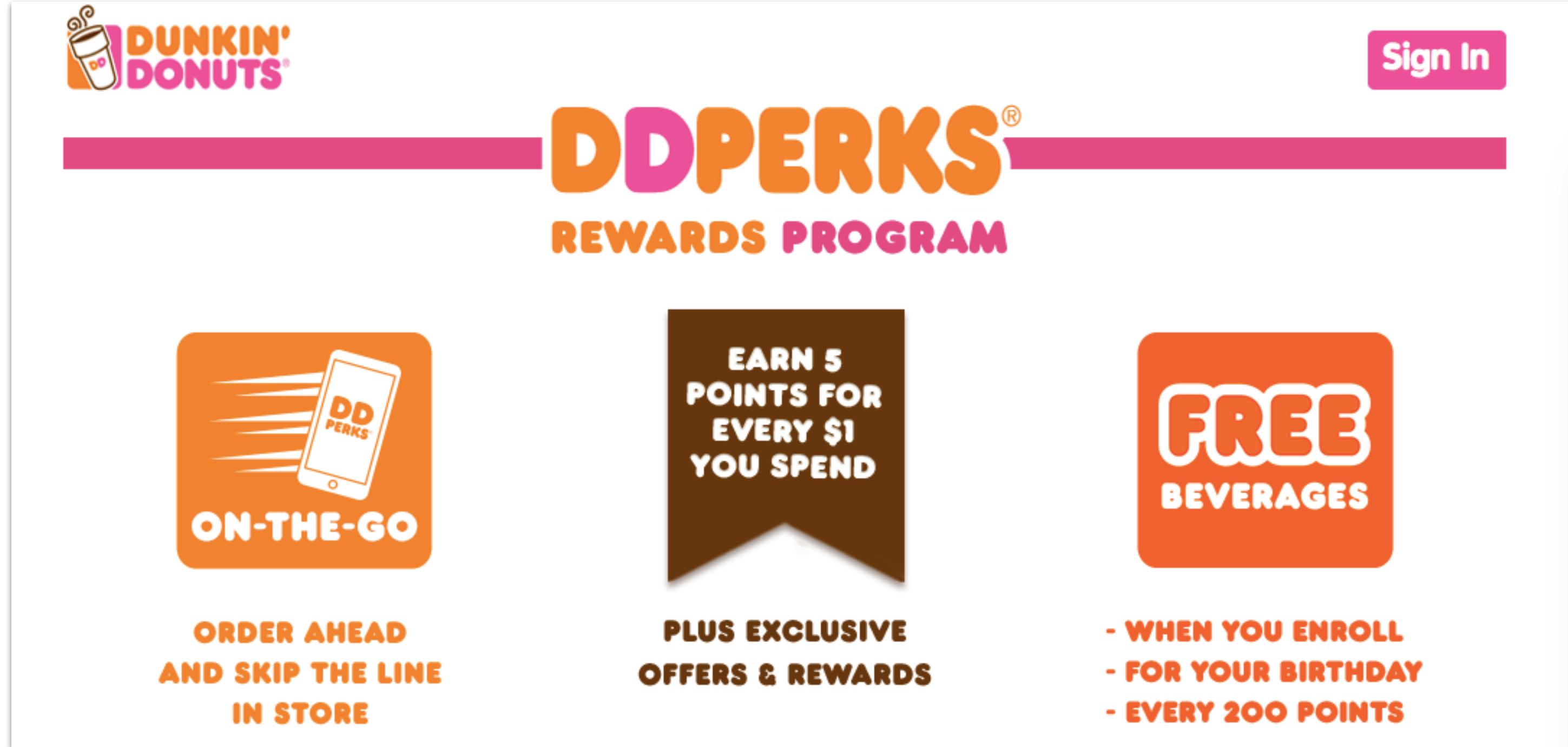
The Internet Freedom community is keenly aware of the need to protect sources who speak with journalists, but we tend to overlook how to protect research participants as well. Here are some questions to ask yourself next time you do a study:

- Do you need to record audio and video — are they necessary for publishing results — or will handwritten notes suffice?
- Are the research participants representative of your target user population? Think not only demographics but also attitudes. If your participants are willing to install logging software and be recorded, are they reasonable approximations of your intended users?
- Site analytics can encroach on privacy. Given this, what alternatives can you consider that will also help you quantify usability?
- What's the threat model? What could happen to your participants if others find out that they participated in your research?
- If your organization requires standard language on an informed consent document, are there options to include a second page that's written in human-centered, accessible language?

Explanation of how to use resources on simplysecure.org/blog

pay attention to ux

Communicate How Things Work



The image shows a screenshot of the Dunkin' Donuts DD Perks Rewards Program website. At the top left is the Dunkin' Donuts logo. To its right is a pink "Sign In" button. Below the logo is a large orange banner with the text "DD PERKS®" in white and "REWARDS PROGRAM" in pink. On the far left, there's a blue box containing a smartphone icon with "ON-THE-GO" text below it. To the right of the phone is another blue box with the text "EARN 5 POINTS FOR EVERY \$1 YOU SPEND" and "PLUS EXCLUSIVE OFFERS & REWARDS". Further right is a blue box with "FREE BEVERAGES" text. At the bottom right, there's a list of rewards: "- WHEN YOU ENROLL", "- FOR YOUR BIRTHDAY", and "- EVERY 200 POINTS".

DUNKIN'
DONUTS

Sign In

DD PERKS[®]

REWARDS PROGRAM

ON-THE-GO

EARN 5
POINTS FOR
EVERY \$1
YOU SPEND

PLUS EXCLUSIVE
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Findings Summarized

Surveillance is accepted as inevitable (in person, online)

Physical device security viewed as the key to privacy (screen lock, etc)

Family plans & social networks have negative consequences

“Renters’ mindset” means the phone belonging to phone company

- Phone company has your number, it's really their number
- Phone company can access all your messages
- Phone company messes with your phone to try to get you to upgrade
- Glitchy apps and limited storage space are ongoing battles

A photograph of a person with dark hair and glasses, wearing a light blue long-sleeved shirt, sitting on a brown wooden bench. They are looking down at a black smartphone with a blue case held in their hands. The background shows a black metal fence and some foliage.

Is a theoretically secure
system any good if it isn't
secure in practice?

NO
but we can do better

Get involved with Simply Secure

Follow @simplysecureorg on Twitter

Email slack@simplysecure.org to request access to our Slack (UX, security, privacy)

Share your work

Thank You

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