Announcements

Today is our final lecture!

Final project reports due Friday at 11:59am
1936

We often fail to foresee the consequences of our social computing designs.
But with great power...

Instagram cofounded by Stanford alums
WhatsApp cofounded by a Stanford alum
Clubhouse cofounded by a Stanford alum
DoorDash created as a senior project at Stanford
Snapchat founded at Stanford
One explanation: it can’t be foreseen.

Interdependence and collective action remain challenging

The real-world stochastic, world-based architecture contains collaborations and feedbacks that make it unpredictable. But many valuable collective activities do not fit this criteria.

Cold start problem

The problem: the social computing system isn’t really very enjoyable or useful to anybody when nobody’s there yet. …but then, why would someone join and start populating it if there’s nobody there?

The entire effort struggles to reach critical mass, like how a car engine on a freezing day can’t start up because it’s too cold, and if it can’t start up, it can’t warm itself up to start. Thus, a cold start problem.

Why? Social proof.

Social proof: when people copy each others behavior. But, when people are uncertain, they’re less likely to engage.

Why? Because you never know where things will go...

So it’s deterministic?

[Belgak, Dodd, and Watts 2006]

Further randomize each participant into one of eight possible parallel “worlds” where the download counts at start at 0.

OK, here’s a picture of a woman in her twenties breastfeeding a foreign boy.

FINE. Age can only influence…

Can’t even wrap the line between an infant and a toddler?

Is it too big for a baby to walk on its own? Then it’s too old.

But the WHO says to breastfeed an infant partially until two years.

NOPE. (C)

"The book I’m on is by one of my favorite authors, but I’ve never read him before."
Another explanation: we can design

Defaults influence norms
Very few users change defaults; only 5% of Microsoft Word users in one study had ever changed any settings [Spool 2011]
Why? Recall Channel factors. (Amongst other reasons.)
We don’t readily distinguish between socially enforced norms and default enforced norms. Is public-by-default a social norm?
Think about the defaults you encounter in social computing systems
Who do you share with by default on Facebook?
What’s the default sort order of posts?
What’s the default skin color of emoji? 🌟

3) Calculate objective
So what do we do with all of these predictions?

\[
P(\text{like}) \quad P(\text{watch}) \quad P(\text{comment}) \quad P(\text{share}) \quad P(\text{click})
\]

\[
P(\text{hide}) \quad P(\text{follow})
\]

We define an objective: an algorithm to combine and weight the predictions

Intuitively: how many points does each predicted behavior get?

\[
\sum \text{weights}_p \cdot p
\]

Moderation’s result
It works.
Moderating content or banning substantially decreases negative behaviors in the short term on Twitch. [Seering et al. 2017]
Reddit’s ban of r/CoonTown and r/mattepeople hate due to violations of anti-harassment policy succeeded: accounts either left entirely, or migrated to other subreddits and drastically reduced their hate speech. [Chandrasekharan et al. 2017]

Design and the Media Equation
Very few social cues from the system are required to prompt an automatic social response from people.
(Tread carefully!)
…but what happens when we try to increase the number and fidelity of the cues?

Designs for strong ties
Often, the design goal is to maintain or deepen the strong tie relationship.
Other examples?

Beyond being there
[Hollan and Stormenta 1993]
“Being there” is the wrong goal.
We will never fully recreate the face-to-face experience. There are too many subtle cues for us to fully model or recreate them, even with hypothetical future technology.

Network lag, immersion and comfort issues in VR, lack of shared physical context, …
So, stop trying.
Can we better know the unknowable?

Two more productive ways to think about this:

Even if you can’t know at the very beginning, you can get glimpses of the possibilities over time

Are the right people at the table?
Can we better know the unknowable?

- What's the worst headline you can imagine?
- What would using your product “too much” look like?
- When you picture your users, who isn’t included?
- What could a bad actor do with your product?

[Link to text](https://tarotcardsoftech.artefactgroup.com)
Black Mirror writers’ room

[Klassen and Fiesler 2022]

Science fiction as a vehicle for imagining alternative futures

Goal: don’t name possible harms—that’s not an episode of Black Mirror—instead amplify our anxieties
Recipe:

1. Brainstorm near future technology based on your design
2. What are the anxieties and issues that this design highlights?
3. What’s a cautionary tale about the design that amplifies those anxieties?
4. What fictional person could best illustrate this caution?
5. What’s their story?
Conduct your own review

1) What are the ethical risks, and risks to society?
   - To society as a whole?
   - To subgroups in society?
   - To other societies around the world?

2) What principles should designers of other systems be using to mitigate these risks?

3) What concrete design decisions are you making to instantiate those principles in your own system?
The goal is not to see the unforeseeable, but to bring more issues to light, earlier.
I asked you what you wanted me to discuss. Here are some of the topics...
The TikTok Ban
What is it?

The US legislature has passed a bill that forces TikTok’s owner, the Chinese company ByteDance, to divest its ownership of the TikTok platform in 270 days.

If it doesn’t do so, the app will be removed from app stores on January 19, 2025.

The US government’s concerns center around national security and data privacy.

Michael’s take: we are the only G20 nation without a comprehensive data privacy law, and this law doesn’t change that.
What will happen?

If the ban goes into effect, I think we should expect the large social media companies to swoop in with similar products

Meta: Instagram, or maybe a new app?

YouTube: YouTube shorts

TikTok’s algorithm is not magic: its design yields it better information than other platforms, and it also functions as a commons (and not network) so can draw on a larger pool of content
Is it constitutional?

The are already legal challenges to the TikTok ban under the first amendment, e.g., this impugns American’s right to post content to the platform.

Evelyn Douek, Stanford Law professor and expert on platforms and the first amendment: judging by previous Supreme Court precedent, this law is 100% unconstitutional.

…but, this is a Supreme Court that is suddenly more open to national security arguments.
Social media addiction
Coddling Plus Devices? Unequivocal Disaster for Our Kids.

In “The Anxious Generation,” Jonathan Haidt says we’re failing children — and takes a firm stand against tech.
The great rewiring: is social media really behind an epidemic of teenage mental illness?

The evidence is equivocal on whether screen time is to blame for rising levels of teen depression and anxiety – and rising hysteria could distract us from tackling the real causes.

By Candice L. Odgers
Haidt asserts that the great rewiring of children’s brains has taken place by “designing a firehose of addictive content that entered through kids’ eyes and ears”. And that “by displacing physical play and in-person socializing, these companies have rewired childhood and changed human development on an almost unimaginable scale”. Such serious claims require serious evidence.

Haidt supplies graphs throughout the book showing that digital-technology use and adolescent mental-health problems are rising together. On the first day of the graduate statistics class I teach, I draw similar lines on a board that seem to connect two disparate phenomena, and ask the students what they think is happening. Within minutes, the students usually begin telling elaborate stories about how the two phenomena are related, even describing how one could cause the other. The plots presented throughout this book will be useful in teaching my students the fundamentals of causal inference, and how to avoid making up stories by simply looking at trend lines.
The committee’s report, *Social Media and Adolescent Health*, contains its analysis and recommendations. The committee’s review of published literature did not support the conclusion that social media causes changes in adolescent health at the population level. The report also notes that the use of social media—rather than having purely negative or positive impacts—is likely a constantly shifting calculus of the risky, the beneficial, and the mundane that affects different people in different ways. Due to the lack of robust evidence on the relationship between social media use and health outcomes, the committee proposed a research agenda that will endeavor to answer these critical questions. The committee also proposed several...
Wait, what?

The causality is really difficult to prove here: is social media use the cause, or the effect?

The real story here is likely to be one of heterogeneous group effects: for whom is it a harm, under what circumstances?

Hundreds of researchers, myself included, have searched for the kind of large effects suggested by Haidt. Our efforts have produced a mix of no, small and mixed associations. Most data are correlative. When associations over time are found, they suggest not that social-media use predicts or causes depression, but that young people who already have mental-health problems use such platforms more often or in different ways from their healthy peers.

These are not just our data or my opinion. Several meta-analyses and systematic reviews converge on the same message. An analysis done in 72 countries shows no consistent or measurable associations between well-being and the roll-out of social media globally. Moreover, findings from the Adolescent Brain Cognitive Development study, the largest long-term study of adolescent brain development in the United States, has found no evidence of drastic changes associated with digital-technology use. Haidt, a social psychologist at New York University, is a gifted storyteller, but his tale is currently one searching for evidence.
What will happen to social computing in the age of AI?
A couple predictions

Social AI agents will become more prevalent, in roles ranging from social coach (“what if you said it this way?”) to interactive “dear diary” apps

Generative models will enable even more highly produced content, which will lead to a premium on “authentic” content…and filters that try to produce things while making it look authentic

So many more filters…
Pulling it all together
Thank you, TAs!

Grace Zhou
Griffin Miller
Kyla Guru
Selaine Rodriguez
Shruti Sridhar

Star Doby
Thomas Escudero
Uma Phatak
Wilmer Zuna
Congrats, seniors

(About 40% of you are seniors)
What I hope you take away

That every social system is designed, either explicitly or by default.

That designs can have substantial — but not complete — influence over the behaviors in that system.

That, as socio-technical systems, those designs require a combination of computation and of structured human behavior to succeed.

That we have many tools in our toolbox to help us create enlightening, fun, and meaningful spaces.
The more things change, the more they stay the same.

I, a geriatric millennial, am not cool. Ergo, systems I liked are no longer cool. Ergo, systems you like will soon no longer be cool.

But the fundamentals will remain.
How can we design the social systems that we inhabit?
fin.

have a great summer!
References


Merton, Robert K. "The unanticipated consequences of purposive social action." American sociological review 1.6 (1936): 894-904.
Creative Commons images thanks to Kamau Akabueze, Eric Parker, Chris Goldberg, Dick Vos, Wikimedia, MaxPixel.net, Mescon, and Andrew Taylor.

Slide content shareable under a Creative Commons Attribution-NonCommercial 4.0 International License.