

Mostly Harmless

Design for digital with a conscience



Per Axbom

axbom.eu/feirapdmanaus

"So you married into a family of traitors?!"

(Real comment to my wife a few weeks after she married me.)



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Garrincha



1958 World Cup final in Sweden





Brésil Suède 5 2 Garrincha décisif

Nutmeg • Tunnel

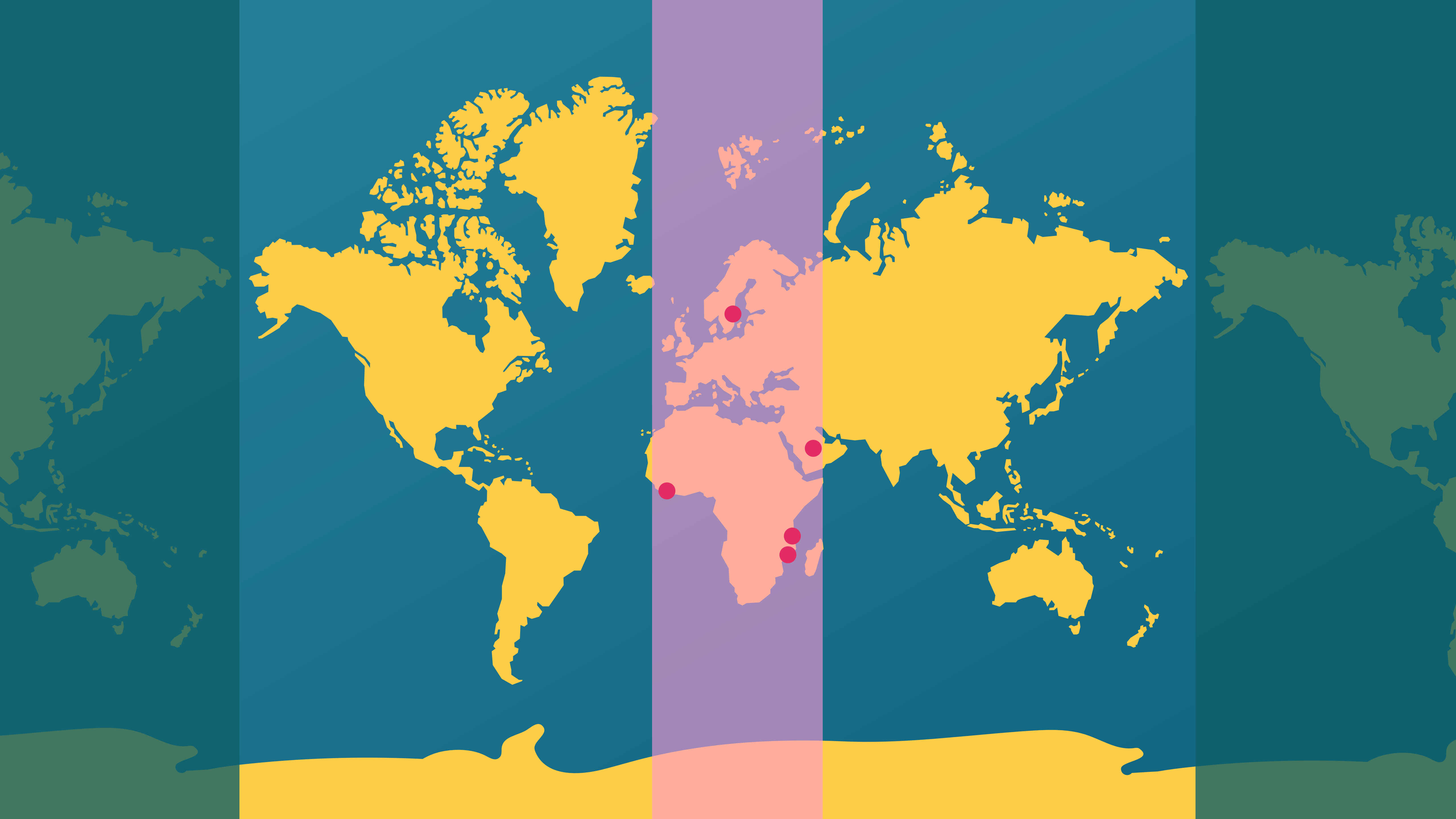
Caneta • Janelinha • Rolinho • Ovinho



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The Mercator map projection



















Image © 2012 TerraMetrics
© 2012 Cnes/Spot Image
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO

The Authagraph map projection centered on Europe





球面を96領域に分割する



球面の分割領域の面積比（この場合
全球面に対し96分の1の比率）を
保ちながら太った正四面体に変形
（写像）する



同じように面積比を保ちつつ太った正四面体の面を平らにすると正四面体の地球ができる



正四面体にはさみを入れ切り開く



**How
much**

**do you
trust**

**the
maps**

**and
tools**

**we
use**

**in
design
?**

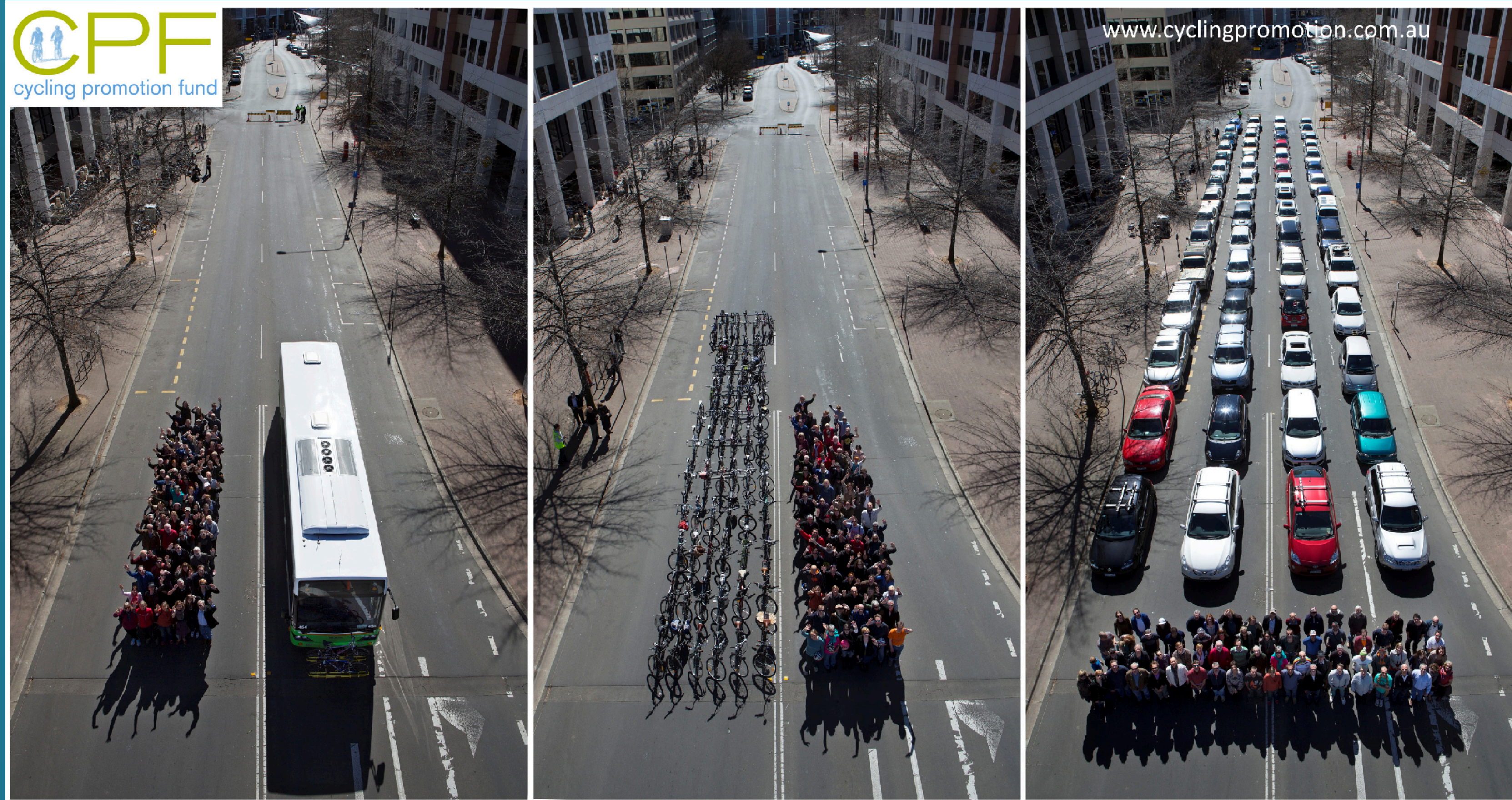




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Road space taken by 60 people



on a bus

on bicycles

in cars



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Road space taken by 60 people



fossil-fuel cars

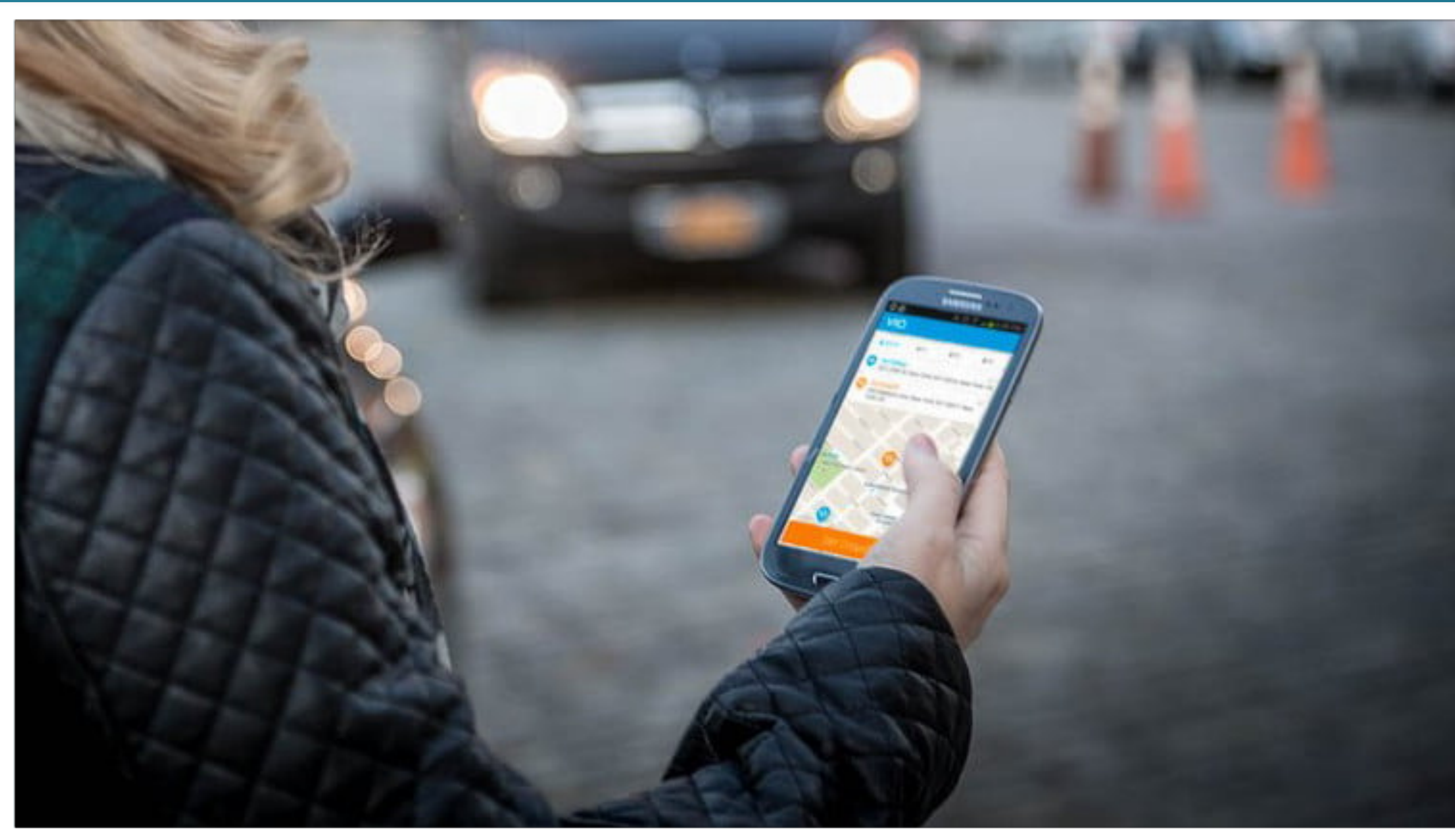


electric cars



**autonomous
cars**





Ride sharing adds 2.6 vehicle miles to city traffic for every one mile of personal driving removed.

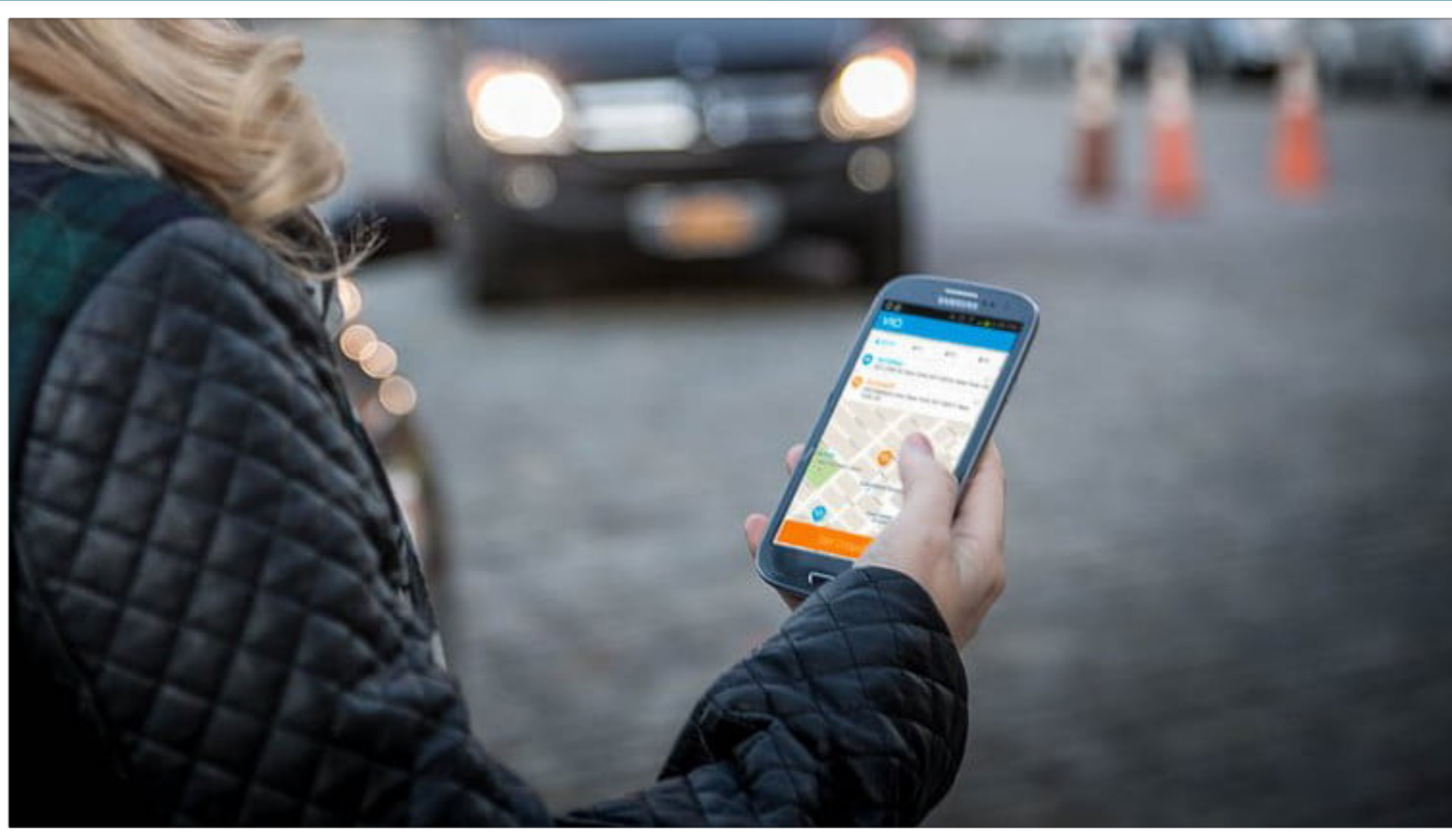
That's an increase of 160%.

UberPOOL, Uber Express POOL, Lyft



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<http://www.schallerconsult.com/rideservices/automobility.htm>



UberPOOL, Uber Express POOL, Lyft

Ride sharing adds 2.6 vehicle miles to city traffic for every one mile of personal driving removed.

That's an increase of 160%.

Ride-sharing apps actually make traffic in cities worse.

Optimising a broken system can make the system even more broken.



✗ The photo you want to upload does not meet our criteria because:

- Subject eyes are closed

Passport photo

Select photo

✗ The photo you want to upload does not meet our criteria because:

- Subject eyes are closed

Please refer to the technical requirements.

9 attempts left.

photo requirements.

more about common photo problems and to resolve them.

After your tenth attempt you will need to start again and re-enter the CAPTCHA security check.

Reference number: 20161206-81

Filename: Untitled.jpg

If you wish to contact us about the photo, you must provide us with the reference number given above.

Please print this information for your records.

Print



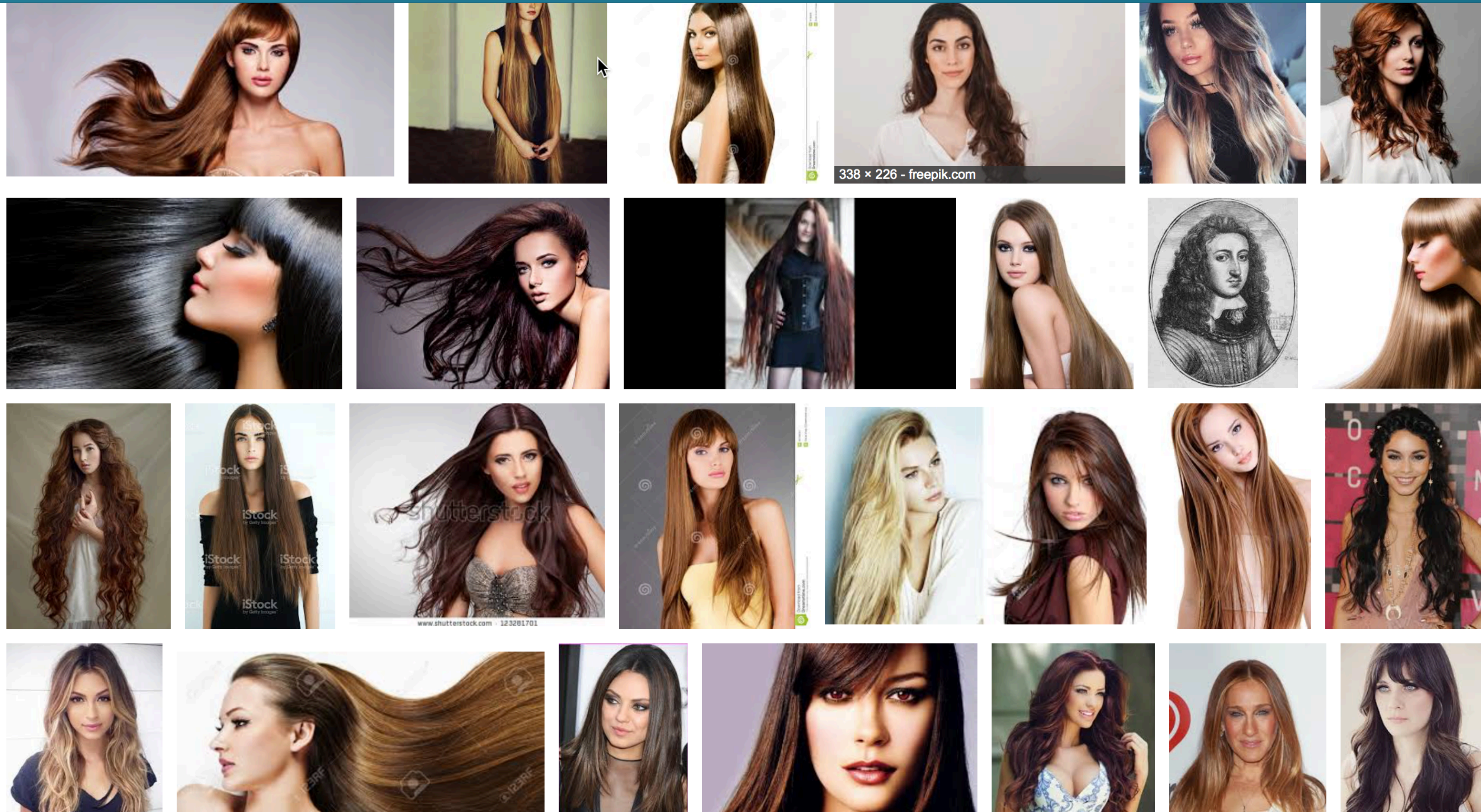


I hope they accept this one



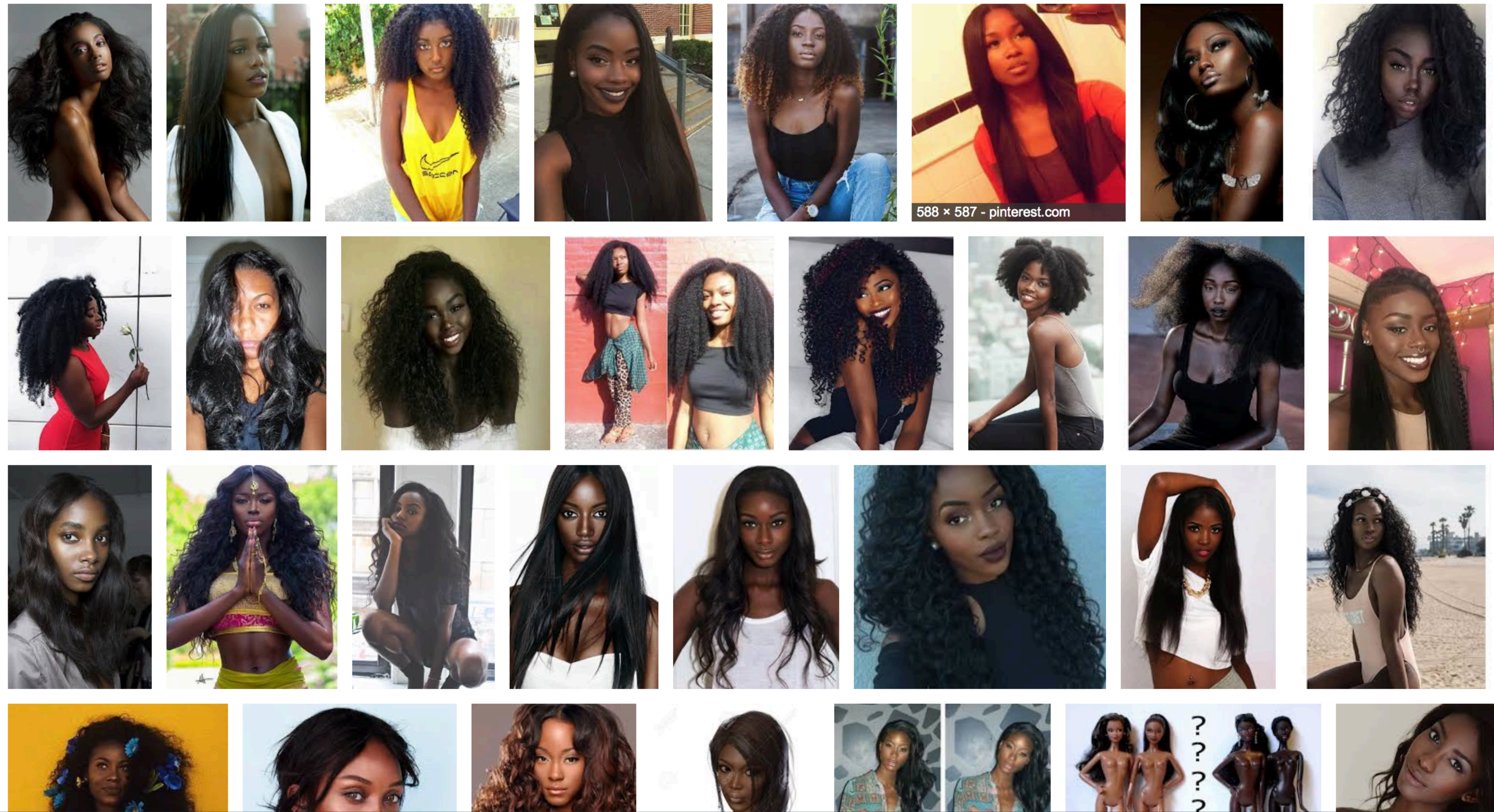
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woman long hair



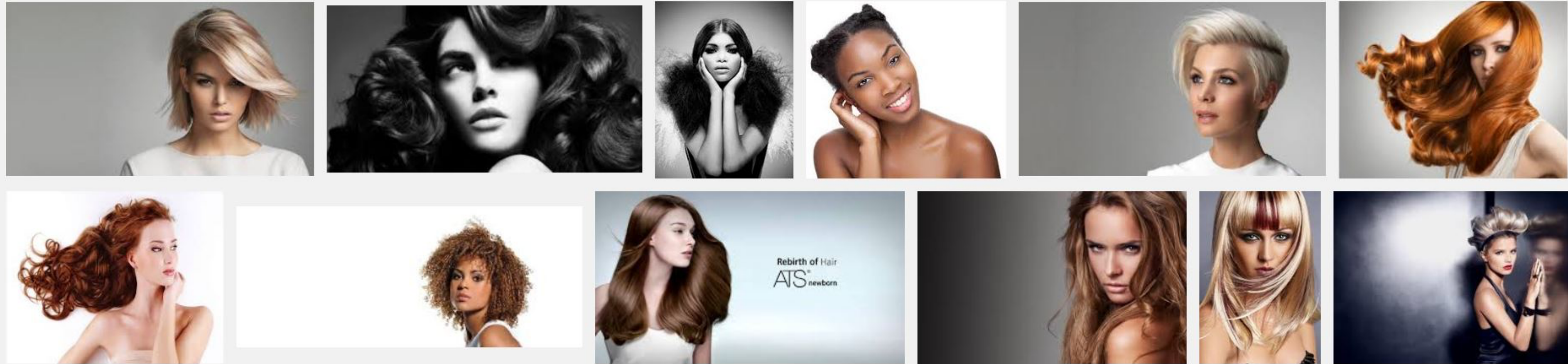
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woman long hair dark skinned



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professional hair



unprofessional hair



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<https://www.iafrikan.com/2016/06/25/why-does-a-google-search-for-unprofessional-hair-show-images-of-black-women-including-michelle-obama-2/>

Machine Bias

There's software used across the country to predict future criminals. And it's biased against blacks.

by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica

May 23, 2016

Just as the 18-year-old girls were realizing they were too big for the tiny conveyances — which belonged to a 6-year-old boy — a woman came running after them saying, “That’s my kid’s stuff.” Borden and her friend immediately dropped the bike and scooter and walked away.

But it was too late — a neighbor who witnessed the heist had already called the police. Borden and her friend were arrested and charged with burglary and petty theft for the items, which were valued at a total of \$80.

Two Petty Theft Arrests

VERNON PRATER

Prior Offenses
2 armed robberies, 1
attempted armed
robbery

Subsequent Offenses
1 grand theft

LOW RISK

3

BRISHA BORDEN

Prior Offenses
4 juvenile
misdemeanors

Subsequent Offenses
None

HIGH RISK

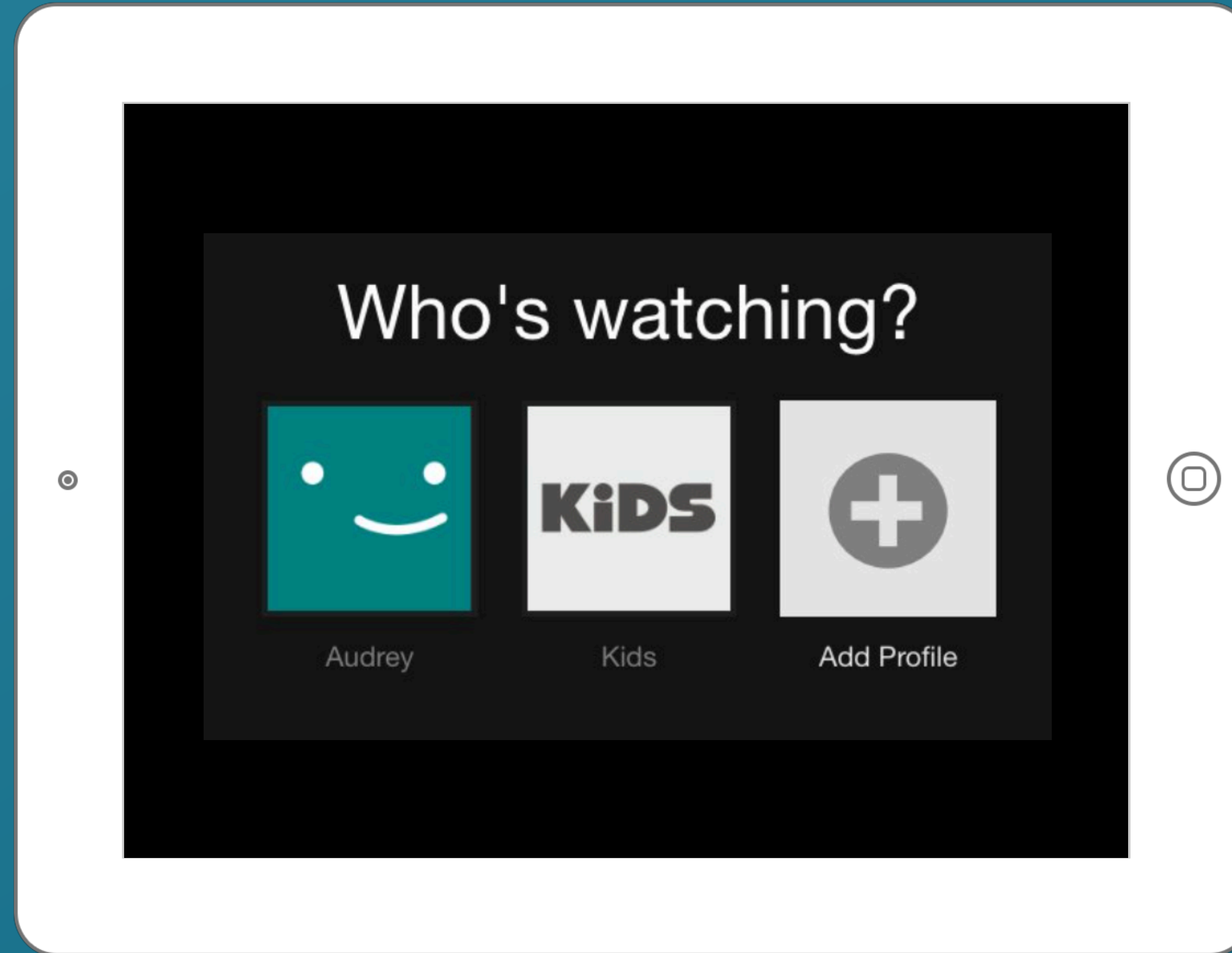
8

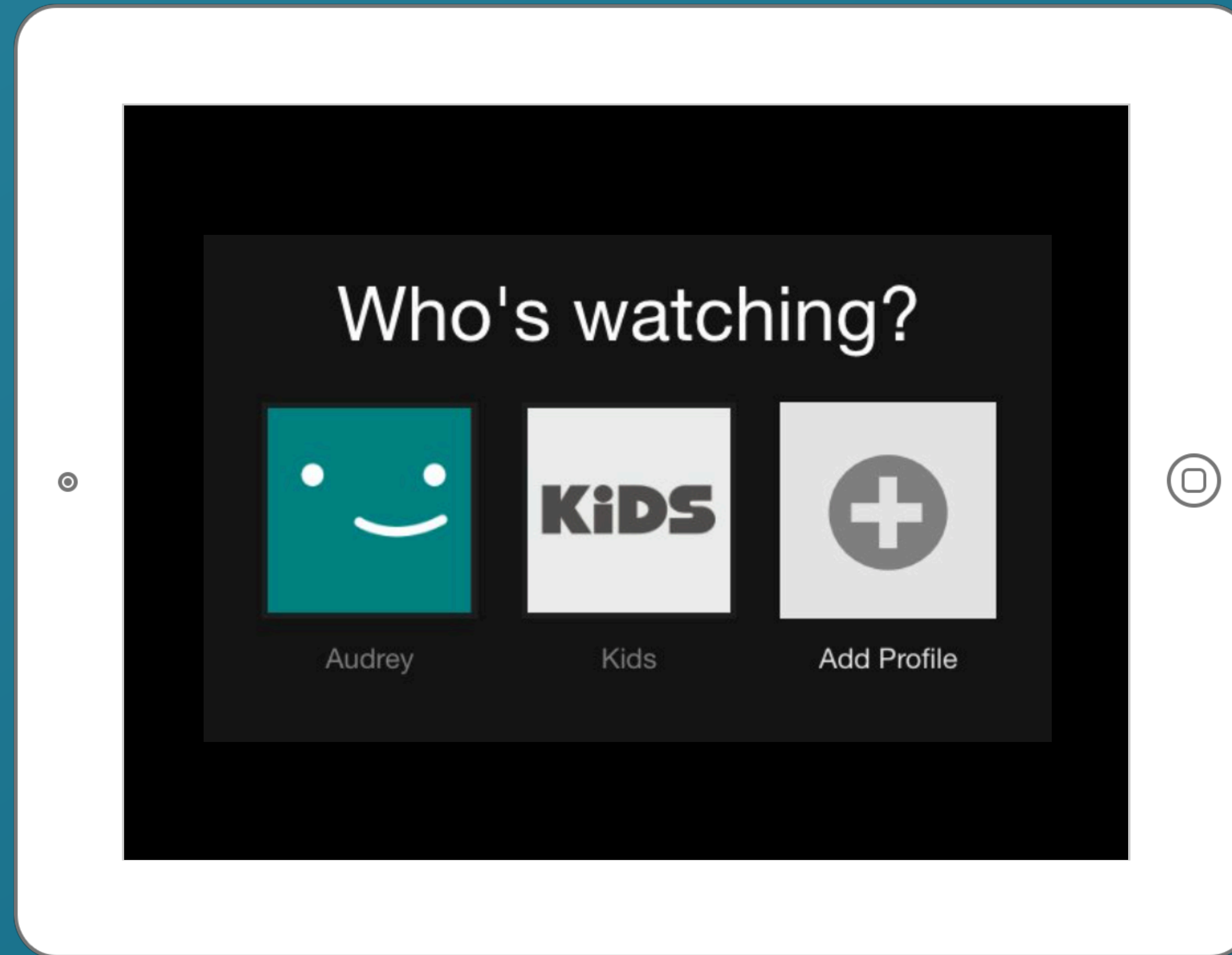
Borden was rated high risk for future crime after she and a friend took a kid’s bike and scooter that were sitting outside. She did not reoffend.

<https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>



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Come on @netflix, I don't have kids!! Also, how would this feel if you lost a child or had trouble conceiving - no button here to remove it.

@audreylouisa on Twitter



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Zélia Sakhi

@ilovegraphics

Following



At this point, I have so many mindfulness, reflection, and motivation notifications on my phone that I am actually getting stressed out by them. This. doesn't. Work. For. Me.

10:23 AM - 28 Feb 2018

**Gentle nudges are not so gentle
when everyone is pushing you.**



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18 Cognitive Biases You Can Use for Conversion Optimization

Last updated: August 11, 2017

Anchoring

Loss aversion

Decoy effect

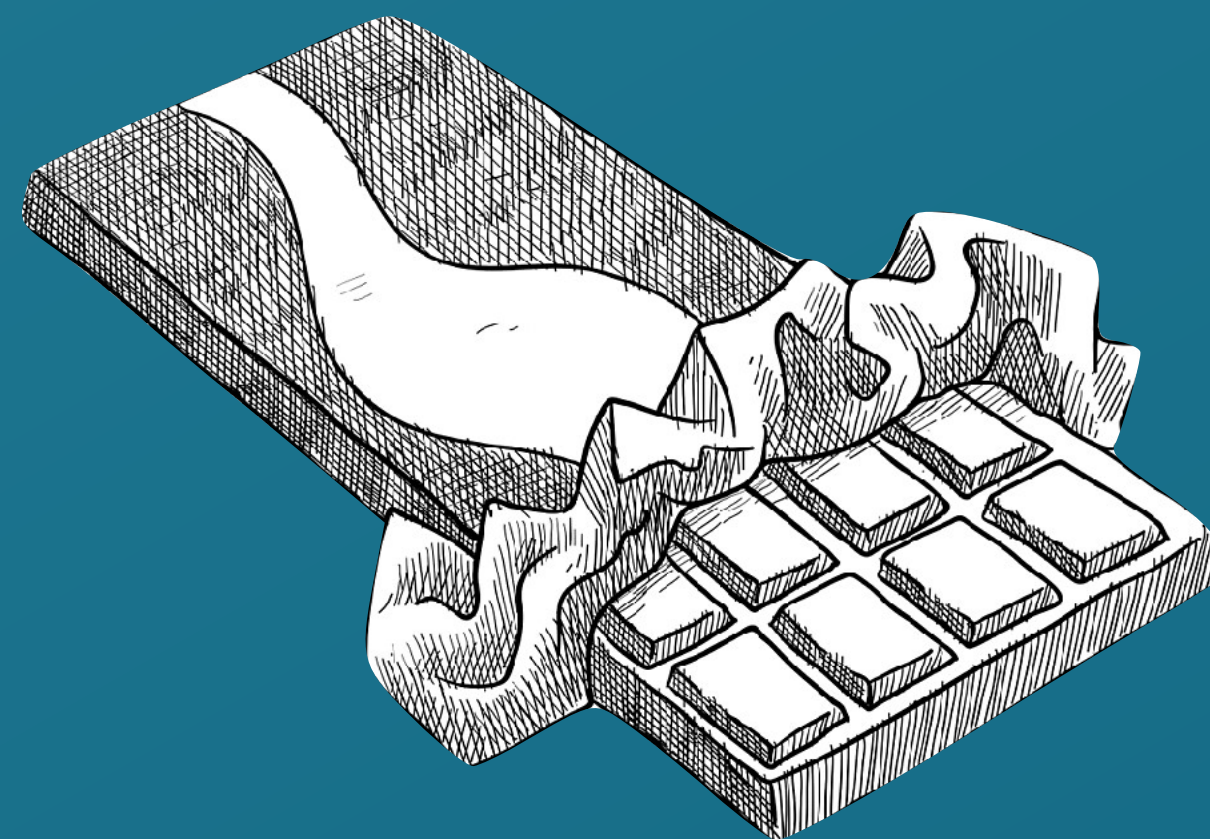
Sunk cost fallacy

Expectation bias

Confirmation bias

Bandwagon effect





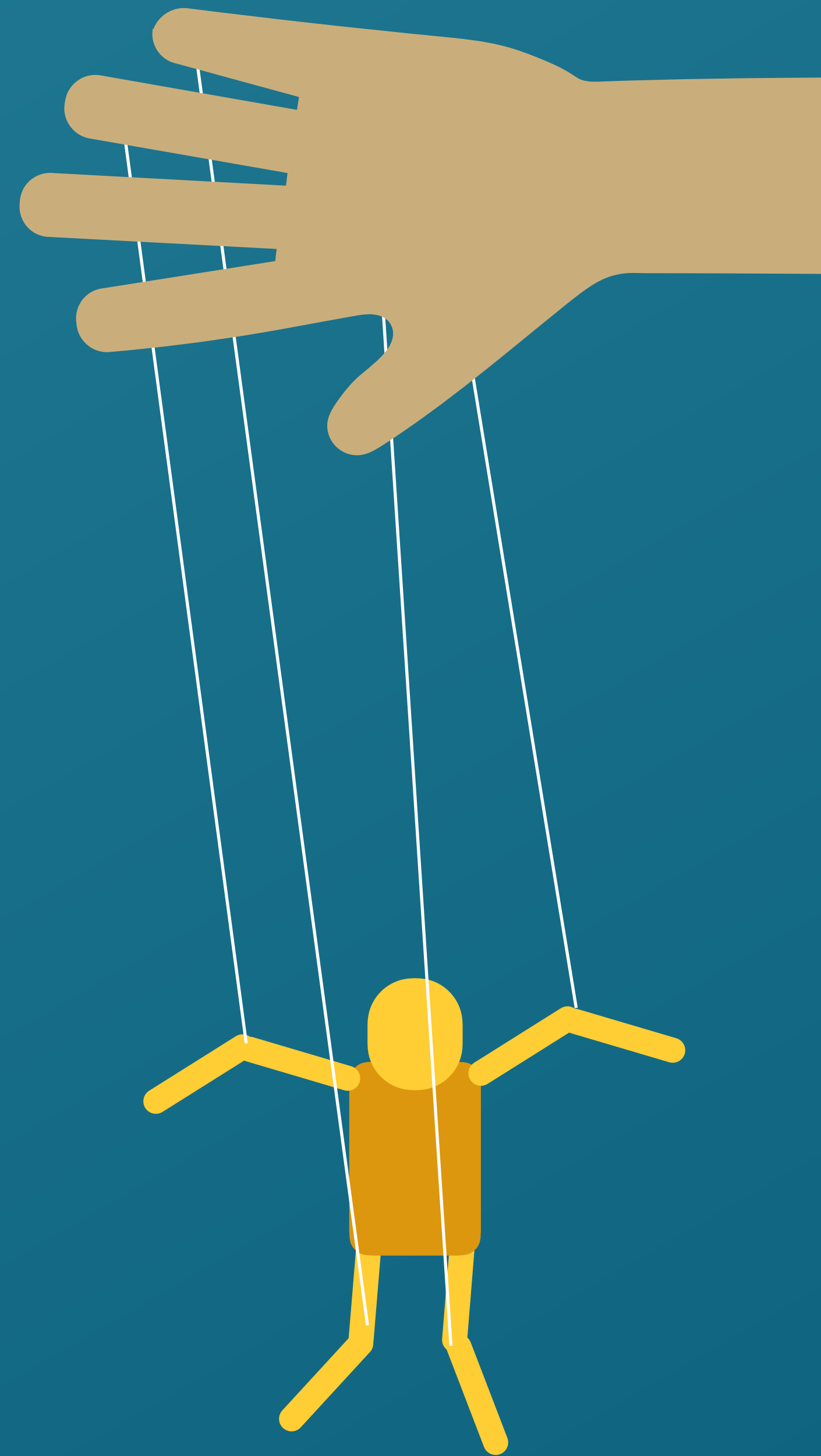
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Bias is the tendency to have an opinion, or view, that is often without considering evidence and other information.

Biases are a human **trait**, and can be a **weakness**.

As designers we are not learning about human weaknesses so that we may **exploit** them.

Our job is to **remedy** them.





Unlock the outdoors.

Get access to exclusive camping deals,
and the first look at new camps.



[No thanks, I'm not a fan of the outdoors.](#)



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MyMedic would like to send you notifications.

You'll be notified about the latest tips, sales, and discounts, so you and everyone you know can stay alive.

[no, I don't want to stay alive](#)

Allow

My Medic Gear is a huge value for the dollar, my kits has more gear than other competitors that cost much more.



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https://twitter.com/i_anic/status/1039127723388612609

**A higher conversion rate
is not equivalent to
“better for the person”**



Ask a psychiatrist

1177
VÅRDGUIDEN

E-tjänster

[Inställningar](#)

[Logga ut](#)

Inloggad som Andrea Antananarivo

Meddelanden ⓘ

Inkorg

Påminnelser

Vårdval ⓘ [Lägg till och ändra](#)

Trädgårdstorgets vårdcentral

Barnvårdscentralen Ringdansen, Cityhälsan Söder

Övriga tjänster ⓘ

Journaltjänster

Läkemedelstjänster

Meddelanden ⓘ

17 juni 2015 kl. 10:30
Trädgårdstorgets vårdcentral

26 juni 2015 kl. 10:30
Trädgårdstorgets vårdcentral

Mottagningar ⓘ [Hitta och lägg till](#)

Capio Psykiatri Linköping

Käkkirurgi Druvan, Käkkliniken US

Landstinget/regionen rekommenderar ⓘ

Beställ klamydiahemtest

Fråga psykiatrin

Fråga sjukvårdsrådgivningen

Ring supporten 08-123 135 00

Mejla supporten

Läs mer om e-tjänster

Webbarta

1177 Vårdguiden — En tjänst från Sveriges landsting och regioner



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**Someone is always trying to
push you to do something.**

**It's a global
experiment with
non-consenting
participants.**



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"UX is
about
putting
people
first"



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Why do we keep messing up?



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What we do

Right

Wrong

Wrong

Right

How we do it



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What we do

Right

Wrong

Doing
the wrong thing
the wrong way

Wrong

Right

How we do it



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What we do

Right

Wrong

Doing
the right thing
the wrong way

Doing
the wrong thing
the wrong way

Wrong

Right

How we do it



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What we do

Right

Wrong

Doing
the right thing
the wrong way

Doing
the right thing
the right way

Doing
the wrong thing
the wrong way

Wrong

Right

How we do it



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What we do

Right

Wrong

Doing
the right thing
the wrong way

Doing
the right thing
the right way

Doing
the wrong thing
the wrong way

Doing
the wrong thing
the right way

Wrong

Right

How we do it



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With more **efficient tools** we
can work **much faster**.



With more **efficient tools** we
can work **much faster**.

So a lot of people are getting **much better**
at doing **the wrong thing**.



Raise your hand and take it down only when you hear a statement you do not agree with.

- ✓ I have lied.
- ✓ I have lied to someone I care about.
- ✓ My parents told me it is wrong to lie.
- ✓ I believe I will continue to lie.



Why we make bad decisions

SELF-AWARENESS

TIME

RESILIENCE

UNDERSTANDING

HEALTH





Self-awareness

You haven't yet figured out if your behaviour aligns with your values



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Time

You aren't given enough time



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Resilience

Other people's expectations are steering your behaviour





Understanding

You do not have a full understanding of the system at play



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Health

You are not taking care of yourself



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You are too tired.

**You are letting others
make decisions for
you.**

**You are putting too
much trust in the
tools you are working
with.**

You are out of time.





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Fresh concerns raised over academic conduct of major US nutrition and behaviour lab

Do smaller plates make you eat less? No
March 7, 2017 10.29am GMT

How knowledge about different cultures is shaking the foundations of psychology
March 9, 2018 11.09am GMT

Evidence-Based Lies
The facade of veracity in medical science hinges on widespread ignorance

Scientists Replicated 100 Psychology Studies, and Fewer Than Half Got the Same Results
The massive project shows that reproducibility problems plague even top scientific journals



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4 out of 20 users *could not* find the search function on the website.



4 out of 20 users *could not* find the search function on the website.

16 out of 20 users found the search function on the website.

Practitioners who saw the finding described as the failure rate were 31% more likely to believe the design needed to be redesigned.



A loading time of 3 seconds or more
leads to **40-50% of users abandoning
their shopping cart.**



A loading time of 3 seconds or more leads to 40-50% of users abandoning their shopping cart.

A loading time of 2 seconds or less means X% buy stuff they don't really want or need.



A loading time of 3 seconds or more leads to **40-50% of users abandoning their shopping cart.**

A loading time of 2 seconds or less means **X% buy stuff they don't really want or need.**

A loading time of 3 seconds or more allows **X% to make a considered purchase decision.**



How you frame the problem
may indicate if you are human-
centric or organization-centric.

We must stop people
from abandoning
their shopping cart.

We must assist people in
making a relevant
purchase-decision.



A red alarm clock with a black face and white numbers is the central focus. The clock is slightly out of focus, with the hands pointing towards the 10 and 2. The background is a light gray with several red lightning bolts. A dark gray rectangular box is overlaid on the clock face, containing white text. The text reads: "ALARMINGLY our current methods, processes, incentives, tools and general behavior provide little guidance for avoiding harm to humans." The words "little guidance" are highlighted in yellow.

ALARMINGLY
our current methods, processes,
incentives, tools and general
behavior provide **little guidance**
for avoiding harm to humans.

We need better maps



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Ethics!



Top 10 Strategic Technology Trends for 2019

gartner.com/SmarterWithGartner

Source: Gartner

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Gartner

Trend number 9. Digital Ethics and privacy

Consumers have an growing awareness of the value of their personal information, and they are increasingly concerned with how it's being used by public and private entities. Enterprises that don't pay attention are at risk of consumer backlash.

Conversations regarding privacy must be grounded in ethics and trust. The conversation should move from “Are we compliant?” toward “**Are we doing the right thing?**”



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Intelligent



Autonomous Things



Augmented Analytics



AI-Driven Development

Digital



Digital Twin



Empowered Edge



Immersive Experience

Mesh



Blockchain



Smart Spaces



Privacy and Ethics



Quantum Computing

Ethics

Relativism - Absolutism

Situation ethics

Utilitarianism

Virtue ethics

Deontology

Kantian ethics

Intent

Outcome



Ethics

Relativism - Absolutism

Altruism
Asceticism
Cognitivism
Consequentialism
Cynicism

Humanism
Individualism
Moral Absolutism
Moral Anti-Realism
Moral Nihilism

Situation ethics

Kantian ethics

Utilitarianism

Virtue ethics

Deontology

Deontology
Egoism
Epicureanism
Ethical Naturalism
Ethical Non-Naturalism
Ethical Subjectivism
Eudaimonism
Hedonism

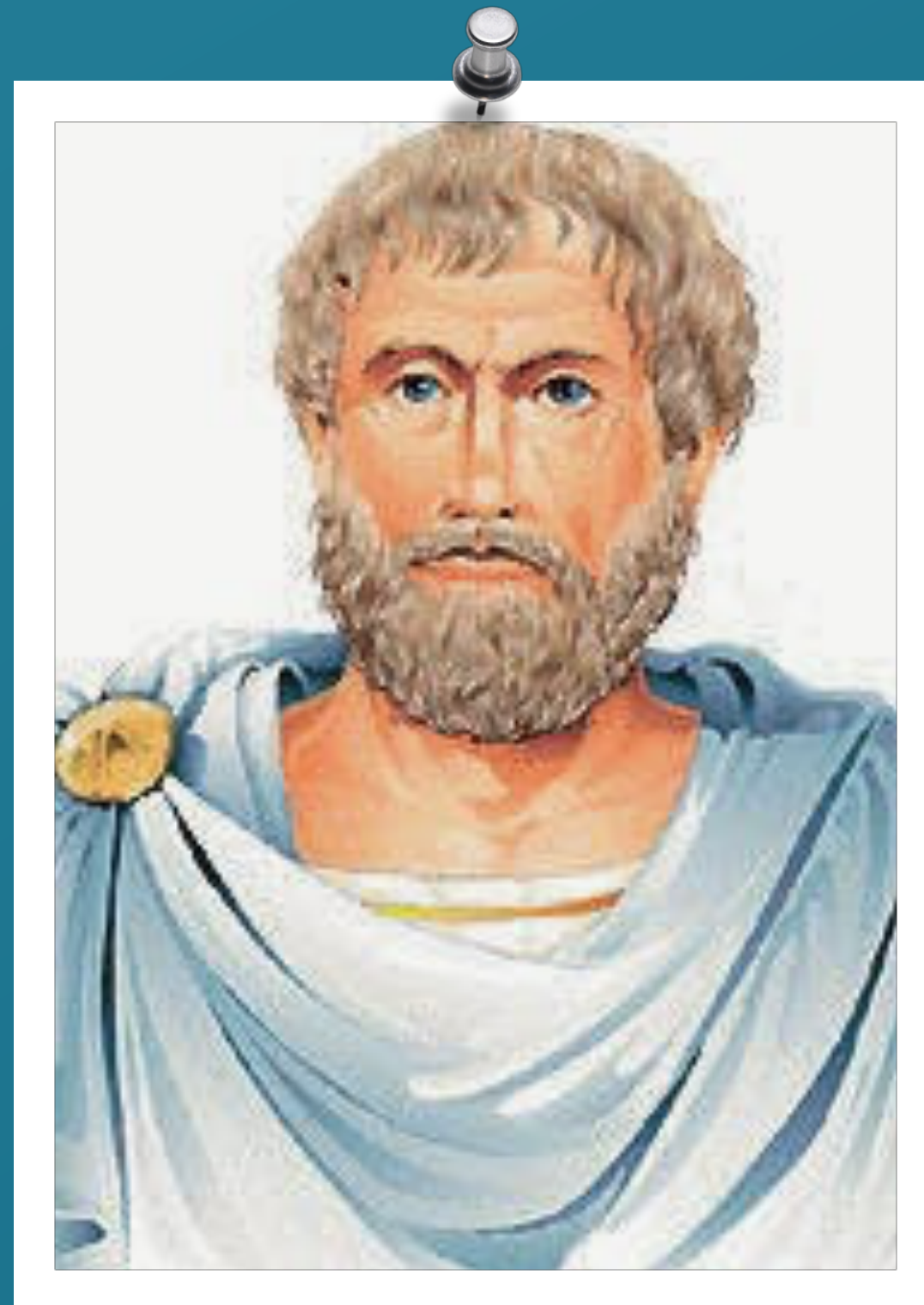
Moral Realism
Moral Relativism
Moral Skepticism
Moral Universalism
Non-Cognitivism
Utilitarianism
Virtue Ethics

Intent

Outcome



Ethics

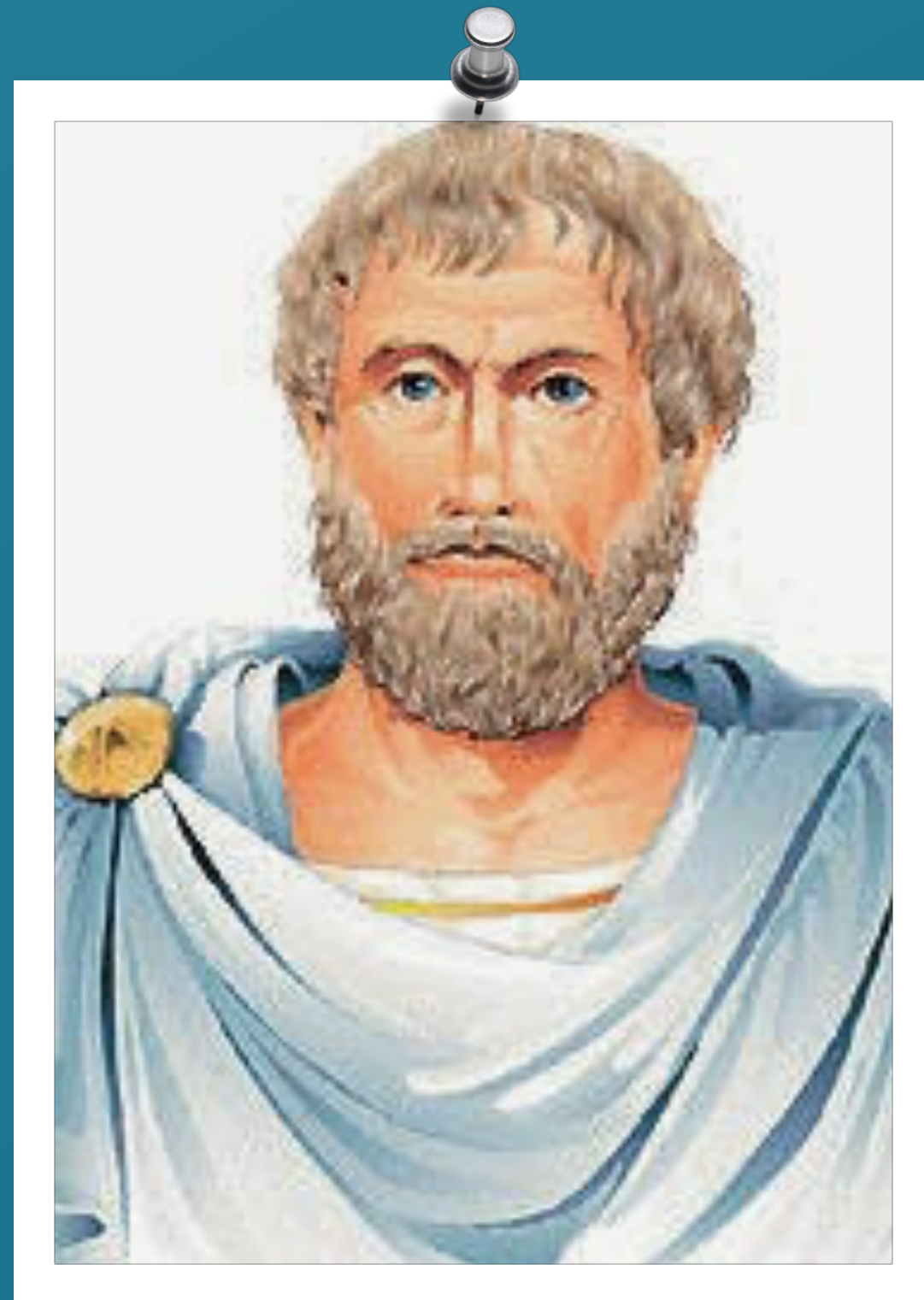


Aristotle

**“We are what we repeatedly do.
Excellence then, is not an act, but a
habit.”**



Ethics



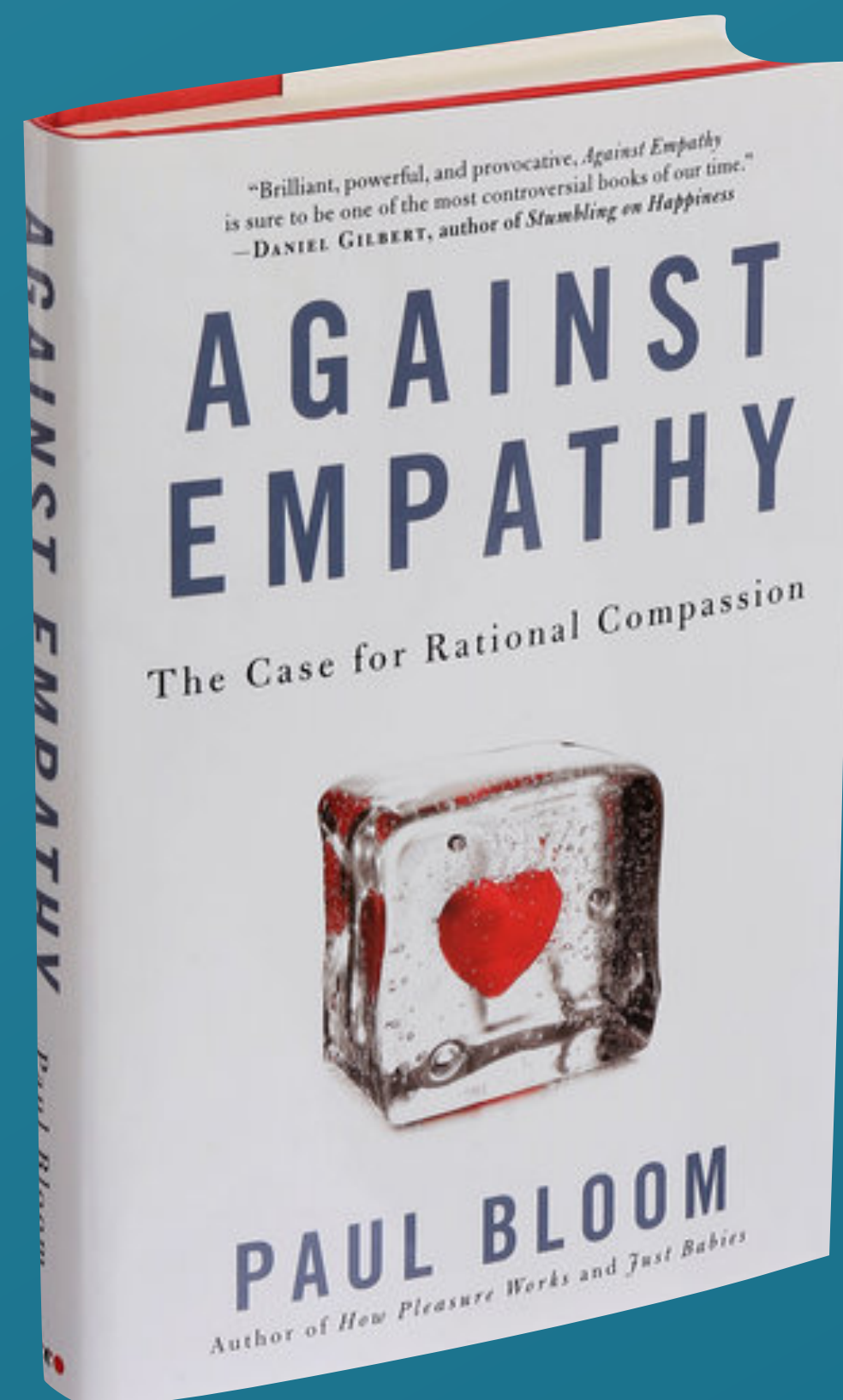
Aristotle

**“We are what we repeatedly do.
Excellence then, is not an act, but a
habit.”**

“Women are deformed males.”

**“A proper wife should be as obedient
as a slave.”**





We talk a lot about empathy in design but we rarely talk about how empathy itself is prejudiced.

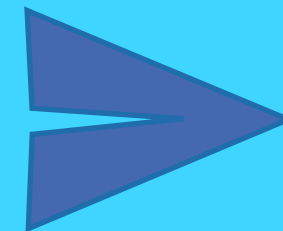
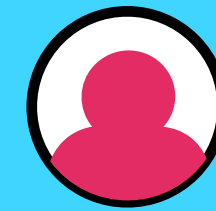
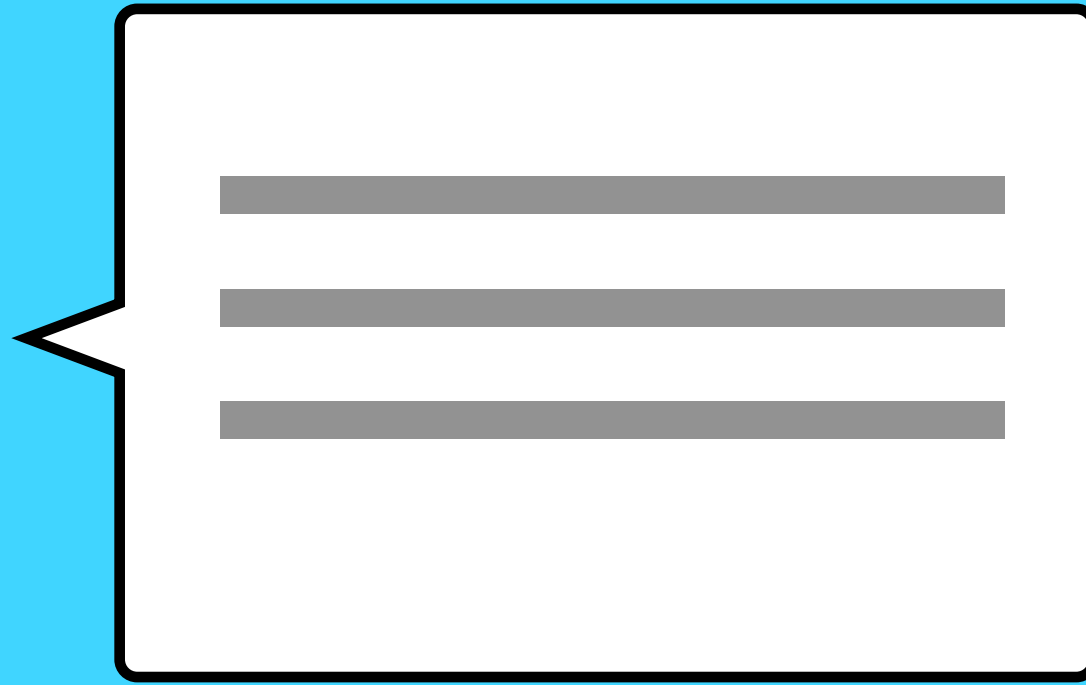
Empathy is why we like family and friends and people like ourselves, and are skeptical about others.



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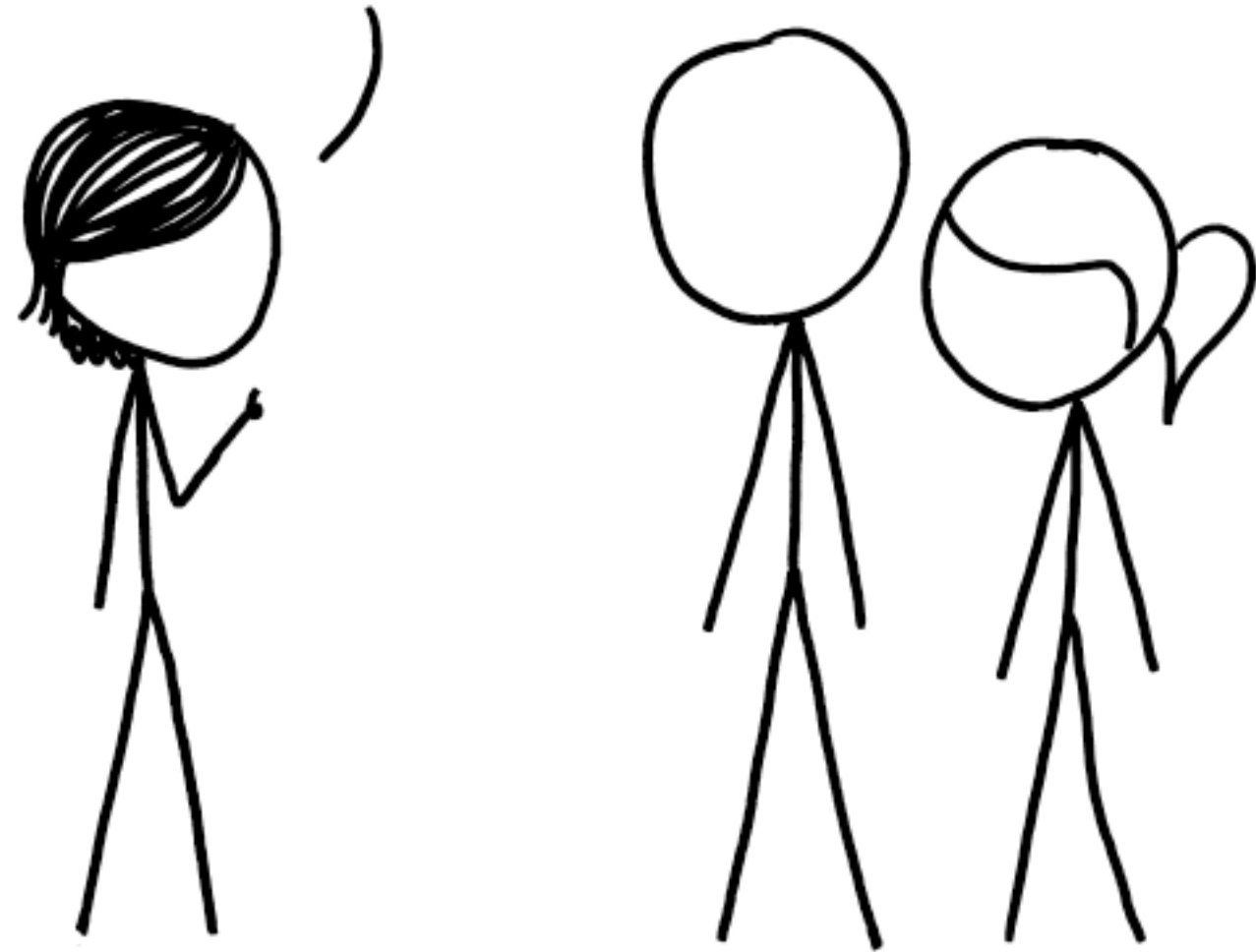


FACEBOOK SHOULDN'T CHOOSE WHAT
STUFF THEY SHOW US TO CONDUCT
UNETHICAL PSYCHOLOGICAL RESEARCH.

THEY SHOULD ONLY MAKE THOSE
DECISIONS BASED ON, UH...

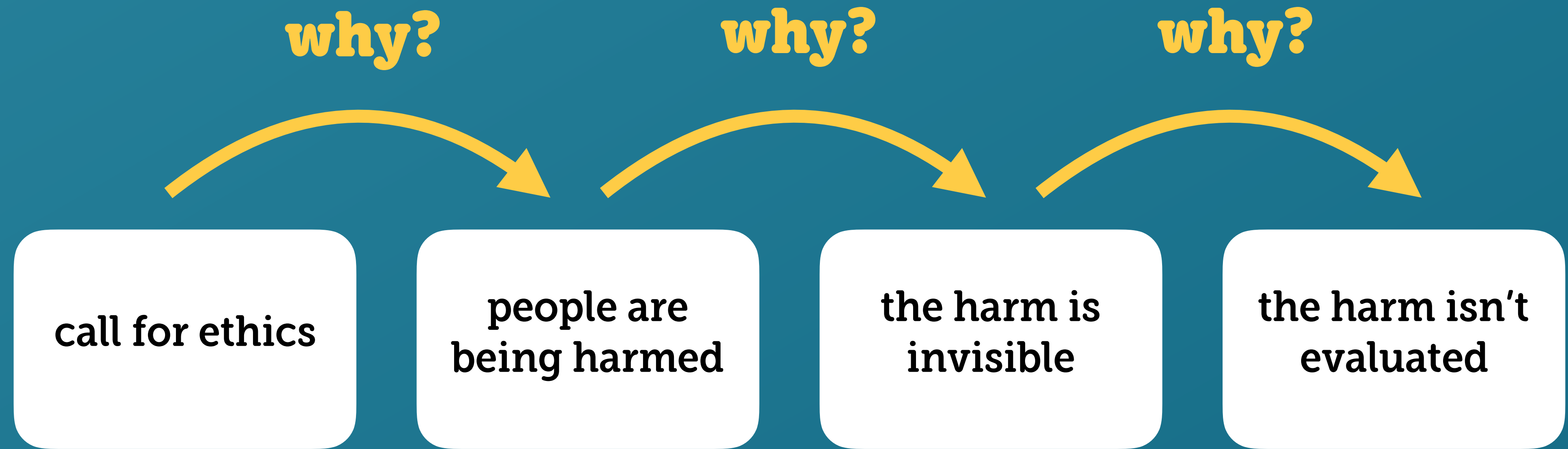
HOWEVER THEY WERE
DOING IT BEFORE.

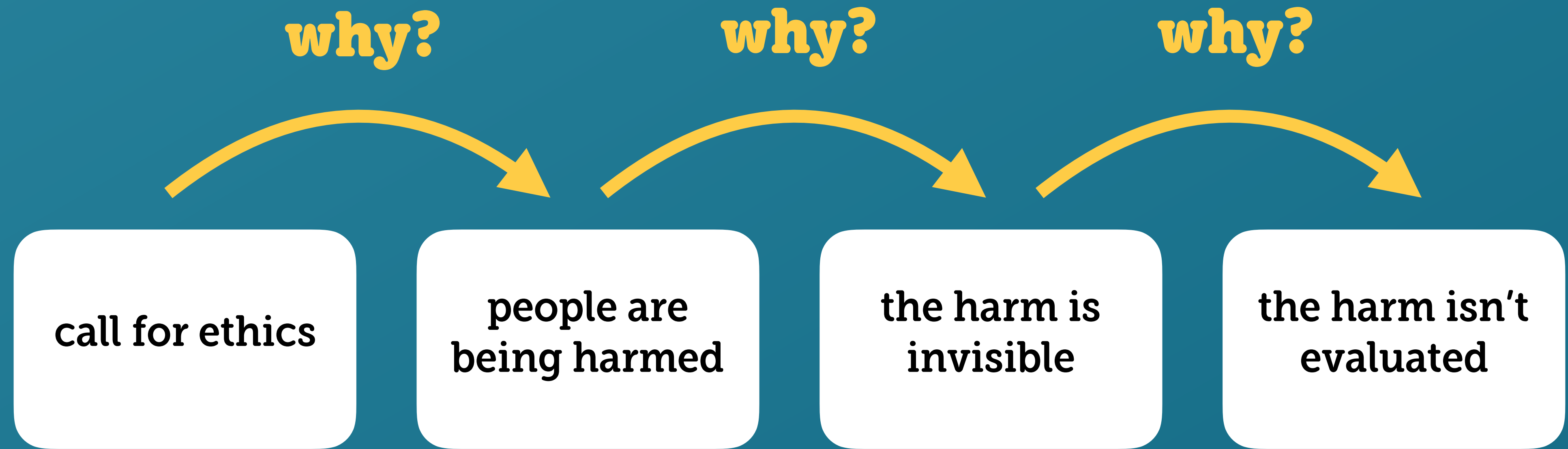
WHICH WAS PROBABLY
ETHICAL, RIGHT?



Ethics is not a great
map if we can't always
trust it and have a hard
time agreeing on what
it means.







Measure and evaluate how people are being harmed by your solutions.





PERSON 1: "Does my hair look good?"

PERSON 2: (lying) "Yes."

PERSON 1: "Awesome; I'll keep going to this new hairdresser I've found then."

Impact: Person 1 will keep having bad hair.



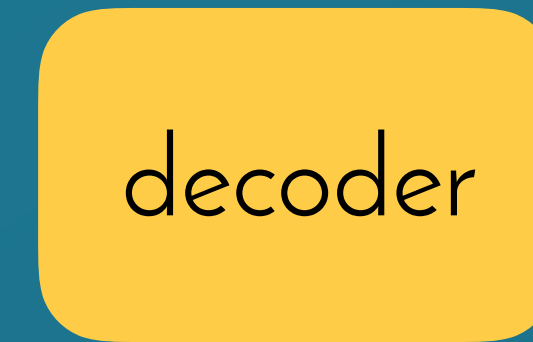
A young girl with long blonde hair, wearing a blue and white striped dress and black Mary Jane shoes, sits on a grey sofa. A small brown dog with long ears lies on her lap. To her right, a boy in a red shirt and blue jeans sits on the same sofa. The background is a blurred interior with wooden pillars.

**First we need to understand how
communication between people works.**

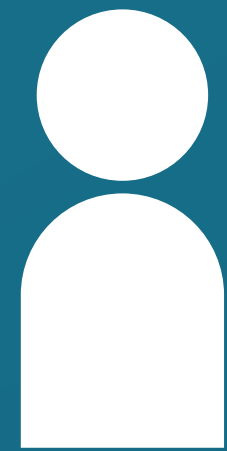


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message



received
message



message

received
message

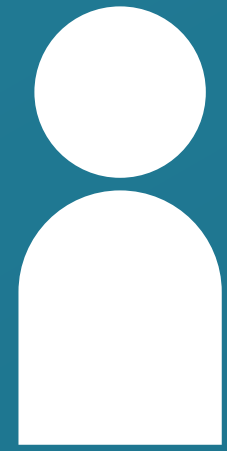
sender

encoder

channel

decoder

receiver



FEEDBACK



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The longer the distance between sender and receiver, the more work you must put into enabling the feedback loop.



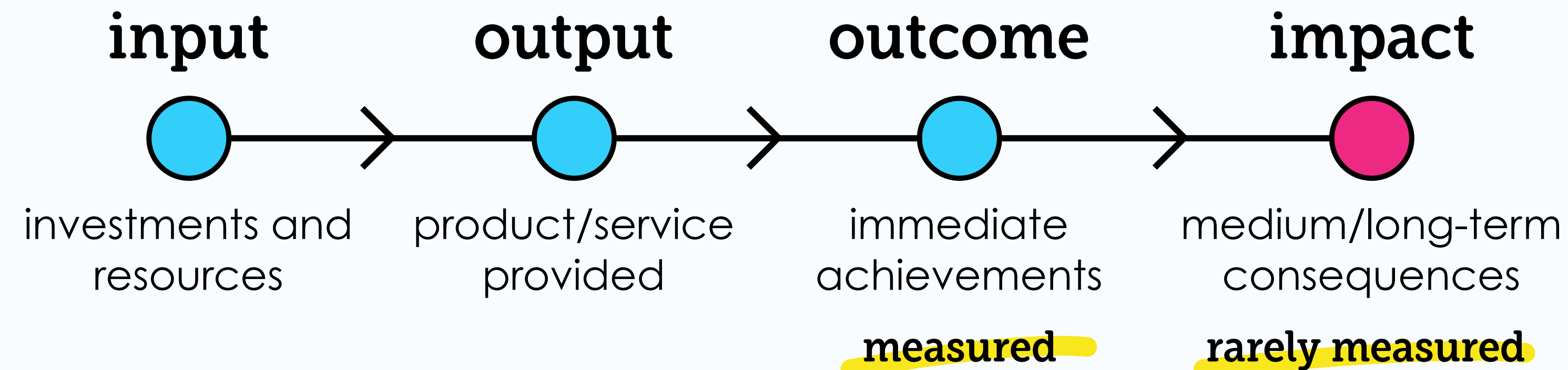
**How do we
actively listen for
harm?**



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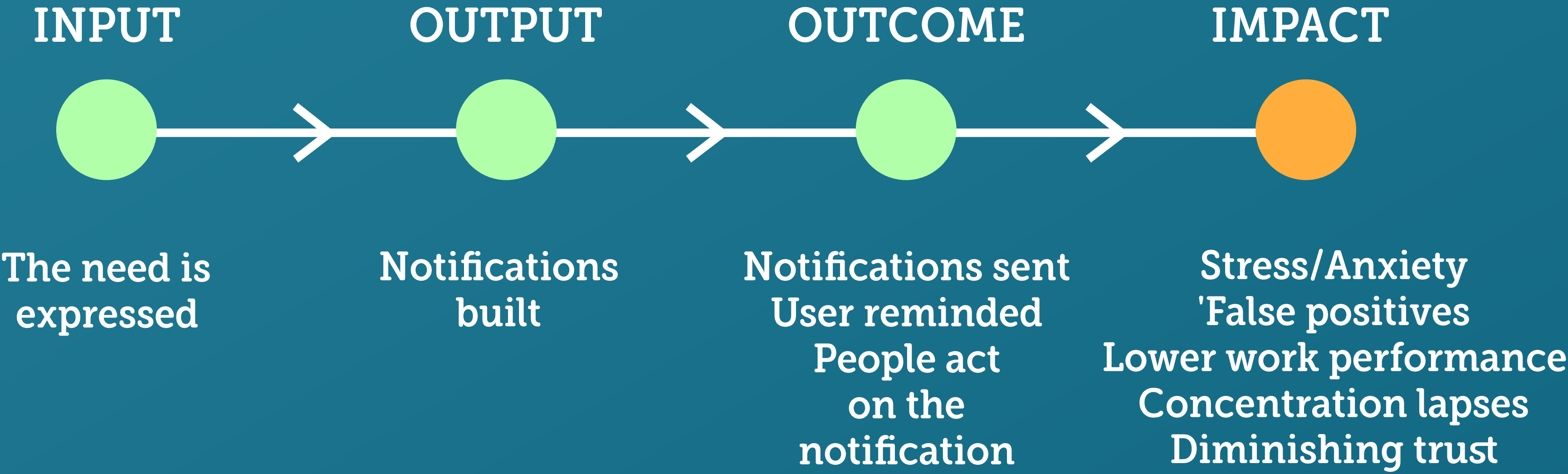
Understanding impact

Impact represents an intended or unintended significant change that affects people on an individual or societal level.

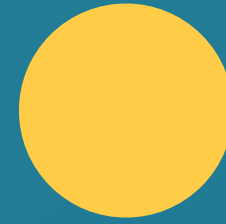


A good way to avoid harm is to include impact risk assessment in your work.

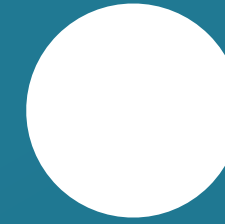




ACTION



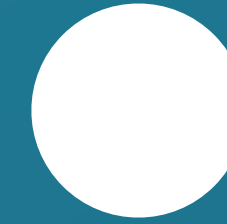
OUTPUT



1st order



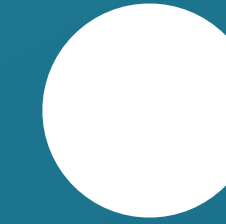
OUTCOME



2nd order



IMPACT



3rd order

A. Eat chocolate



Energy boost



Hungry again



Addiction

B. Work out



Exertion/pain



Improved
physiology



Better at work

C. Donate clothes



Feel better,
can buy new



Cheap clothes
for poor



Repressed
self-sufficiency

D. Recycle



Recycling space
at home



Visit recycling
station regularly



Waste reduced



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OPT-OUT CULTURE

Using a fitness app taught me the scary truth about why privacy settings are a feminist issue



By Rosie Spinks • August 1, 2017

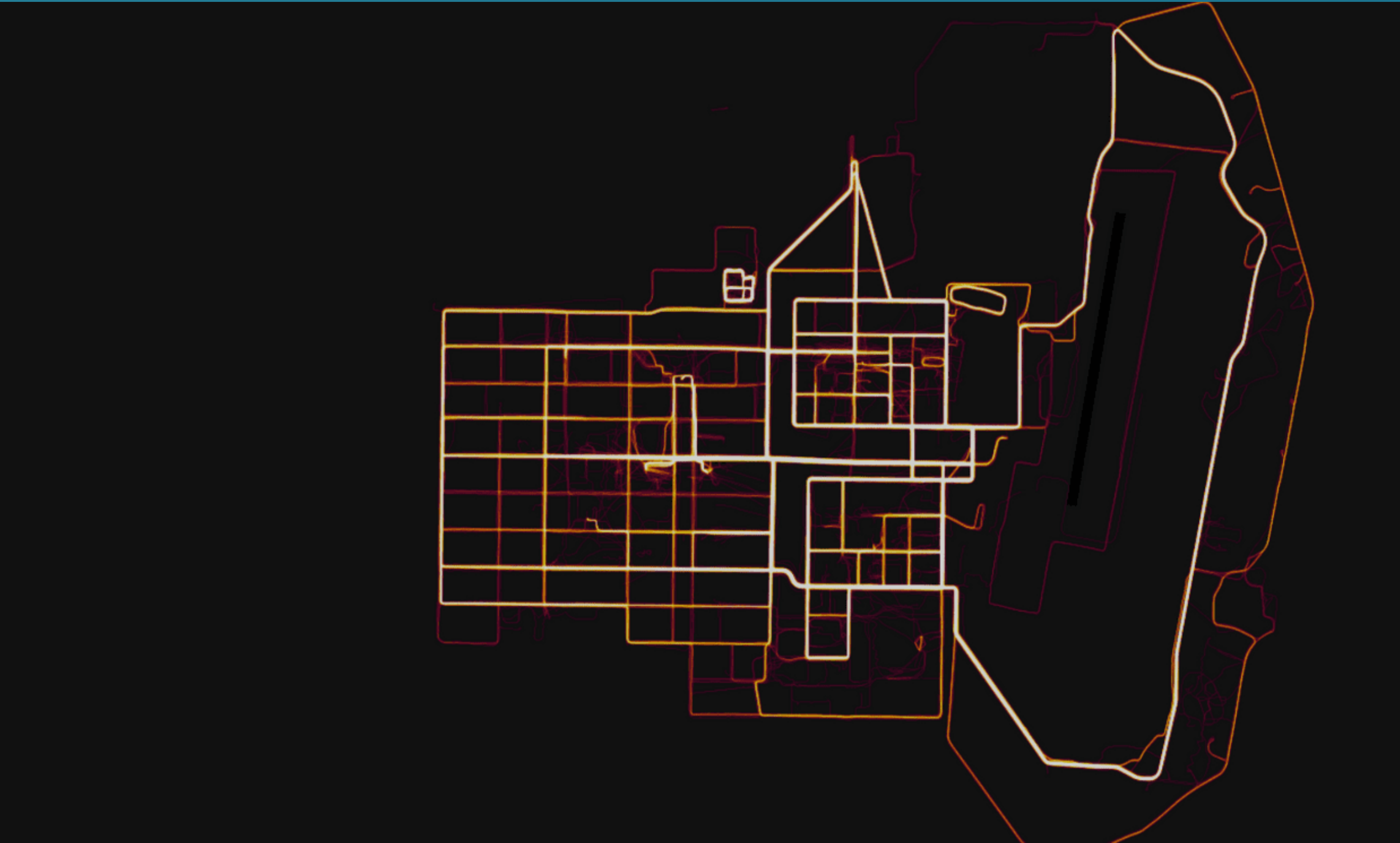
After I'd completed my usual 5-kilometer loop near my London flat, a stranger I didn't know "liked" my workout—even though I had enabled stricter privacy settings, which I thought would shield my workouts from public view. This happened several more times while I jogged the same route, and then again when I was on vacation in Barcelona. Alarmed at the idea of that strangers could see the routes I run on two or three times a week, I embarked on an investigation into the privacy settings of Strava. What I learned wasn't reassuring for an urban woman—or anyone concerned about location-based privacy.

This meant that if I ran a particularly fast 200-meter segment in the park, landing me temporarily on a Leaderboard, anyone who was examining that segment in the app—whether or not I've allowed them to follow me—could see my workout that day. Troublingly, this also would allow them to see my first and last name and the photo attached to my profile.

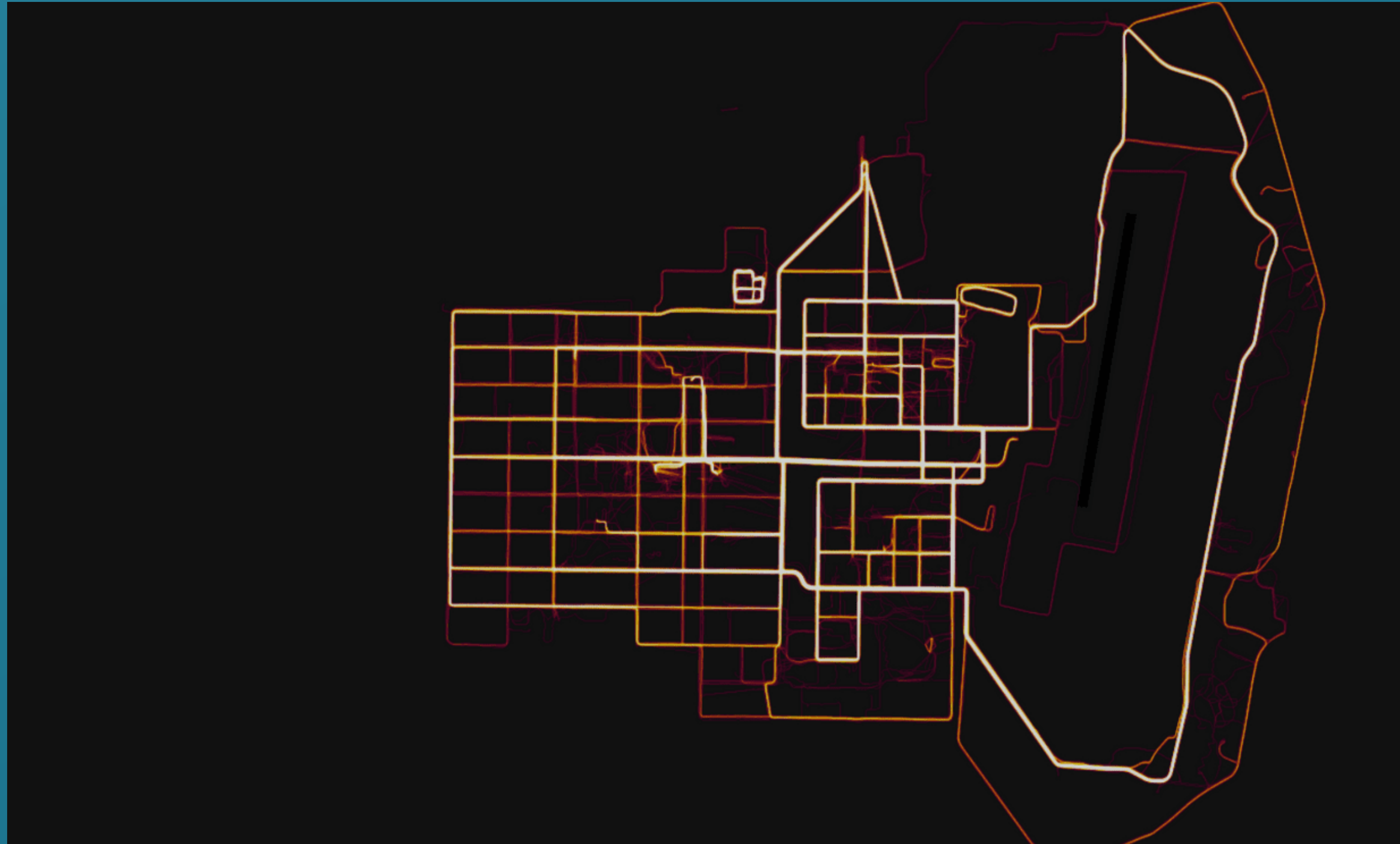


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<https://qz.com/1042852/using-a-fitness-app-taught-me-the-scary-truth-about-why-privacy-settings-are-a-feminist-issue/>



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Fitness tracking app Strava gives away location of secret US army bases



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<https://www.theguardian.com/world/2018/jan/28/fitness-tracking-app-gives-away-location-of-secret-us-army-bases>

WHO could be harmed? (traits)

People who want to keep their location a secret

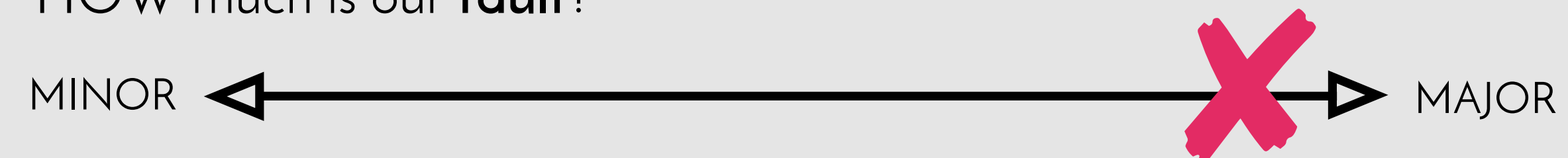
WHAT could happen? (impact)

Stalkers could find them and harass them / hurt them

HOW **harmful** would that be?*



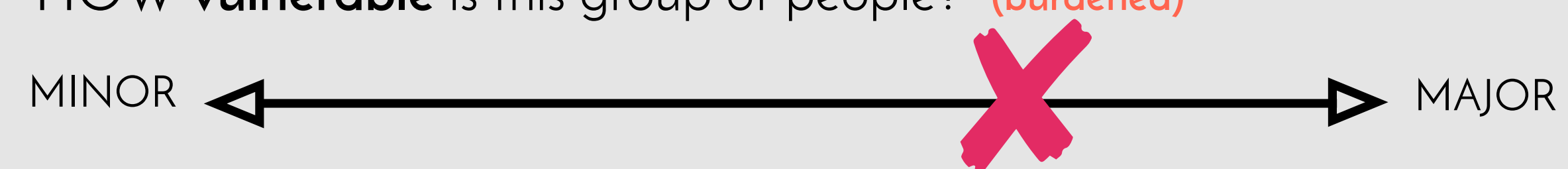
HOW much is our **fault**?



HOW **likely** is it to happen?



HOW **vulnerable** is this group of people? (burdened)





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Makes things worse when people are excluded, ignored and don't feel safe.

So, not a great tool for listening.



**We value your
opinion!**

**Would you be
willing to answer a
few questions?**

Yes

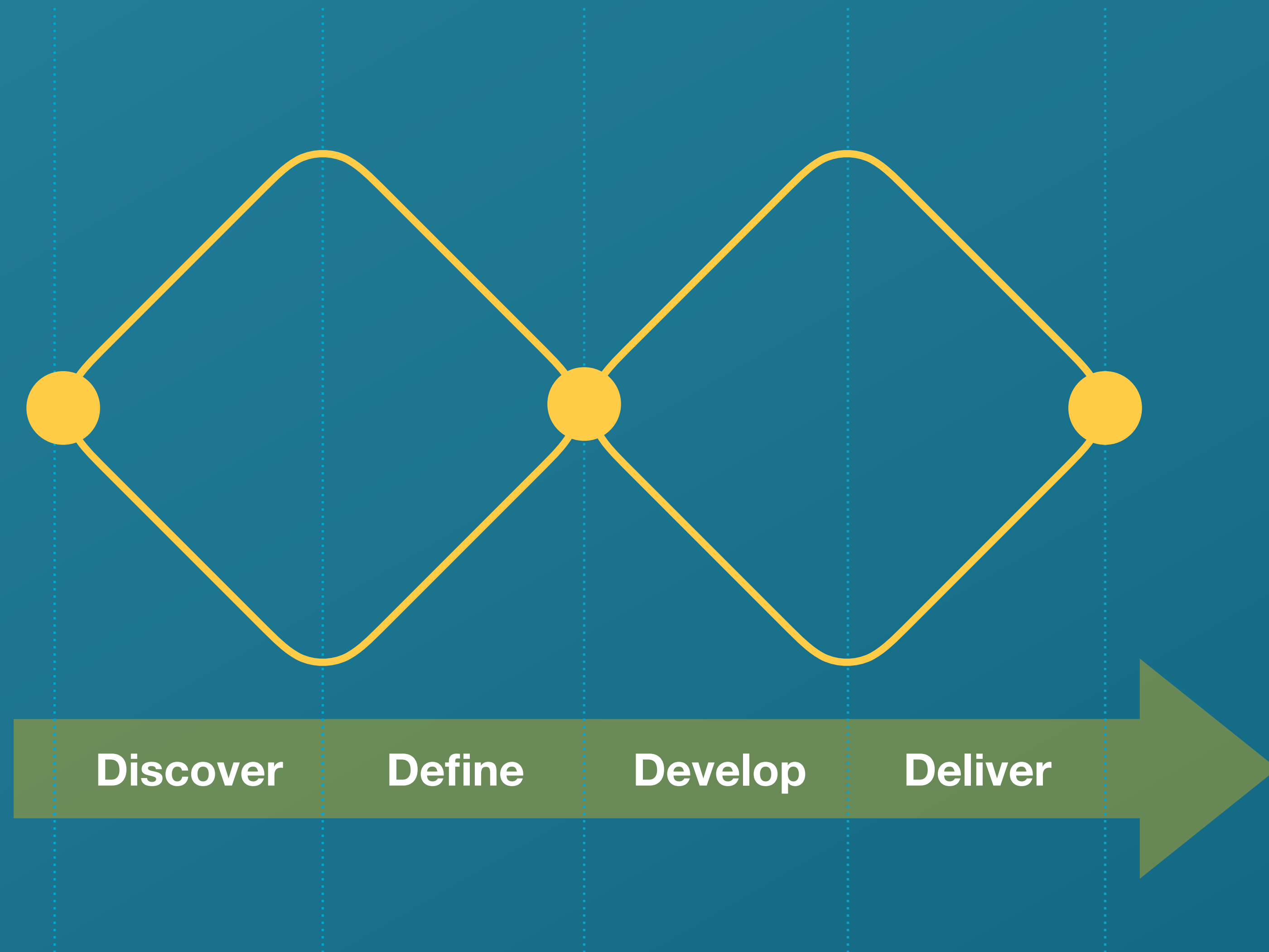
No

**Online surveys are a
terrible way of listening.**

Most people who find it
difficult to answer online
surveys are the marginalized,
burdened people you are
already ignoring.

Online surveys give privileged
people even more space.





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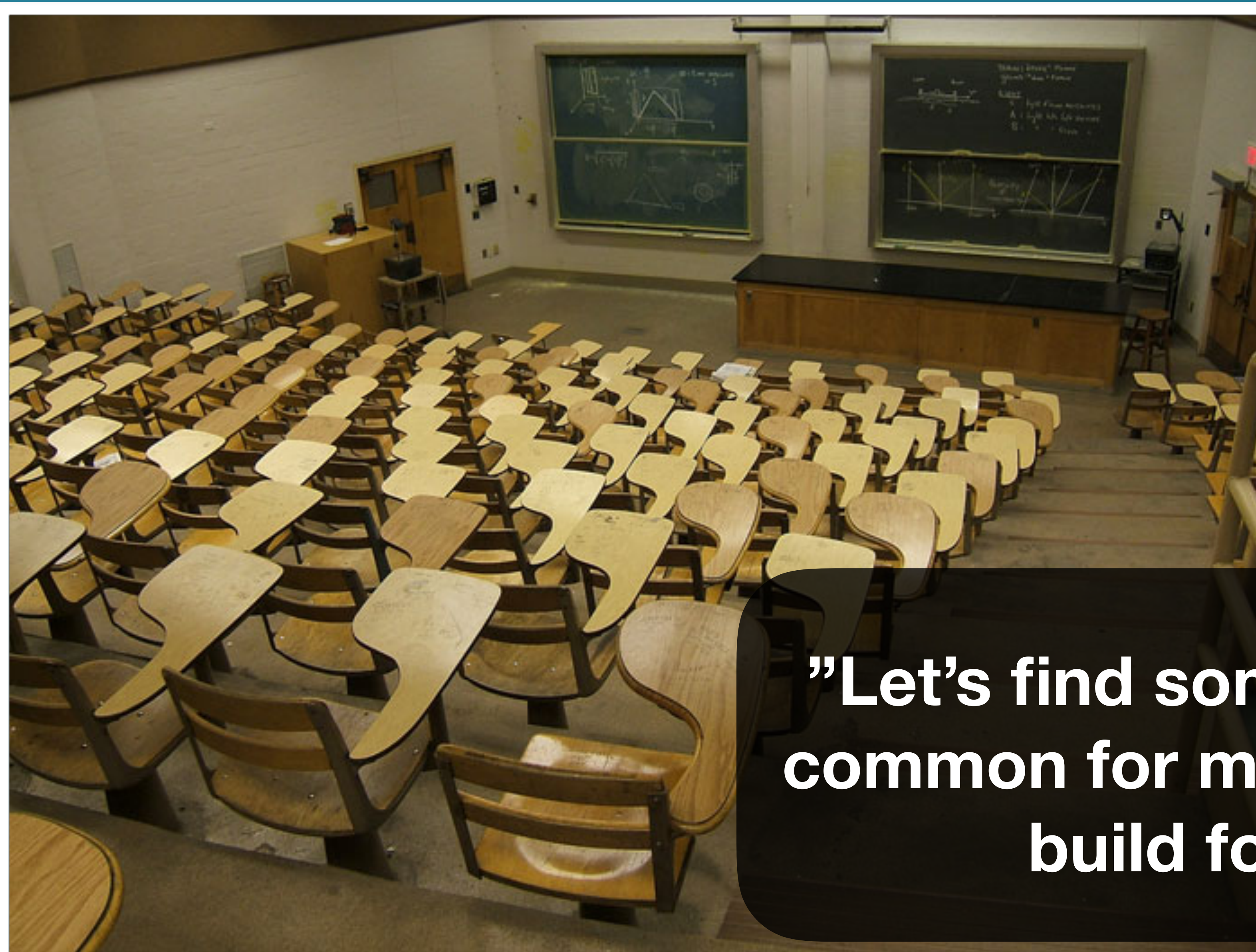
Alastair Somerville: How do we design for divergence & diversity if convergence is the goal?
https://medium.com/@acuity_design/how-do-we-design-for-divergence-diversity-if-convergence-is-the-goal-fb31e0946b6c



Most projects keep building
for the average person.



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**“Let’s find something that is
common for most people and
build for that.”**



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Who?

- ☐ Ability divergent
- ☐ Age disfavored
- ☐ Appearance disfavored
- ☐ Crime/distress endurer
- ☐ Ethnic minority
- ☐ Faith disfavored
- ☐ Gender disfavored
- ☐ Illness endurer
- ☐ Non-citizen
- ☐ Racism endurer
- ☐ Social class disfavored
- ☐ Sexuality disfavored



What?

- ☐ Environment
- ☐ Esteem
- ☐ Finance
- ☐ Health
- ☐ Privacy
- ☐ Relationships
- ☐ Safety
- ☐ Self-actualization
- ☐ Self-worth
- ☐ Social belonging
- ☐ _____



How?

- ☐ Dangerous defaults
- ☐ False assumptions
- ☐ False expectations
- ☐ Excluded by design
- ☐ External pressure
- ☐ Lack of choice
- ☐ Lack of knowledge
- ☐ Lack of understanding
- ☐ Sensory overload
- ☐ Time constraints
- ☐ _____



"unprofessional hair"



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- ☐ Time constraints
- ☒ out-of-control algorithms





The lack of crash test dummies with female body types means women are 70% more likely to be moderately injured in car crashes, 45% more likely to be seriously injured and 15% more likely to die.





The lack of crash test dummies with female body types means women are 70% more likely to be moderately injured in car crashes, 45% more likely to be seriously injured and 15% more likely to die.



When you design for average — marginalized and burdened people get hurt.



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https://www.washingtonpost.com/local/trafficandcommuting/female-dummy-makes-her-mark-on-male-dominated-crash-tests/2012/03/07/gIQANBLjaS_story.html?utm_term=.1c263f679e89

People who are already burdened and unfairly marginalized are the ones who are most likely to be hurt by your design.

Rational compassion can be considered a much more reliable guide to moral behavior than empathy.





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Technology is an **enabler** for
communication between people and
empowers humans.

Unless we make it a **disabler**.

This happens if we don't find out if
people are being harmed.

And act on that information.



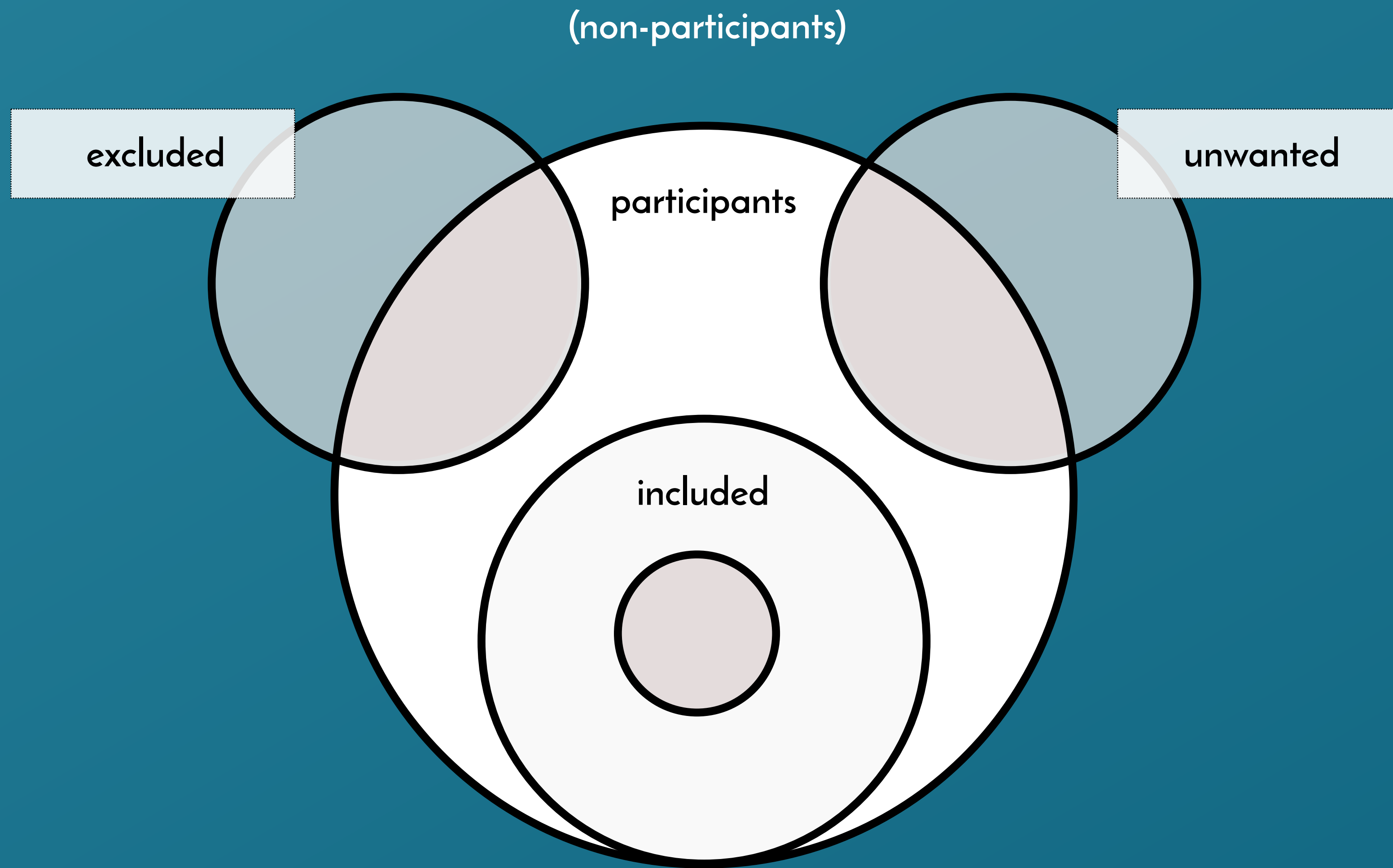
THE INCLUSIVE PANDA



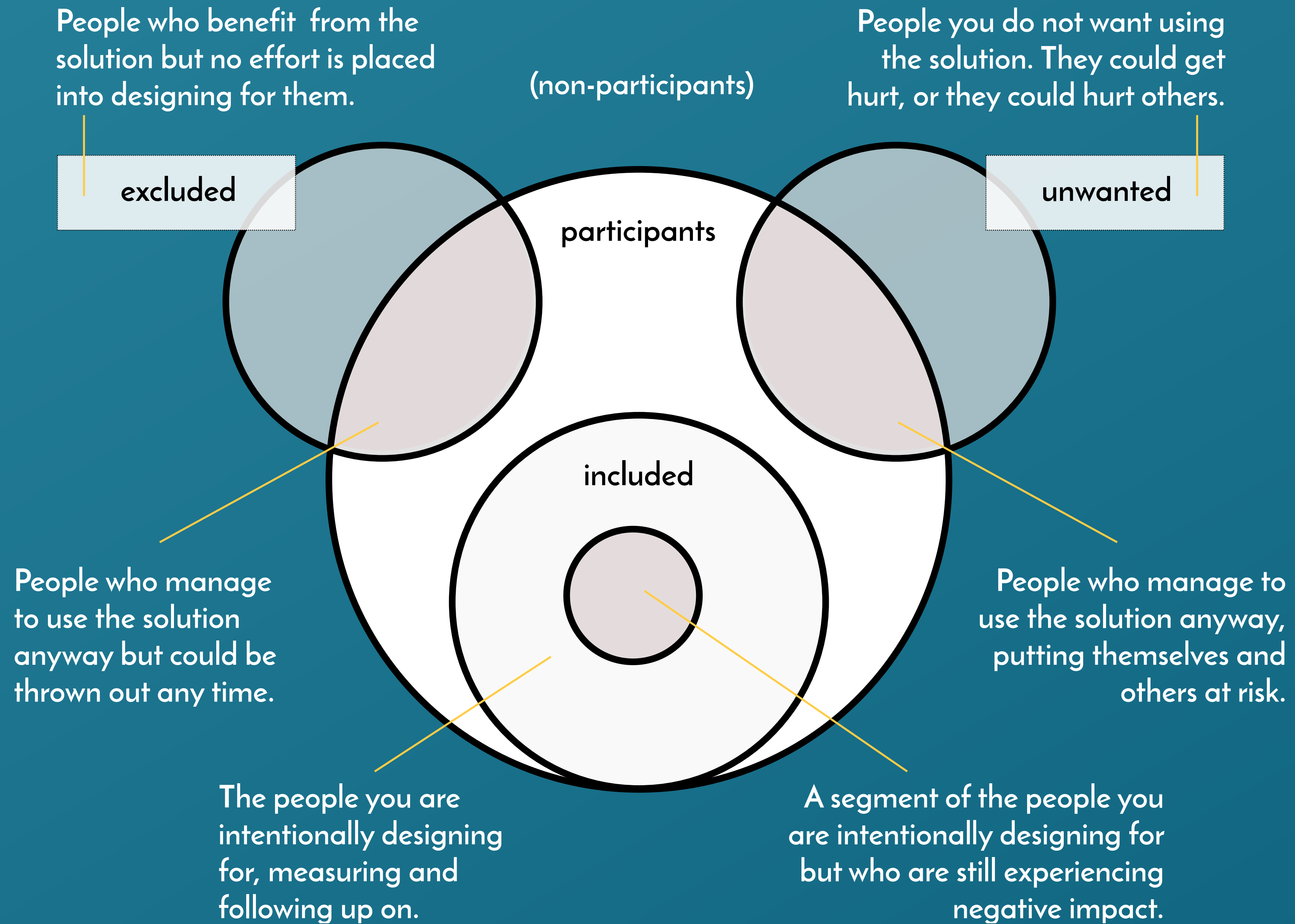
@axbom



THE INCLUSIVE PANDA



THE INCLUSIVE PANDA



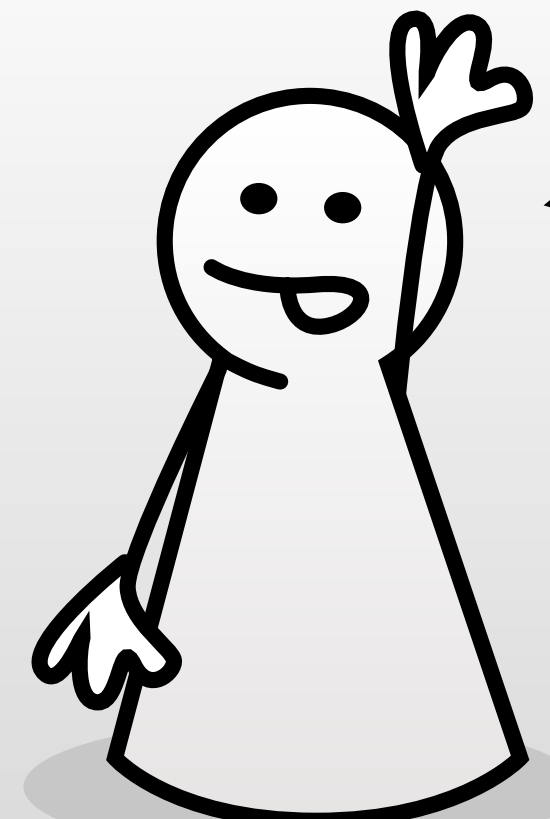
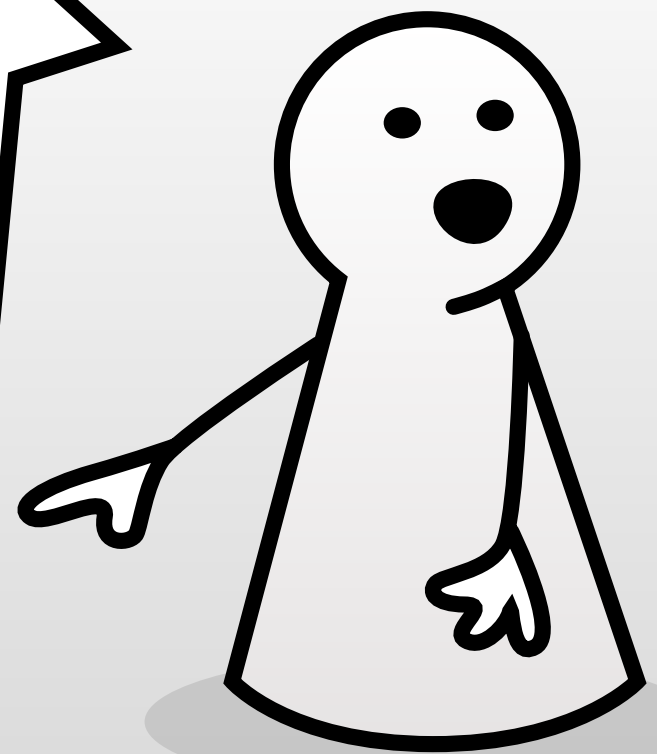


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@axbom

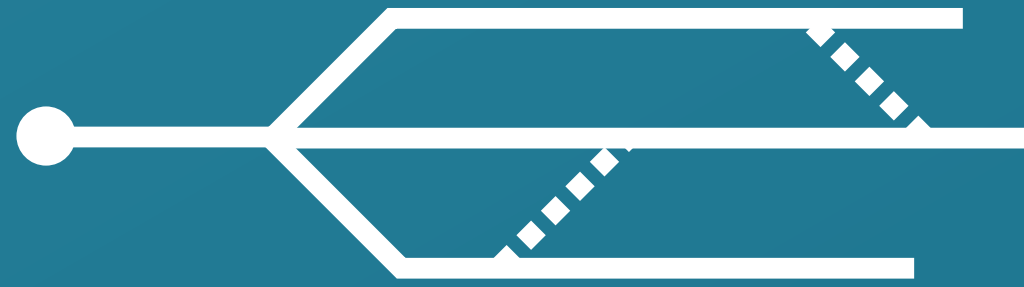
We should add
pink cupcakes
as a measure of
calories burned
when walking.



Hang on, I'm
concerned
about the
impact of this
decision. I may
be wrong, but....



Alternative paths



Short term / Long term



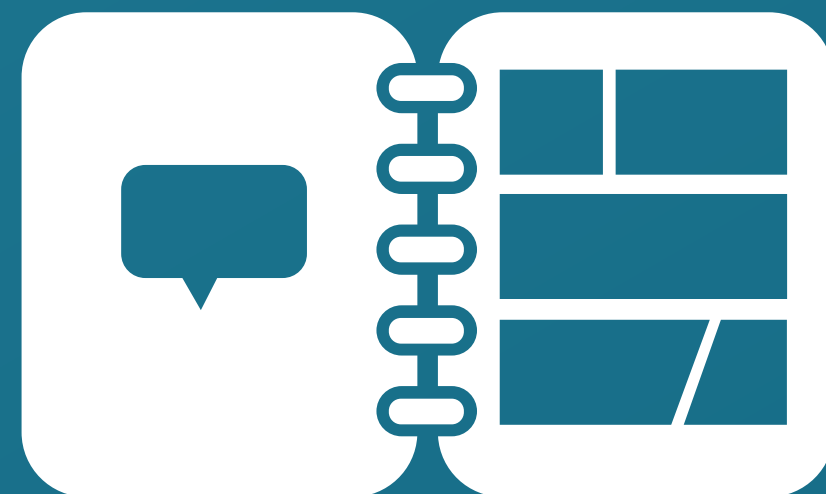
Addictive cycles



Cost consideration



The Other Story



Reputation and trust



We say work with human-centric design.
Ensuring human safety is our responsibility.
It's why we go to work.

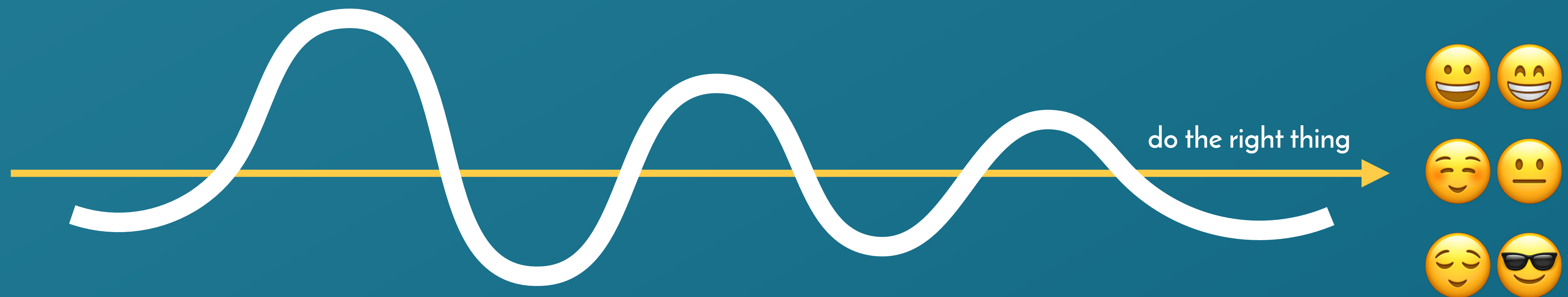


We say work with human-centric design.
Ensuring human safety is our responsibility.
It's why we go to work.

If our profession is built on
human safety and we are failing
to deliver, then how do we claim
our **right to be taken seriously?**

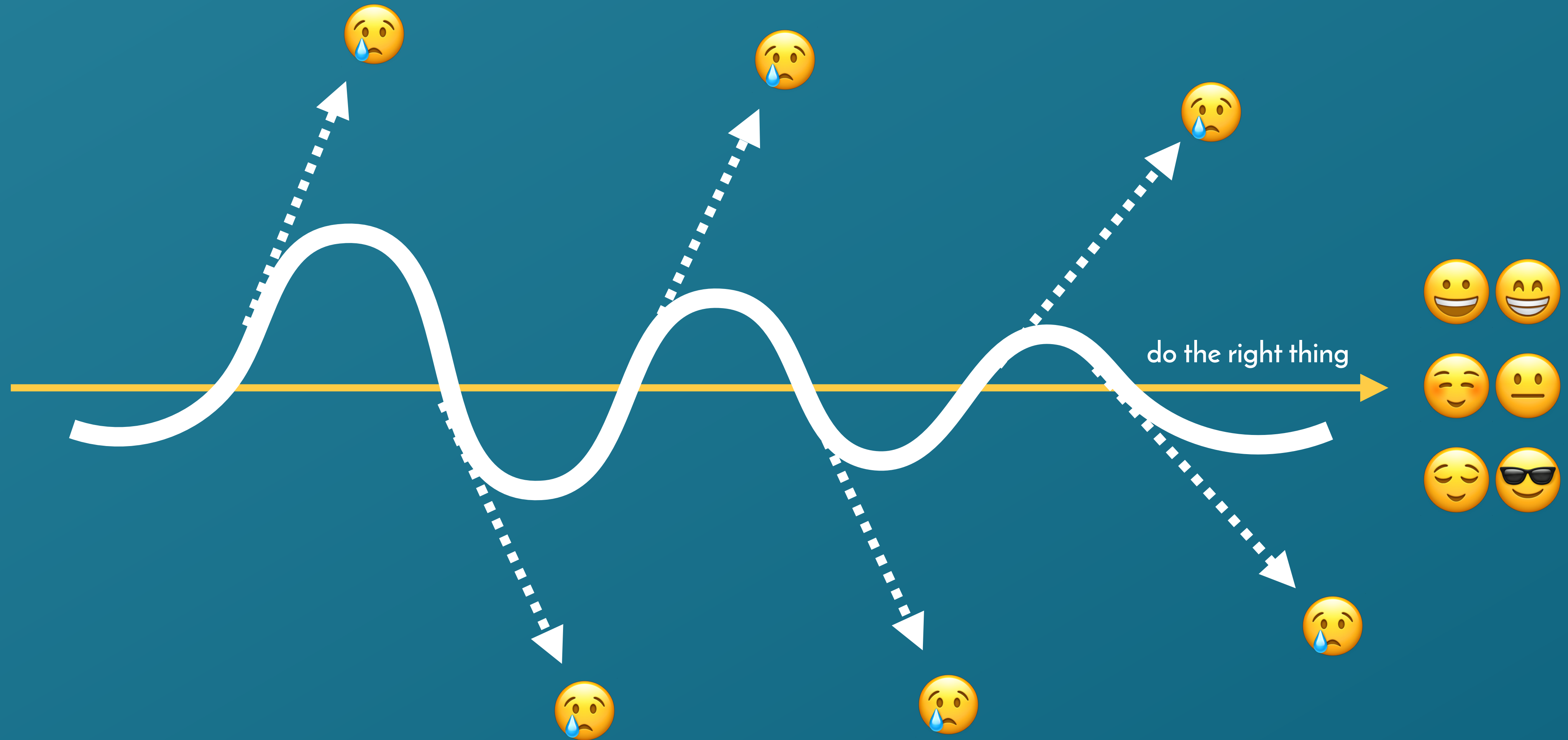


**Let's make sure our maps and tools can
evaluate and identify negative impact.**



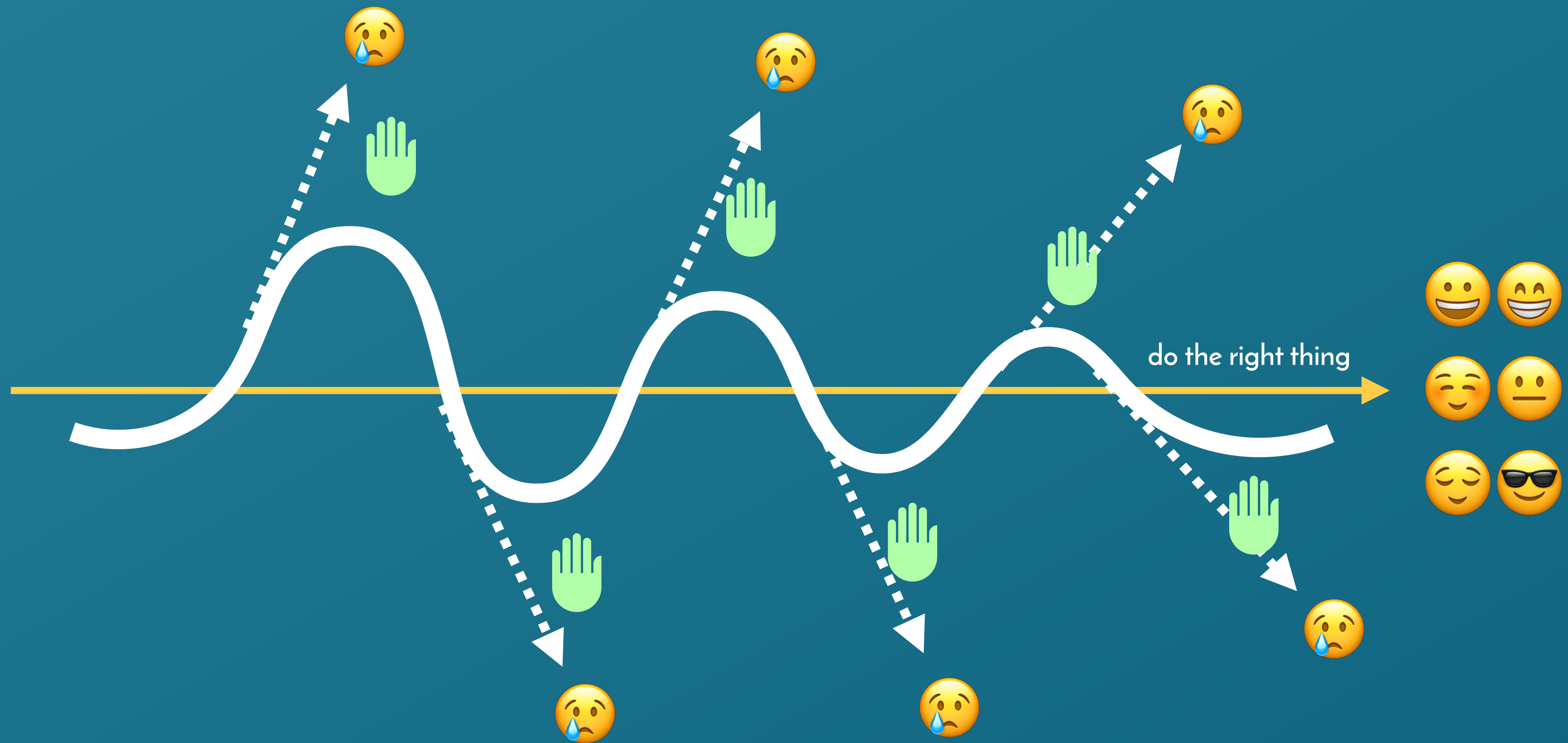
@axbom

Let's make sure our maps and tools can evaluate and identify negative impact.



@axbom

Let's make sure our maps and tools can evaluate and identify negative impact.



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FORGET AVERAGE
It's listening to everyone
that will make a difference



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A black and white photograph of two pugs facing each other, their heads touching. The pugs have characteristic wrinkled faces and large, floppy ears. The background is slightly out of focus, showing some vertical lines.

Start with YOU

Understand your destination




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Use the maps that will help you get there



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Don't be afraid
to ask for help.

Human's best
friend.



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Listen. Explore. Agree. Do.

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