



Pandemic of Risk Perception: *Understanding Human Behavior to Improve Identity Security*



Sarah Handler

Senior Technical Product Manager
Netflix

What is risk?

Risk

"A situation involving exposure to danger"

(Oxford Dictionary)

Risk Perception

"The ability to identify and evaluate risk associated with hazardous events"

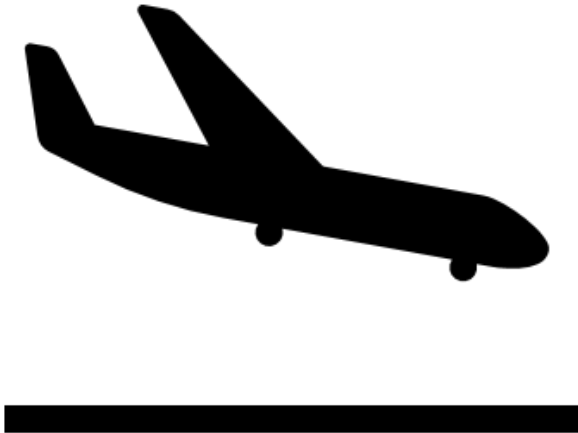
(Hunter, 2002)

What's our risk getting to Identiverse?



1 in 5,000

vs



1 in 11,000,000

Spr!ng2020



#identiverse

Barriers to Accurate Risk Perception

1. Our Brains ♥️ 🧠 Heuristics

- Mental shortcuts save us cognitive load!
- ...but can result in inaccurate risk assessments that put us in danger



♥ Availability Heuristic



"My grandma had Covid and she didn't die, it's not a problem."



"I've used this same password for 10 years and haven't had a problem."

♥ Anchoring Heuristic

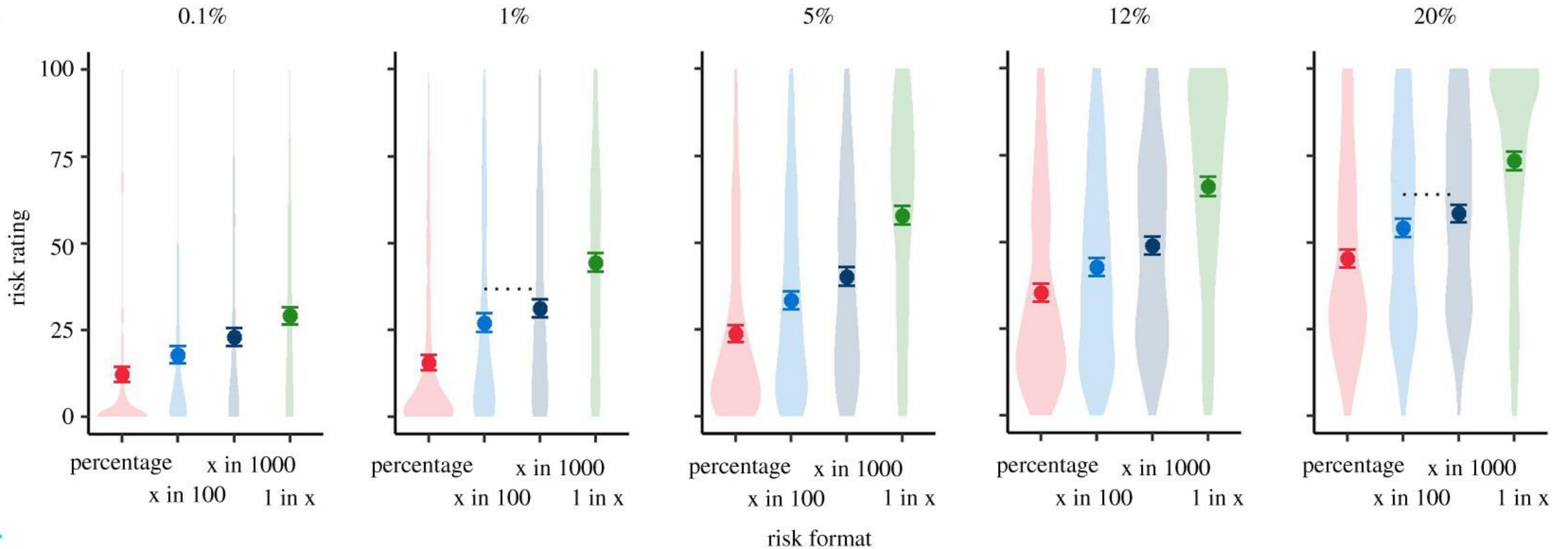


"In March 2020 they said masks don't work, so I don't need one."



"I change my password quarterly so I must be secure."

2. Poor data presentation & accessibility



Source: Communicating personalized risks from COVID-19: guidelines from an empirical study, 2021

Calculate approximate risk of contracting COVID

Step 1: Characterize community infection

The microCOVID calculator's data source is no longer providing updates on COVID rates. To use the calculator, please look up **weekly new cases per 100k** in your area and enter it below. Then enter "100,000" in the "total population" box.

We hope to have a more usable version of the interface in place soon. Contact info@microcovid.org with any questions.

If you are in the US, go to covidactnow.org, click your state on the map, then your county. The first number on the screen is "weekly new reported cases per 100k".

Reported prevalence: 0.10%
Adjusted prevalence: 0.23%

Weekly new cases / 100k population

100

Total population

100000

Step 2: Describe the scenario



Indoor party: 25 people, unmasked

A gathering, activity, or errand

[Show math](#)

[Restart](#)

Adjust the values below to match your situation and see how you can reduce risk (*based on research!*)

[+ Add your vaccine](#)

Nearby people

People: How many people are usually within 15 feet (5 meters) of you, at any given time?

- 25 +

Warning: This is a large number of people. Remember, you only need to include the number of people who are within 15 feet (5 meters) of you (not everyone present in the area). However, gathering a large number of people could put everyone at risk and creates the possibility of superspreader event.

Distance: How close are these nearby people, on average?

Normal socializing (~3 feet / ~1 meter apart) [baseline risk]

Duration: How long is the activity?



⚠ Dangerously high Risk

120x your weekly risk budget

~24,000 microCOVIDs each time (probably between: 8,000 to 72,000)

**Choosing a new password or
deciding to RSVP to a party
shouldn't require me to do
math!**

ARE YOU FAMILIAR WITH “FIDO
AUTHENTICATION”

Yes 15%

No 85%

ARE YOU FAMILIAR WITH
“FOMITE TRANSMISSION”

Yes 10%

No 90%

ARE YOU FAMILIAR WITH “2
FACTOR AUTHENTICATION”

Yes 91%

No 9%

ARE YOU FAMILIAR WITH “N95
MASK”

Yes 100%

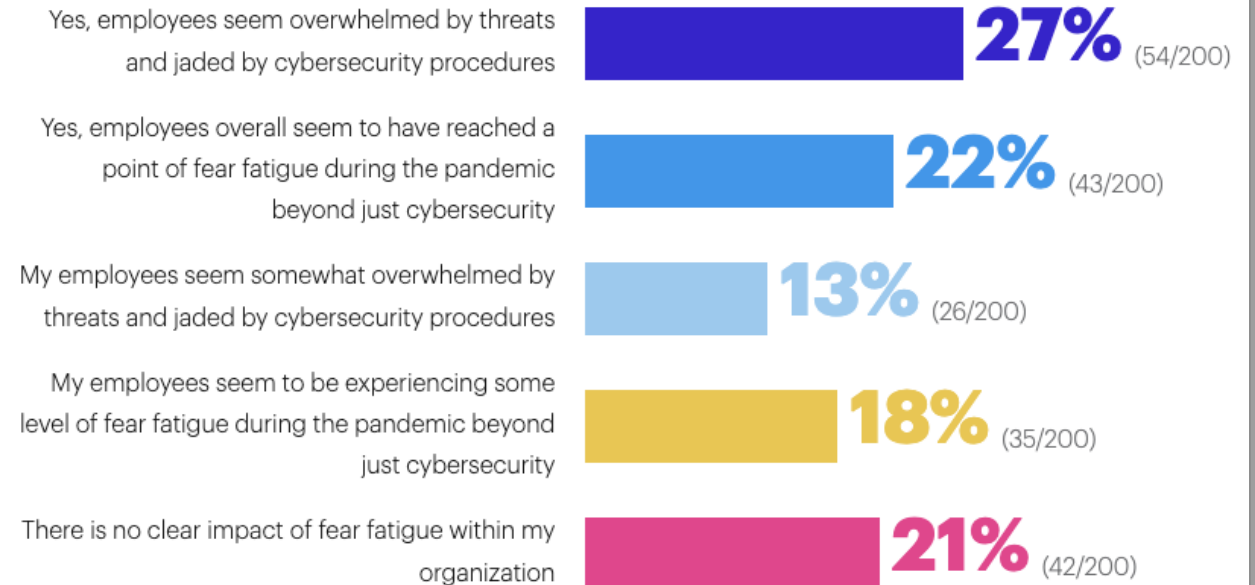
No 0%

3. Fear Fatigue

"Demotivation to follow recommended protective behaviors, emerging gradually over time and affected by a number of emotions, experiences, and perceptions."

Are your employees facing "fear fatigue?" Does that impact cybersecurity threats?

200 total respondents



Source: Malwarebytes "Still Enduring from Home" survey

"There are a lot of companies or organizations that have my email [address] and chances are one of them is going to get hacked"



Mayer, Peter et al. "'Now I'm a bit angry: ' Individuals' Awareness, Perception, and Responses to Data Breaches that Affected Them." USENIX Security Symposium (2021).



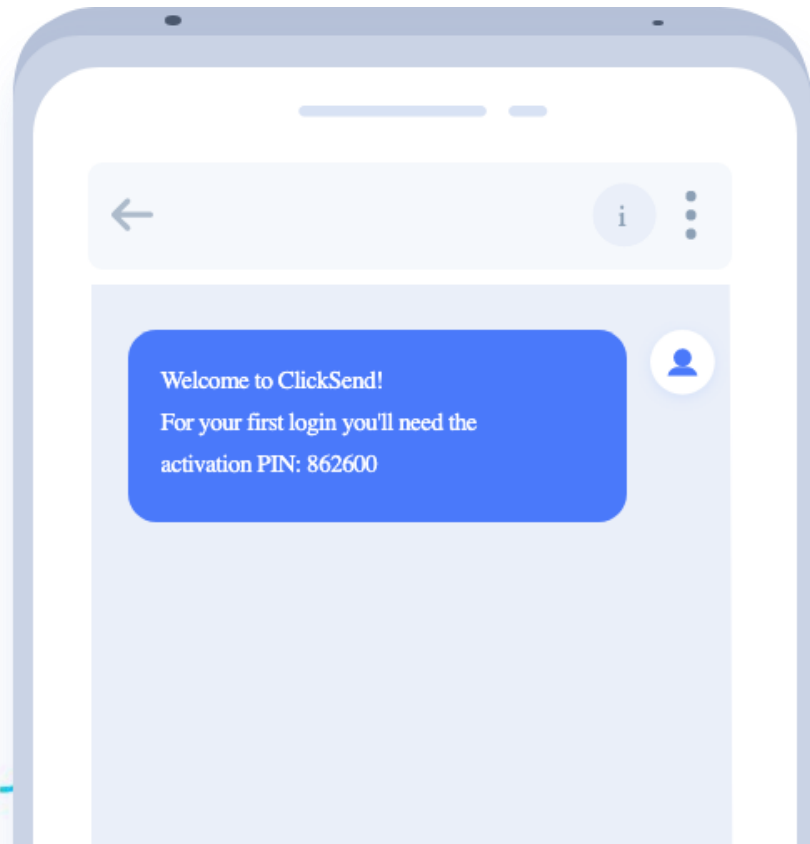
**But I'm good at perceiving my
own risk... so why should I
care?**

**... my individual risk
perception & consequent
actions impact the risk of
those around me**

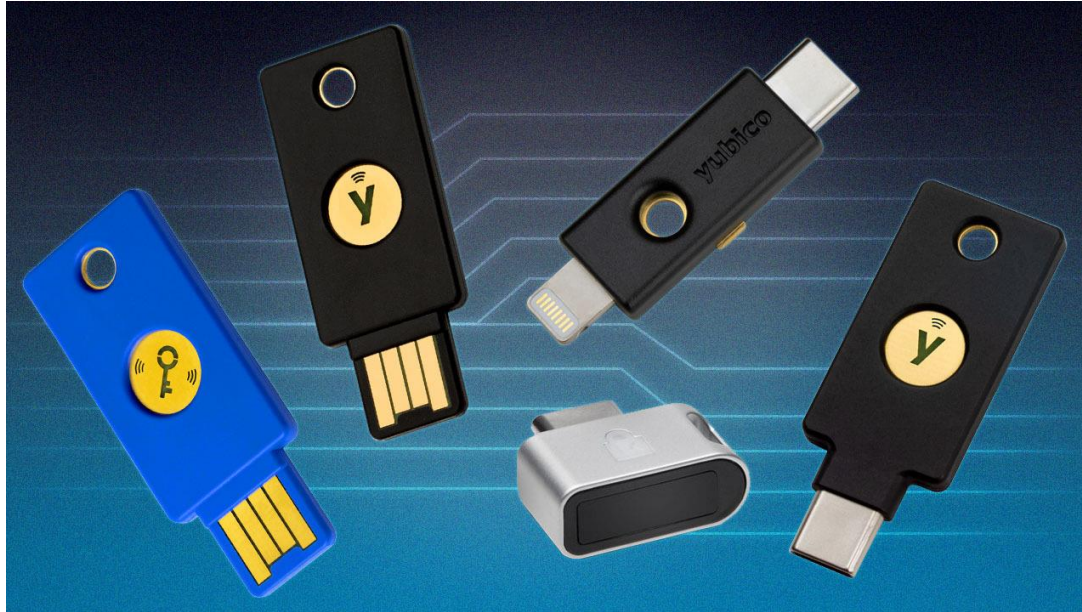
What now? □

- **We need to help users build better heuristics!**
- **Present data so that it meets people where they are and conveys risk appropriately**
- **Reduce complacency to counter fear fatigue**
- **"We" not "me"**

Improve risk perception → Give tools for mitigation!



Improve risk perception → Give tools for mitigation!



Source: <https://healthmatters.nyp.org/how-to-wear-a-face-mask-your-guide-to-the-dos-and-donts/>

Thank you!

Sources

Brown VJ. Risk perception: it's personal. *Environ Health Perspect.* 2014;122(10):A276-A279. doi:10.1289/ehp.122-A276

Freeman ALJ, Kerr J, Recchia G, Schneider CR, Lawrence ACE, Finikarides L, Luoni G, Dryhurst S, Spiegelhalter D. 2021 Communicating personalized risks from COVID-19: guidelines from an empirical study. *R. Soc. Open Sci.* 8: 201721. <https://doi.org/10.1098/rsos.201721>

Hanson-Easey S, Hansen A, Williams S, Bi P. Communicating about heatwaves: Risk perception, message fatigue, and threat normalisation [Internet]. The University of Adelaide; 2019

Haktanir A, Can N, Seki T, Kurnaz MF, Dilmaç B. Do we experience pandemic fatigue? current state, predictors, and prevention. *Curr Psychol.* 2022;41(10):7314-7325. doi: 10.1007/s12144-021-02397-w. Epub 2021 Oct 20. PMID: 34690475; PMCID: PMC8527300.

Madison AA, Way BM, Beauchaine TP, Kiecolt-Glaser JK. Risk assessment and heuristics: How cognitive shortcuts can fuel the spread of COVID-19. *Brain Behav Immun.* 2021 May;94:6-7. doi: 10.1016/j.bbi.2021.02.023. Epub 2021 Feb 27. PMID: 33647433; PMCID: PMC7910129.

Mayer, Peter et al. "Now I'm a bit angry: " Individuals' Awareness, Perception, and Responses to Data Breaches that Affected Them." *USENIX Security Symposium* (2021).



Pandemic of Risk Perception: *Understanding Human Behavior to Improve Identity Security*