



Sticking Together while Staying Apart

Resilience in the time of global pandemic



Aaron Aldrich

 @CrayZeigh

“

Million-to-one chances... crop up nine
times out of ten.

—Sir Terry Pratchett GNU



“

Everything's a little bit broken all of the time... but it keeps working anyway

Resilience

Resilience



Rebound



Graceful
Extensibility



Robustness



Sustained
Adaptability

Rebound

Return to “normal” after a surprise or traumatic incident.

Work done ahead of time



Robustness

The ability to withstand and absorb well-modeled disturbances.

Known-knowns



Graceful Extensibility

The ability to stretch with challenges to operational boundaries.

Opposed to brittleness.



Sustained Adaptability

Recognizing and managing
adaptive capabilities over
long timescales.

Requires people







Bone

- Continuously created and destroyed
- Reconstruction directed by mechanical strain
- Process directed by signals through layered networks at cell-level

The marvelous resilience of bone

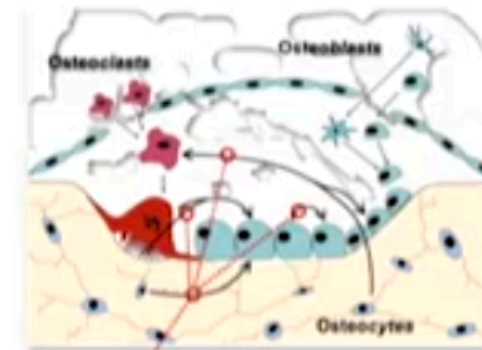
Resilience engineering...



- ...is engineering applied to a resilient system.
- ...depends for its success the presence of resilience.
- ...requires understanding how resilience plays out.
- ...can be successful even without understanding the mechanisms of resilience.
- ...benefits from greater understanding of the sources and modulators of resilience.

~3500 yrs old

Resilience engineering...



signals (partial list)

OSM	EphB4
PTHrP	Sema3a
sclerostin	OSM
TGFb	RANKL
IGF-1	Sema3B
CT-1	Wnt5a
Sema4D	OPG
S1P	OSM
ephrinB2	interleukins
	RANKL

- ...alters the resilience mechanisms of a system.
- ...depends for its success on deep understanding resilience.
- ...seeks to retard the loss of adaptive capacity.
- ...generates new types of hazard.

~5 yrs old

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<https://youtu.be/8LbePBiOvZ4>



Rebound



**Graceful
Extensibility**



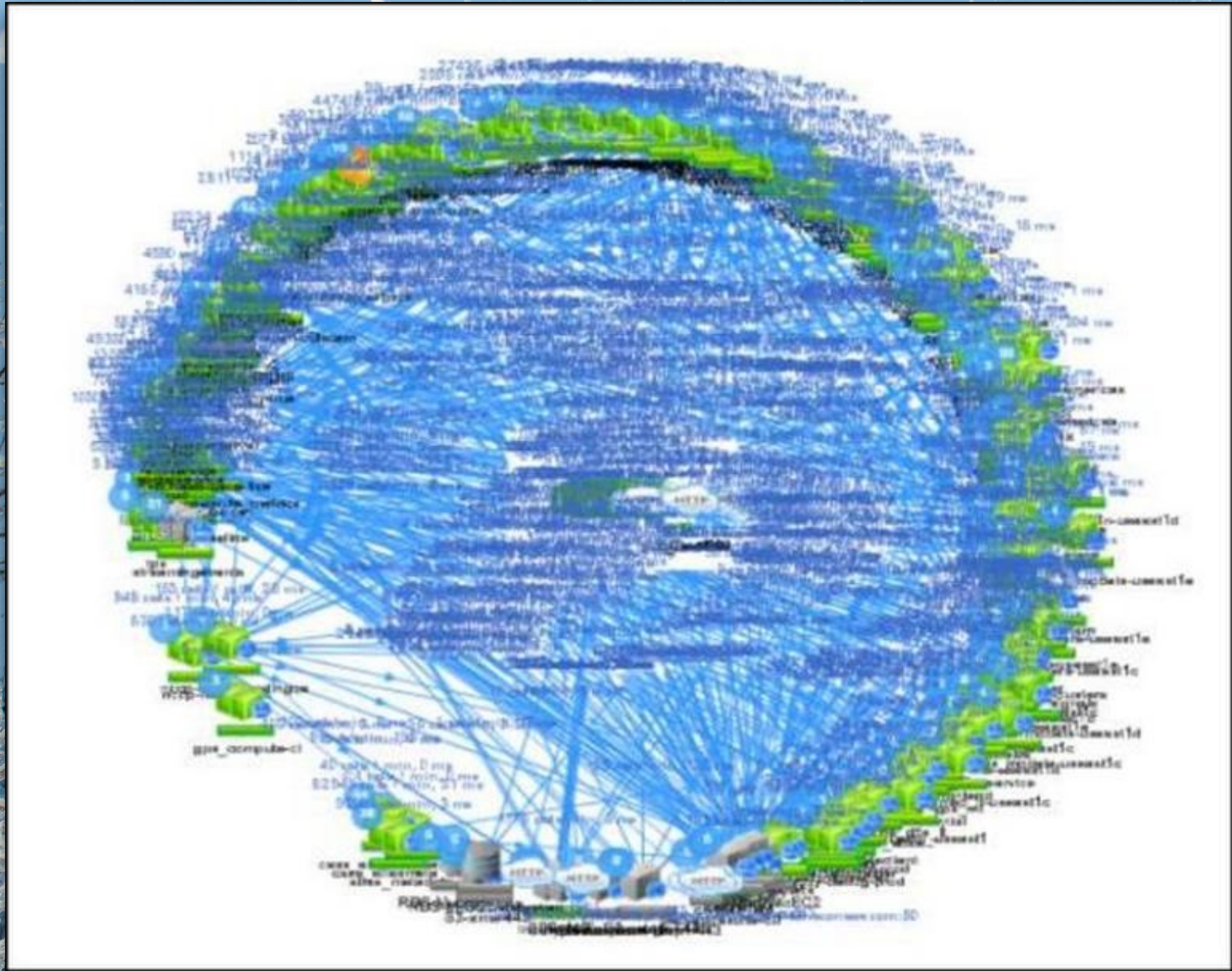
Robustness

Socio-Technical Systems

Conway's Law

Designed systems
represent an
organization's
communication structure

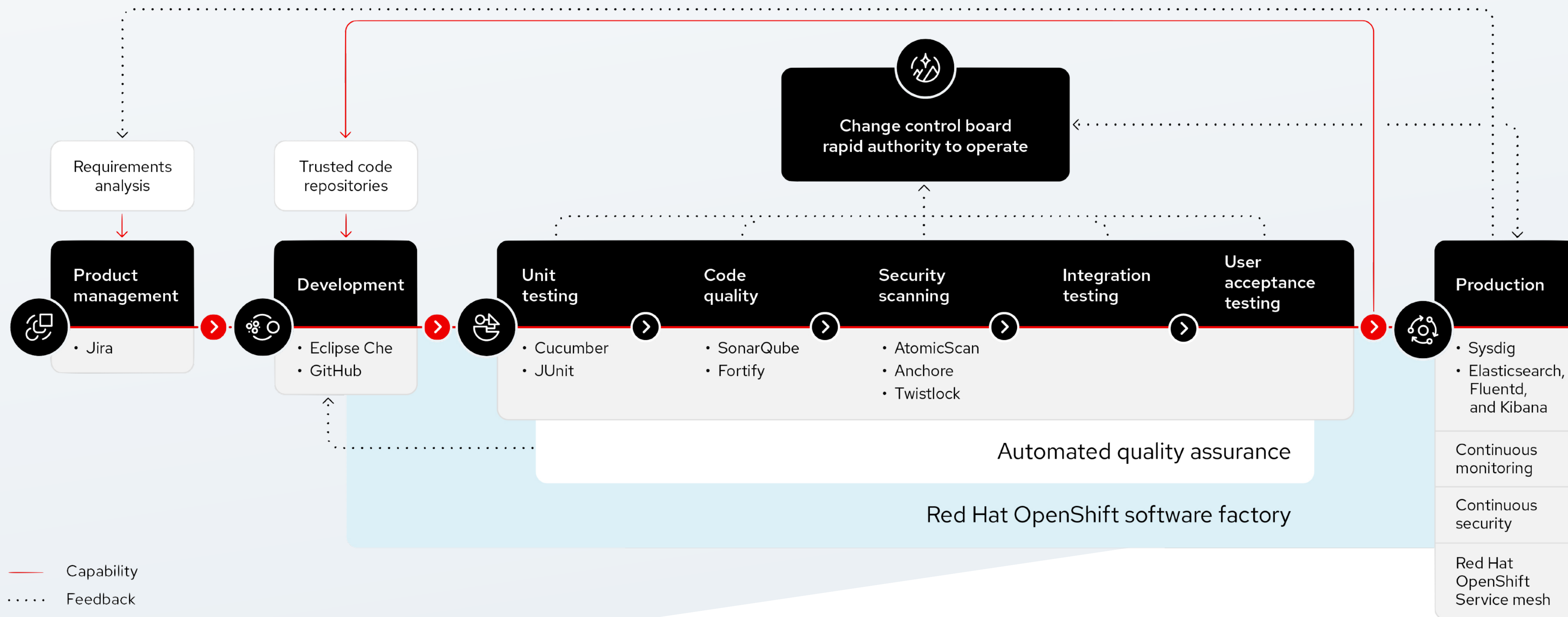




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Trusted software supply chain





Blunt End

Removed from experience,
upstream decision makers



Sharp End

Closest to the work, practitioners

Sharp End

Closest to the work, practitioners



- Constantly building and destroying systems
- Strong signaling
- Improve systems based on strain
- Will do so naturally given ownership

“

Teams that do well dealing with
impact [surprises/incidents] are those
that have a strong common ground

—J. Paul Reed (@jpaulreed), Sr Applied Resilience Engineer, Netflix
Failover Conf

“

If we want to improve a team's
resilience, we must build a strong
common ground

—Me, Just now.

Common Ground

- **Basic Compact**
- Goal Alignment/
Commitment
- **Inter-predictability**
- Sustain & Repair



Building Common Ground

- **Blameless Postmortems**
- Chaos Engineering
- **Game Days**
- Modeling Vulnerability



1

Psychological Safety

Team members feel safe to take risks and be vulnerable in front of each other.

2

Dependability

Team members get things done on time and meet Google's high bar for excellence.

3

Structure & Clarity

Team members have clear roles, plans, and goals.

4

Meaning

Work is personally important to team members.

5

Impact

Team members think their work matters and creates change.

“

Our analysis found that this culture of psychological safety is predictive of software delivery performance, organizational performance and productivity.

— Accelerate State of DevOps 2019



Matt Stratton

**Kick 'Em or Keep 'Em -
Collaborating on our own
Deserted Islands**

**Deserted Island
DevOps**

Register at desertedislanddevops.com

April 30th, 2020

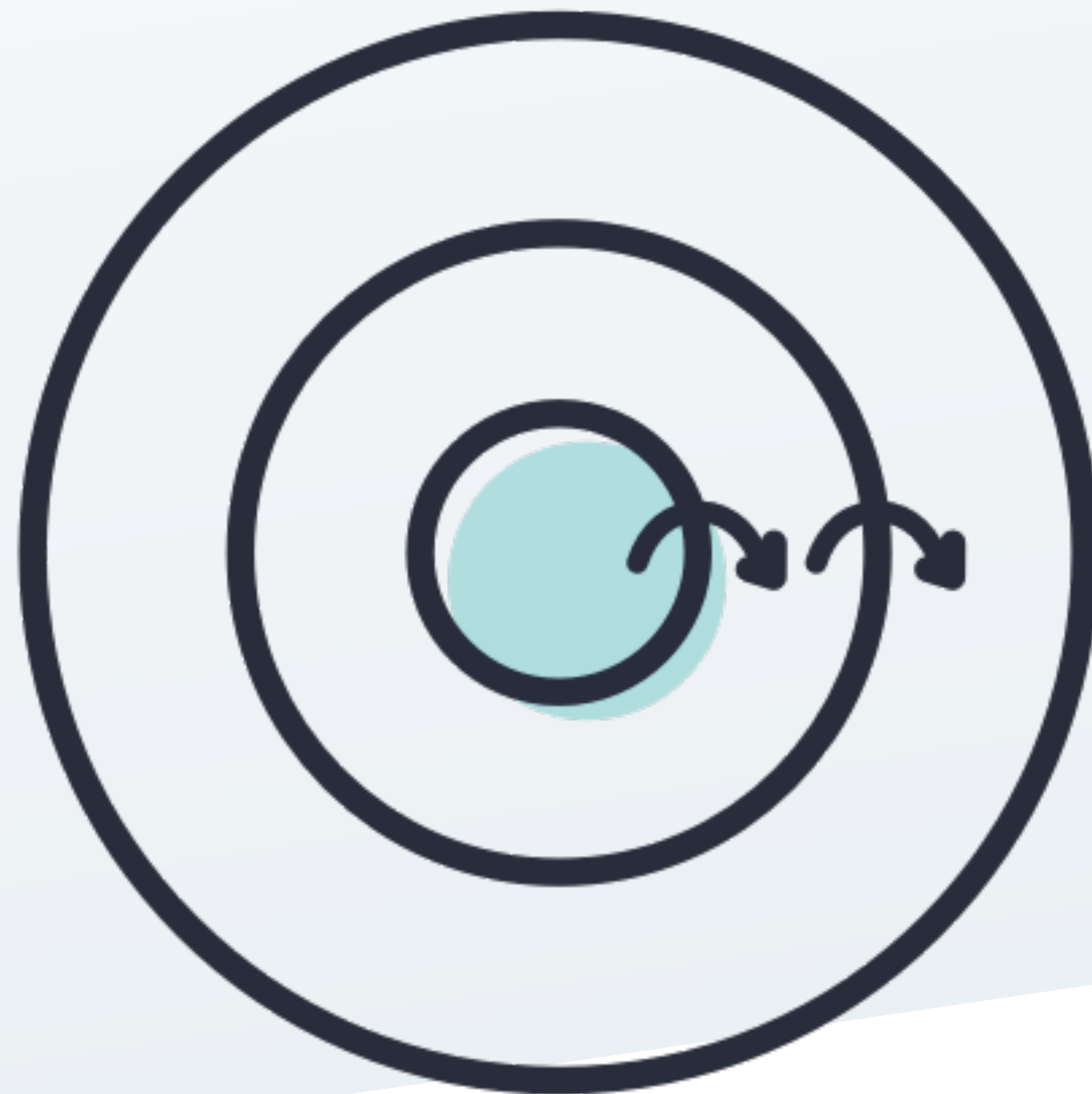
Starting 10 AM ET

<https://youtu.be/SgCGD7rutSw>



Resilience is about creating the
conditions that maximize everyone's
potential

—Rein Henrichs, >Code Podcast, 174: Resilience







What happens when governments fail?



It's left to us

“

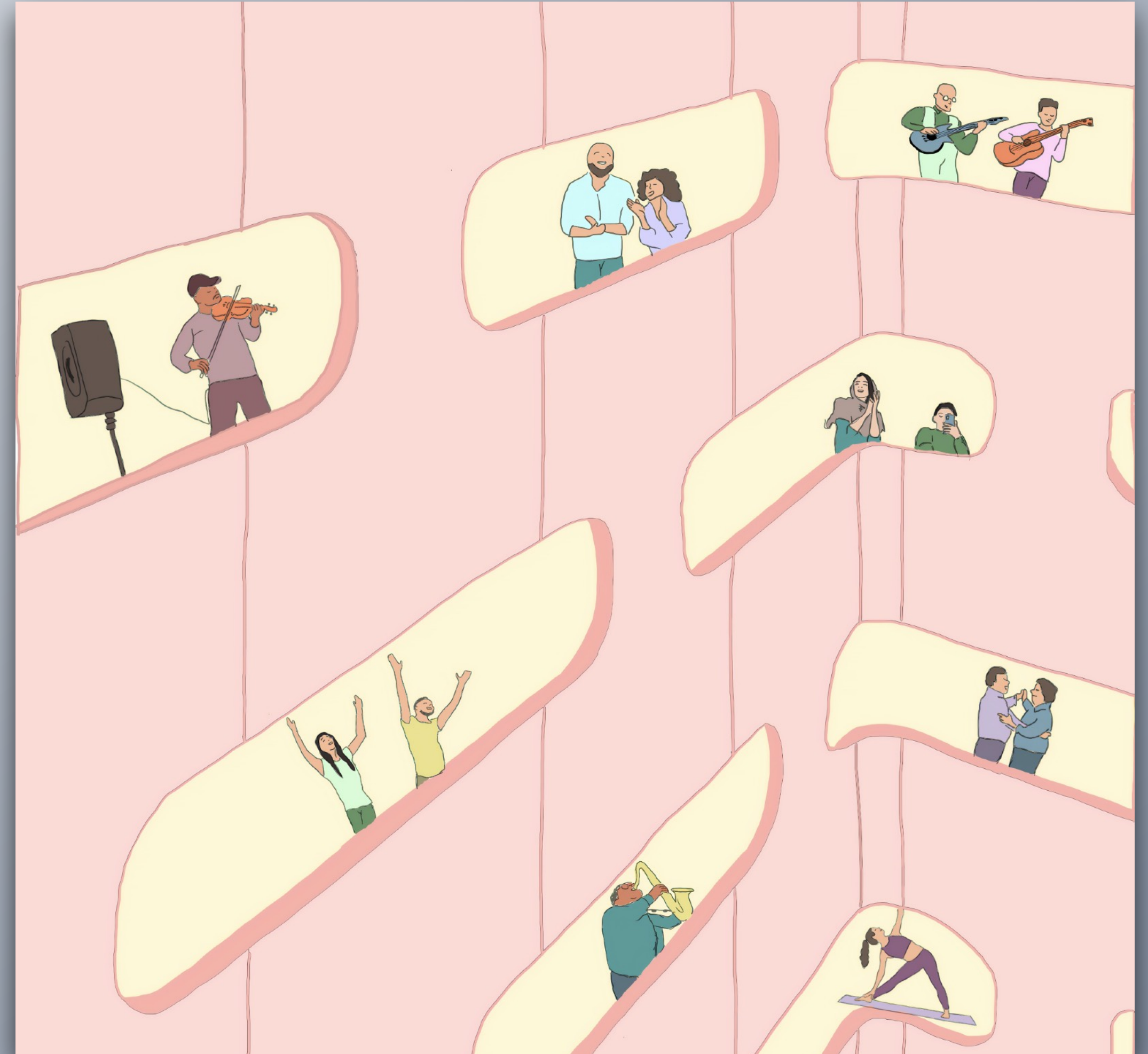
Community Building is Resilience Engineering

—Me again, just now again.



Strong Communities

- **Diverse**
- **High Trust & Safety**
- **Sustain & Repair**
- **Inter-predictability**
- **Loosely Coupled, layered networks**



Fearing shortages, locals across Upstate SC are sewing face masks for healthcare workers

[Zoe Nicholson and Ken Ruinard](#), Greenville News

Published 6:09 a.m. ET March 24, 2020

U.S. Rent Strike Planned for May 1 as Pain of Coronavirus Deepens

Most residents at 17 buildings near Elmhurst Hospital Center in Queens, N.Y., have committed to stop paying rent, organizers say

[MONEY](#)

Stores offer shopping time for vulnerable customers amid coronavirus: Target, Aldi, Walmart and more

[Kelly Tyko](#) USA TODAY

Published 12:39 a.m. ET Mar. 18, 2020 | Updated 1:19 p.m. ET Mar. 31, 2020



Missisquoi Valley School District to begin free meals Thursday

By MESSENGER STAFF Mar 17, 2020

Portland EWOKS, first mobilized for protests, offer disaster relief during wildfires

Updated Sep 19, 2020; Posted Sep 19, 2020

Court Protest Aims at Boston Covid Housing Crisis

By Unicorn Riot ▸ October 29, 2020

BOSTON, MA – Thousands of families in eastern Massachusetts face renewed risk of eviction. Governor Charlie Baker opted on October 17 to cease emergency measures to protect shelter that have been in effect throughout most of 2020, triggering a huge surge in “notices to quit” from landlords. A rally downtown outside the [Eastern Housing Court](#) near Haymarket on a rainy Thursday morning called for an alternative program at the state legislature, among [other policies that have been proposed including a rent freeze](#).





How To Save Your Community When The Government Fails

March 23, 2020 • 66 min



Cody, Robert and Katy talk to Scott Crow from Common Ground Collective about how we can help each other and build solidarity while the government debates about tax incentives and means testing. Learn more about your ad-choices at <https://news.iheart.com/podcast-advertisers>



Share



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 **Katy** @TheKaterTot · Apr 14

Sometimes the first thing we have to do to take care of our communities is take care of ourselves. Be gentle with yourself.

 1   10 

 **DreadPirateSparklePony** @thelongshanx · Apr 15

You can't pour from an empty cup

 1  1  4 

“



Katy @TheKaterTot · Apr 15

Yes! And it's hard to fill the cup if it's cracked and leaking.



GIF



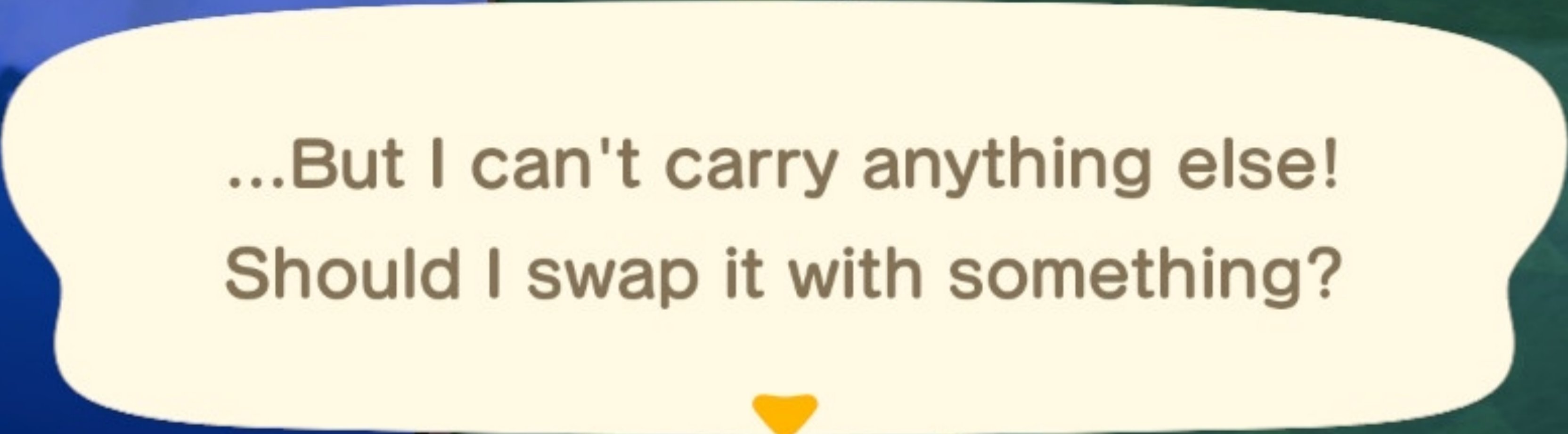
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COPING WITH COGNITIVE LOAD IMPACT

- ▶ Shed load
- ▶ Trade off **thoroughness** in each task
- ▶ **Shift** work in time
- ▶ Recruit more **resources**





...But I can't carry anything else!
Should I swap it with something?

<https://bit.ly/2Ym7Tp9>





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Introducing Virtual Voicebox!

The COVID-19 pandemic swept in very quickly and created uncertainty and disconnection for us all. When we decided to close our doors ahead of the



Deserted Island
DevOps

Streaming on twitch.tv!

The Greatest Minds in DevOps... in Animal Crossing

Register at desertedislanddevops.com

4/30/20 - 10 AM ET

<https://desertedislanddevops.com>



Katy Farmer

You've Got A Friend In Me

**Deserted Island
DevOps**

Register at desertedislanddevops.com

April 30th, 2020

Starting 10 AM ET

<https://youtu.be/L9A6ZauhOhg>



Enable potential and
get out of the way

Slides & Resources
speaking.crayzeigh.com



OSMIhelp.org

<http://😄> <http://😞> <http://😬> <http://😓>

EmotionalAPI.com



devopsdays.org



Aaron Aldrich

Managed OpenShift Black Belt



🐦 @CrayZeigh



TABLETOP

DEVOPS

twitch.tv/desertedislandtv

discord.gg/CPM5Jcg



I love you
Do Good out there
We're all in this together

Watching/Listening

Four concepts for resilience and the implications for the future of resilience engineering - David Woods

<https://bit.ly/3bITTdc>

The Marvelous Resilience of Bone - Dr. Richard Cook, REdeploy 2019

<https://www.youtube.com/watch?v=8LbePBiOvZ4>

Greater Than Code, 174: Resilience

<https://www.greaterthancode.com/resilience>

The Worst Year Ever, How to Save your Community When The Government Fails

<https://ihr.fm/3eVNFbl>

Watching/Listening

Behind Human Error(2nd Edition) - Woods, Dekker, Cook, Johannessen, Carter

The Woolworths Experiment

<https://safetydifferently.com/the-woolworths-experiment/>

The Field Guide to Understanding Human Error - Sydney Dekker

Literally every video from REdeploy:

<https://www.youtube.com/channel/UCHbJcl6KfyxfIRqdv26b3Qw>

On Borrowing From Yourself - Aaron Aldrich

<https://dev.to/crayzeigh/a-reflection-on-borrowing-from-yourself-3jhf>

Watching/Listening

Kick 'Em or Keep 'Em - Collaborating on our own Deserted Islands - Matt Stratton

<https://youtu.be/SgCGD7rutSw>

ACCELERATE State of DevOps 2019

<https://services.google.com/fh/files/misc/state-of-devops-2019.pdf>