

ALL DAY DEVOPS

NOVEMBER 6, 2019

Practice Makes
Perfect: Developing
Expertise Through
Chaos Engineering



How much do we invest in preparing to support production systems?

Who I am

1 Sr. Engineering Manager

2 Chaos Engineering

3 Vanguard

4 Twitter: @tleam

5 Baker



Acknowledgement upfront

Hollnagel, Erik, and David D. Woods. *Joint cognitive systems: Foundations of cognitive systems engineering*. CRC Press, 2005.

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Dekker, Sidney. "Failure to adapt or adaptations that fail: contrasting models on procedures and safety." *Applied ergonomics* 34, no. 3 (2003): 233-238.

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Why invest



How to train

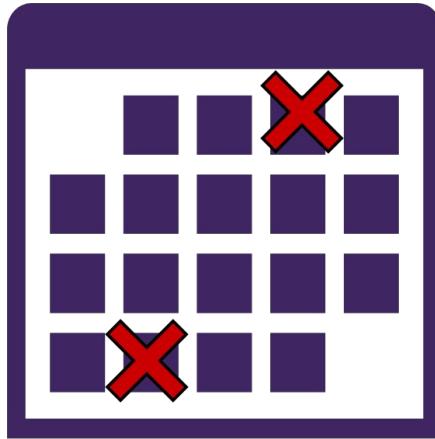


Incorporating Firedrills

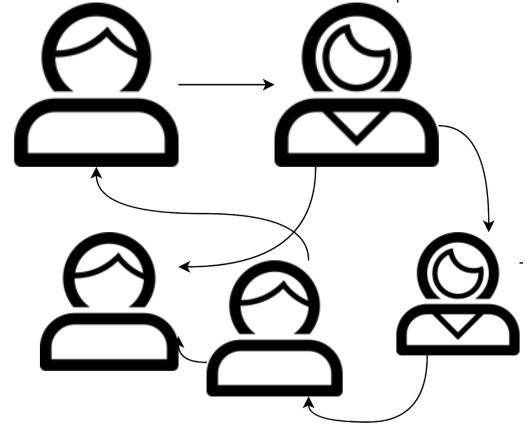
Key takeaways



**Our systems are
important**



It's not our day job

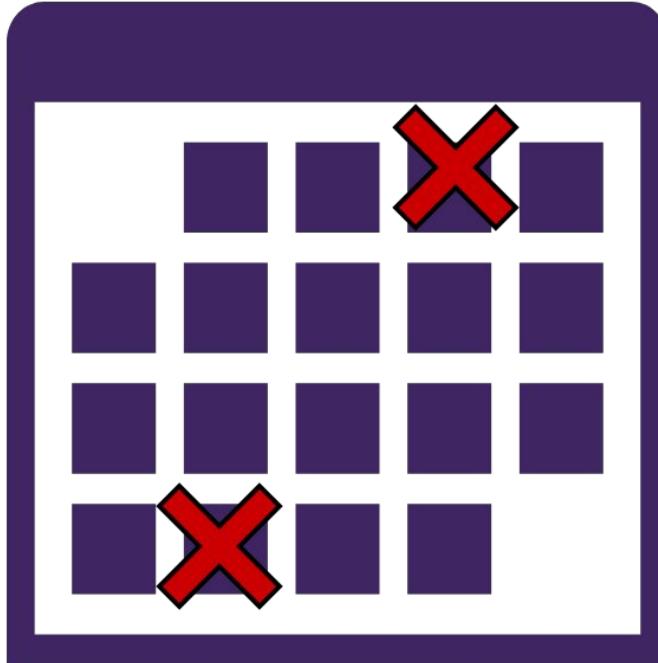


It's a team effort

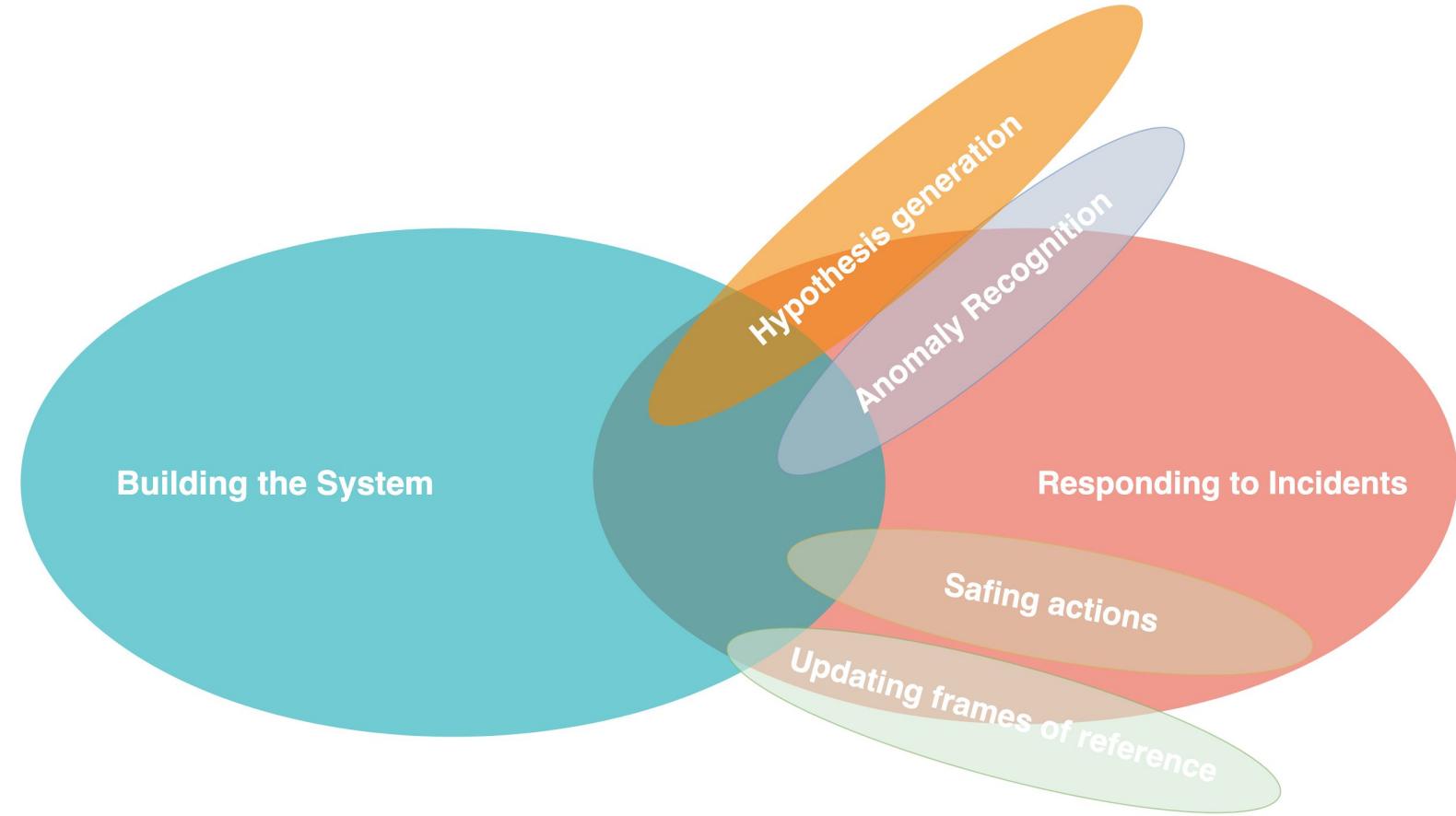
Why invest in operational practice?



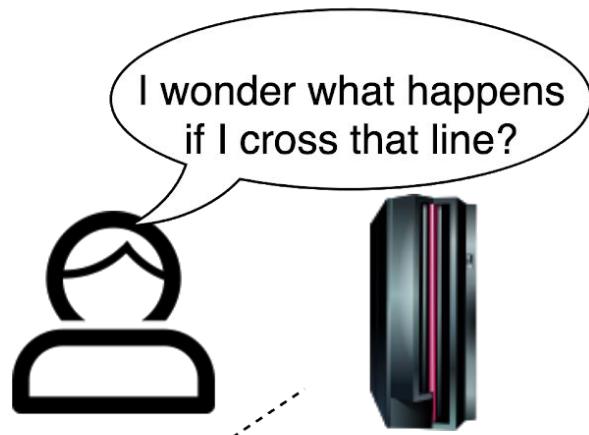
Our systems are important



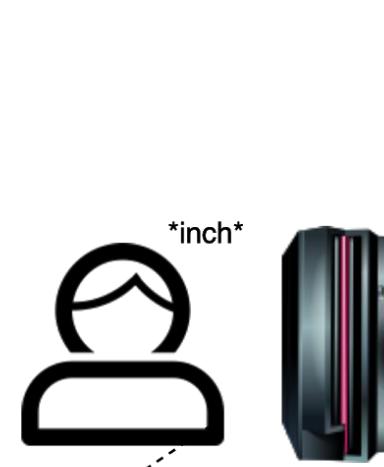
We don't do this everyday



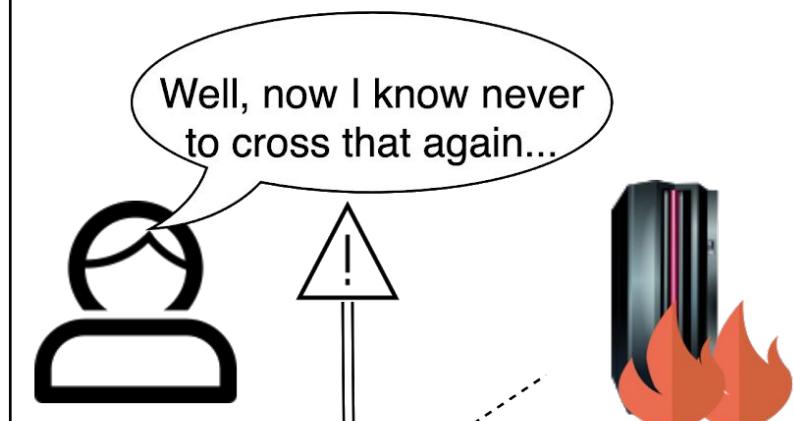
... because the work is very different



Boundary of
Functional
Performance

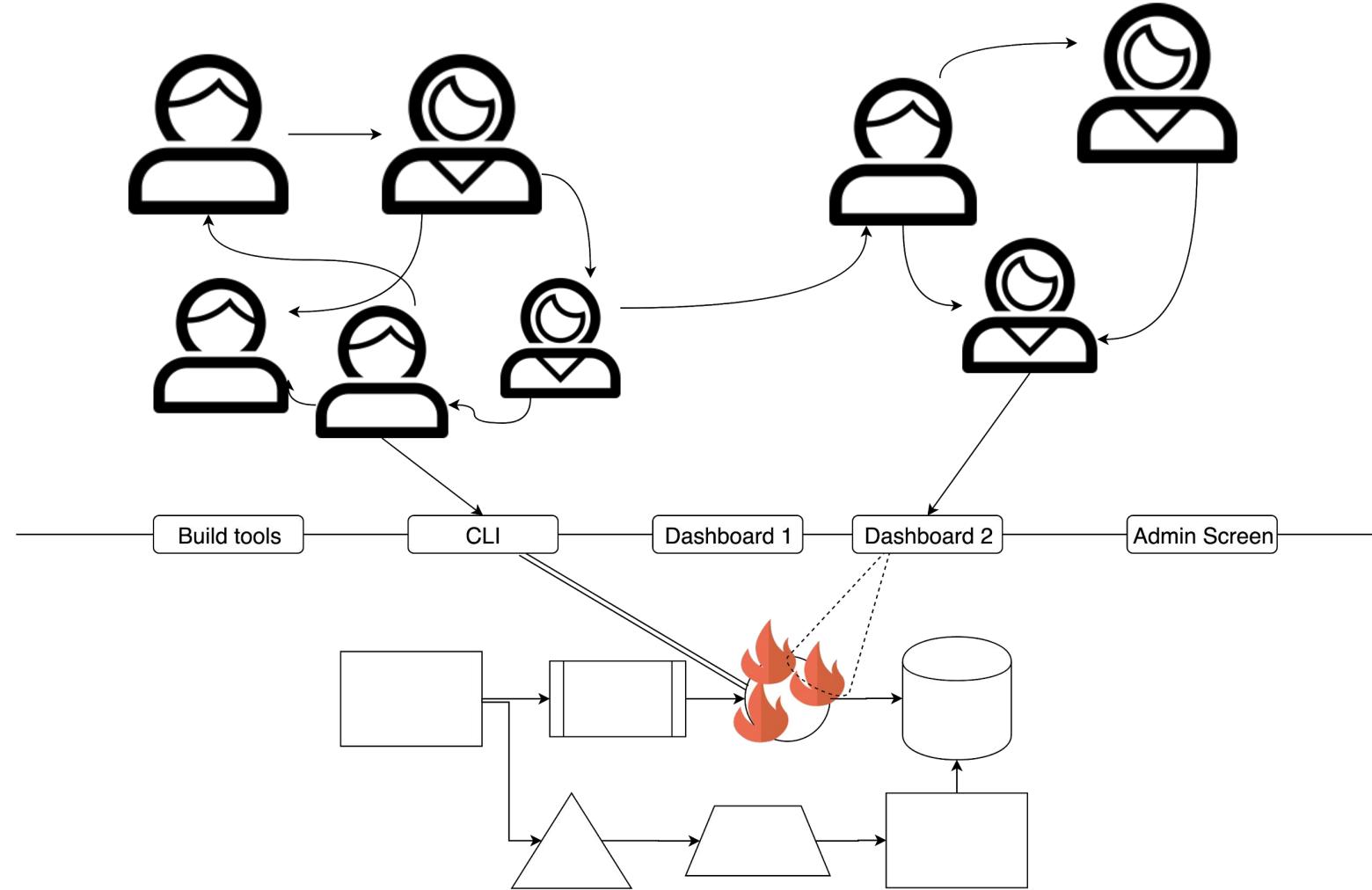


Boundary of
Functional
Performance

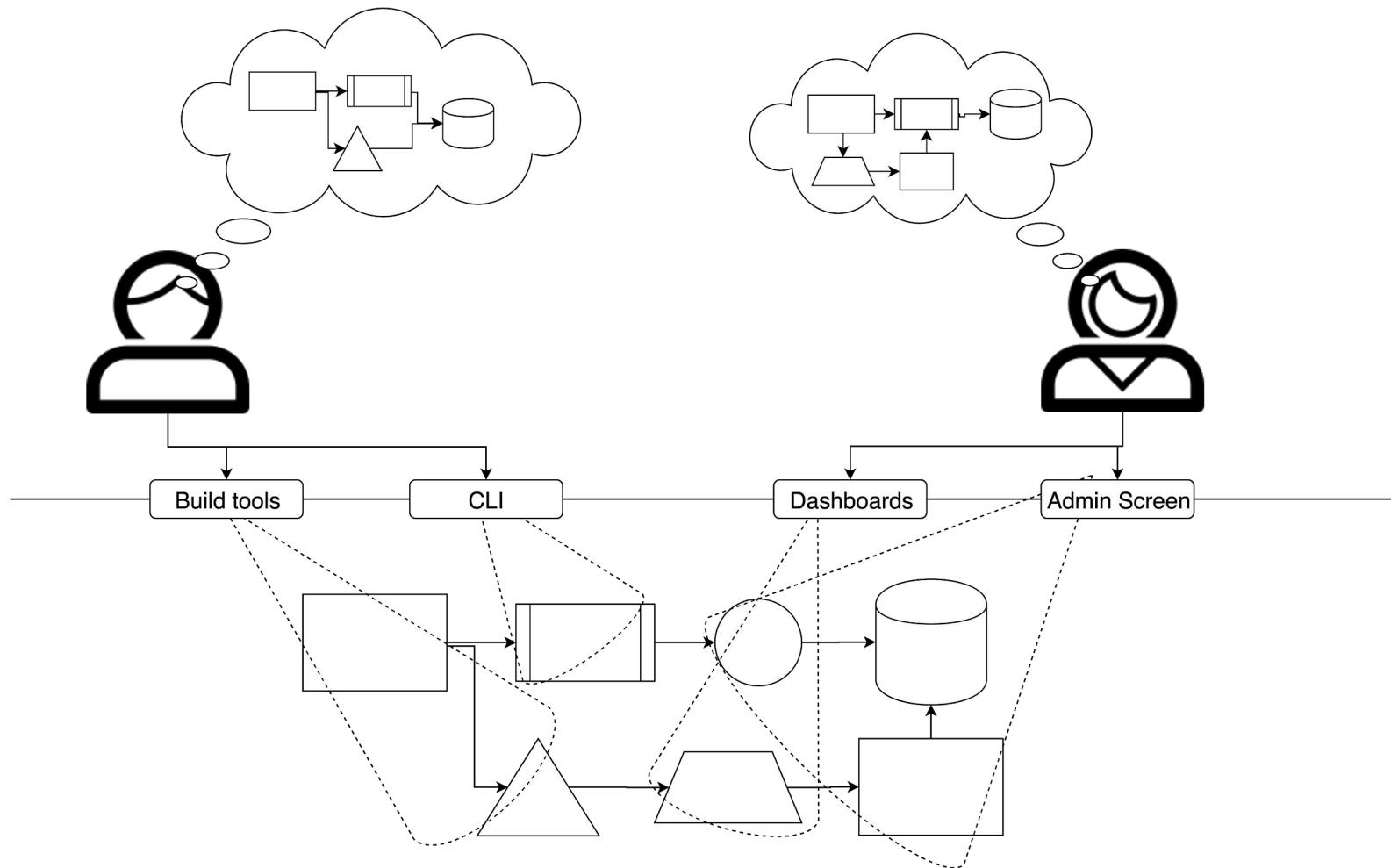


Boundary of
Functional
Performance

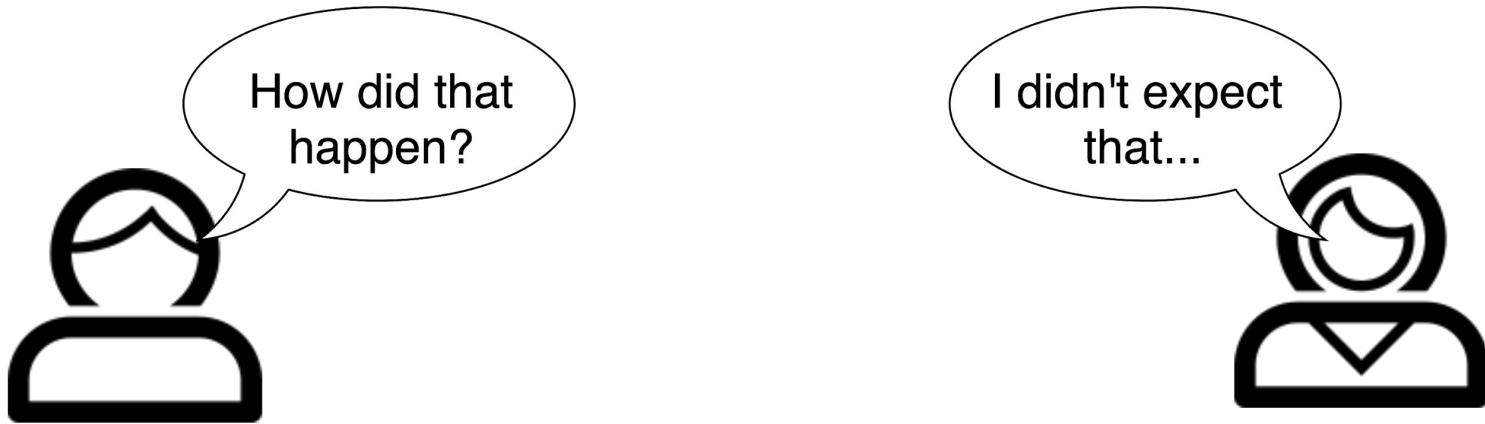
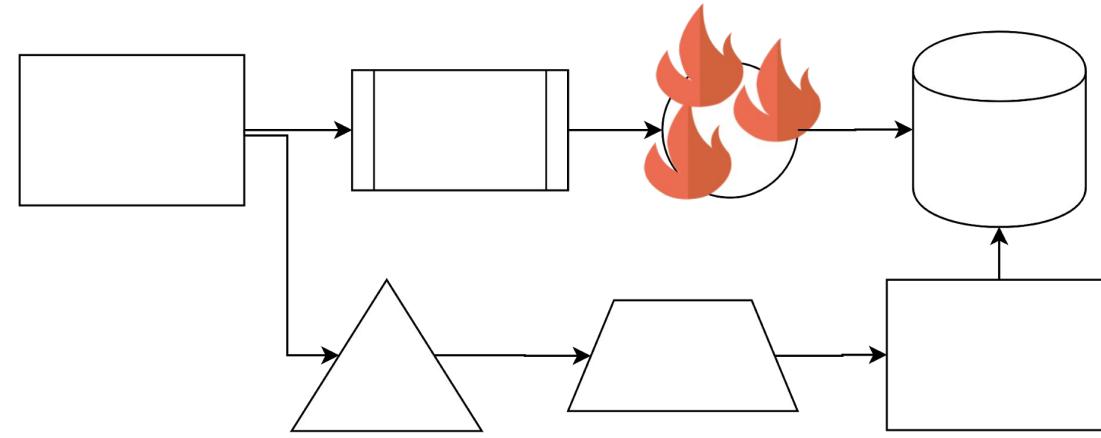
So we need to get in contact with failure



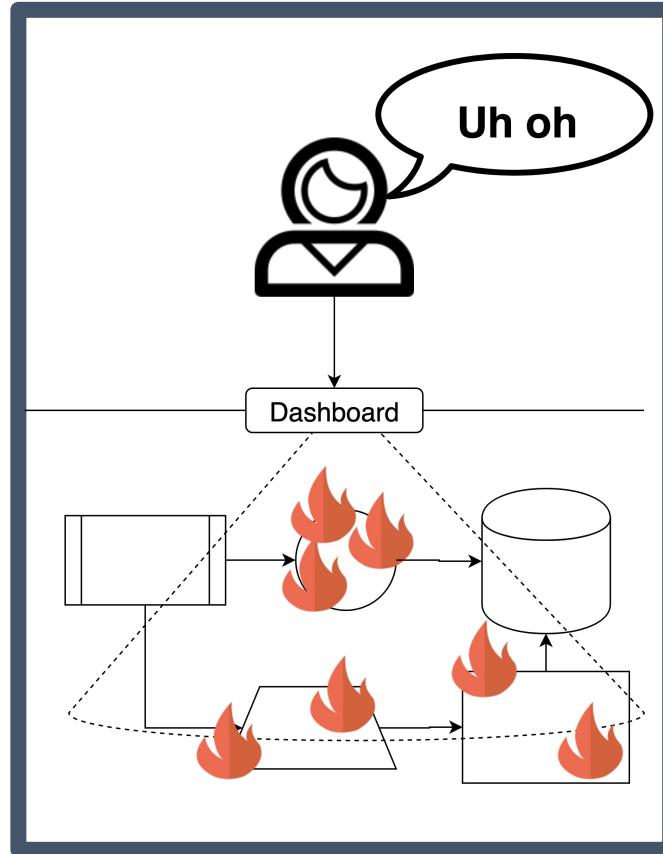
And to mitigate we need to work together



... because we all have different understandings



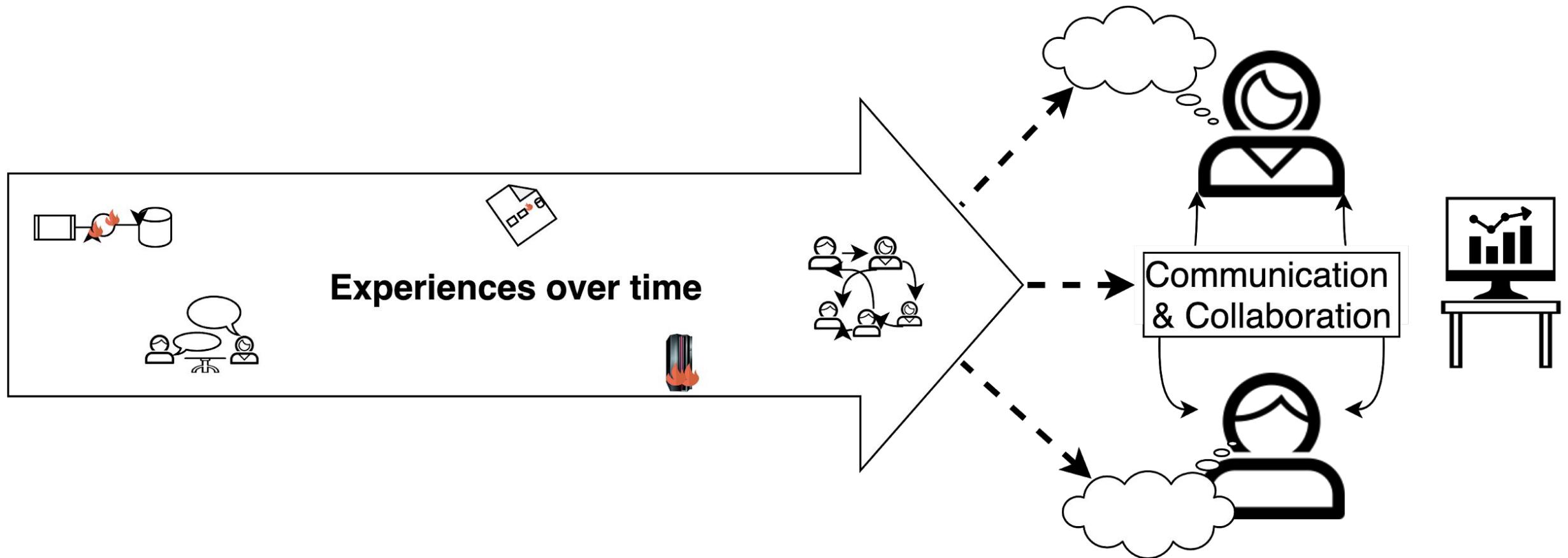
Incidents challenge these understandings

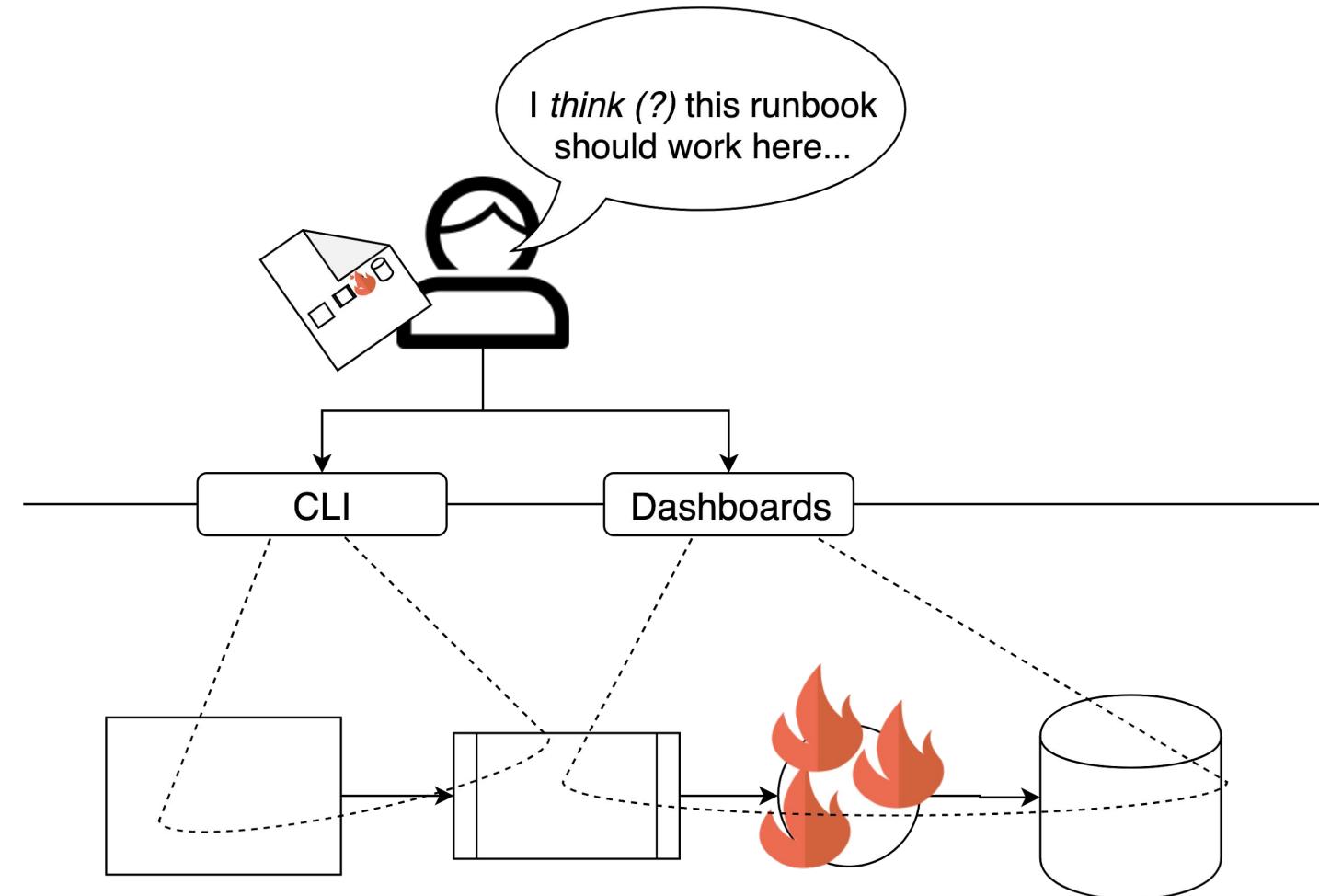


Coping mechanisms

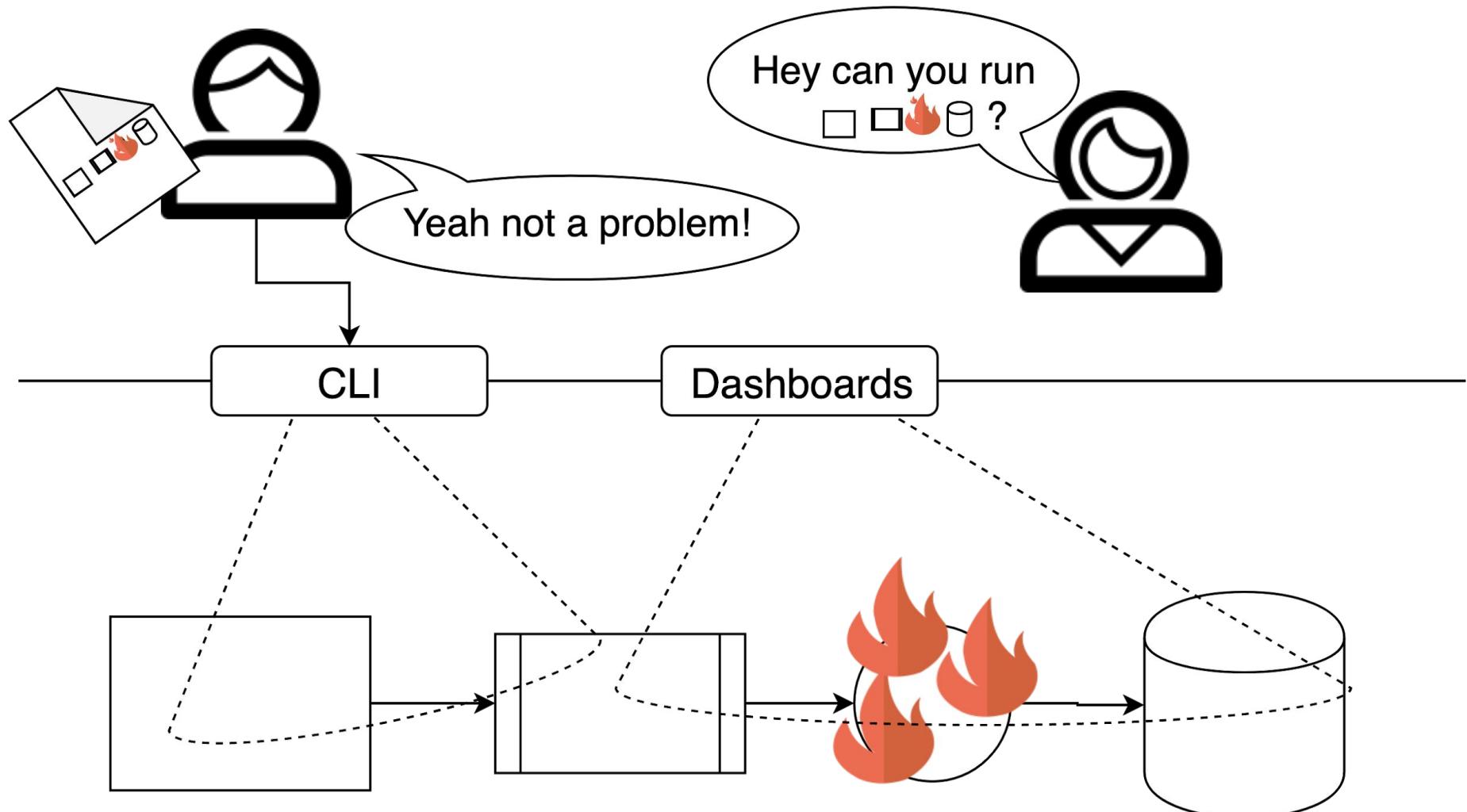


Common ground

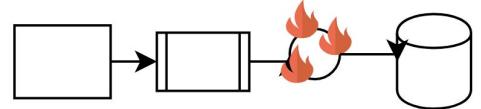




Procedures can reduce cognitive load during response



... they can also reinforce common ground



1 Don't panic!

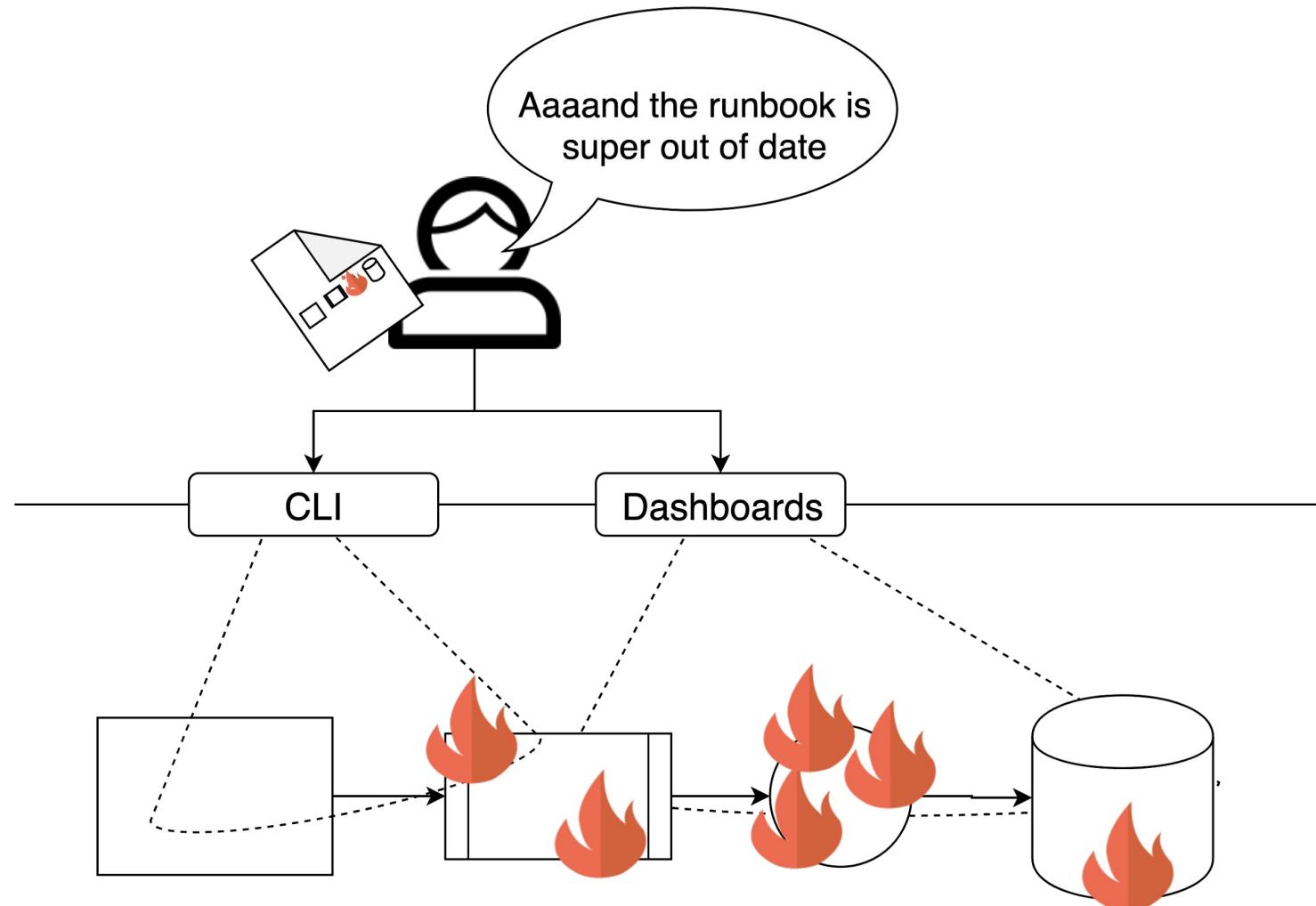
2 SSH

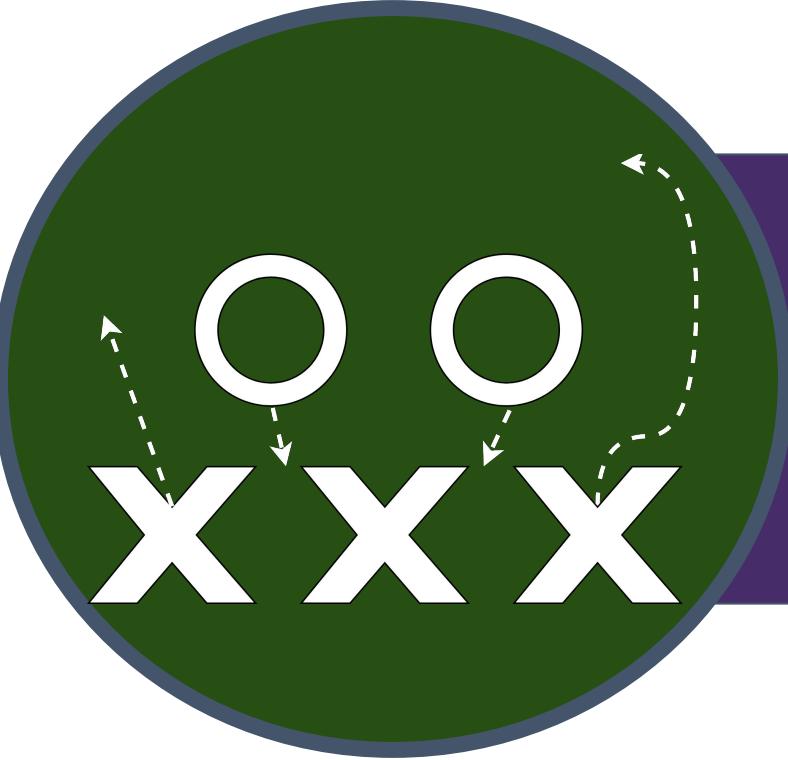
3 ID process

~~4 Internal Comm~~

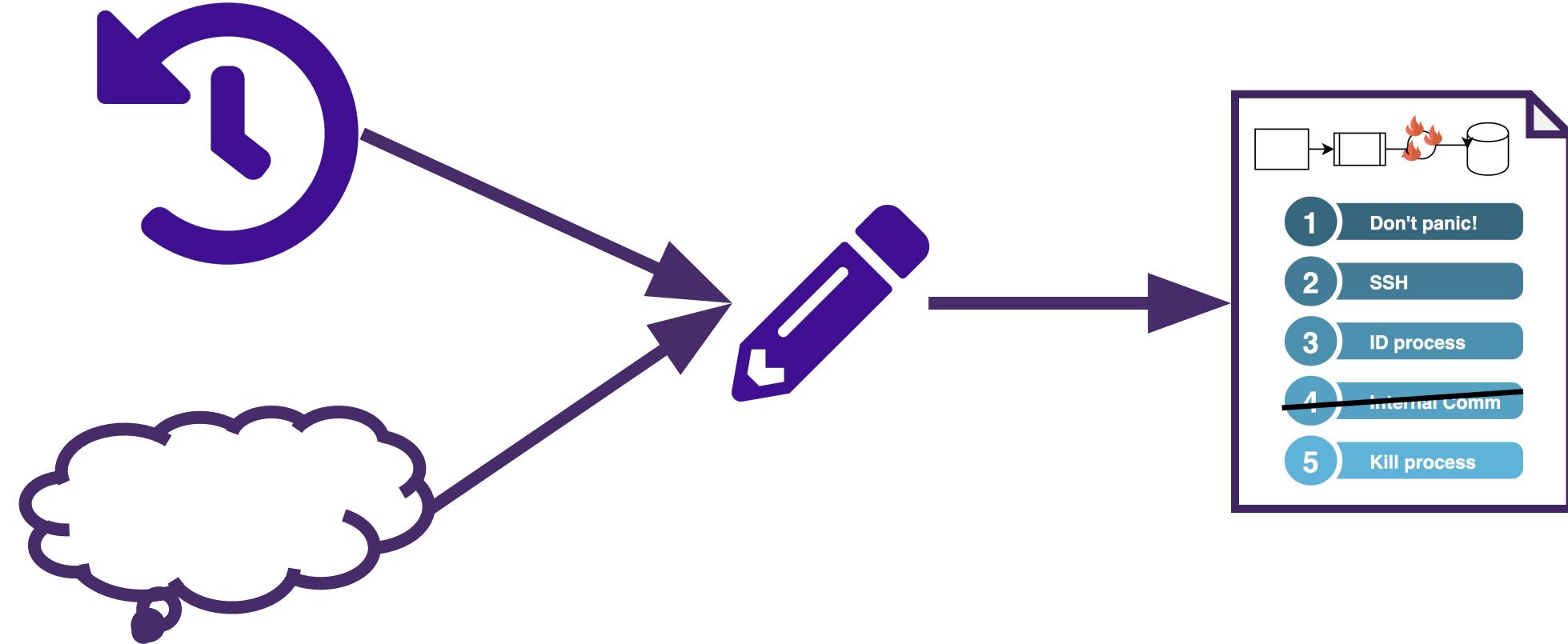
5 Kill process

Task shedding

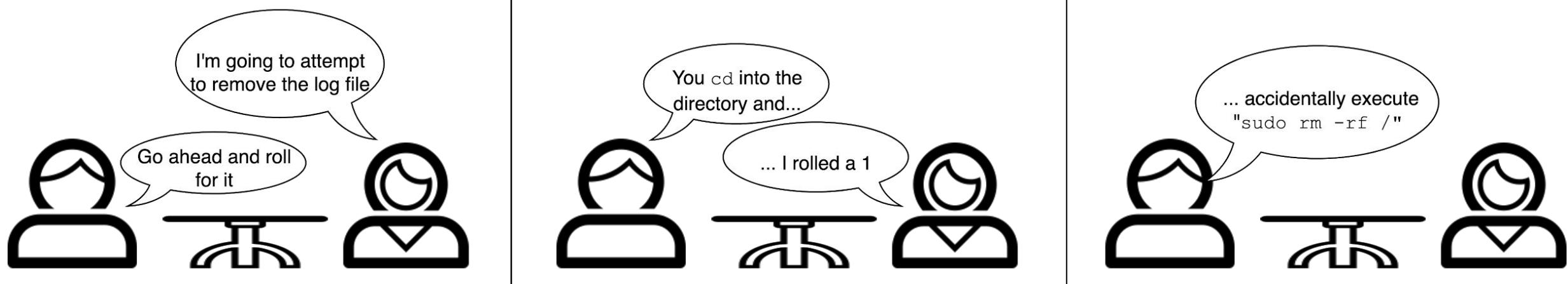




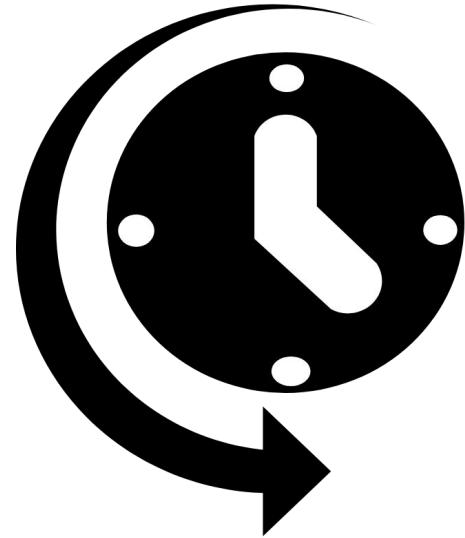
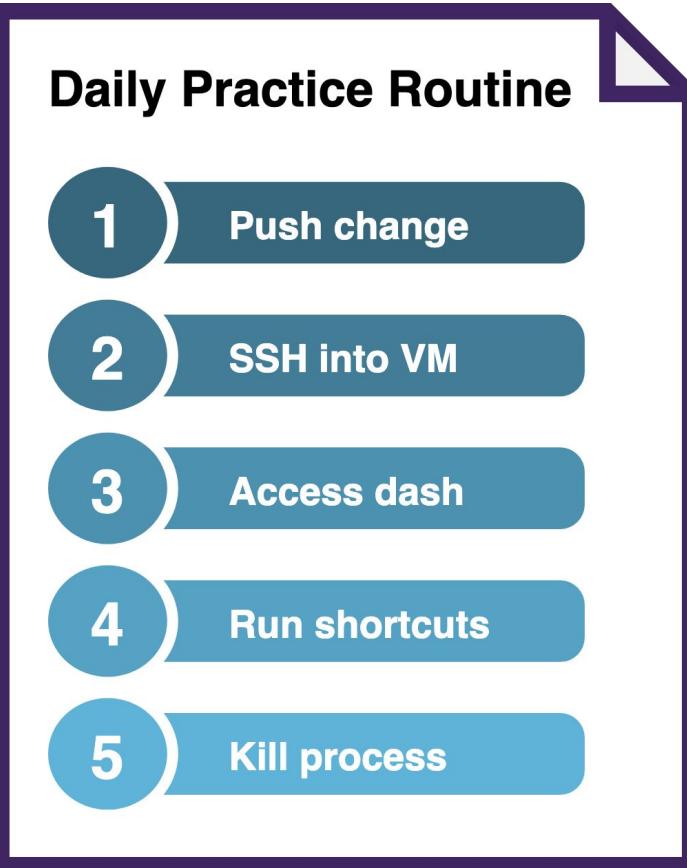
Traditional methods of practice



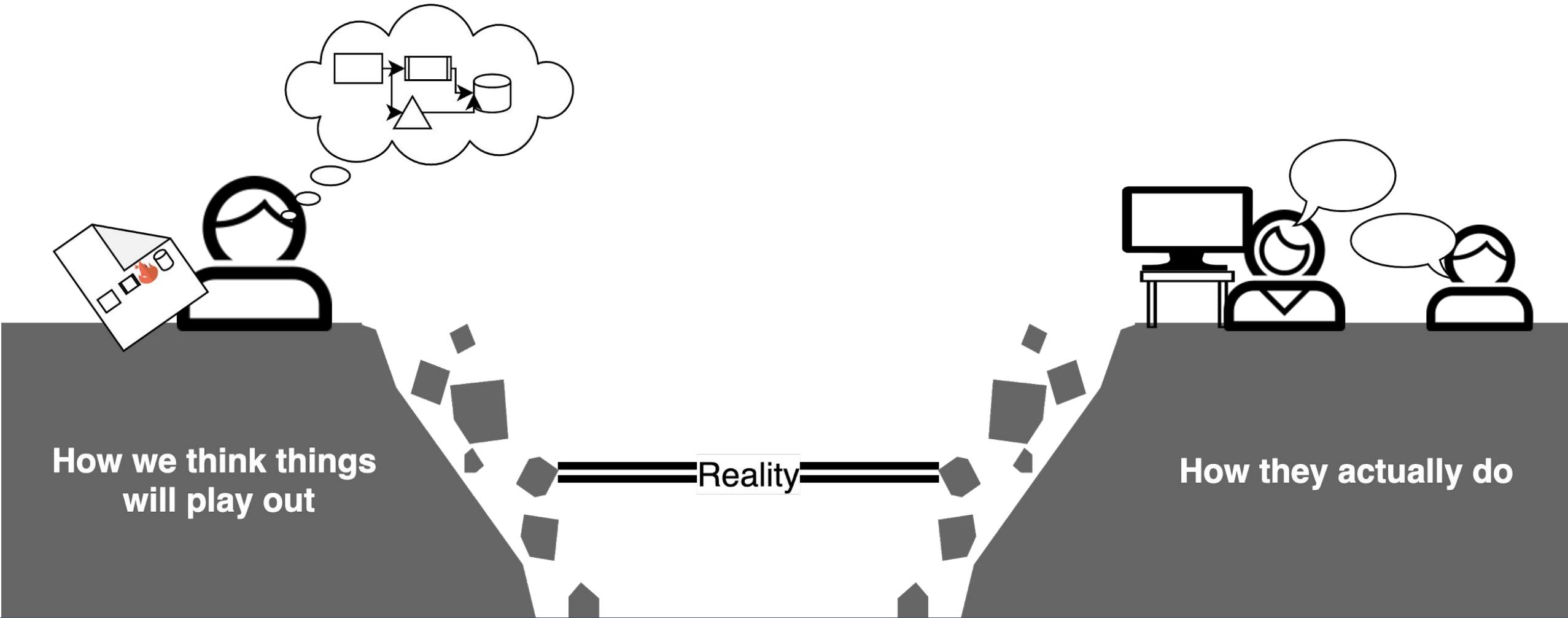
Development of and reference to procedure



Incident response tabletops and roleplays



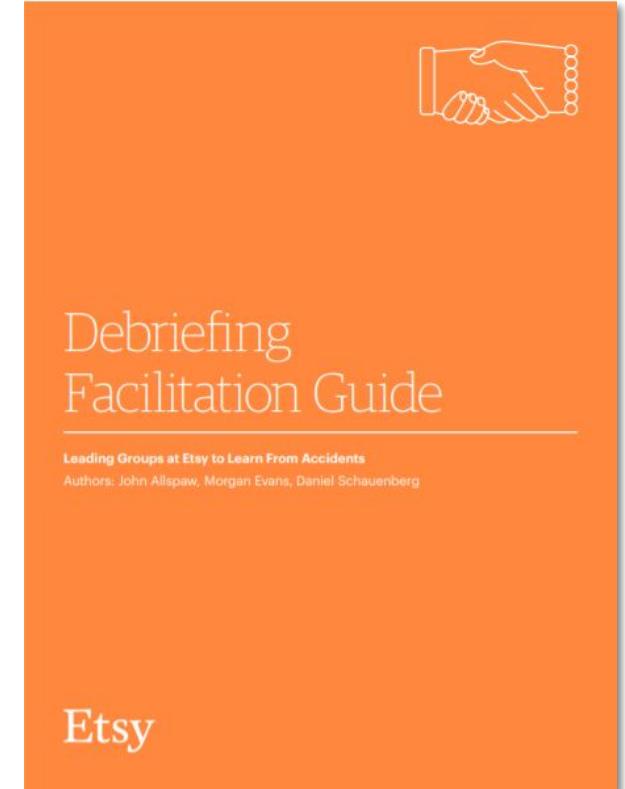
15 Minutes / Day



"We hear about the procedures they always follow, and the ones they sometimes skip because if they followed them blindly and to the letter they'd have a bad day, guaranteed.

We hear about what they usually do when that alert goes off and everything is fine again. When "this" and "that" happens, they do "these things," but only in certain circumstances. We coax out the hidden nuances underlying their actions, decisions, and rationales."

- Etsy Debriefing Facilitation Guide (Allspaw, Evans, Schauenberg)



ROBERT DAITZMAN



Things Break,
But How Do We
Move Forward?

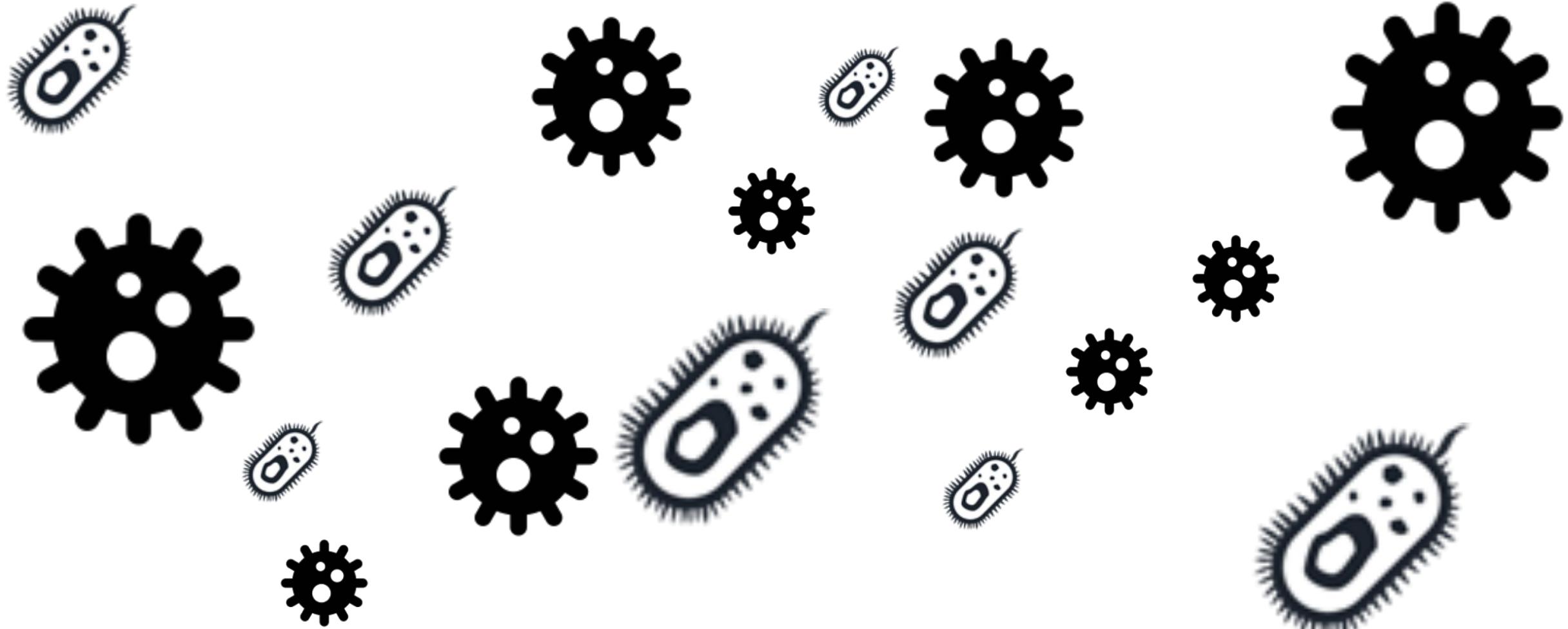
CHAD TODD



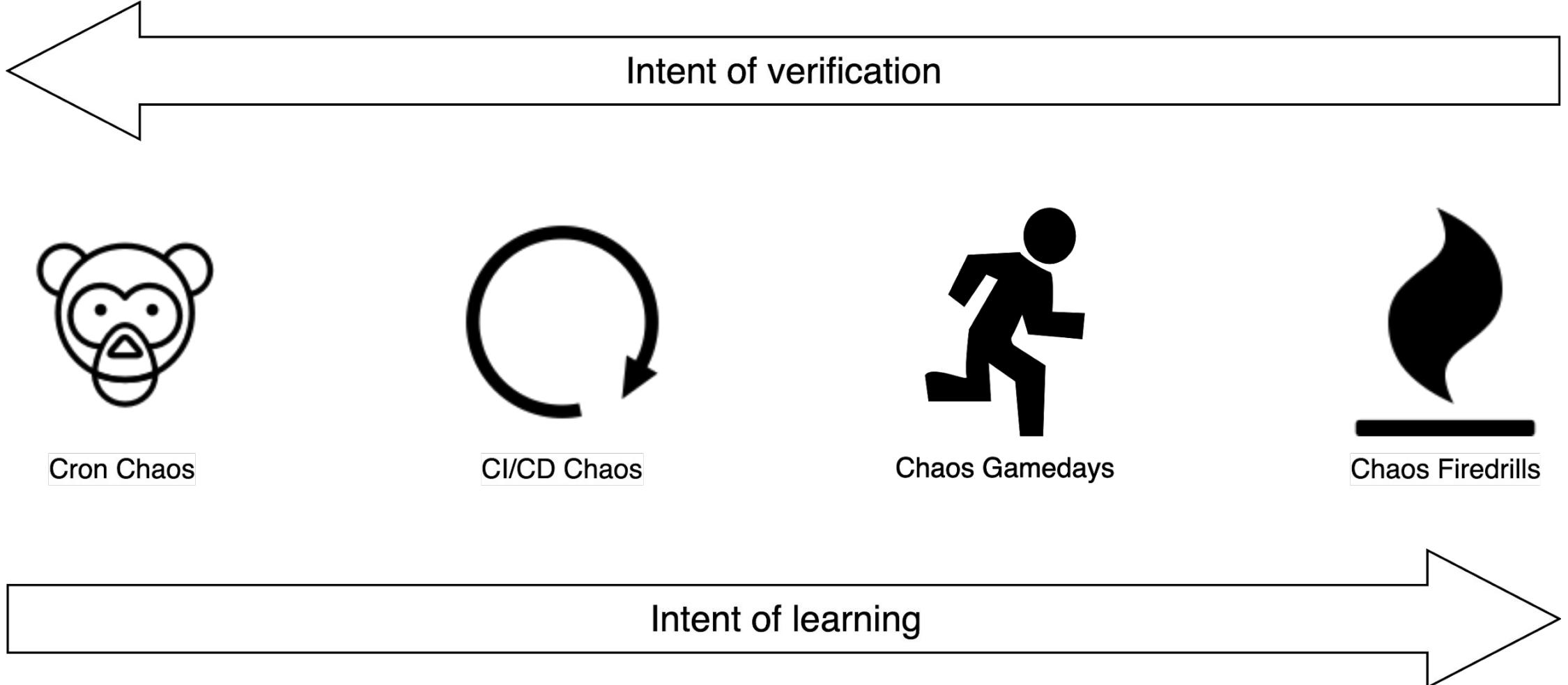
Learning From Failure
and How You Can Too

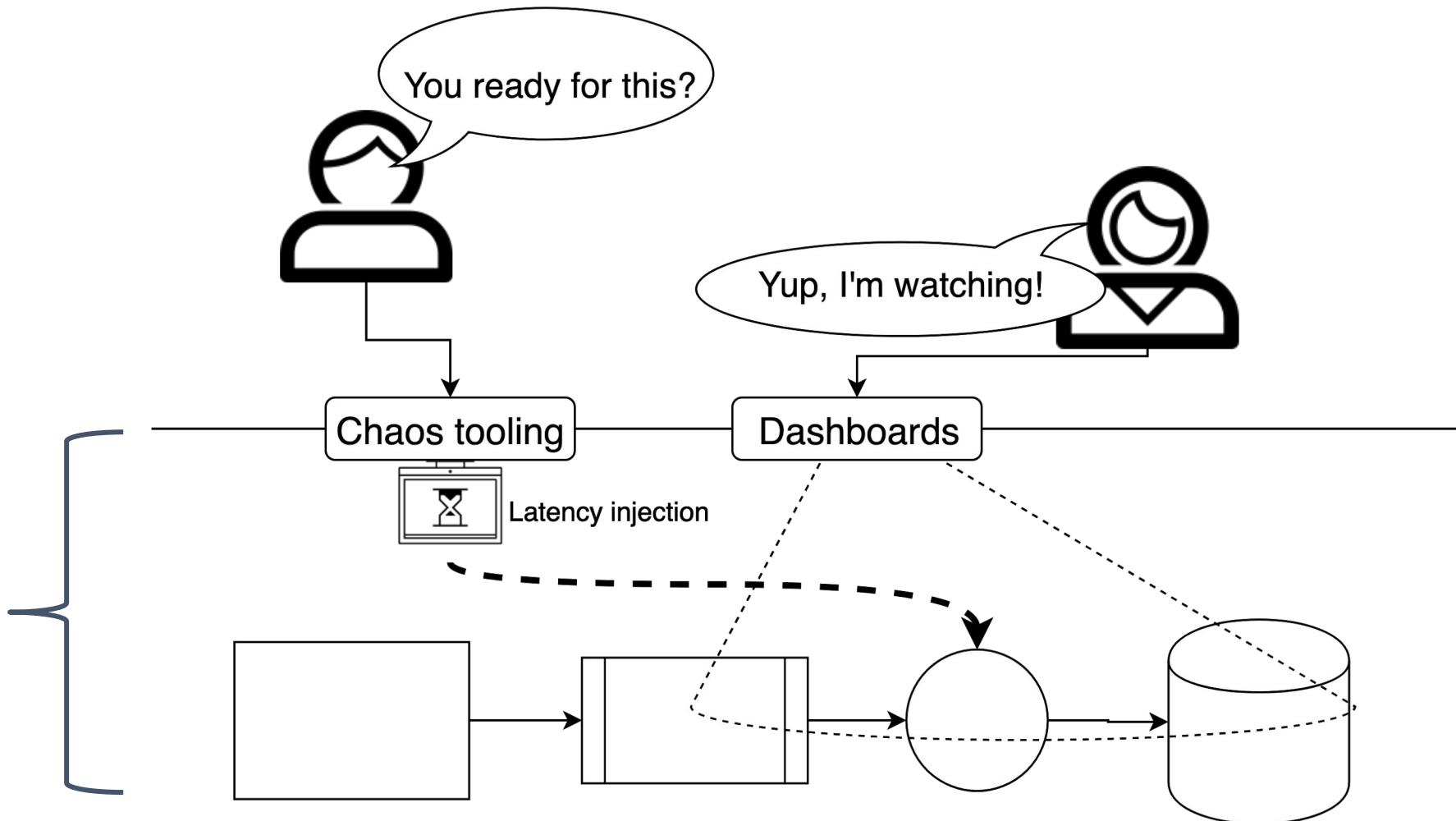
Chaos Engineering is the discipline of experimenting on a system in order to build confidence in the system's ability to withstand turbulent conditions in production - The Principles of Chaos

<https://principlesofchaos.org/?lang=ENcontent>



@tteam **Chaos engineering is like an allergy test for a system**





JASON YEE



Chaos: Breaking
Your Systems to
Make Them
Unbreakable

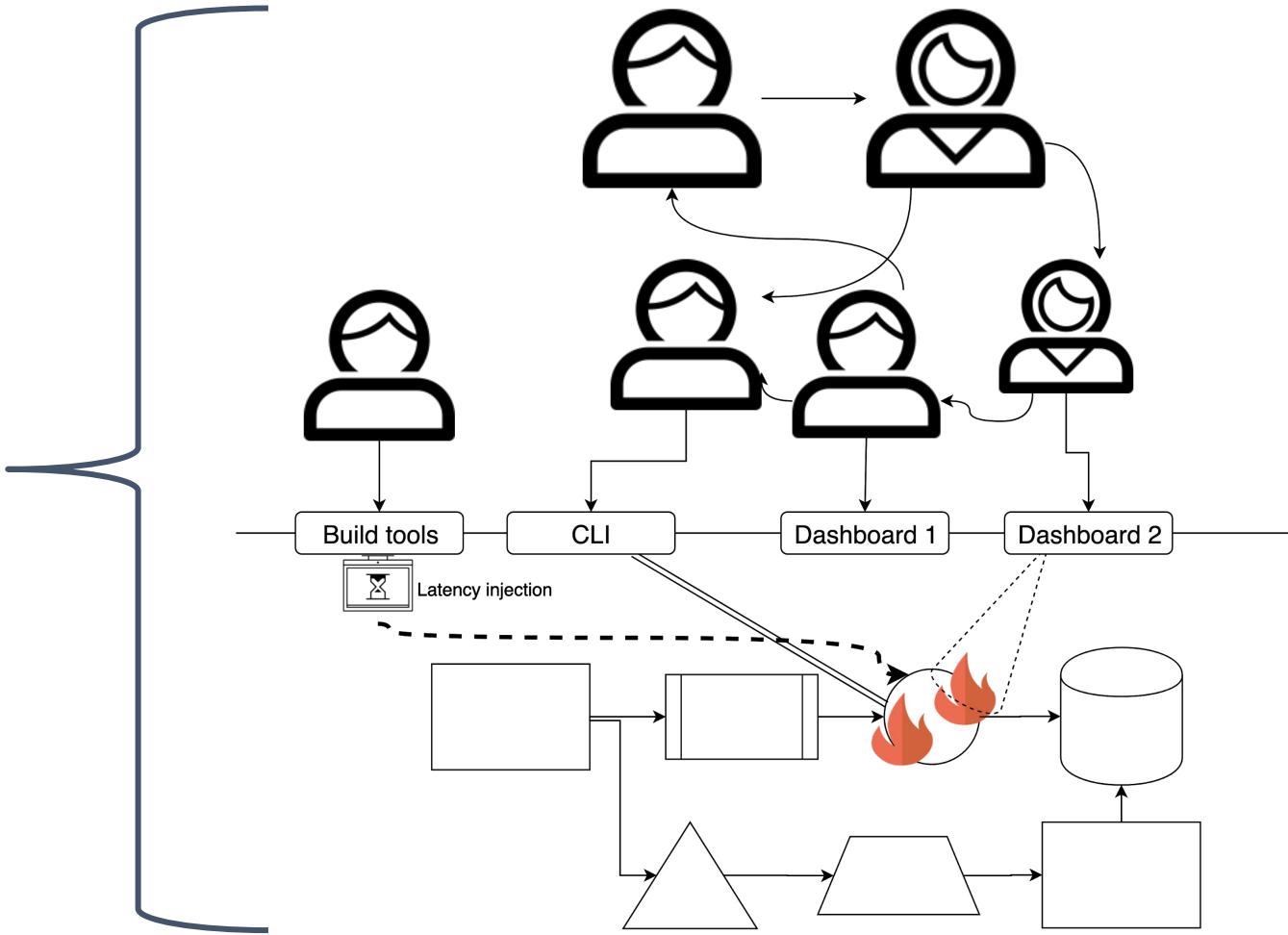
AARON RINEHART



Security Pre-Cognition:
DevSecOps & Chaos
Engineering

Interested in more chaos? Check these out.

Focus is
holistic





Prepare



Inject

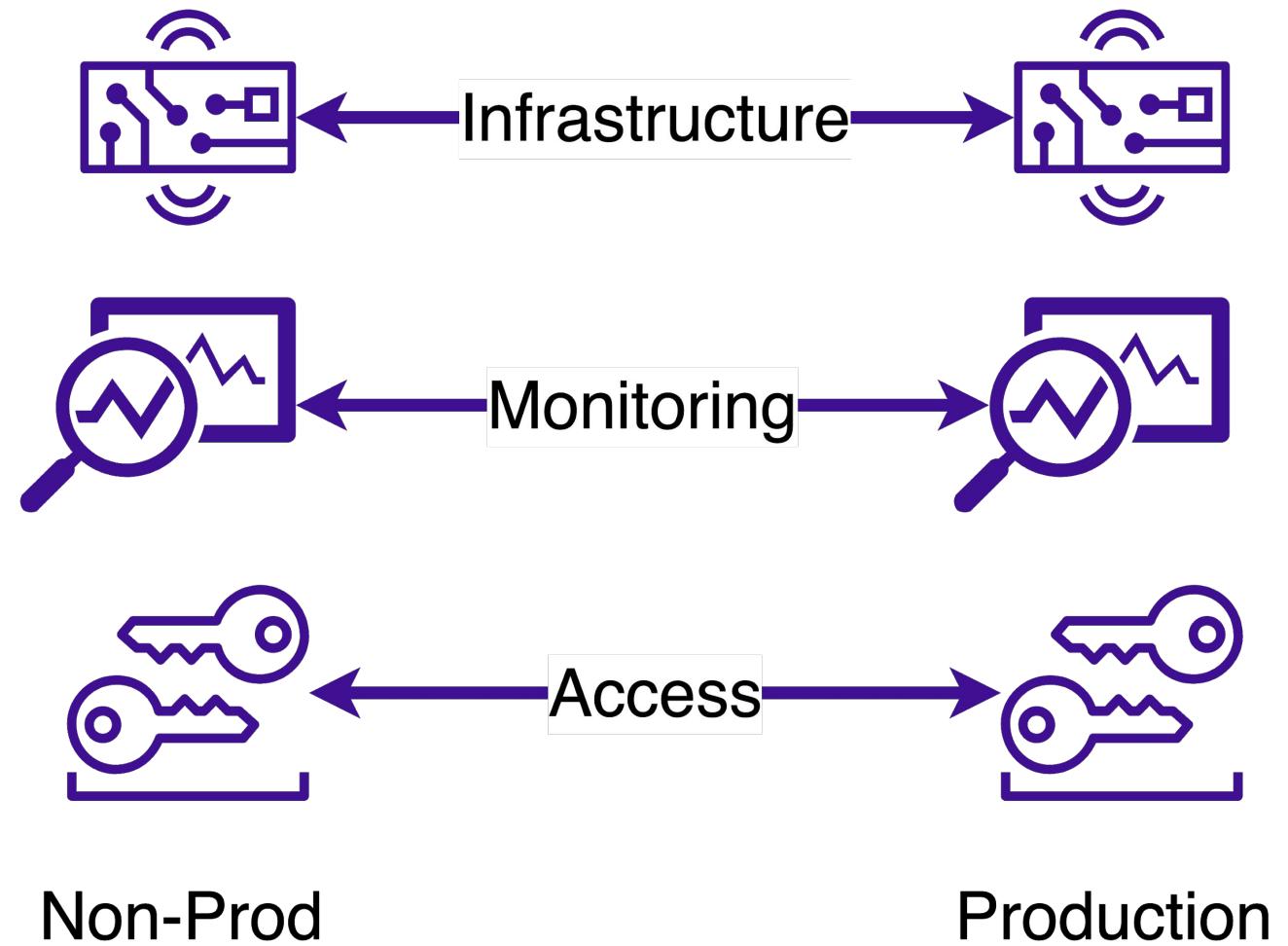


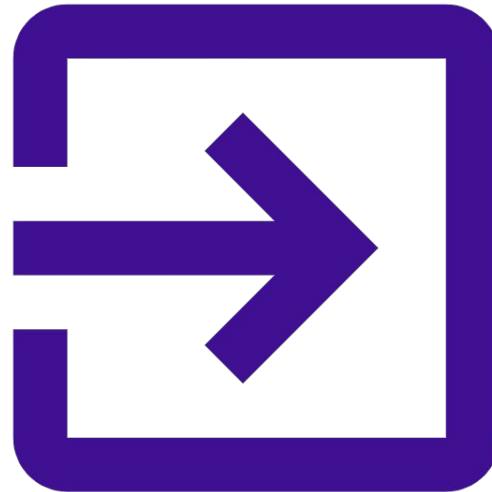
Respond



Review

Anatomy of a Firedrill





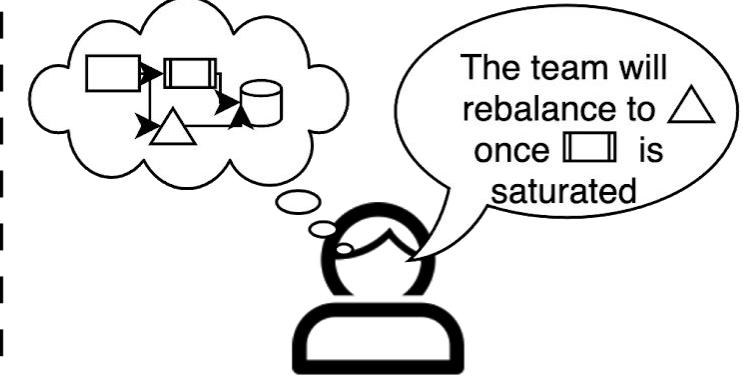
Exit Criteria



Problem Detection
& Triage

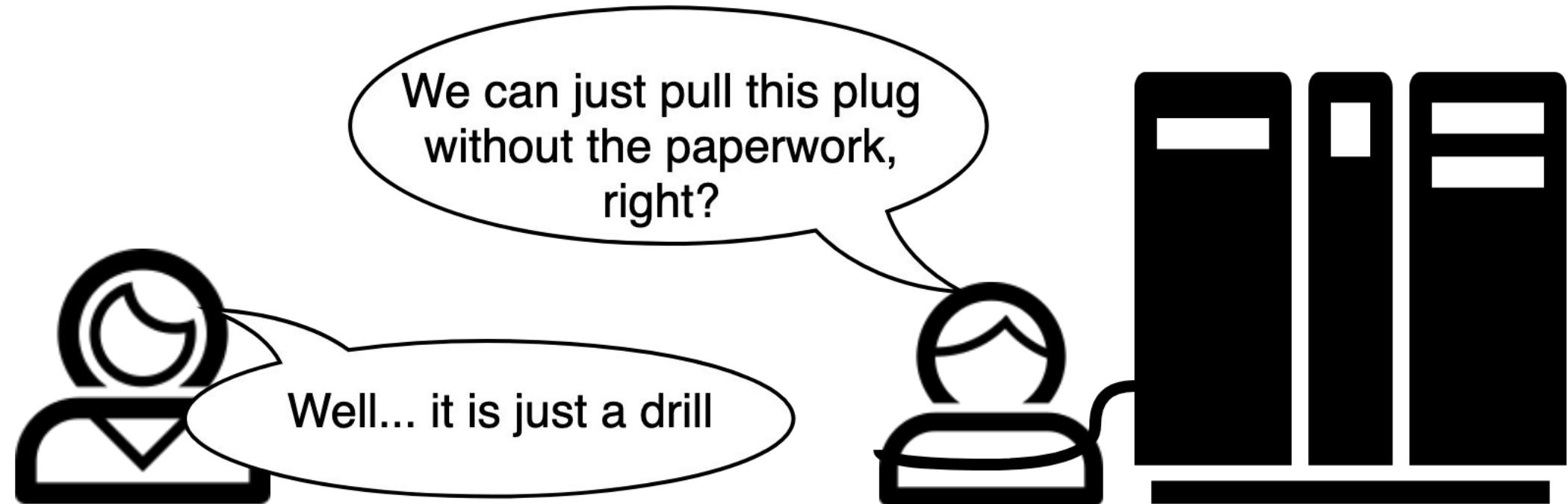


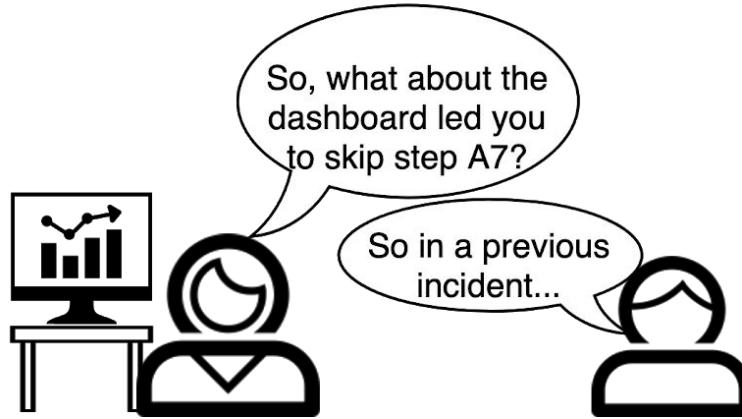
Collaboration & Coordination



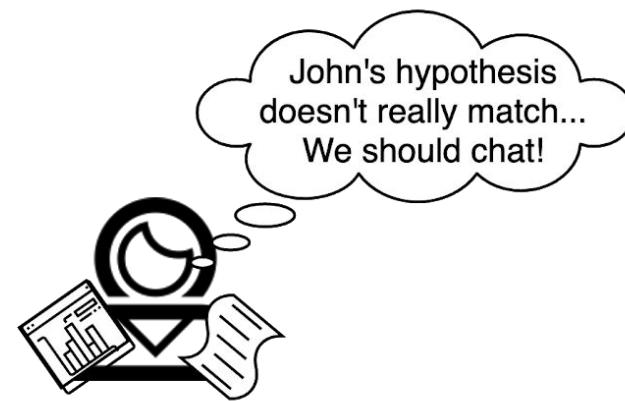
Safing & Resolution
Practices

@tteam Hypotheses can be set for social and technical aspects





Responder interviews



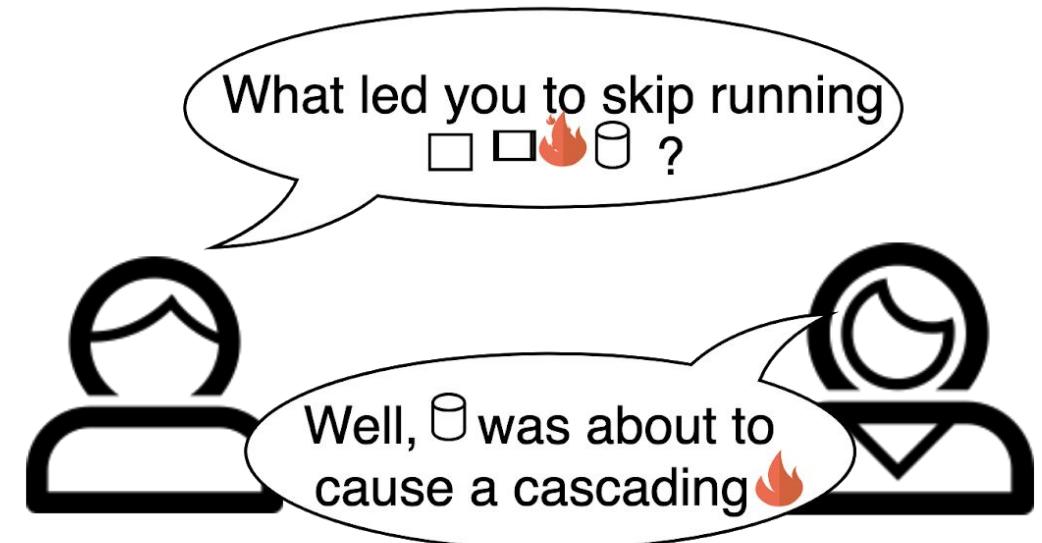
Text
Operational data and
transcription analysis



Group reviews



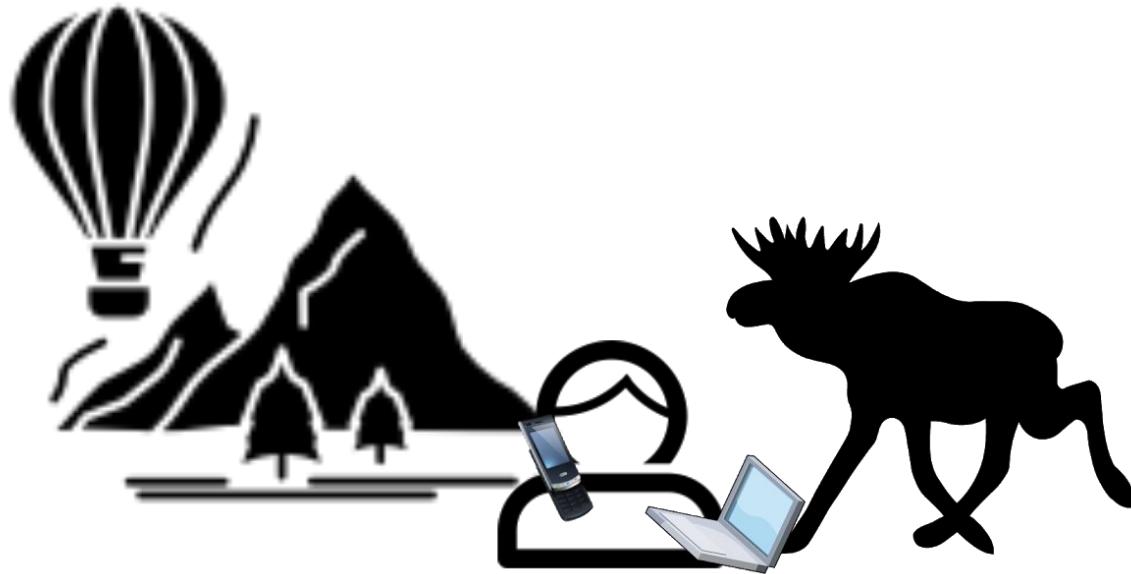
Please don't.



Please do.

Don't over emphasize procedures

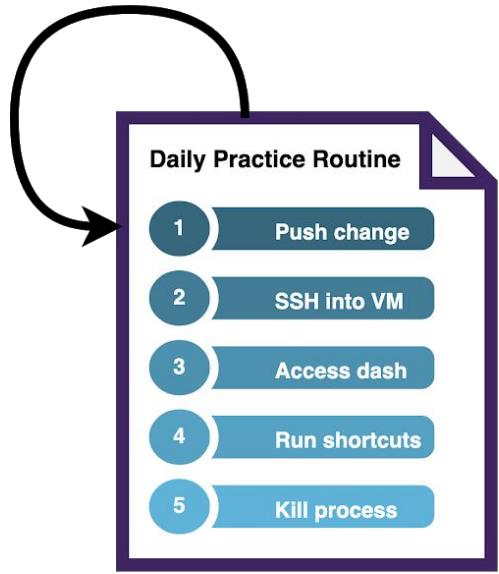
Some additional things to consider...



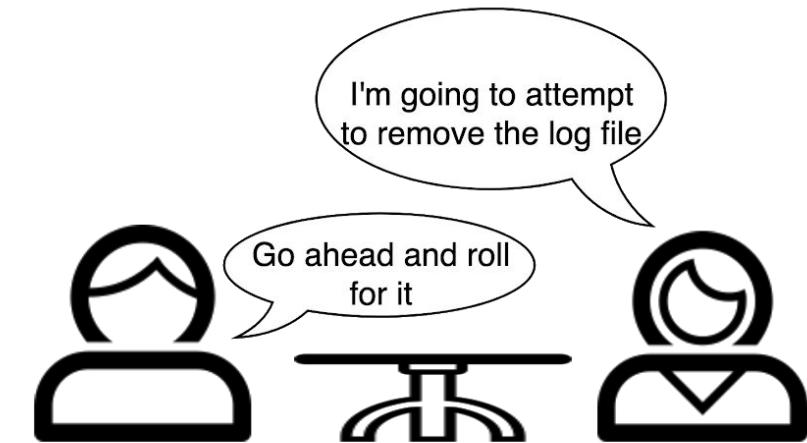
Respond from exotic locations!



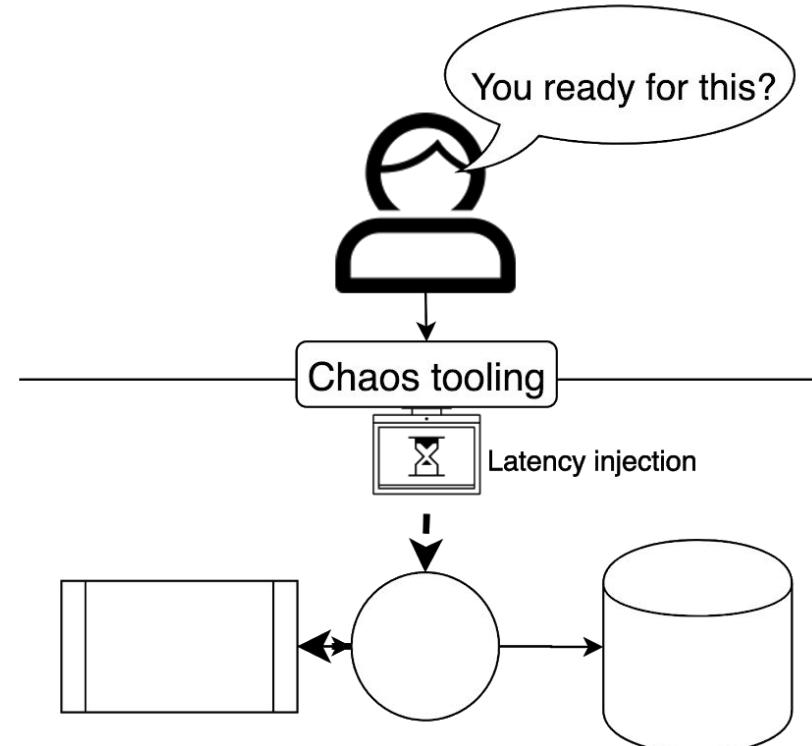
Get pestered with questions!



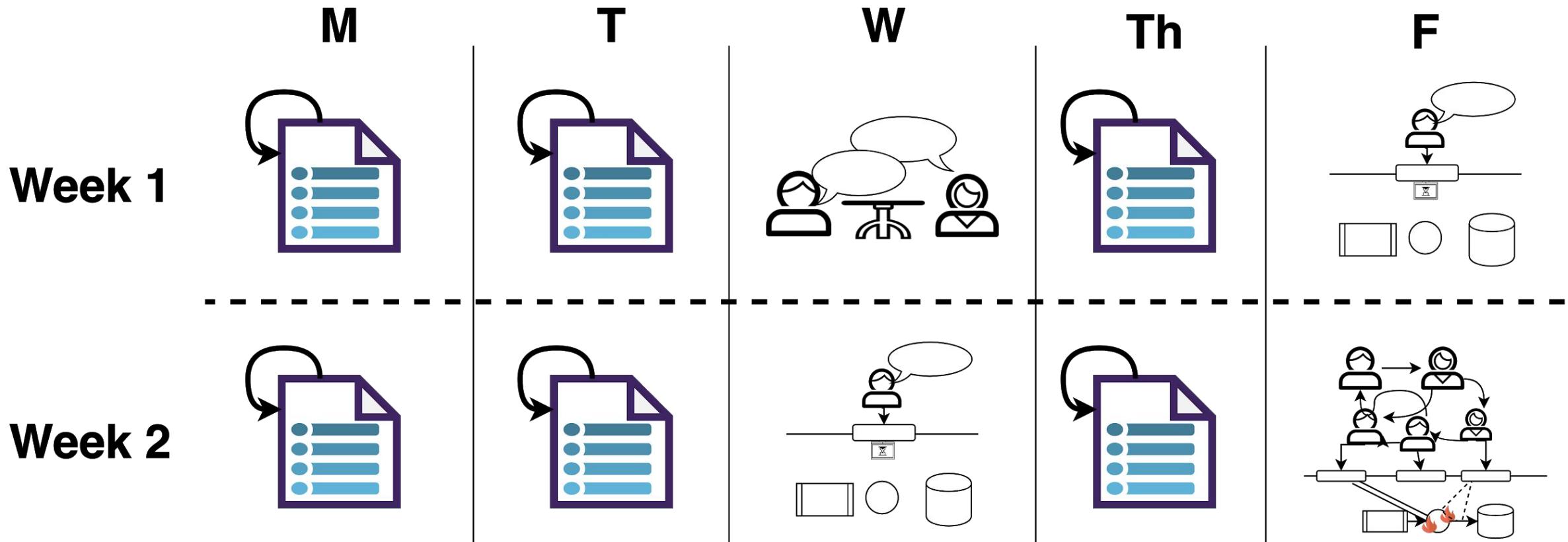
Operational Katas

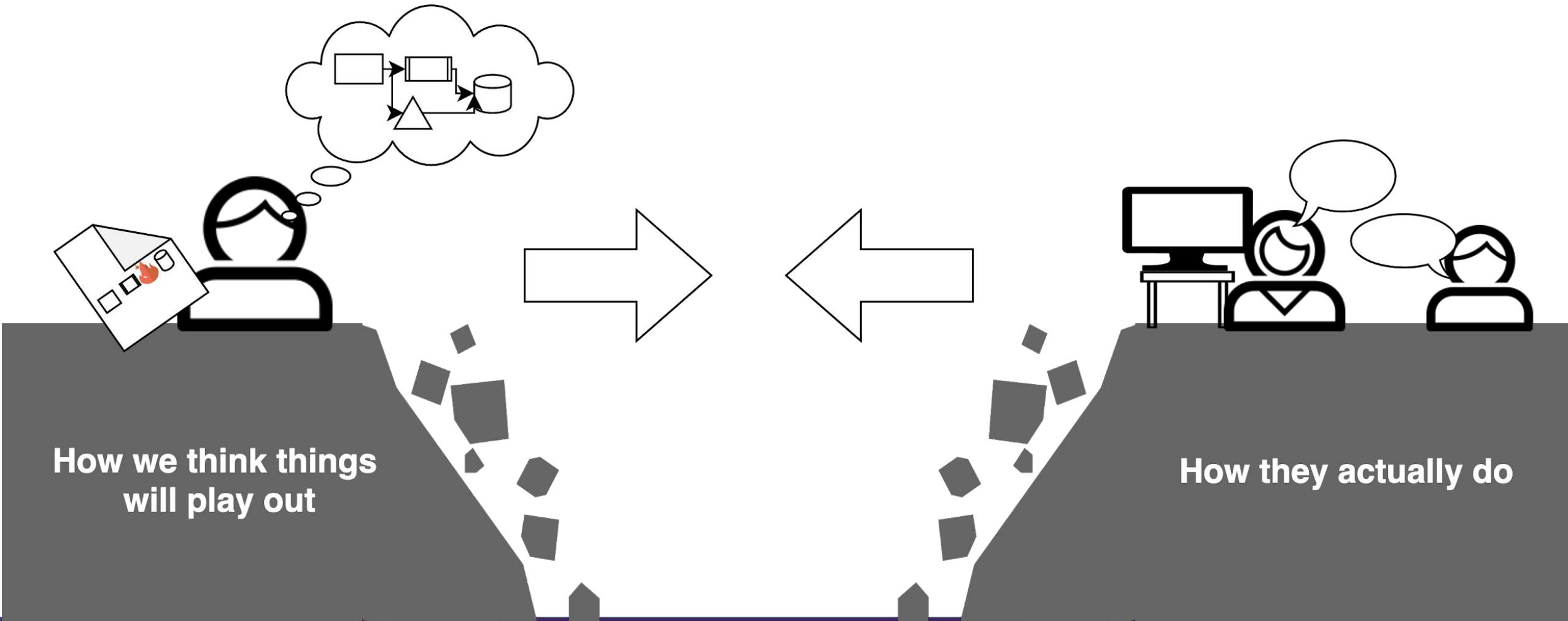


Tabletop Exercises



Chaos Gamedays





Practice != perfect, but it helps close the gap