Why this stuff is hard

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Or: Why we'll never stop having outages

Or: You aren't actually doing it wrong

Our journey together

1. The adaptive universe
2. Complexity forever
3. Local nature of perspective
4. Coordination
5. OK, so what?

I. The adaptive universe and its consequences

Dr. David Woods

1. Resources are finite

2. Change never stops

Finite resources

There's never enough time

There's never enough people

The law of stretched systems

It's really, really hard to build up capacity

Production pressure!

Deliver on those features...

...but don't break anything!

Double bind

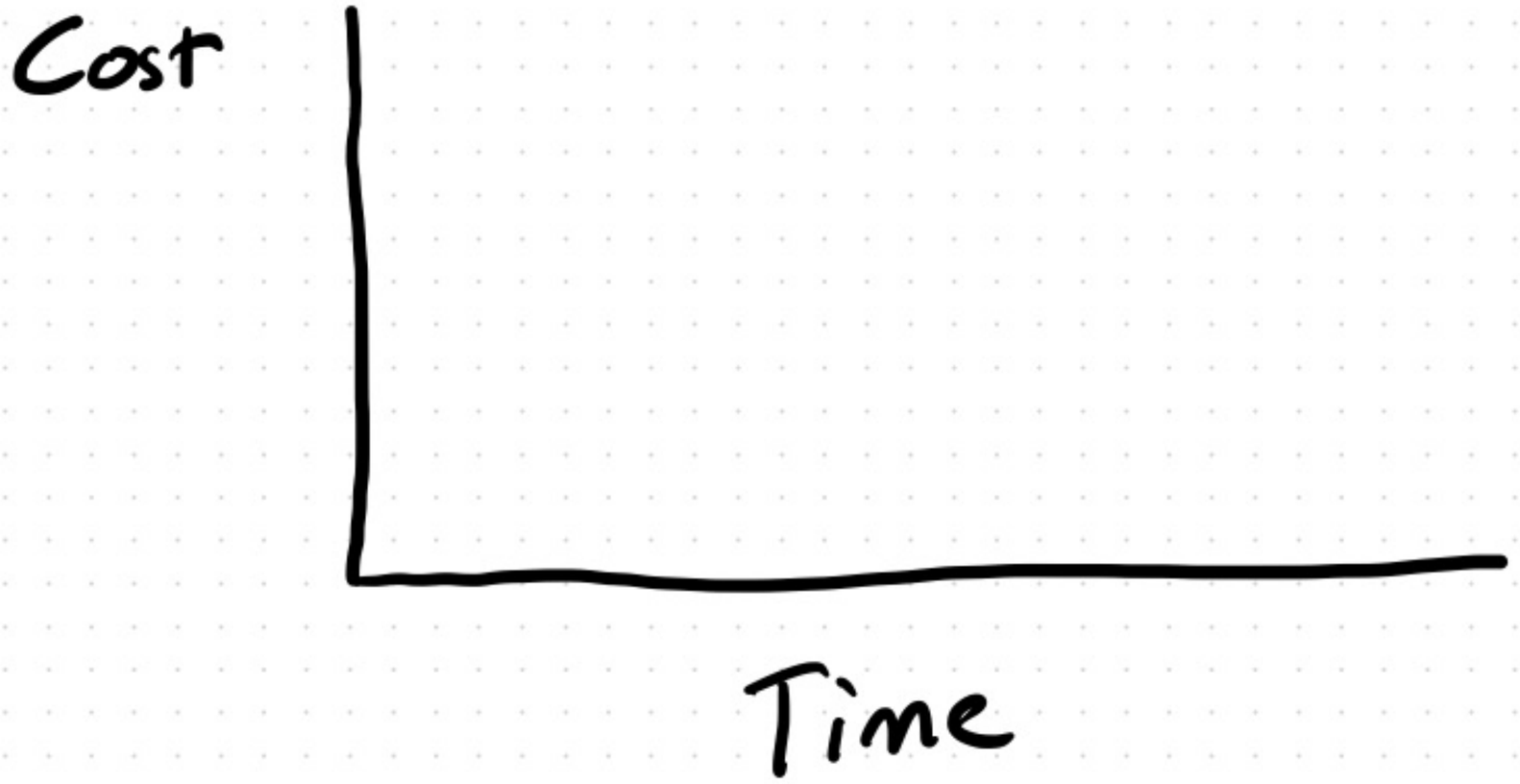
Hard to find time to do reflection

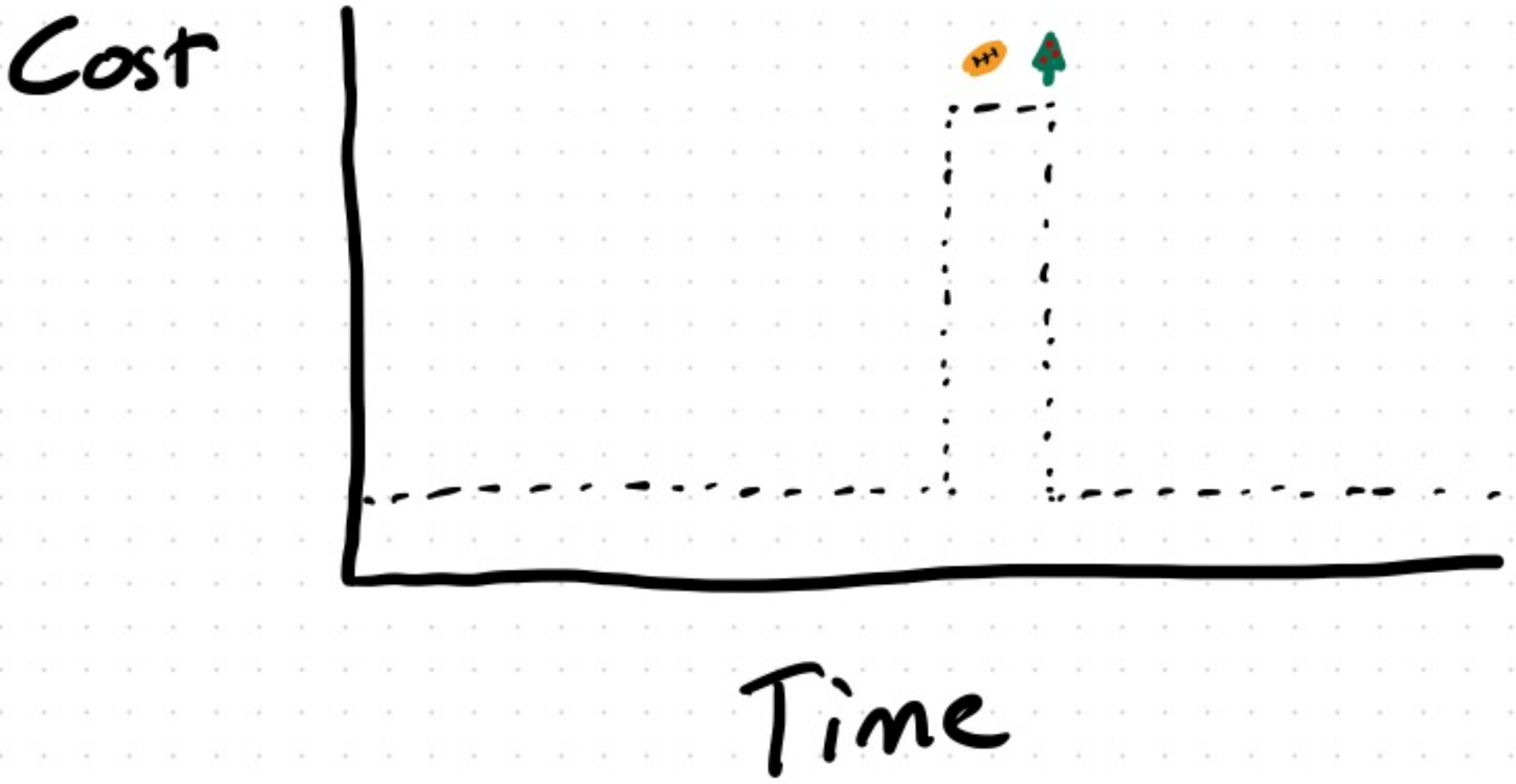
Planning vs reviewing

Unceasing change

Keep the system up in the face of change

Code freezes


Cost
Time


Cost
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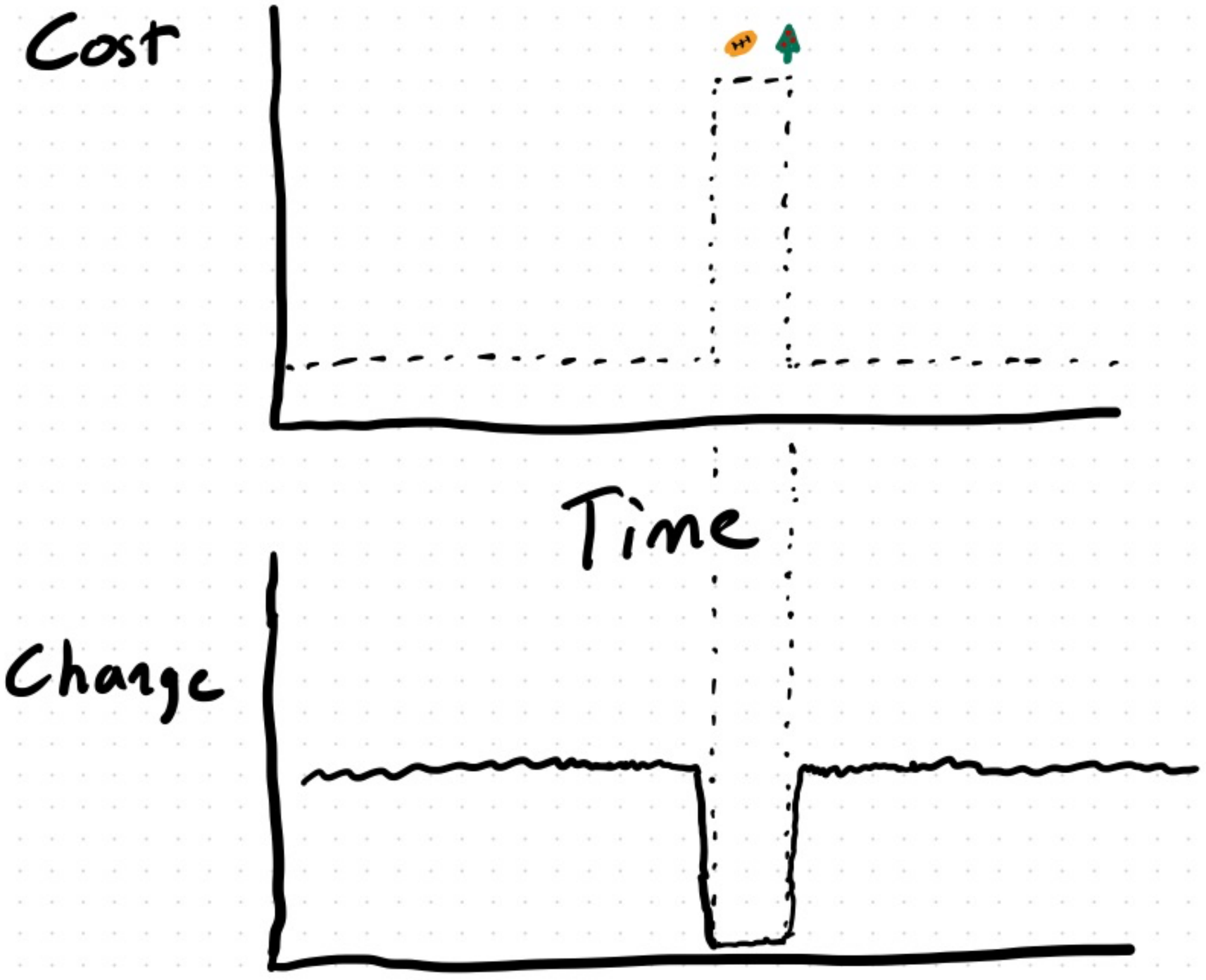
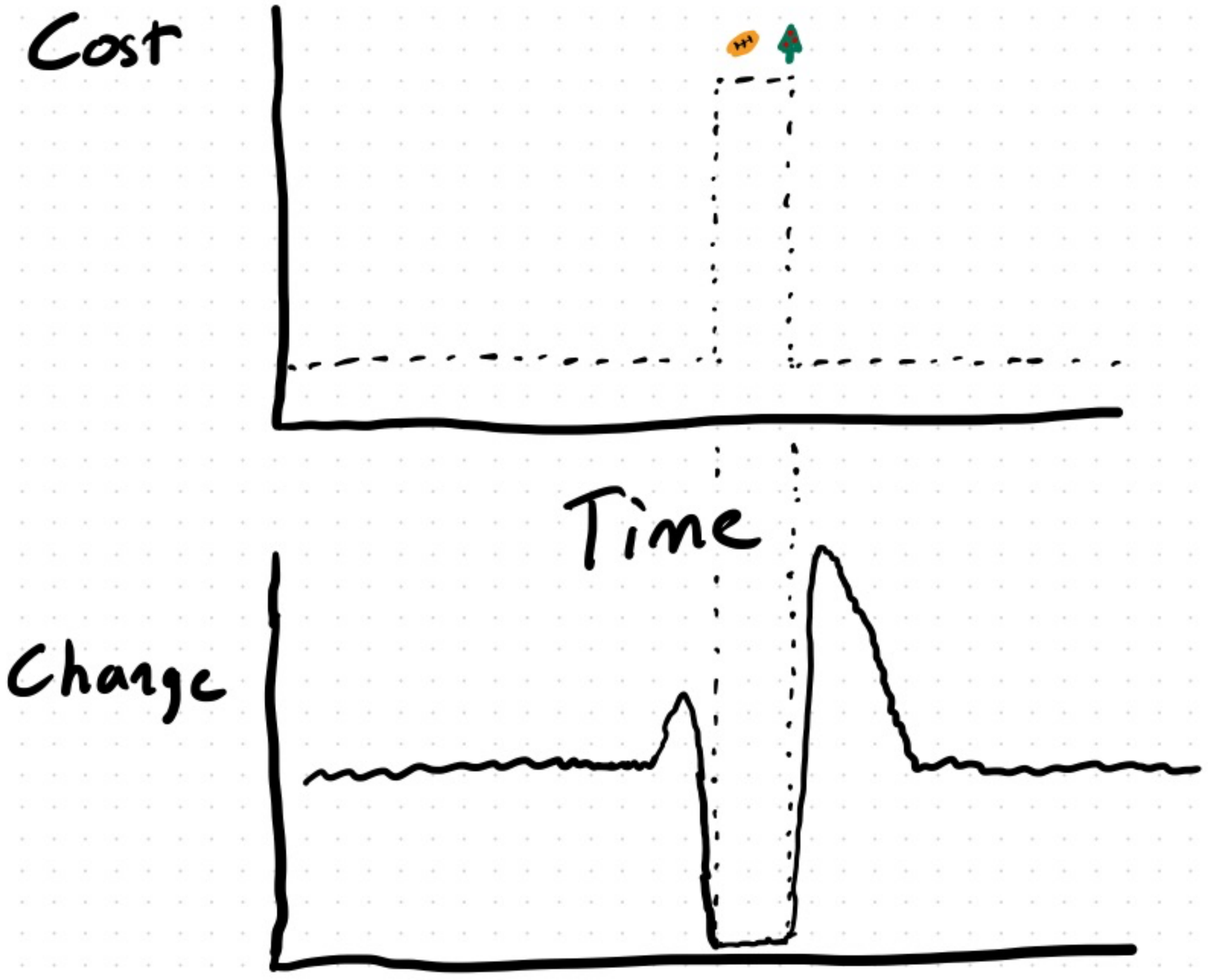

Cost
Time
Charge


Cost
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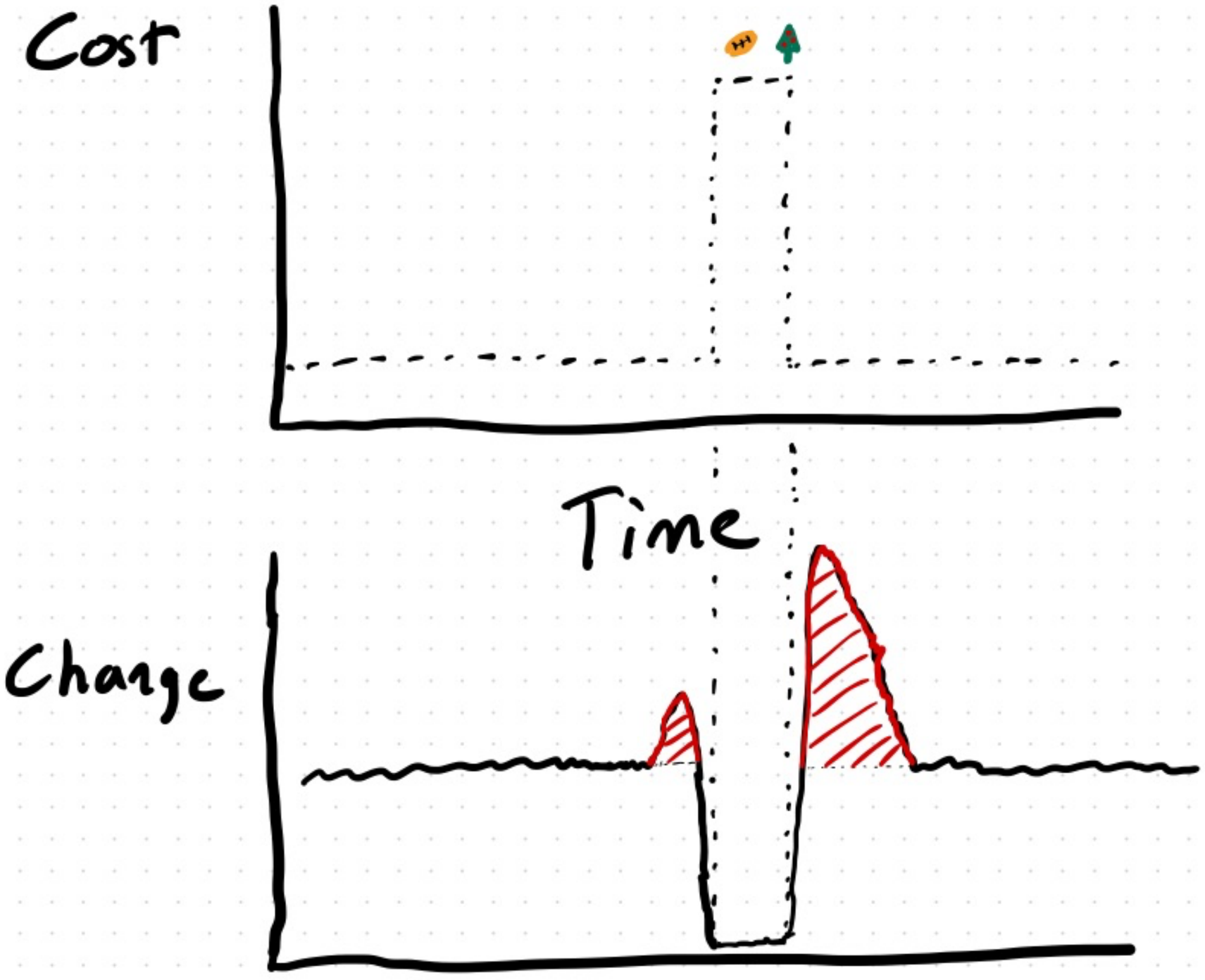

Cost
Time
Charge

"on a hunch decided to look at..."

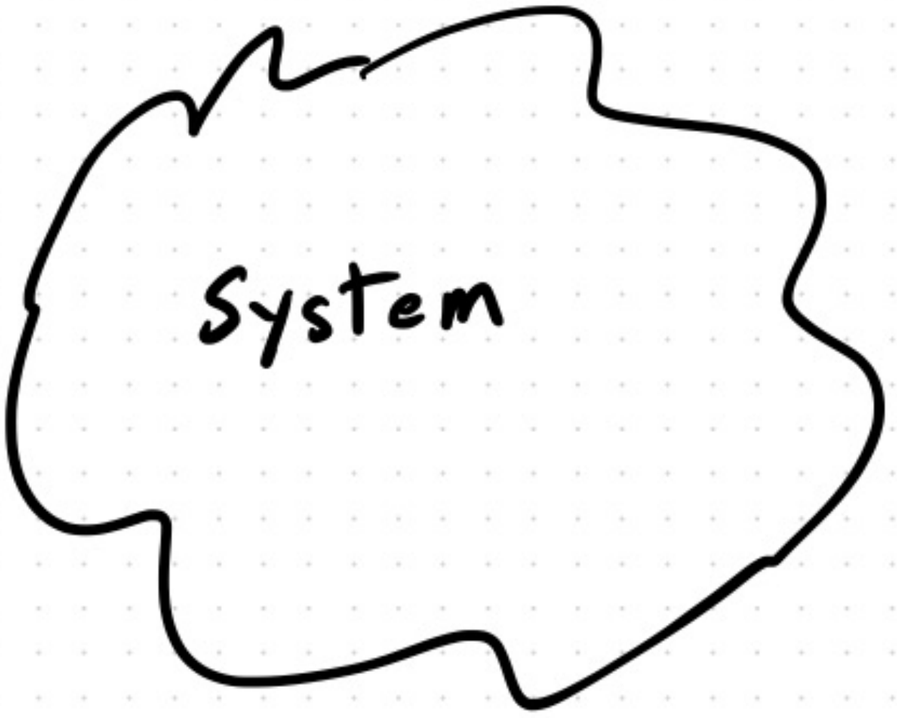
~ 4:00 PM PST

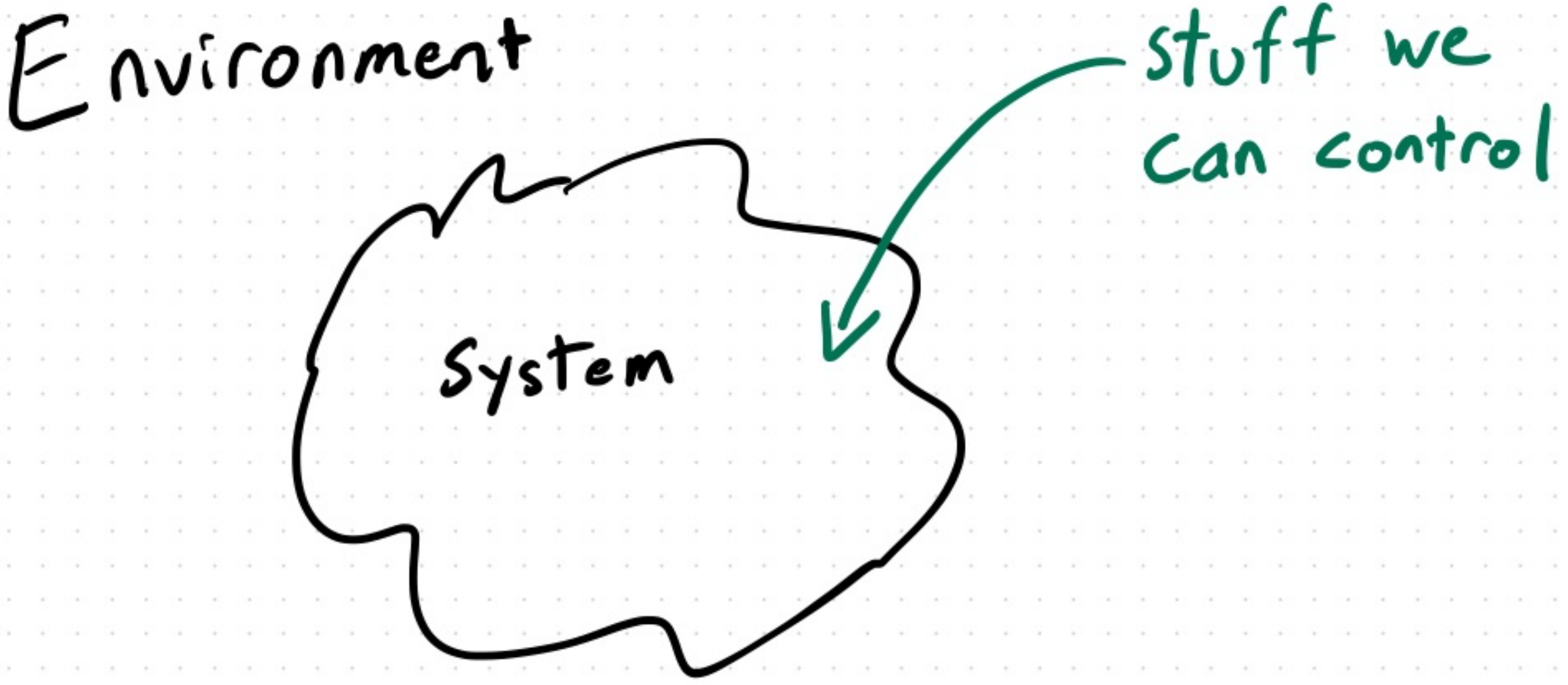
"What changed?"

The world changes around us

We can't stop change

Environment

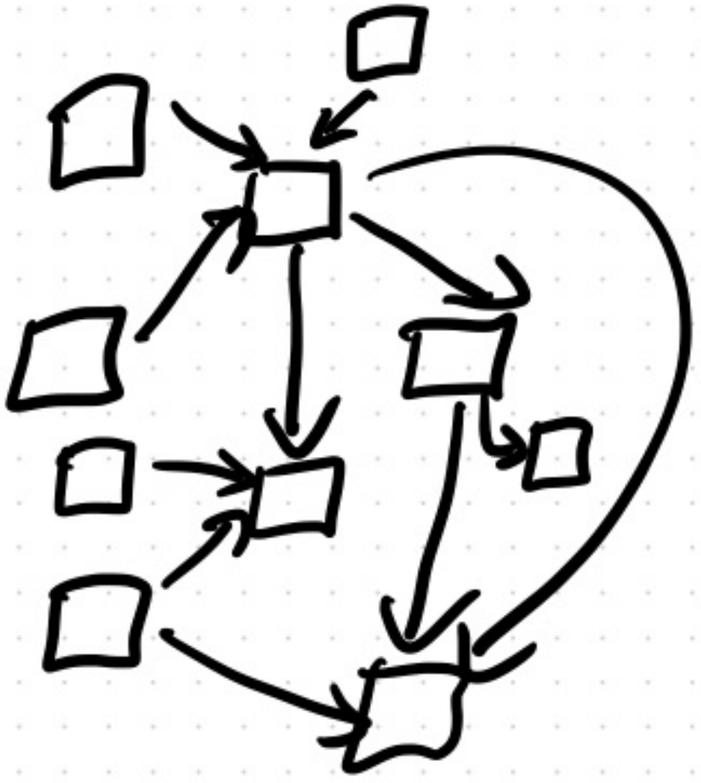



Environment
stuff we can control
System

If you think the future is scary, try the past!

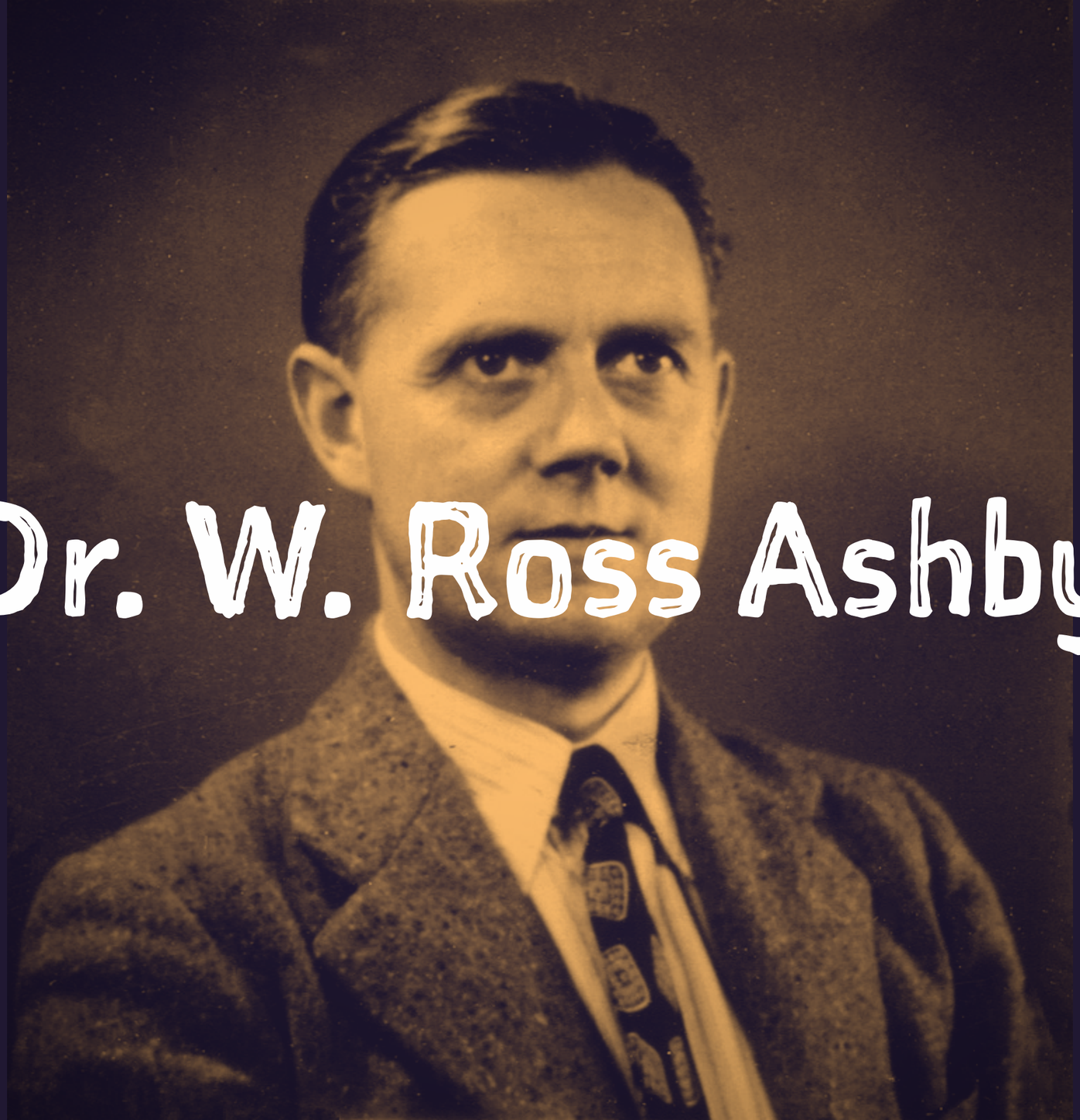
We are prisoners of history

II. The inevitability of complexity



We eliminate failure modes by adding complexity

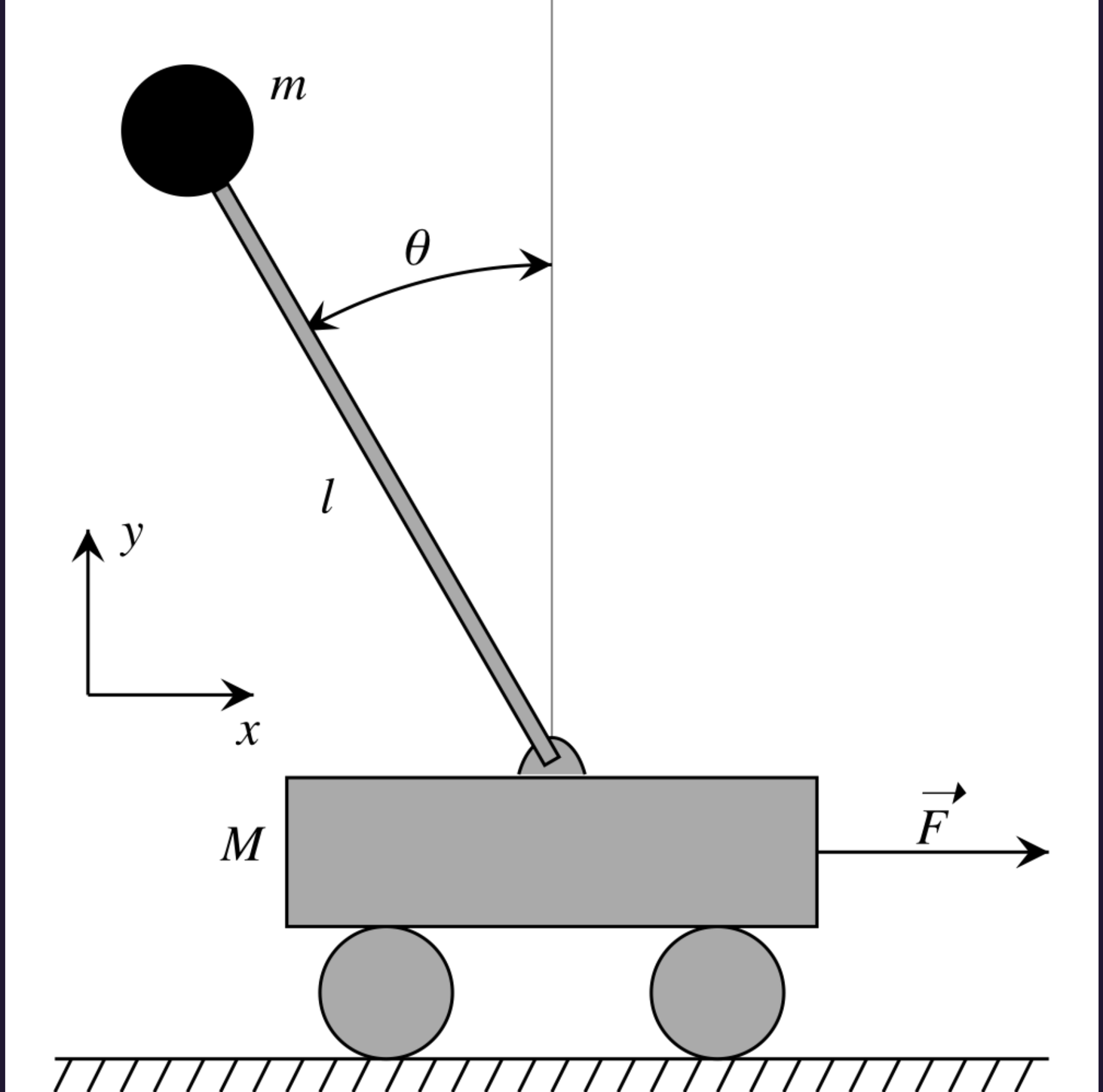
We're in the control systems business



Dr. W. Ross Ashby

Ashby's Law of Requisite Variety

"Only variety can destroy variety"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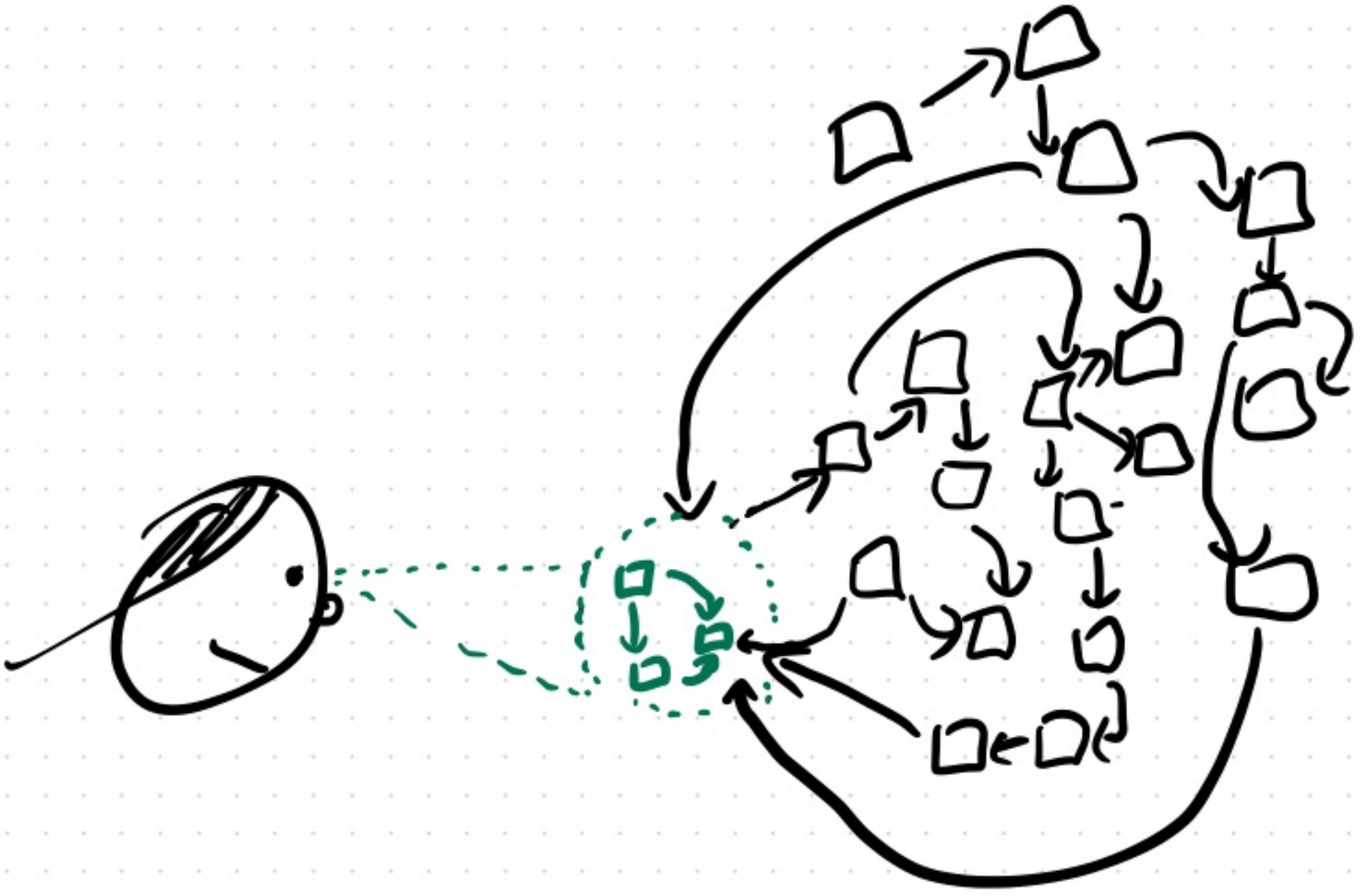
Better control means a more complex model

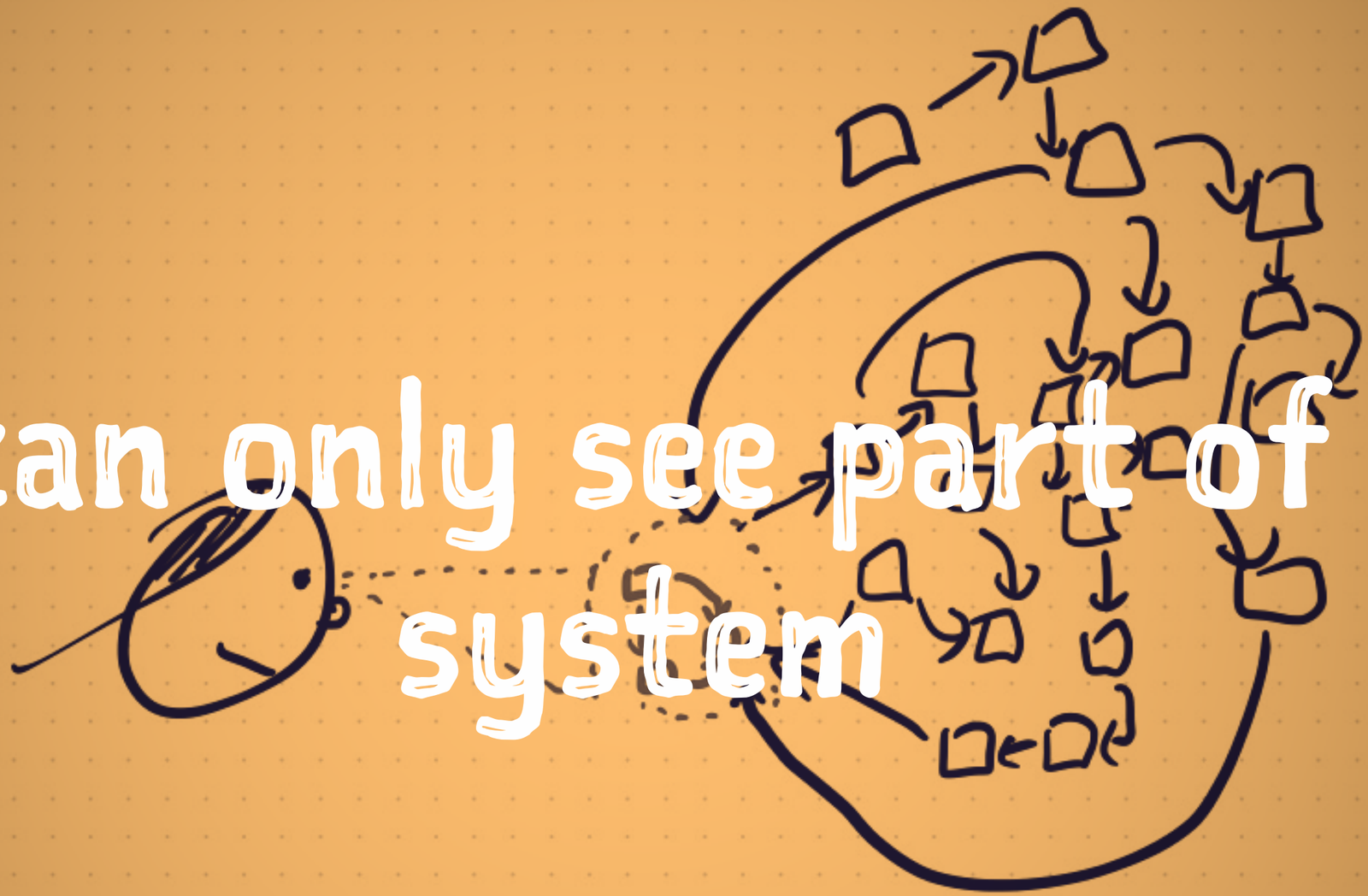
Q: But, what about reducing accidental complexity?

A: Finite resources

III. The local nature of perspective



We can only see part of the system



Our understanding is always partial

Can't see the interactions by looking at the components

"Dark debt"

We have local rationality

Something somebody didn't know

Getting the info into the heads of the people who need it

The moment an action is performed, it ceases to exist.

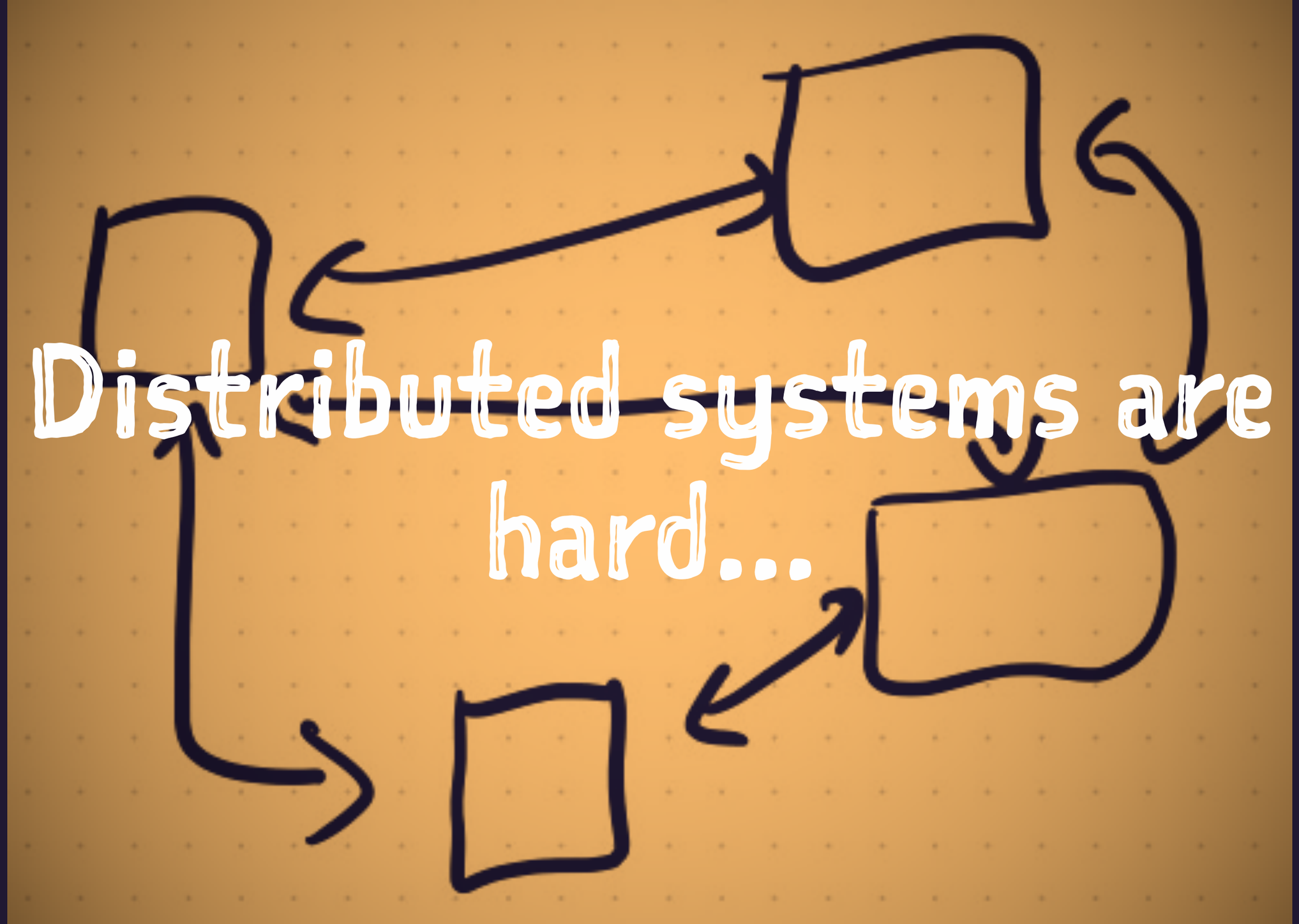
★

Dr. Karl Weick, Sensemaking in Organizations

Work is invisible

It's hard to watch experts in action

IV. Communication and coordination


Distributed systems are
hard...

...human edition

Incident response is a team sport

Communication is hard

Especially in a remote/
hybrid world

"Anyway... we're dead in the water until this figures itself out."

Dr. Laura Maguire

V. OK, so what?

1. We can't escape the adaptive universe

2. We can't reduce complexity in the long run

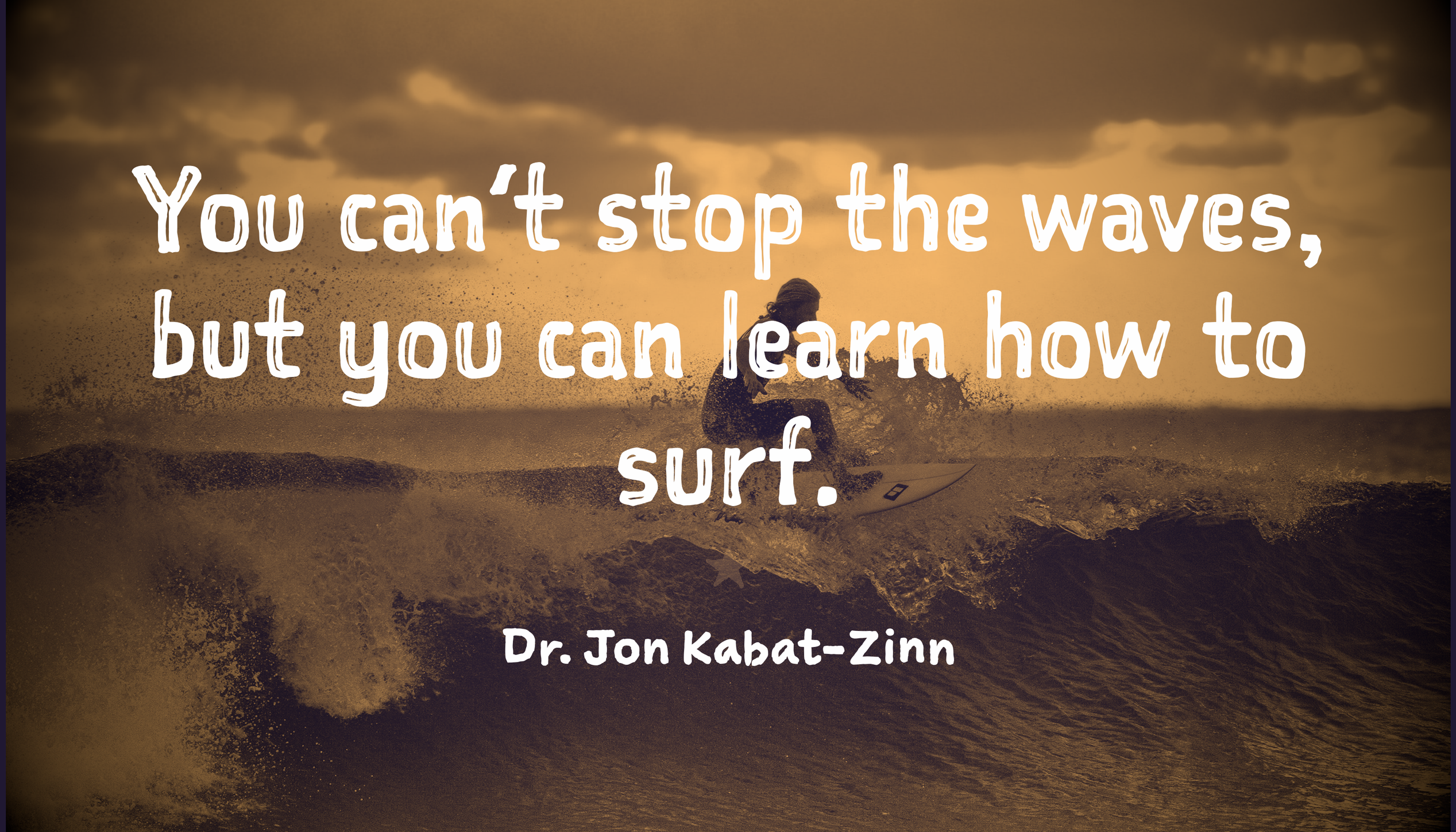
3. We can't step outside our own local perspective

4. We can't do it alone

These are all constraints

We can get better at navigating them

That means treating skills as first class


You can't stop the waves, but you can learn how to surf.
Dr. Jon Kabat-Zinn

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