ARCHITECTURE != KUBERNETES



Diana Montalion
@dianamontalion

goto;

goto;

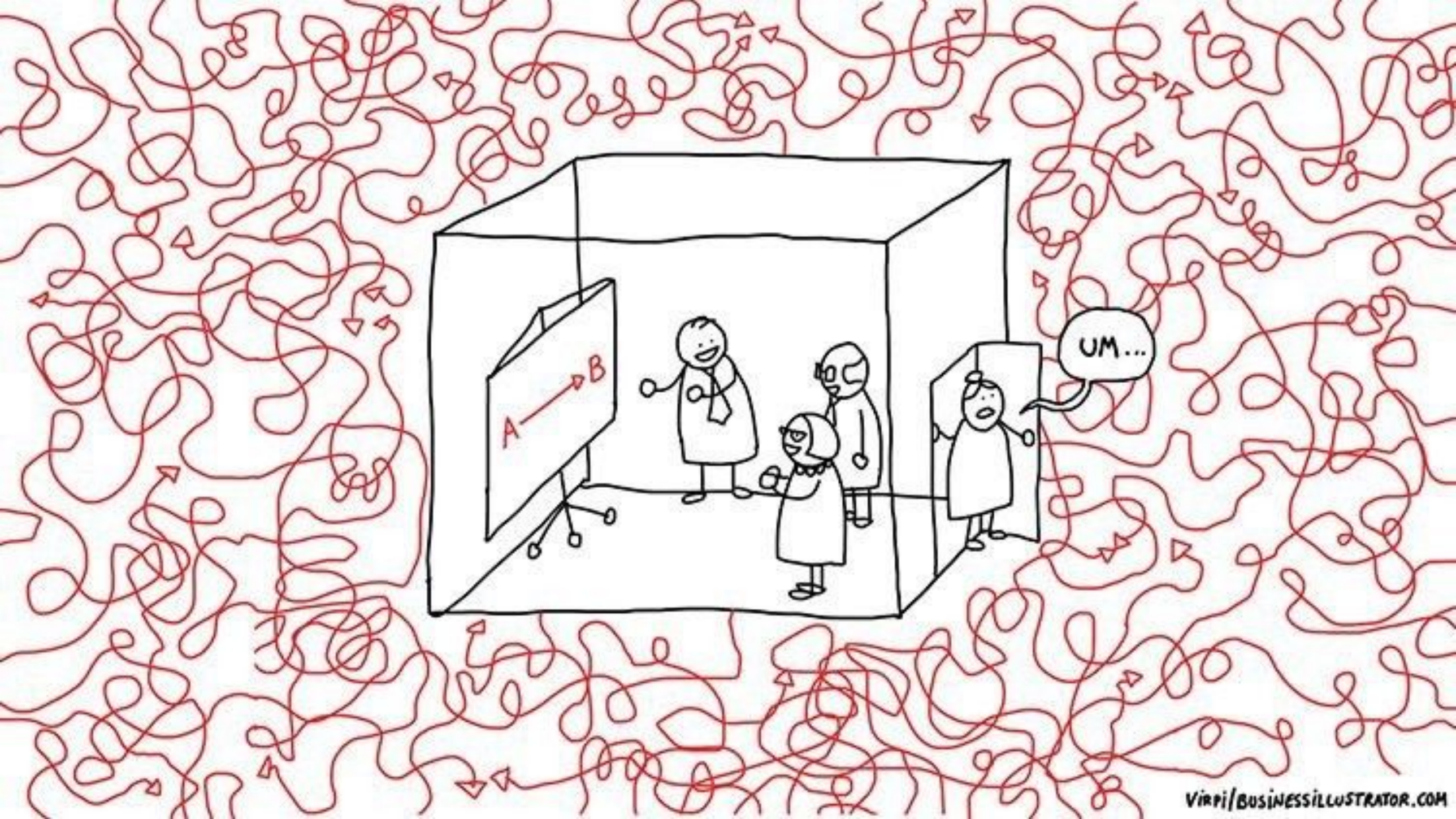
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DOGGOS


A
B
UM...
VIRPI/BUSINESSILLUSTRATOR.COM





OH, YOU’RE AN ARCHITECT. I WANT TO BE AN ARCHITECT TOO! BUT I DON’T KNOW ENOUGH ABOUT KUBERNETES YET.

“

ORGANIZATIONS WHO DESIGN SYSTEMS, ARE CONSTRAINED TO PRODUCE DESIGNS WHICH ARE COPIES OF THE COMMUNICATION STRUCTURES OF THESE ORGANIZATIONS

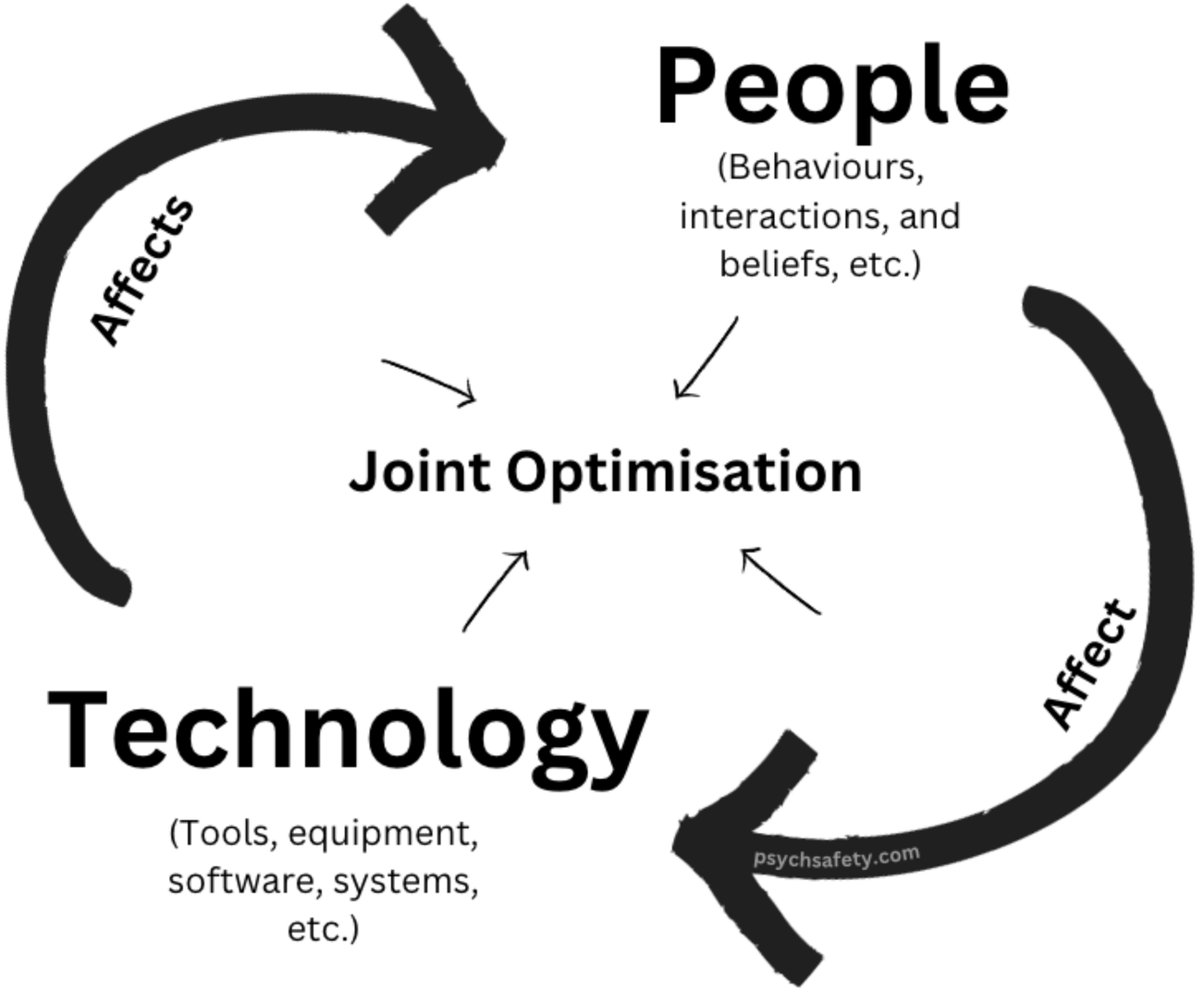
Conway’s Law



SOFTWARE SYSTEMS ARE **SOCIOTECHNICAL**

Sociotechnical Theory

psychsafety.com




Scaled
Agile
DevOps
Maturity
Framework
"Enterprise Transformation
without the risk of culture change"
SADMF.com

Five practices of a

MODERN ARCHITECT

1

Expand your

THINKING TOOLSET

RATIONAL,
TOP DOWN,
PROCEDURAL,
PREDICTABLE,
CONCERNED
WITH CONTROL




REDUCTIONISM

“

SYSTEMS CAN'T BE CONTROLLED, BUT THEY CAN BE DESIGNED AND REDESIGNED.

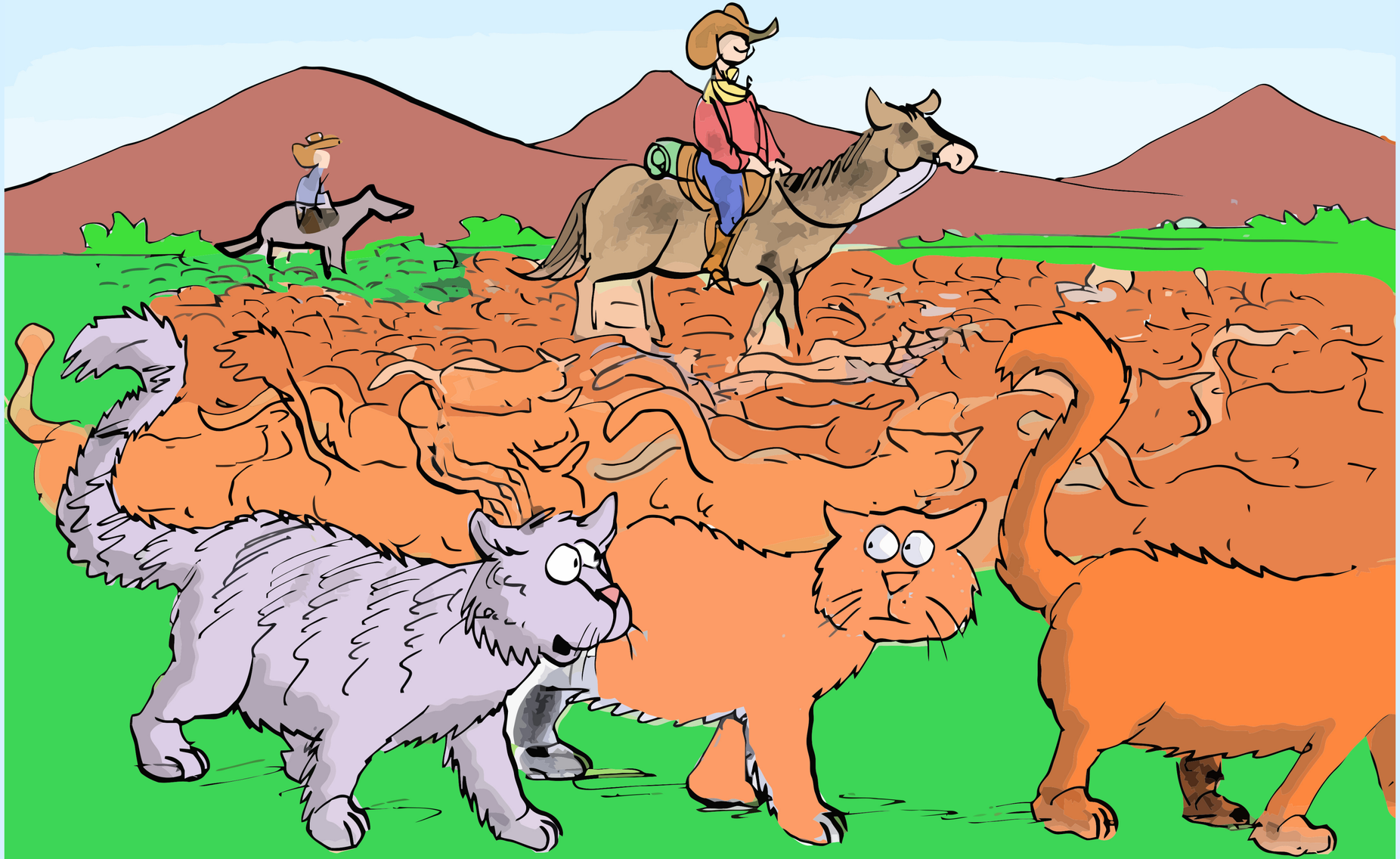
Donella Meadows, Thinking in Systems



AIM TO HAVE **IMPACT** RATHER THAN CONTROL

“

ARCHITECTING SYSTEMS REQUIRES SYSTEMS THINKING



“I tried to organize a stampede, but everybody has their own agenda.”

TOOLS OF A SYSTEM THINKER



DISCONNECTION



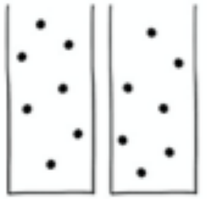
INTERCONNECTEDNESS



LINEAR



CIRCULAR



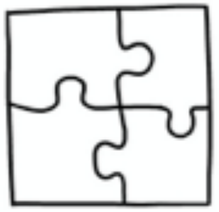
SILOS



EMERGENCE



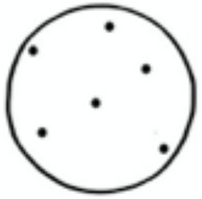
PARTS



WHOLES



ANALYSIS



SYNTHESIS



ISOLATION



RELATIONSHIPS

Leyla Acaroglu - https://disruptdesign.co/

DISRUPT DESIGN



DISCERN WHEN TO APPLY REDUCTIONISTIC, ANALYTICAL THINKING (LINEAR) AND WHEN TO TAKE A SYSTEMIC PERSPECTIVE (NONLINEAR)


Architecture is a
PRACTICE

2

Practice

METACOGNITION

“

PEOPLE WHO DESIGN SYSTEMS WILL PRODUCE COPIES OF THEIR THINKING AND COMMUNICATION PATTERNS

~~Conway's~~ Diana's Law

WE BLAME THE WRONG THINGS





RECOGNIZE REACTIONS AND SHIFT TOWARD RESPONDING

“

BUGS IN OUR THINKING PRODUCE BUGS IN OUR ARCHITECTURES

Ad hominem

Hollis recommends offloading complexity by using cloud-native tools.

Briar responds: "Hollis hates open source."



Anecdotal

Hollis recommends building a new capability using microservices, with detailed reasons supporting it.

Briar says: "We tried microservices and it was a disaster."

Burden of proof

Hollis shares a new data model that suits the evolving circumstances.

Briar says: “That looks like a graph. Graphs don’t scale.”

Architecture is not

OPINION GIVING



3

Be excellent at

SYSTEMIC REASONING



REASON SYSTEMATICALLY IN SUPPORT OF AN IDEA, ACTION OR THEORY

BEST POSSIBLE CONCLUSION, UNDER THE CIRCUMSTANCES, WHEN CONDITIONS ARE UNCERTAIN*

* conditions are always uncertain



ACCEPT **UNCERTAINTY** AS NATURAL, WELCOME, AND INEVITABLE

SYNTHESIZING KNOWLEDGE, EXPERIENCE AND SOUND JUDGEMENT INTO RECOMMENDATIONS BASED ON VALID REASONS.

RECOMMENDATIONS INCLUDE ...

- Your idea, action or theory
- Reliable, relevant, sound and cogent reasons that justify your idea, action or theory
- A clear description of why this idea is highly impactful and matters today
- Other people’s relevant point of view



STRUCTURE **DISCOVERY,**
LEARNING AND EXPLORATION
WITH OTHERS PROACTIVELY



PRIORITIZE **KNOWLEDGE FLOW** OVER KNOWLEDGE STOCK

“

THOSE COMPANIES THAT DON’T ADAPT TO UNDERSTANDING **KNOWLEDGE AS A FORCE OF PRODUCTION** ... WILL SLOWLY DIE, AND WILL NEVER KNOW WHAT KILLED THEM.

Larry Prusak

4

Focus on

RELATIONSHIPS

“

A SYSTEM IS NEVER THE SUM OF ITS PARTS — ITS THE PRODUCT OF THEIR INTERACTION.

Russell Ackoff



UNDERSTAND HOW **RELATIONSHIPS PRODUCE EFFECT**

“

“YOU THINK THAT BECAUSE YOU UNDERSTAND “ONE” THAT YOU MUST THEREFORE UNDERSTAND “TWO” BECAUSE ONE AND ONE MAKE TWO. BUT YOU FORGET THAT YOU MUST ALSO UNDERSTAND “AND.”

Donella Meadows, Thinking in Systems

“

… CONTAINS MANY GOOD BUT INDEPENDENT AND UNCOORDINATED IDEAS

— Fred Brooks: The Mythical Man Month



CONCEPTUAL INTEGRITY IS THE MOST IMPORTANT CONSIDERATION IN SYSTEMS DESIGN

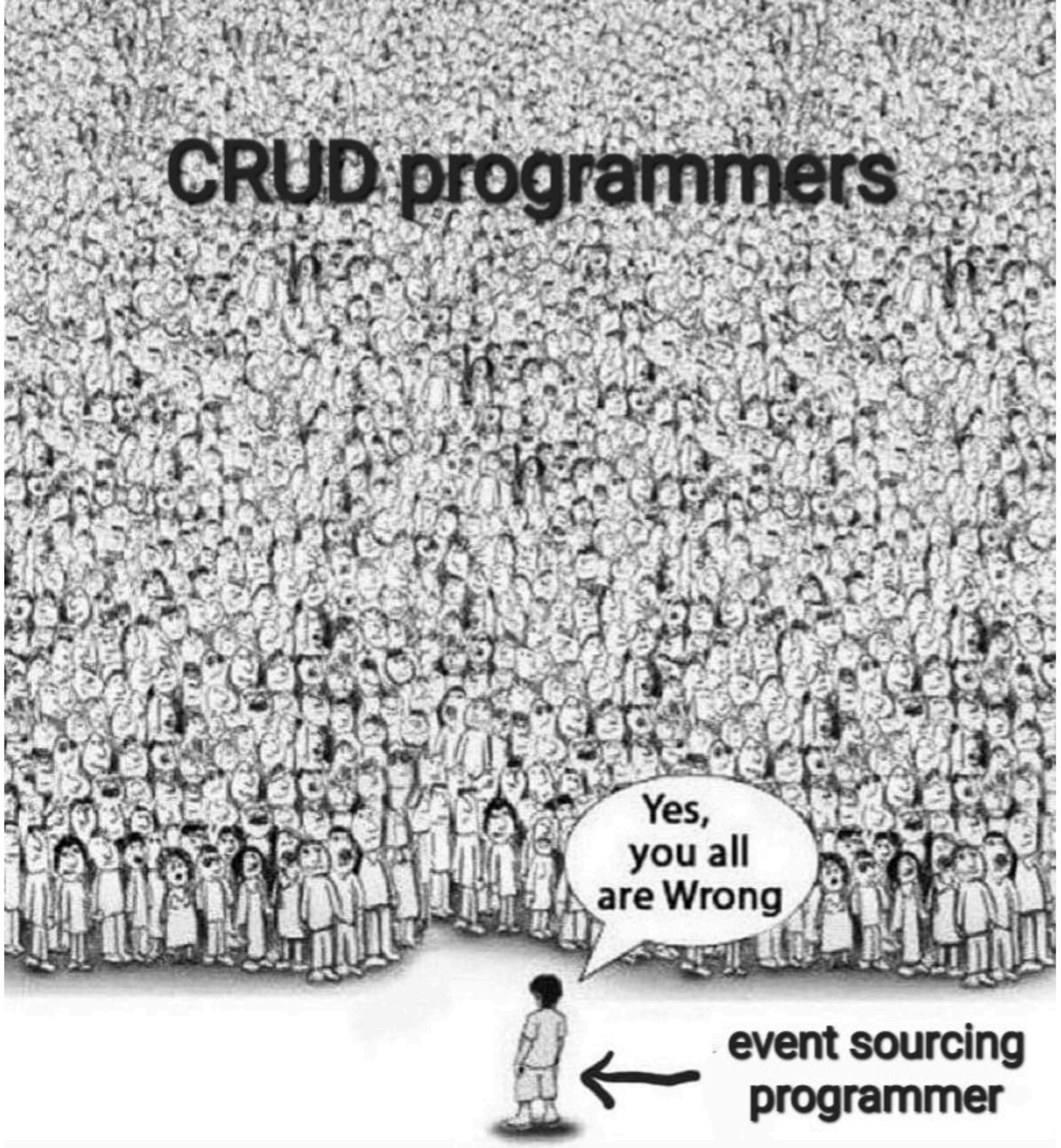
— Fred Brooks: The Mythical Man Month

5

Shift the

PARADIGM

... when necessary


CRUD programmers
Yes,
you all
are Wrong
event sourcing
programmer

“

THE TRUE SYSTEM, THE REAL SYSTEM, IS OUR CONSTRUCTION OF SYSTEMATIC THOUGHT ITSELF, RATIONALITY ITSELF

Robert M Pirsig: Zen and the Art of Motorcycle Maintenance

“

**IF A FACTORY IS TORN DOWN
BUT THE RATIONALITY WHICH PRODUCED IT IS
LEFT STANDING,
THEN THAT RATIONALITY WILL SIMPLY
PRODUCE ANOTHER FACTORY.**

Robert M Pirsig: Zen and the Art of Motorcycle Maintenance

ICEBERG MODEL SYSTEMS THINKING



WHAT IS HAPPENING?

EVENTS

VISIBLE

WHAT TRENDS ARE THERE OVER TIME?

PATTERNS & TRENDS

HOW ARE THE PATTERNS RELATED?

STRUCTURE

WHAT VALUES + BELIEFS SHAPE THE SYSTEM?

MENTAL MODELS

INVISIBLE

“

SYSTEMS CAN'T BE CONTROLLED, BUT THEY CAN BE DESIGNED AND REDESIGNED.

Donella Meadows, Thinking in Systems

6

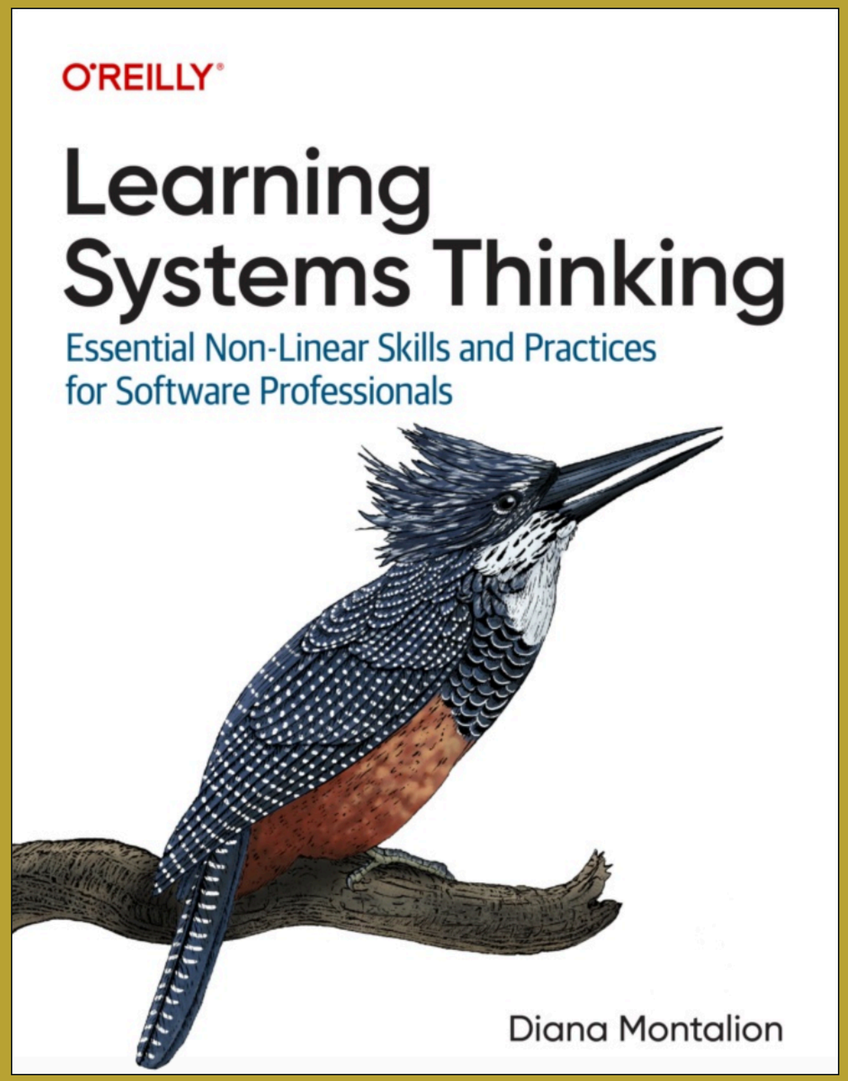
Be really good at

BUILDING TECH

IMAGINE WHAT YOU CAN ACCOMPLISH WITH THESE QUALITIES PLUS YOUR TECHNOLOGY EXPERTISE

1. **Expand your thinking toolset**
2. **Practice metacognition**
3. **Be excellent at systemic reasoning**
4. **Focus on relationships**
5. **Shift the paradigm (when necessary)**

And be great at building tech



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