Monday 17 May 2021

an introduction to complex challenges

Session 1/2/3

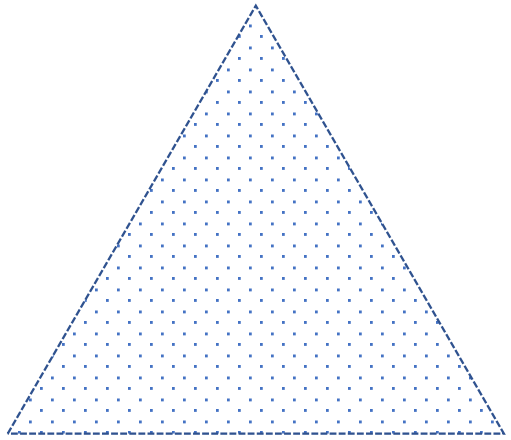
what is complexity?

what is complexity?

it’s a characteristic of a system

three characteristics of complexity

emergent

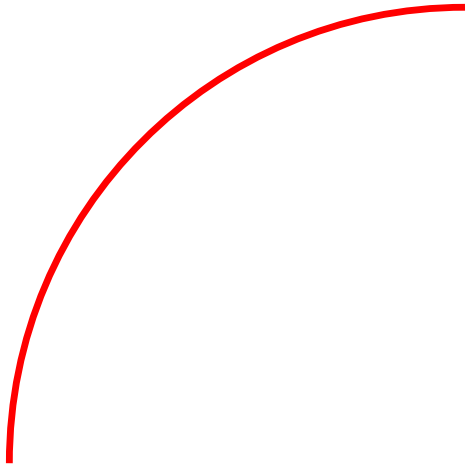


adaptation **information**

Source: Complexity: A Guided Tour – Melanie Mitchell

“pigeon” vs “rocket”

vs



“complex” vs “non-complex”

this is our training

“non-complex”

aka

“technocratic”

vs

“complex”

but we live here

these are two different paradigms for seeing the world

why do the paradigms we believe in matter?

axiom 1

paradigms are built from practices

Source: The Structure of Scientific Revolutions – Thomas Kuhn

axiom 1

paradigms are built from practices ;

practices are built from tools, processes, spaces, ingredients, and customs

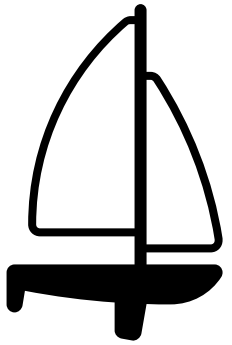
axiom 2

paradigms are incommensurable

you cannot “practice” two contradictory paradigms at the same time ie. the world is both flat and a sphere

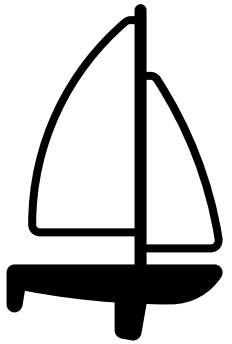
Source: The Structure of Scientific Revolutions – Thomas Kuhn

how do I sail a boat?



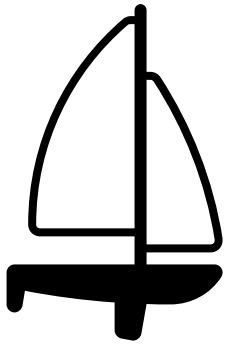
how do I sail a boat?

if I believe the world is flat?



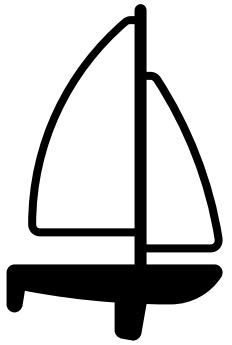
how do I sail a boat?

if I believe the world is a sphere?

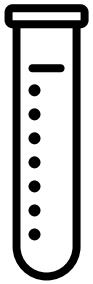


how do I sail a boat?

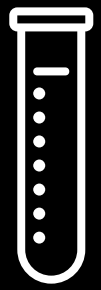
your practice is different depending on the paradigm you believe in



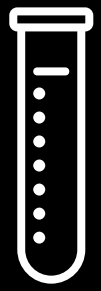
what is a test tube for?



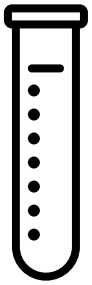
in a chemistry lab?



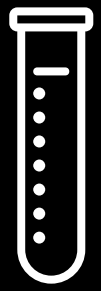
in a chemistry lab?



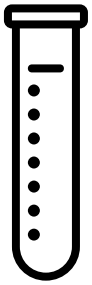
in an alchemist’s workshop?



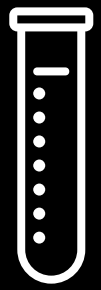
“the world is a sphere”



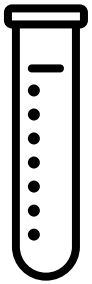
“the world is flat”

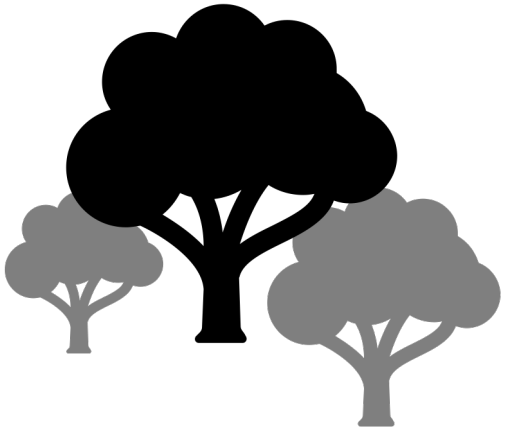


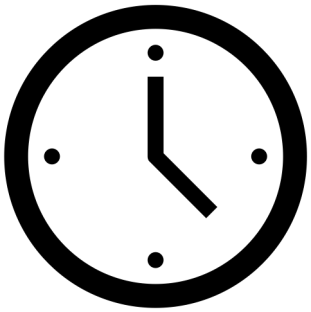
complexity



“clock”





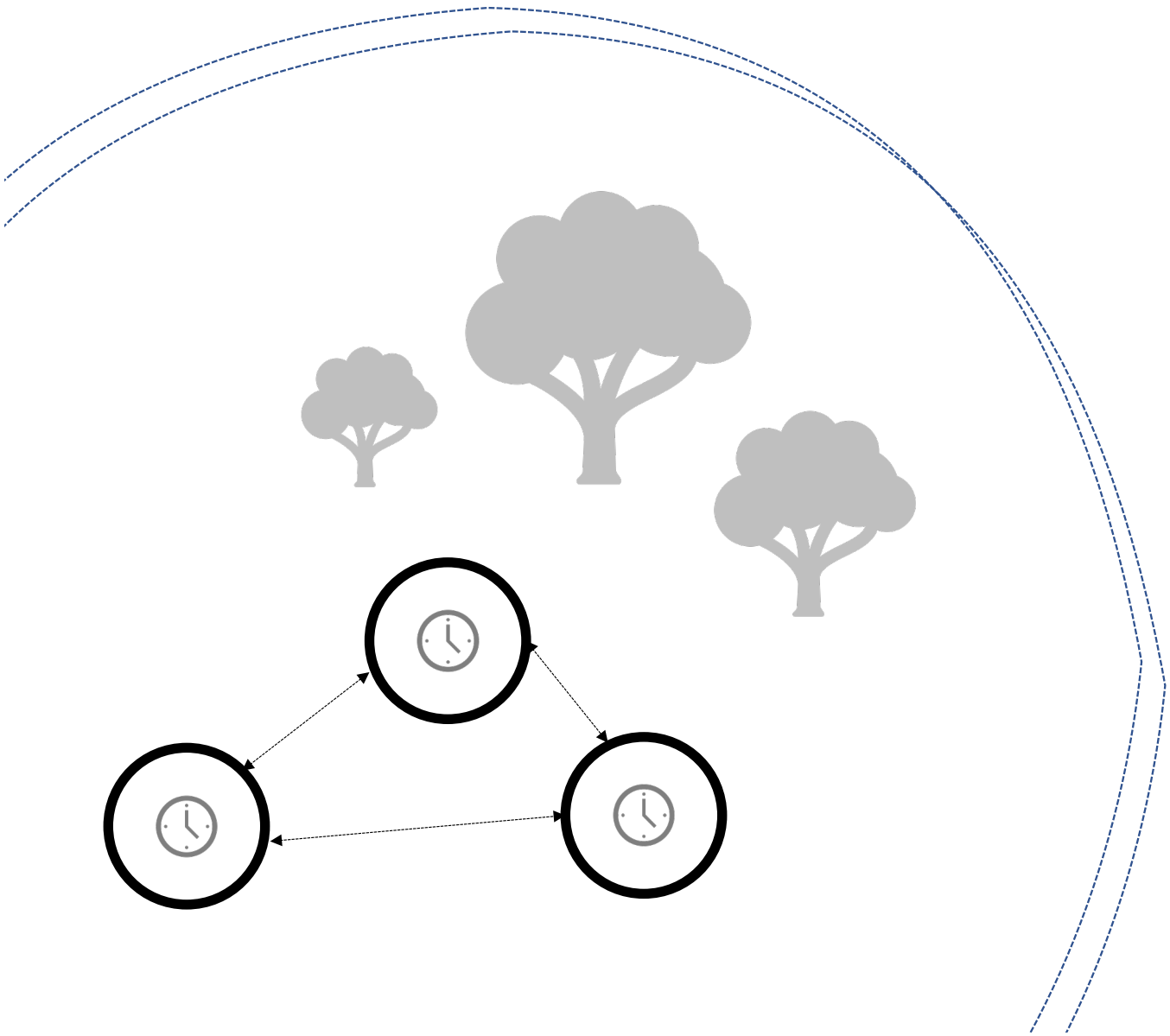


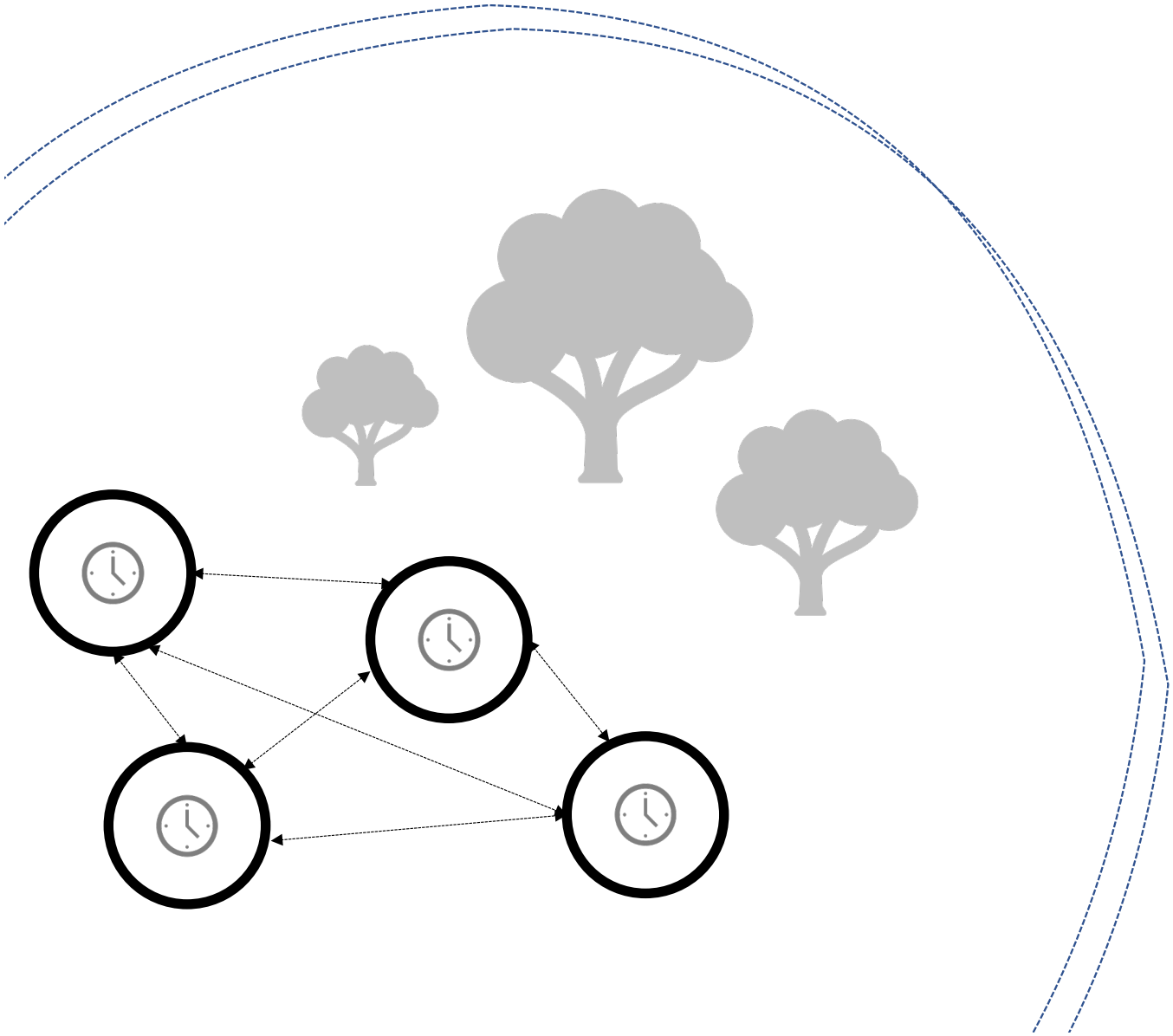
axiom 3

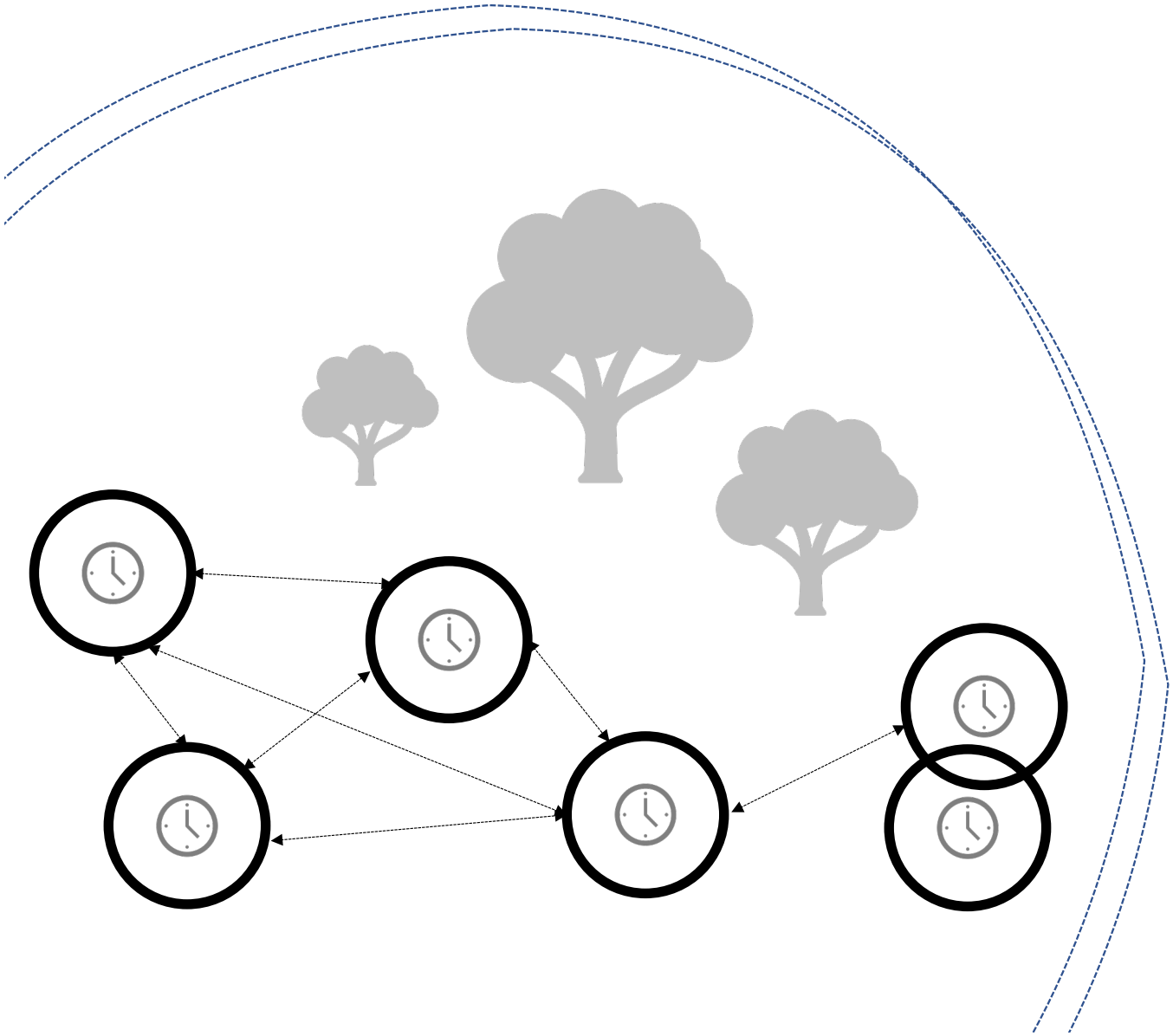
non-complex systems are always part of complex systems

but complexity is increasing

but complexity is increasing as non-complex systems grow







what is does it mean? what is at stake?

what happens when we ignore axiom 1, 2 & 3?

paradigms are built from practices

paradigms are incommensurable

non-complex systems are always part of complex systems

the probability of catastrophic failure grows

Wednesday 19 May 2021

an introduction to complex challenges

Session 1/2/3

axiom 1

paradigms are built from practices ;

practices are built from tools, processes, spaces, ingredients, and customs

axiom 2

paradigms are incommensurable

you cannot “practice” two contradictory paradigms at the same time ie. the world is both flat and a sphere

Source: The Structure of Scientific Revolutions – Thomas Kuhn

axiom 3

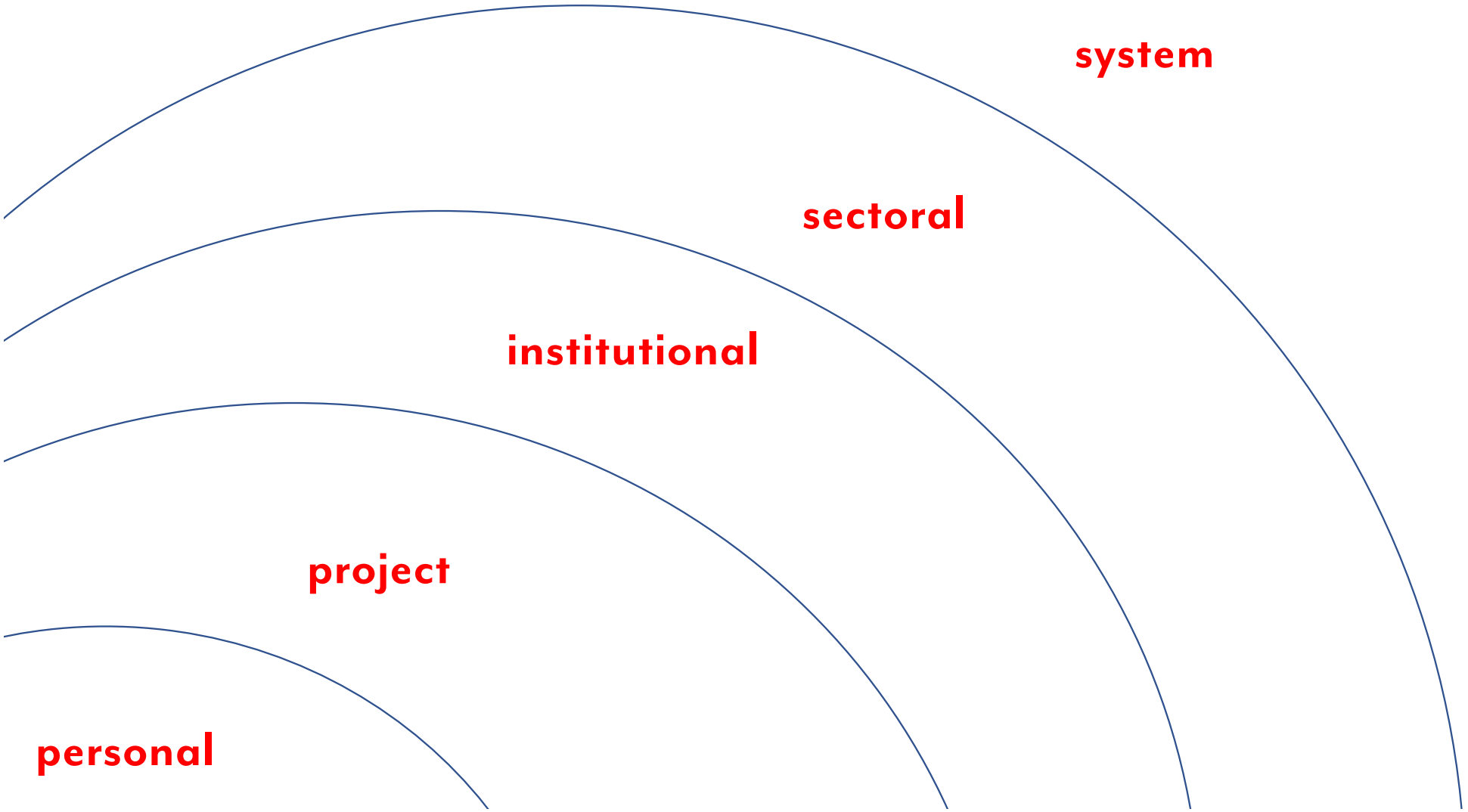
non-complex systems are always part of complex systems
(and you can't hide from complexity)

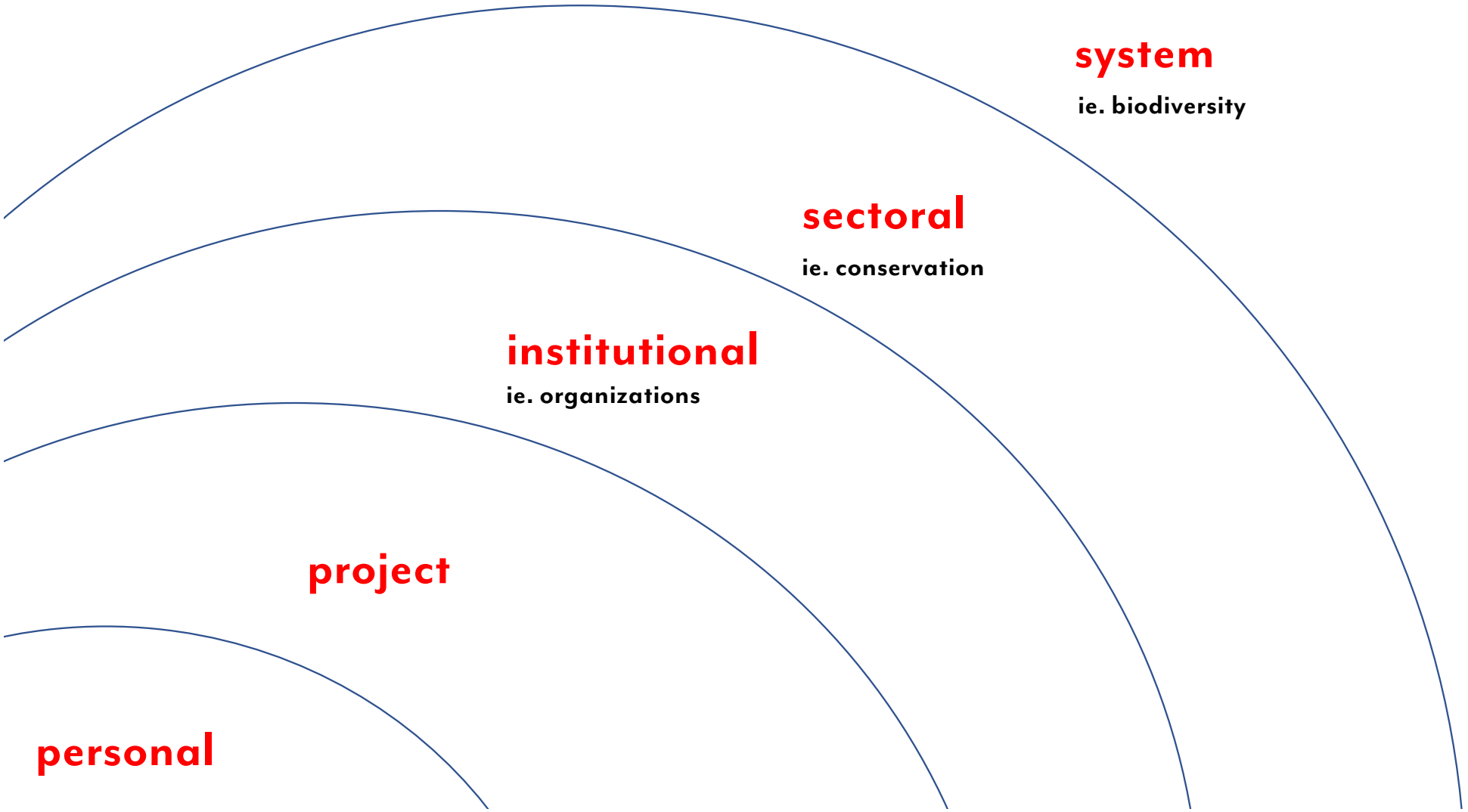
the probability of catastrophic failure grows

how? why?

“[In a crisis] We don't rise to the level of our expectations, we fall to the level of our training.”

- Archilochus


system
sectoral
institutional
project
personal


system
ie. biodiversity
sectoral
ie. conservation
institutional
ie. organizations
project
personal

axiom 4

we adapt and learn our way into catastrophic failure

Source: Drift Into Failure: From Hunting Broken Components to Understanding Complex Systems by Sidney Dekker

how?

demand for multiple forms of capital increases

(natural resources, infrastructure, services)

our ability to supply demand decreases

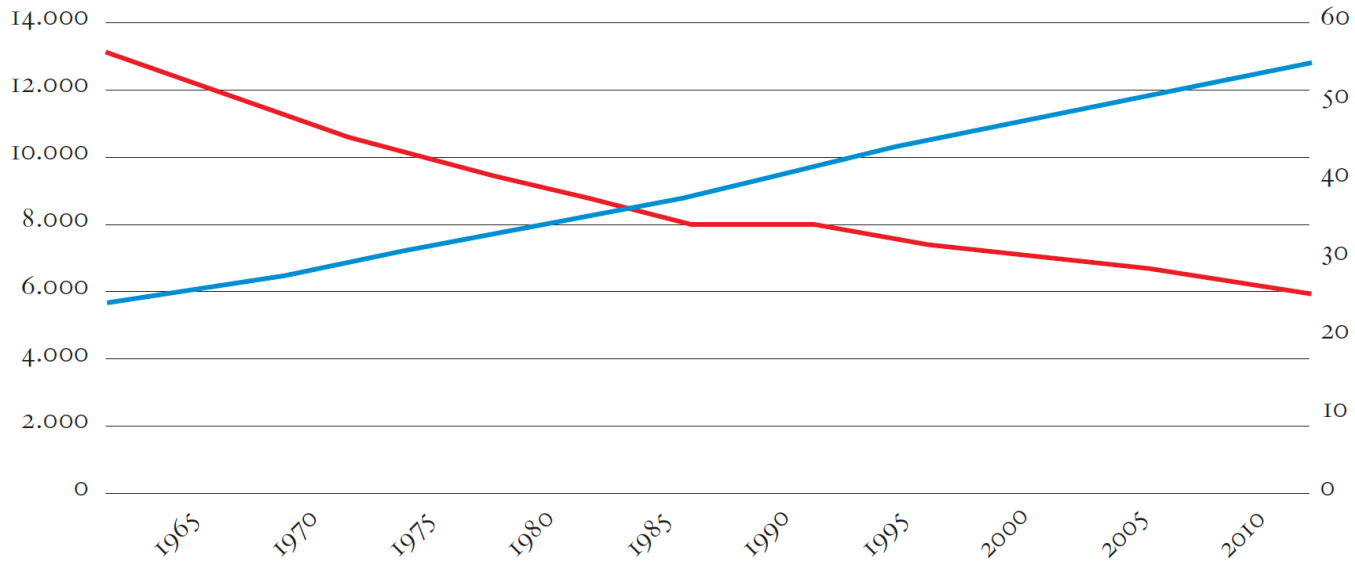


Figure 1: World Renewable Internal Freshwater Resources Per Capita vs World Population Density
Source: Data from World Bank

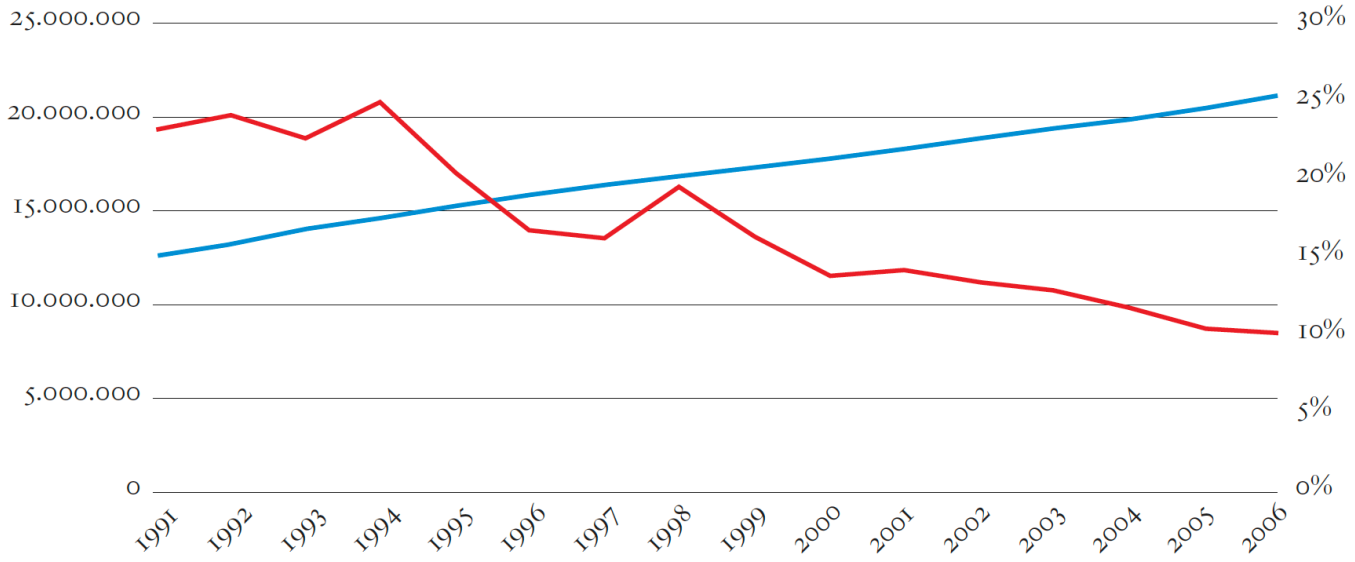


Figure 2:Yemen Population vs Agriculture Value Added
Source: Data from World Bank

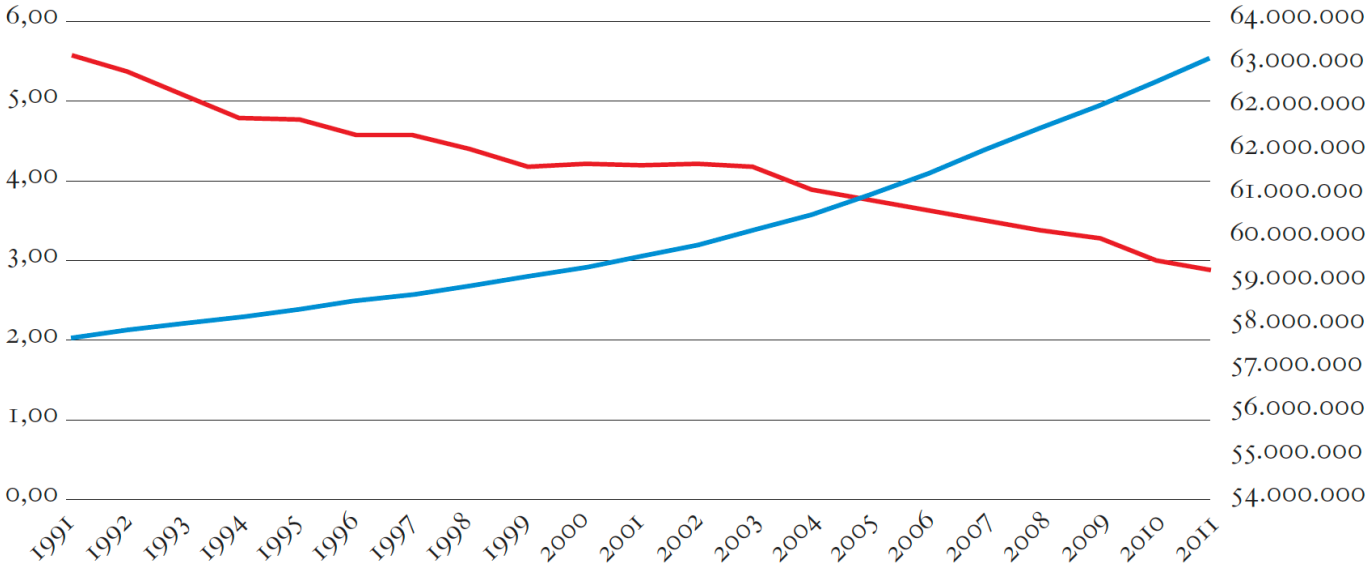


Figure 3: UK Population vs Available Hospital Beds
Source: Data from World Bank

axiom 4

we adapt and learn our way into catastrophic failure

(by focusing on alleviating symptoms)

Source: Drift Into Failure: From Hunting Broken Components to Understanding Complex Systems by Sidney Dekker

axiom 5

if demand is increasing and supply is constant or declining in a system, it is heading for catastrophic failure

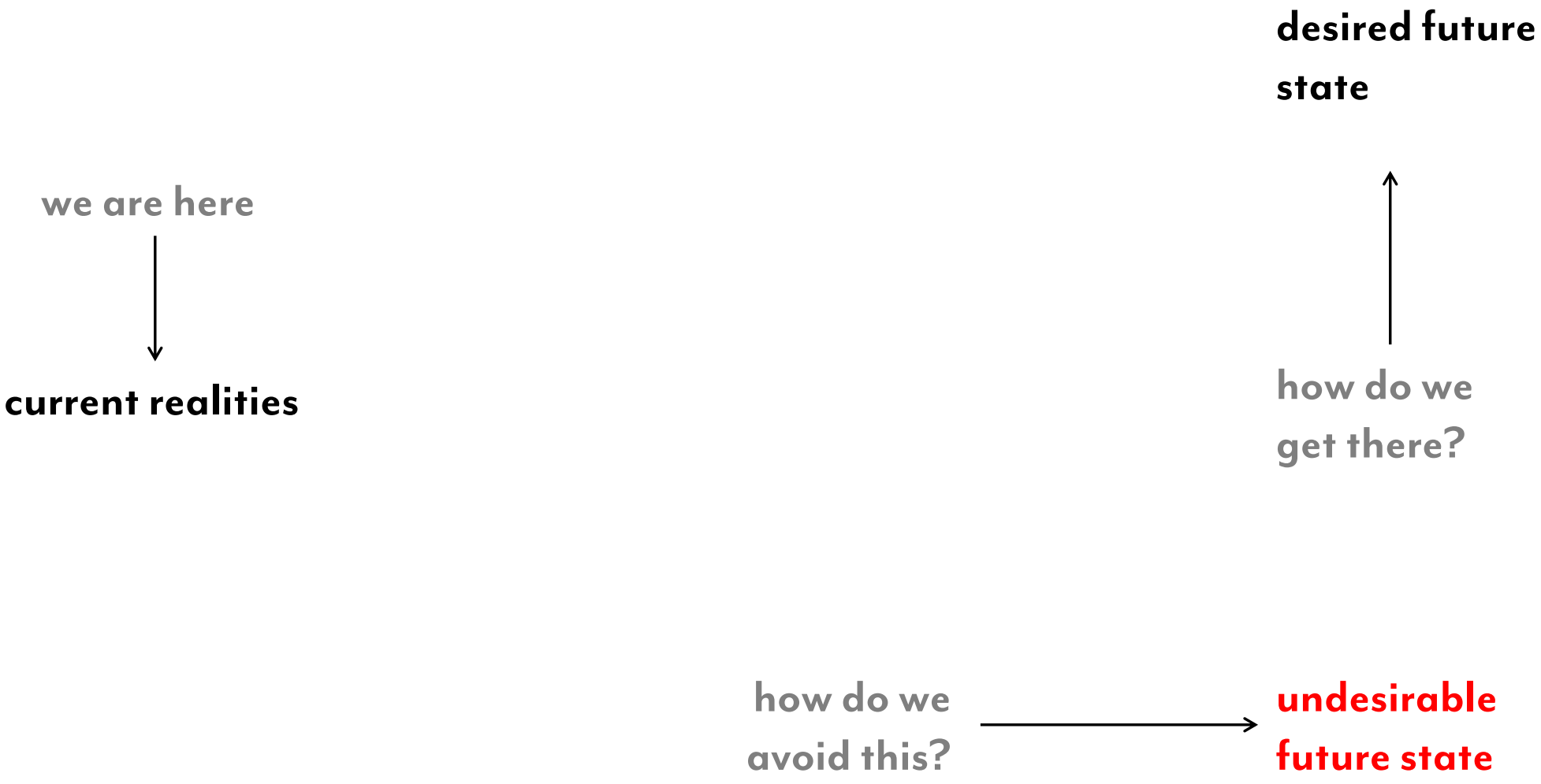
Discuss in small groups, instances, where you see in systems you're a part of, demand increasing while supply is constant or declining…

avoiding catastrophic failure in complex systems

desired future state

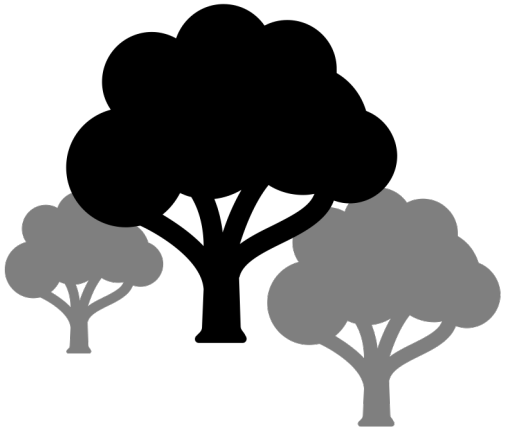
current realities

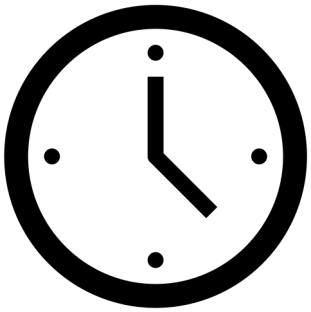
undesirable future state


desired future state
we are here
how do we get there?
current realities
how do we avoid this?
undesirable future state

how do we get there? how do we avoid the undesirable?

two approaches



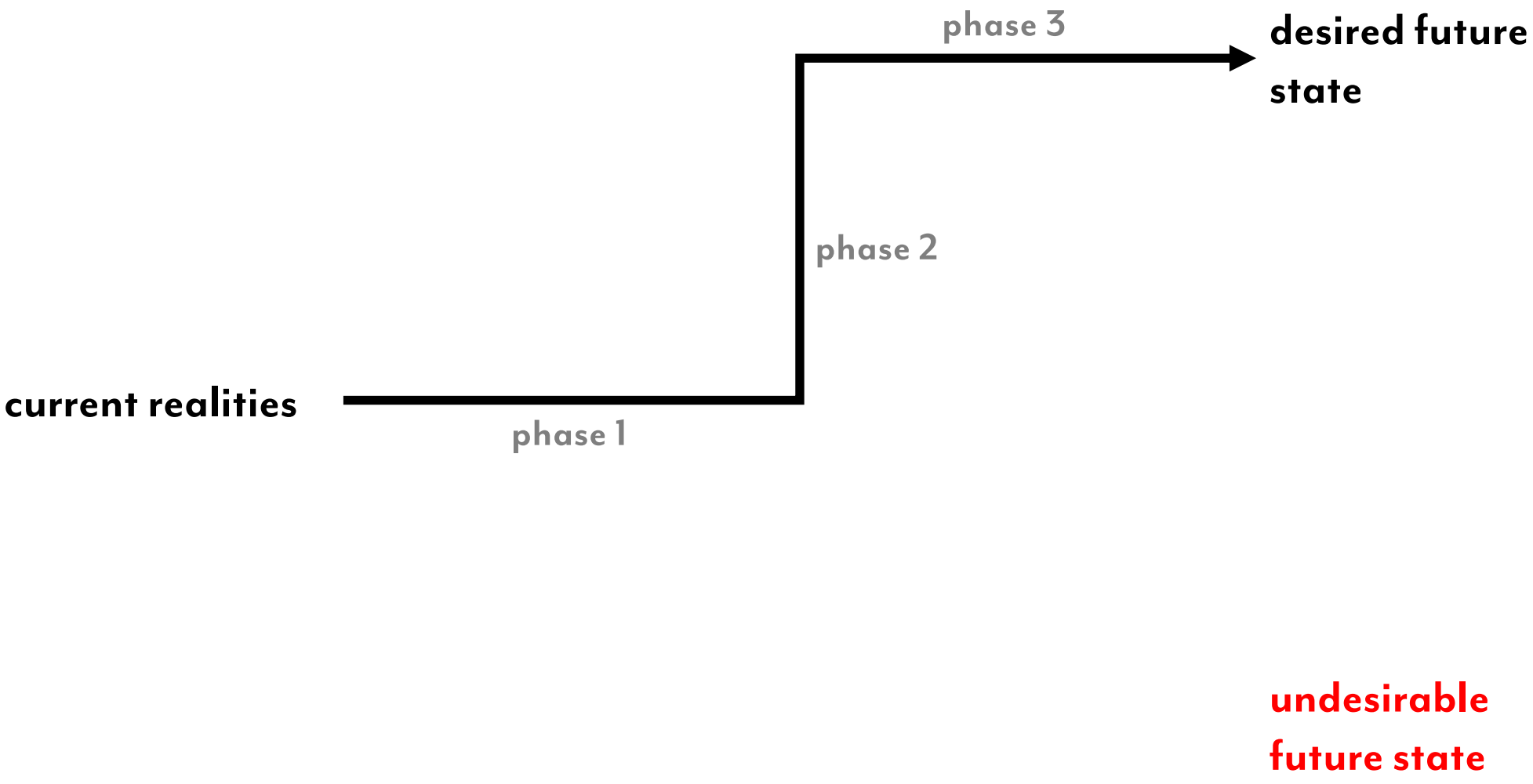


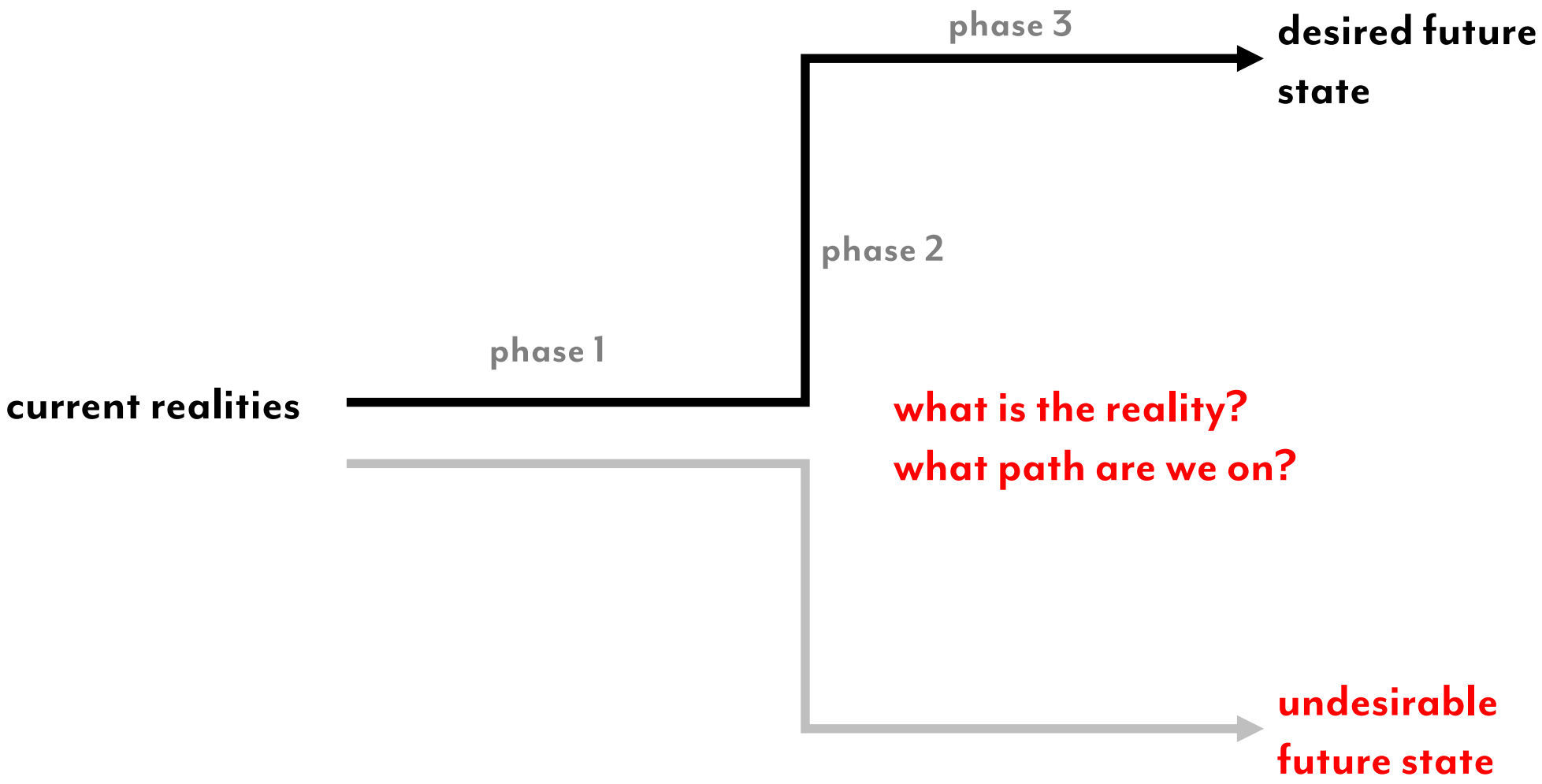
the dominant response = strategic planning

desired future state

current realities

undesirable future state


phase 3
desired future state
phase 2
current realities
phase 1
undesirable future state


phase 3
desired future state
phase 2
phase 1
current realities
what is the reality?
what path are we on?
undesirable future state

strategic planning aims for optimisation

optimisation as a strategy in situations of diverging supply + demand curves does not work

https://www.youtube.com/watch?v=ScU6W3rUEsI&t=16s

(if we can get gravity wrong for 20 centuries,
shouldn't we consider possibility that we've gotten
strategic planning wrong?)

the culture of strategic planning is not fit for purpose

strategic planning in complexity is malpractice

just don’t do it

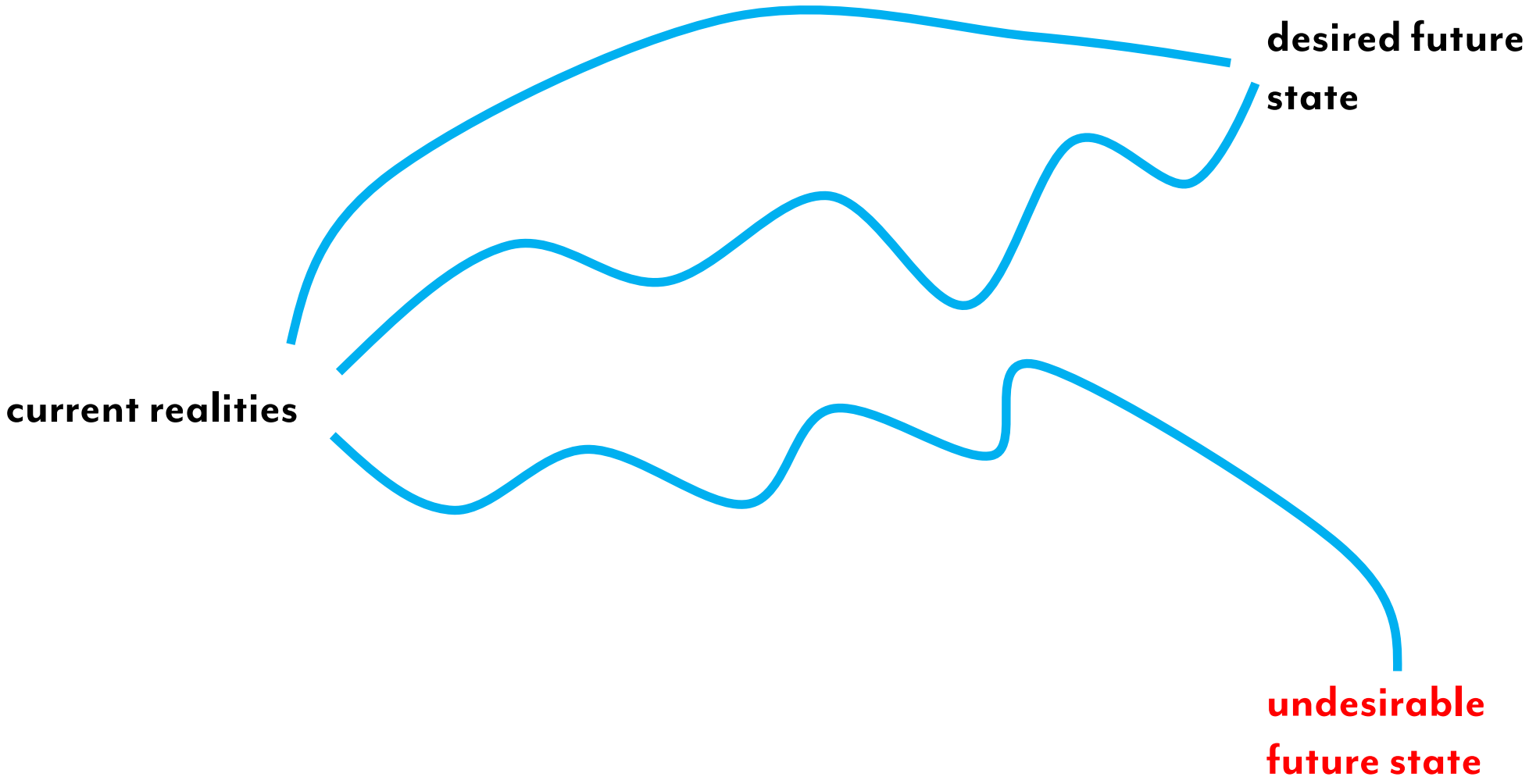
what is a better way?

a better response = the prototyping paradigm[1]

(1) Note the “prototyping paradigm” is different from “prototyping processes”

axiom 6

there are multiple pathways for avoiding catastrophic failure, leading us to to desirable future system states but they are all emergent (unpredictable)


desired future state
current realities
undesirable future state

axiom 7

we cannot see very clearly into the future

axiom 7

we cannot see very clearly into the future

(we live in an era of the law of regression to the tail)

desired future
state
current realities
undesirable
future state

we don’t see the pathway as a whole

we don’t see the pathway as a whole

we have a very partial view

we don’t see the pathway as a whole

we have a very partial view, the journey is unpredictable

desired future
state
current realities
undesirable
future state

think of a good journey you went on, think of a bad journey
what were the differences?

“… the future is a teenage crackhead who makes shit up as he goes along.” – Chuck Klosterman

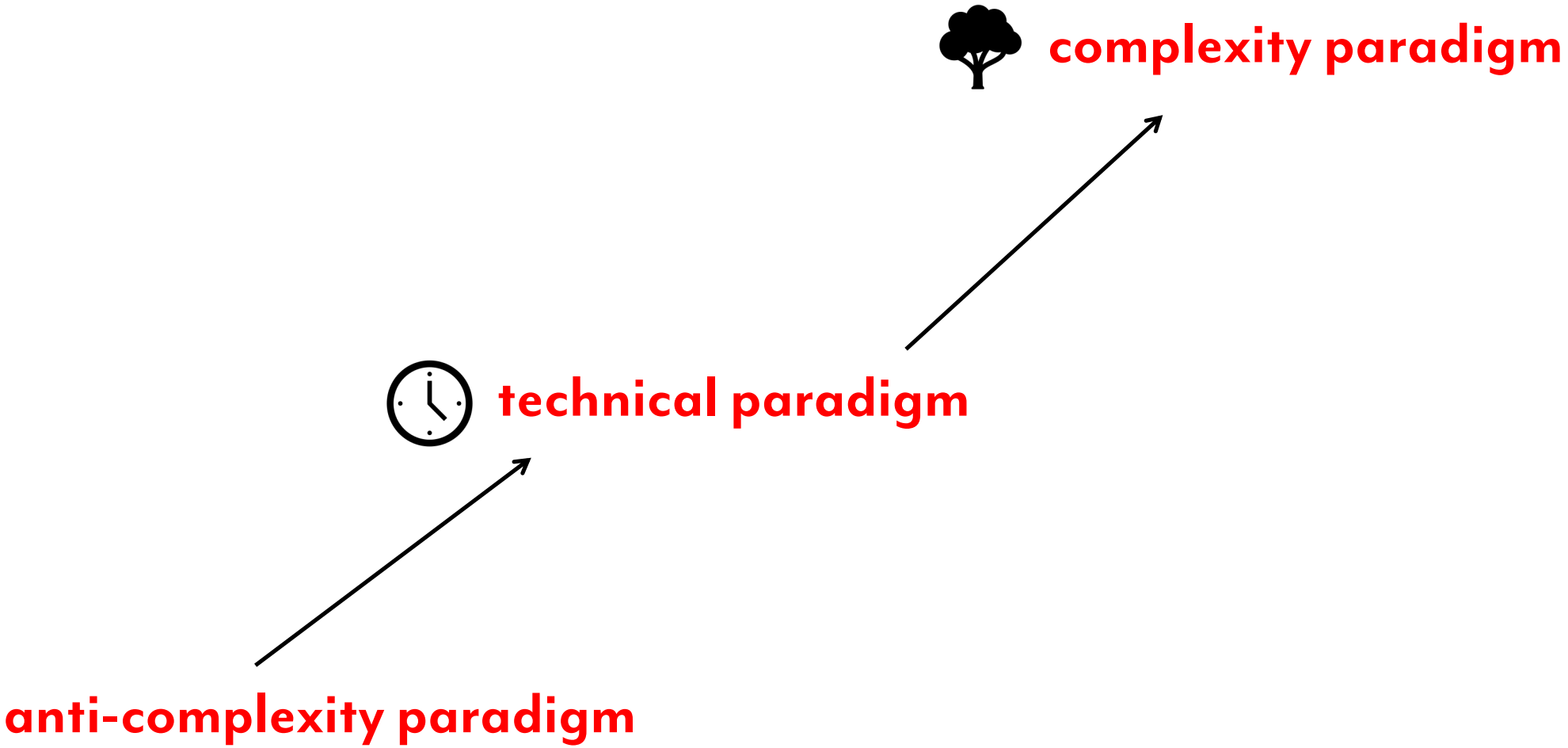
Friday 21 May 2021

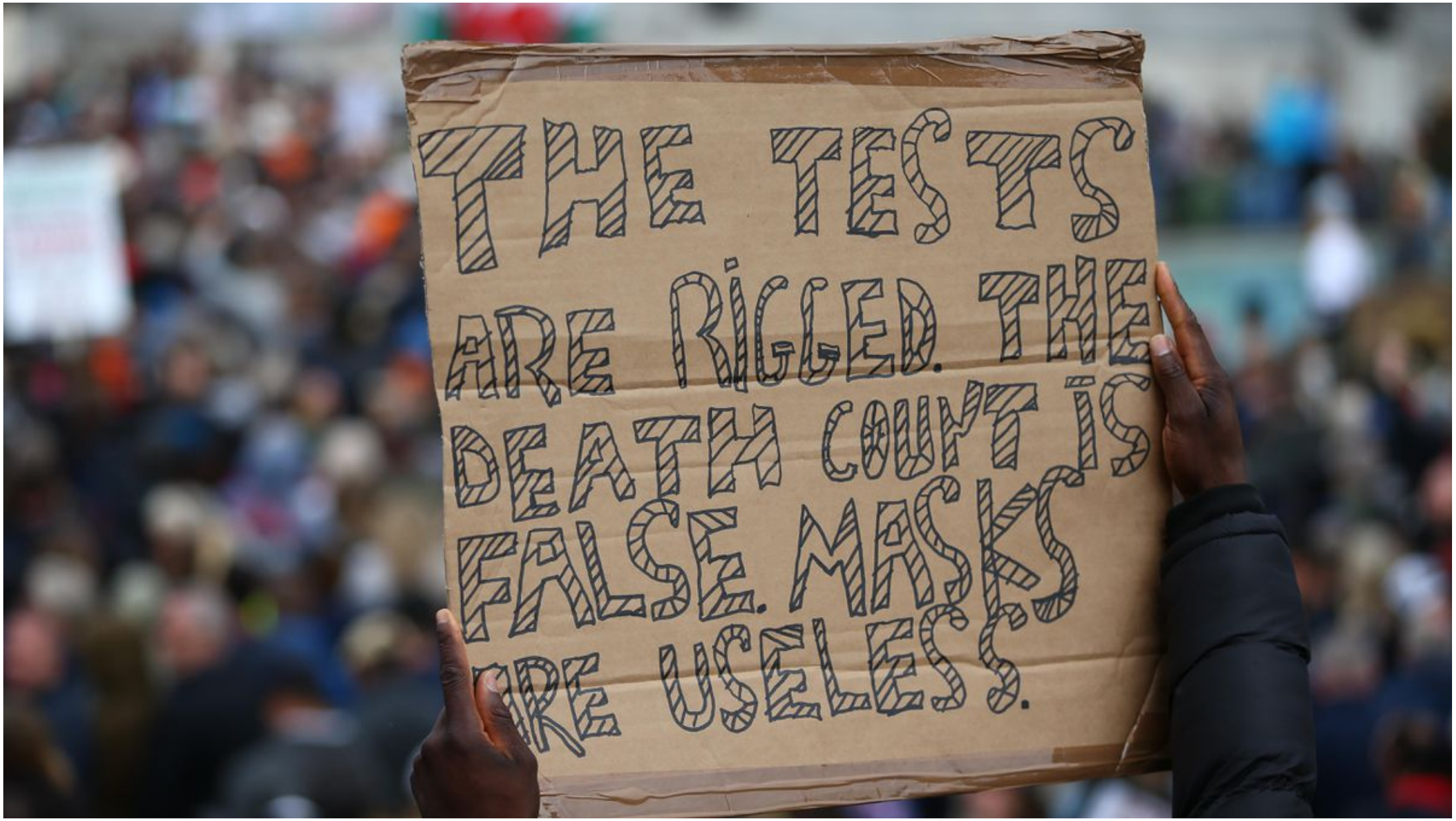
an introduction to complex challenges

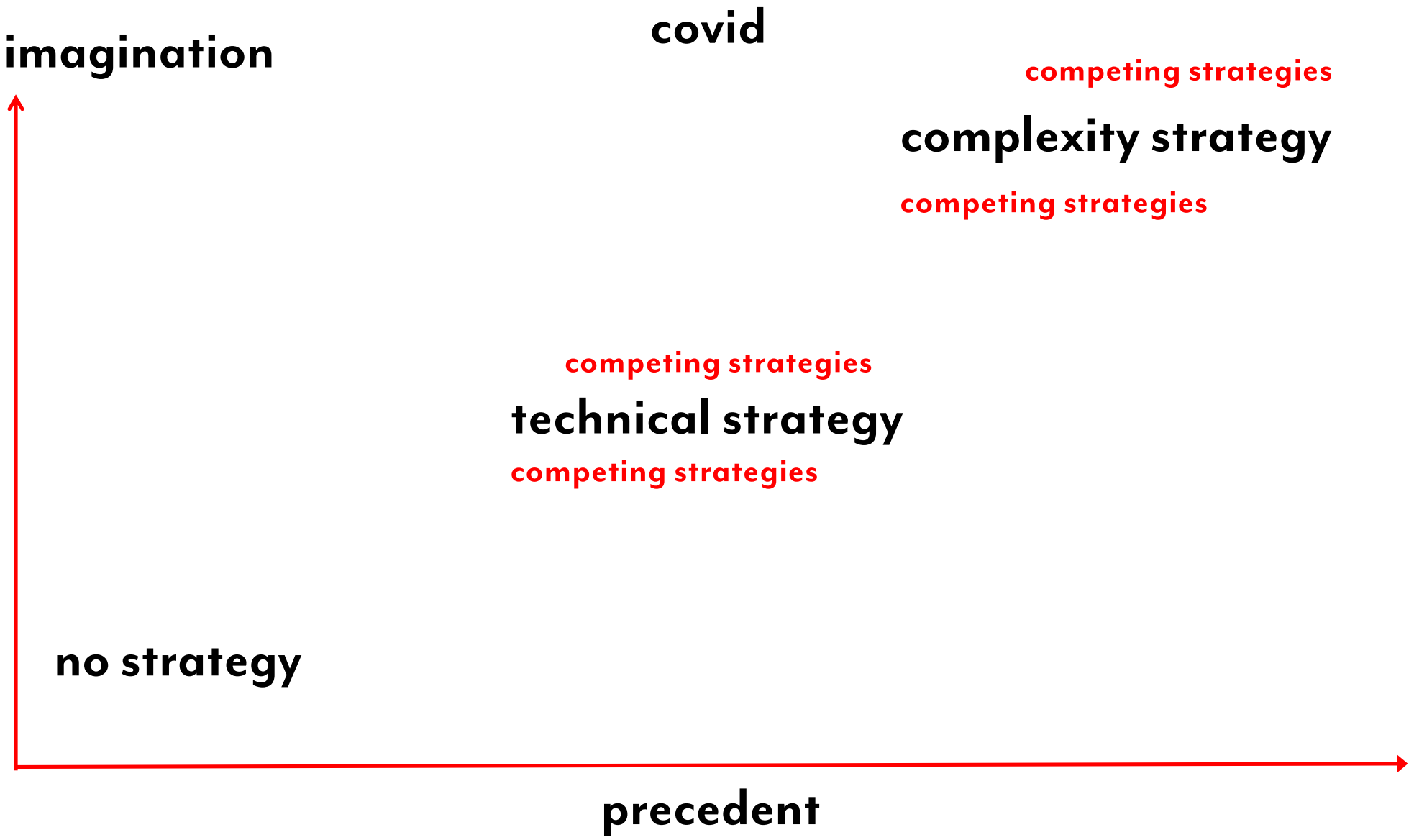
Session 1/2/3

complexity versus anti-complexity is a matter of perception

just as seeing the world as flat versus as a sphere is a matter of perception


complexity paradigm
technical paradigm
anti-complexity paradigm


THE TESTS
ARE RIGGED. THE
DEATH COUNT IS
FALSE. MASKS
ARE USELESS.


imagination
covid
competing strategies
complexity strategy
competing strategies
competing strategies
technical strategy
competing strategies
no strategy
precedent

so what do we do then?

axiom 8

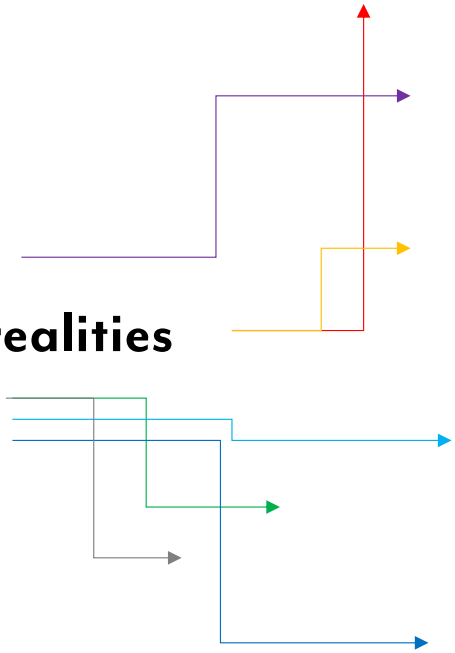
test as many pathways to desirable systems states as possible - the more we test, the more likely we are to find a way through

desired future state

current realities

undesirable future state

desired future state



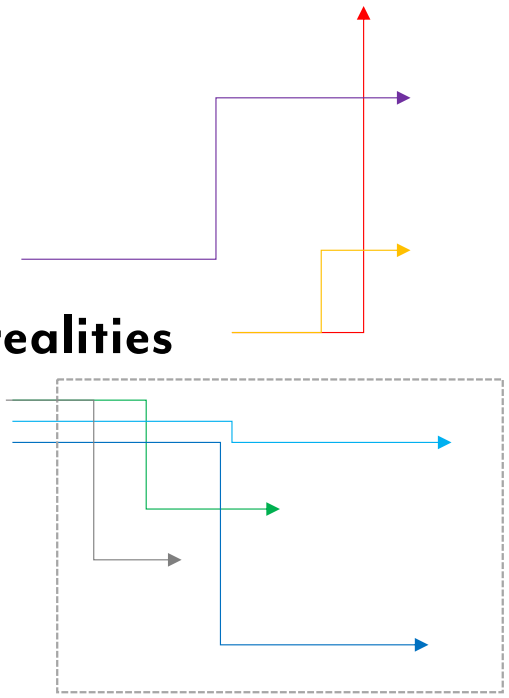
current realities

undesirable future state

axiom 9

be disciplined when testing in complex systems,
draw boundaries (including temporal), be frugal
in testing (jugaad innovation)

desired future state



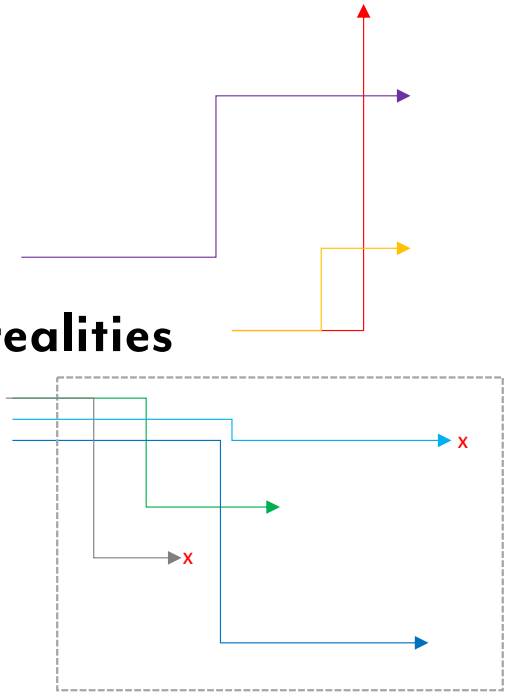
undesirable future state

axiom 10

“effective” practice in a complex system is reflexive

+ contextual

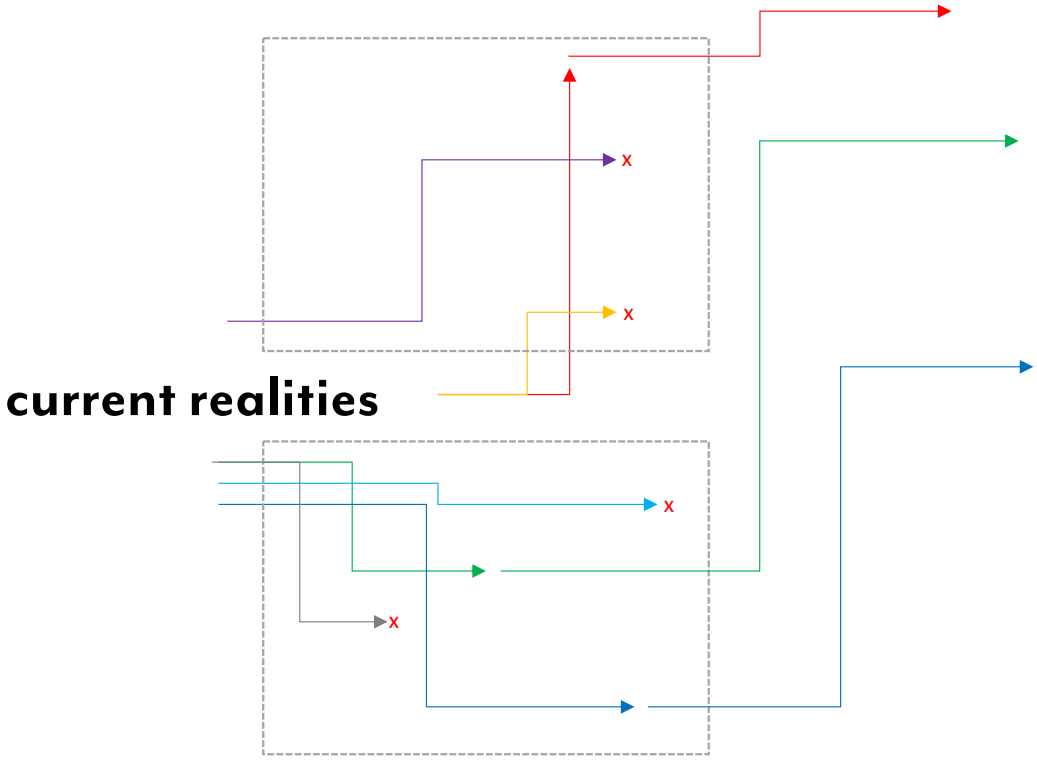
desired future state



current realities

undesirable future state

desired future state



undesirable future state

axiom 10

effective practice in complex systems is reflexive + contextual

(“best practice” is an oxy-moron)

axiom 11

the real innovation in complex systems are teams, not plans

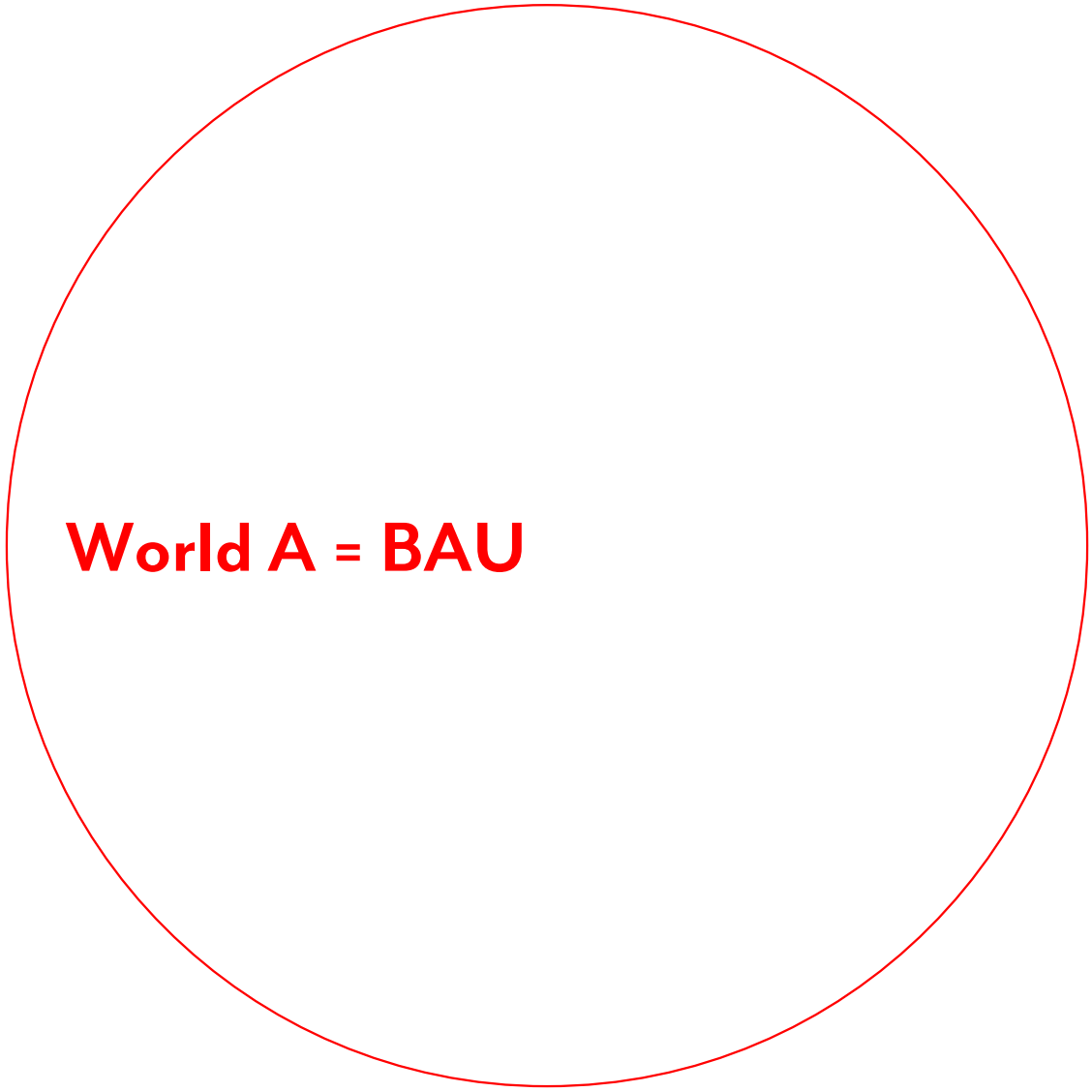
(the best teams are the product of reflexive practice)

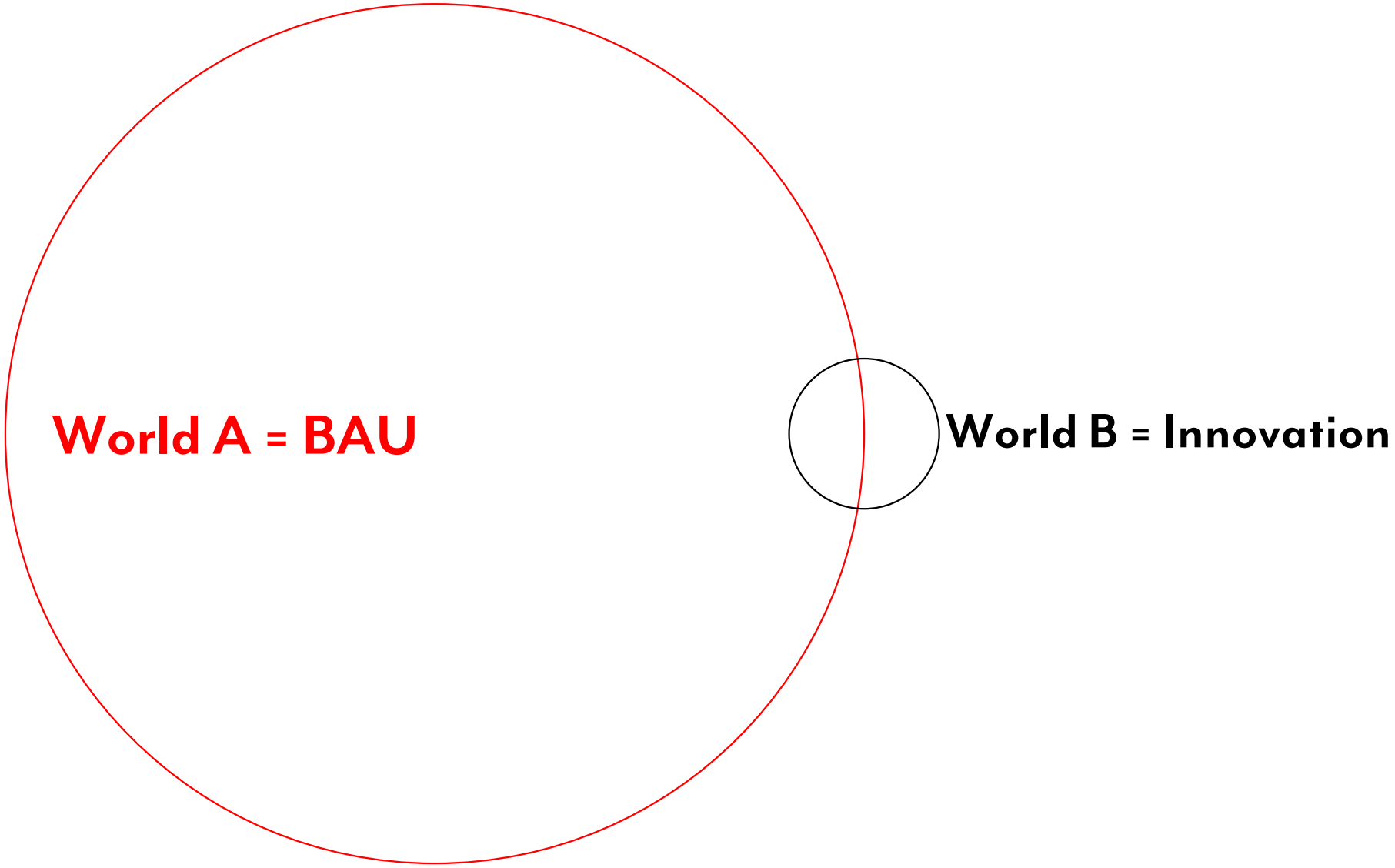
axiom 12

effective strategy in complex systems is a practice

(it is about what you actually do not what you might do)

there is a cultural mismatch between BAU vs complexity


World A = BAU


World A = BAU
World B = Innovation

World A = BAU

imagine business as usual as a movie – describe it

vs

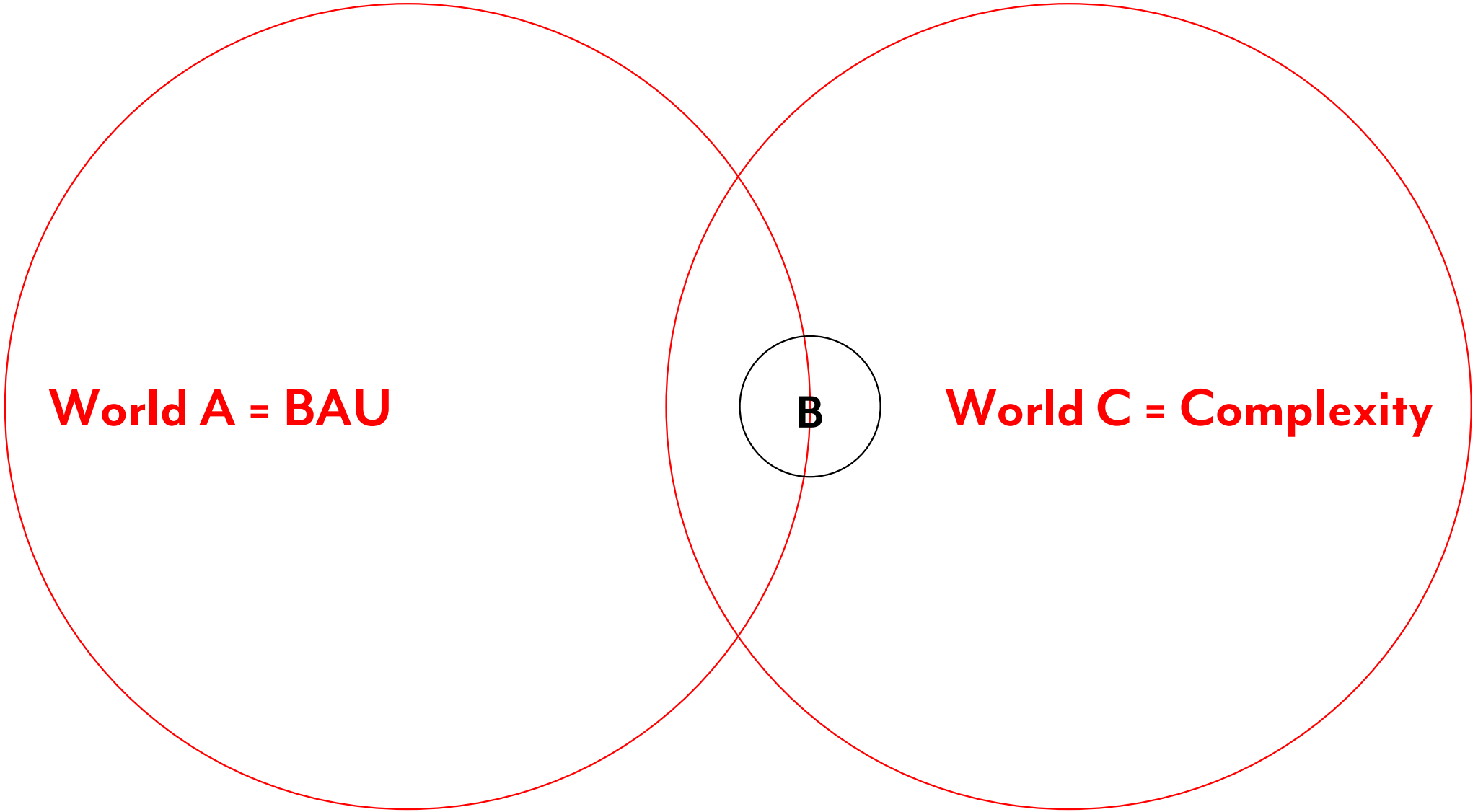
World B = Innovation

World A = BAU

vs

World B = Innovation

imagine “innovation” as a movie – describe it


World A = BAU
B
World C = Complexity

World A = BAU

vs

World B = Innovation = bridge to complexity

imagine “innovation” as a movie – describe it

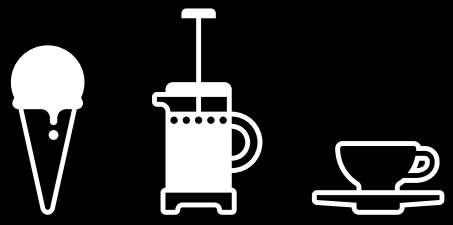
axiom 13

effective strategy in complex systems is an infinite game

(not a finite game)

James P Carse

“A finite game is played for the purpose of winning,
an infinite game for the purpose of continuing the play.”



A-World

Technocratic
Hierarchical
Planning
Players vs Counter-players
Management
Finite Games
Flatland
Epistemological
Power Point
Tactical
Short-Term

Symptoms
Low ROI
Neo-Soviet
Fear
Silo
Complicated
Technical
Fragile
Linear
Diktat
High Risk

B-World

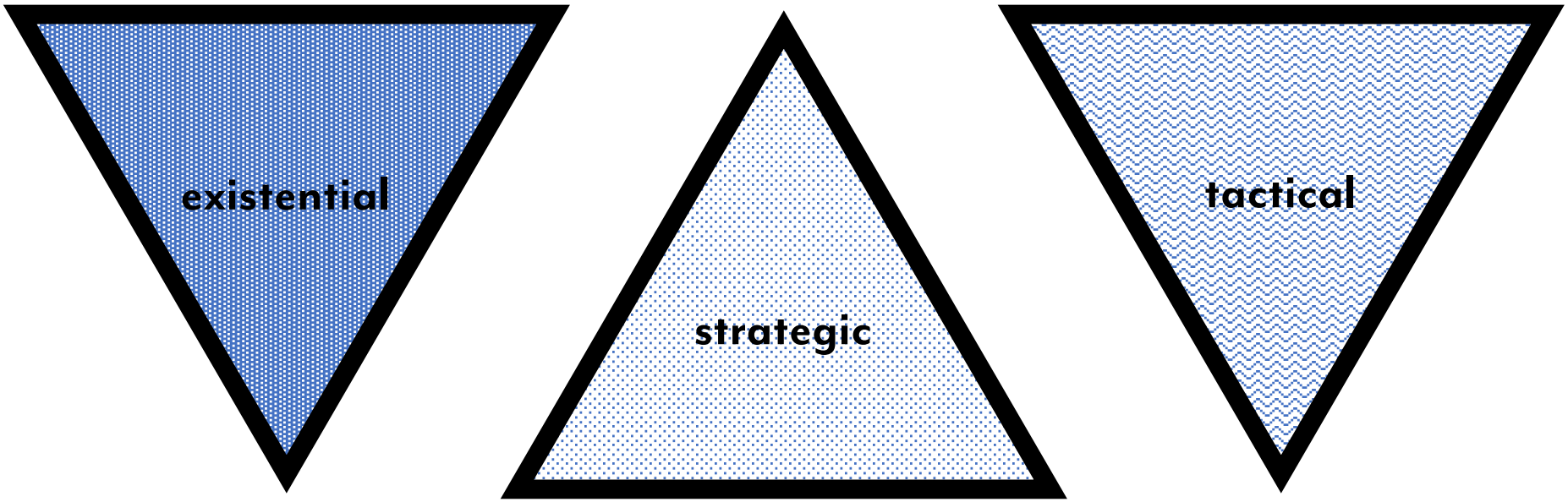
Practical
Flexible
Prototyping
Non-Players
Facilitation
Infinite Games
Real World
Phenomenological
Experience
Existential
Strategic / Tactical
Long-Term

Low Risk
Causes
High ROI
Entrepreneurial
Opportunity
Whole
Complex
Adaptive
Anti-Fragile
Iterative
Negotiation

the three practices of effective strategy

strategy as story-telling

strategy as action



strategy as inner-game

thirteen axioms of complex challenges

axiom 1

paradigms are built from practices ;

practices are built from tools, processes, spaces, ingredients, and customs

axiom 2

you cannot “practice” two contradictory paradigms at the same time ie. the world is both complex and non-complex

axiom 3

non-complex systems are always part of complex systems

and you can’t hide from complexity

axiom 4

we adapt and learn our way into catastrophic failure

one day at a time

axiom 5

if demand is increasing and supply is constant or declining
in any system, it is heading for catastrophic failure
(which is always complex)

axiom 6

there are multiple pathways for avoiding catastrophic failure, leading us to to desirable future system states but they are all emergent (unpredictable)

axiom 7

we cannot see very clearly into the future

we live in an era of the law of regression to the tail

axiom 8

test as many pathways to desirable system states as possible - the more we test, the more likely we are to find a way through

axiom 9

be disciplined when testing in complex systems, draw boundaries (including temporal), be frugal in testing (jugaad innovation)

axiom 10

effective practice in complex systems is reflexive + contextual

“best practice” is an oxy-moron

axiom 11

the real innovation in complex systems are teams (not plans)

the best teams are the product of reflexive practice

axiom 12

effective strategy in complex systems is a practice

it is about what you actually do (not what you might do)

axiom 13

effective strategy in complex systems is an infinite game
(not a finite game)

foundations of complexity

part one / an introduction to complex challenges

part two / an introduction to effective strategy

part three / an introduction to multiple capitals

part four / the architecture of complexity