



Applying Design Thinking and Complexity Theory in Agile Organizations

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growth



good



change



weird



An Agile Adoption Story

2002

5000

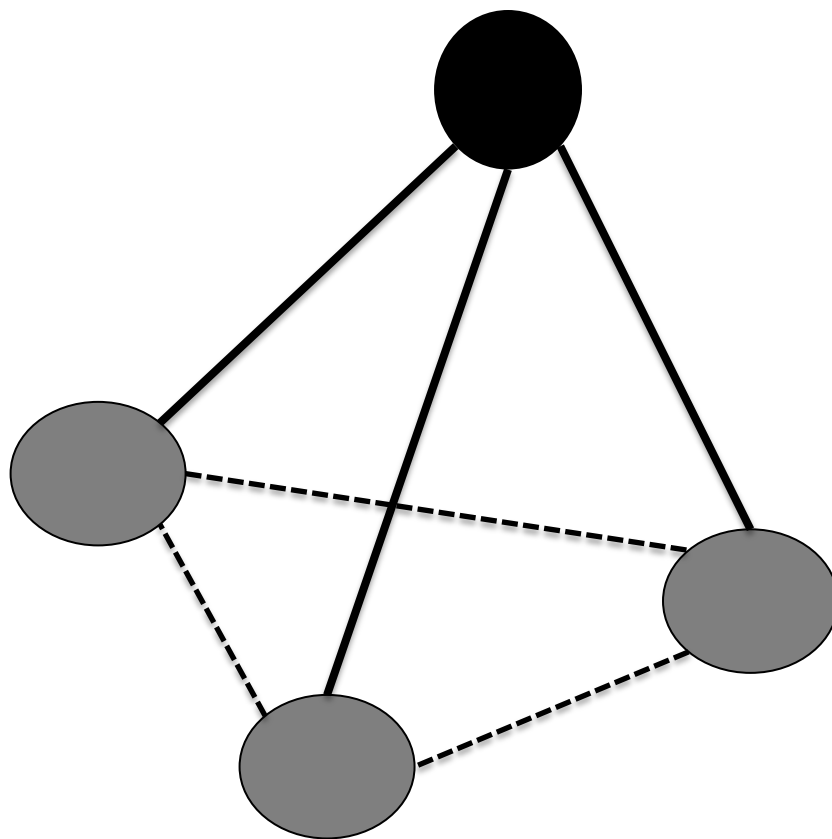
14

7

1

1

Bureaucracy




“Cookbook Agile”



Algorithm



A photograph of a desert landscape. In the foreground, a yellow diamond-shaped sign with a black border contains the text "ABSOLUTELY NOTHING" in black capital letters. Below it is a rectangular yellow plaque with a black border containing the text "NEXT 22 MILES" in black capital letters. The signs are mounted on a black metal post. The ground is sandy and dry, with some sparse desert vegetation. In the background, a paved road curves to the left, and a series of utility poles are visible. The horizon is marked by a range of mountains under a clear sky.

ABSOLUTELY
NOTHING

NEXT
22 MILES

FOLLOW **the PLAN**





**Lack of
innovation**

**Diminishing
customer base**

Escalation



Agile
“blame game”

“MOST Organizations
have what appear to be
suicidal tendencies”



Agile adoptions need to
leverage the science of
complexity

Agile adoptions need to
leverage the discipline of
design thinking

Our journey must
embrace vision with
hunches, exploration and
empathy



3 thoughts

**Don't latch onto a
cookbook of Agile
practices**

**Invite principles and
practices outside of
Agile as your
organization matures**

**Combine emergence
and resilience for
sustained Agile
innovation**

**Benefits
you'll
derive**

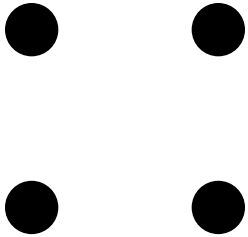
~~Death by Agile~~

Thrive versus merely
survive

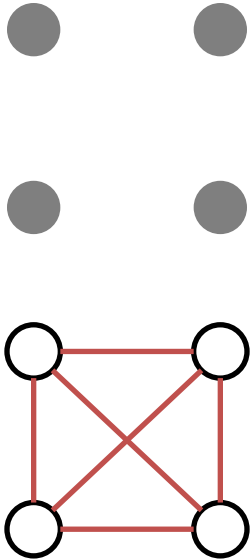
Leverage the wildly
unexpected

Why

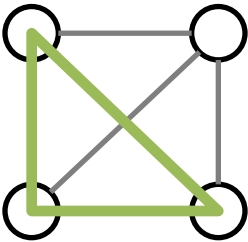
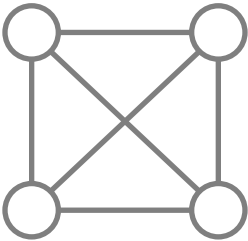
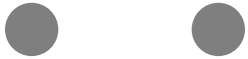
4 Dots



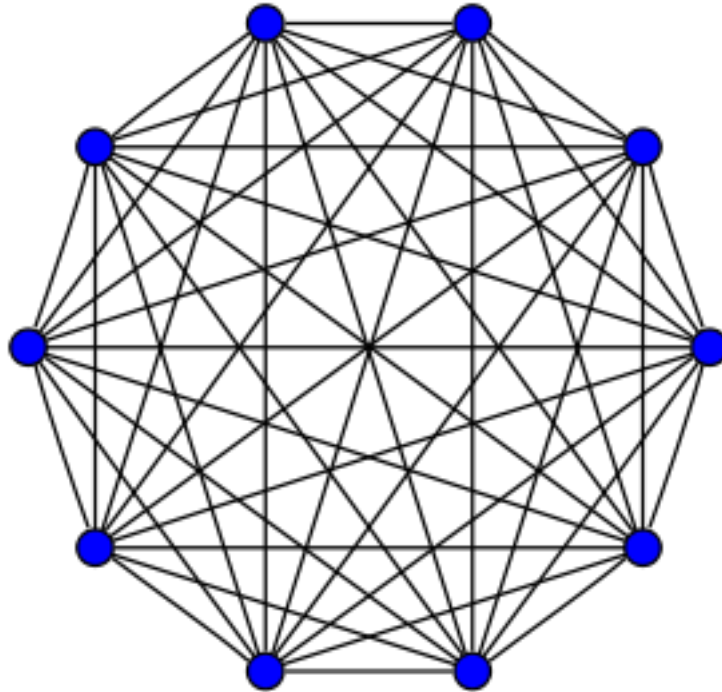
6 Connections



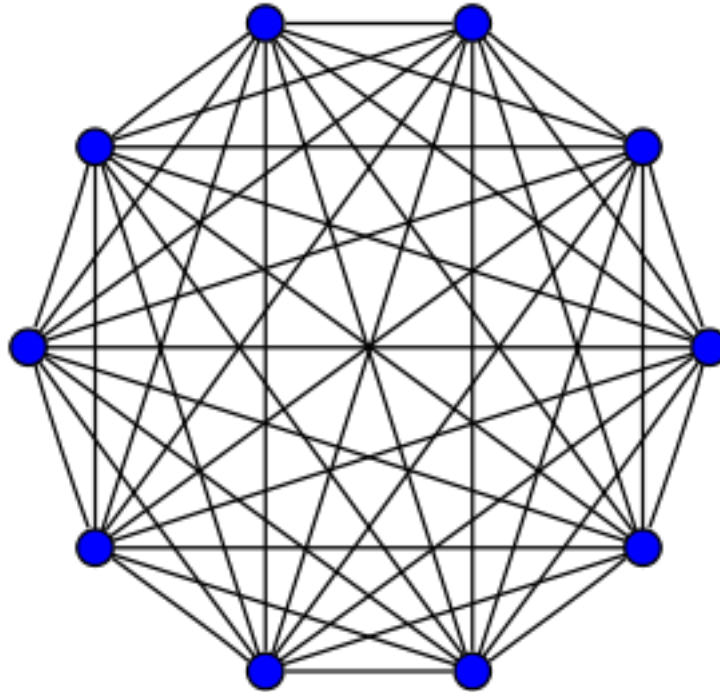
64 Patterns



10 Dots



45 Connections



? Patterns

Patterns

35,184,372,088,832



We live in an
unordered, complex
world

We have
complexity of...

Organizations

Code-base

Customers

Market

We can't afford to latch
onto recipes of...

Order

Control

Algorithm

Are you complex?

**“What you predict
doesn’t come true.”**

**“What worked yesterday,
doesn’t seem to be
working today.”**

**“What you don’t know is
unknown.”**

Are you a chef or a
recipe follower?

IRON CHEF AMERICA

THE SERIES



**EMMA
HEARST**



**MICHAEL
SYMUN**





Analysis and
induction alone
cannot manage
complexity



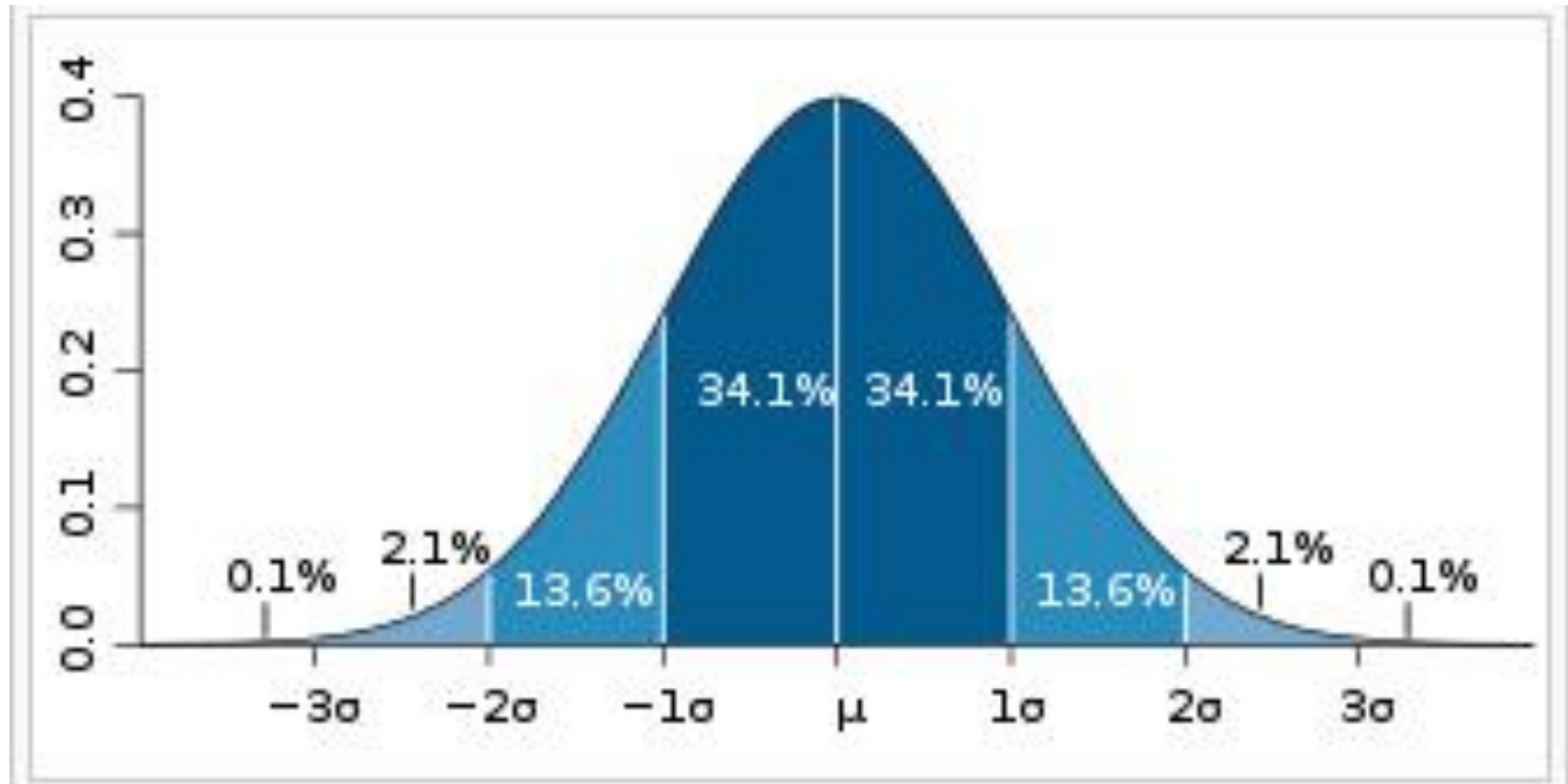
We ~~should~~ **must** invite
abductive logic

**We must invite mystery
to allow innovative
patterns to emerge**

How

How do we make sense
of environments like this?

Gaussian Probability is not sufficient

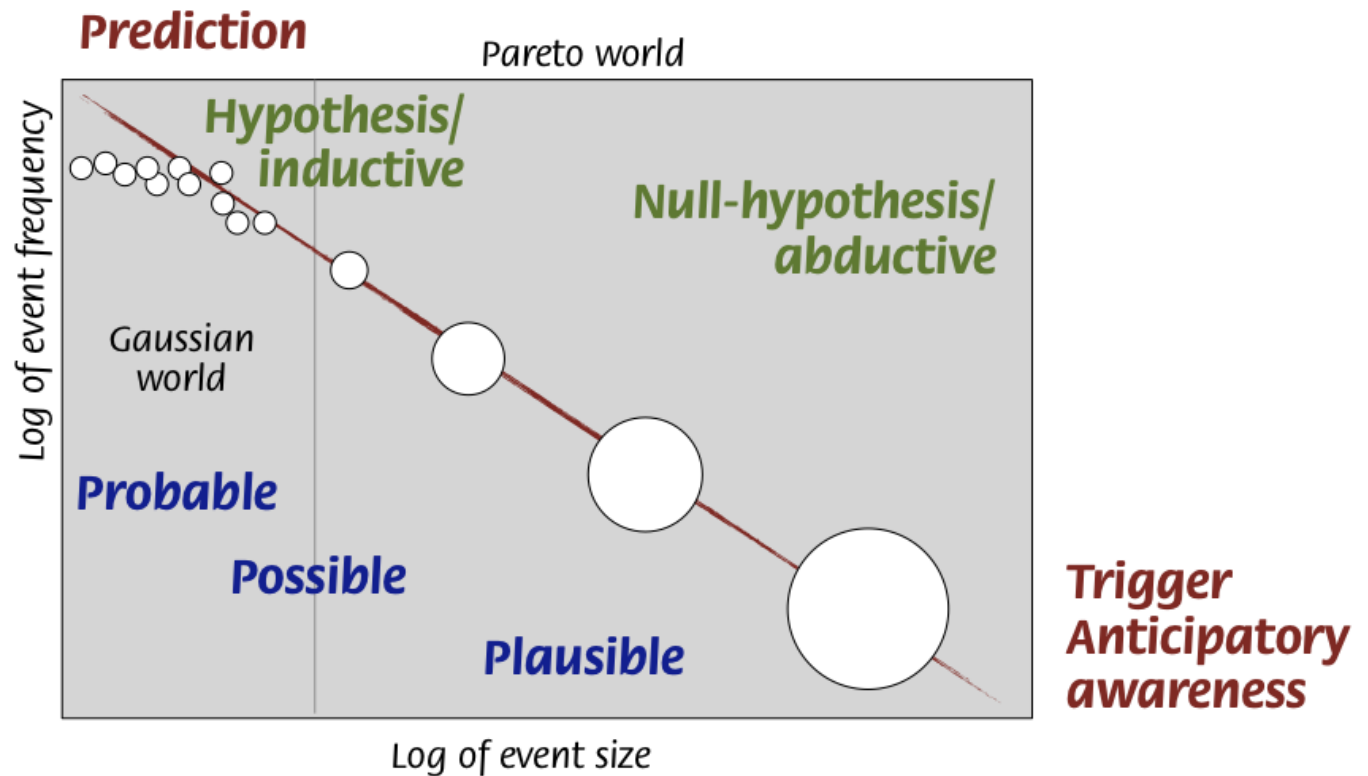


But where are the low
probability, high impact
events?

Pareto Plausibility seeks outliers

Derived from material created by Max Boisot
Academy of Management Montreal 2010

Research & monitoring



Seek the low signal
outliers

Cynefin

David Snowden



Plausible

Probable



Unordered

Ordered

Plausible

Probable



Chaotic

Complex

Complicated

Simple

Unordered

Ordered

Plausible

Probable

Complex

Complicated

Chaotic

Simple

Unordered

Ordered



Plausible

Probable

Complex

Complicated

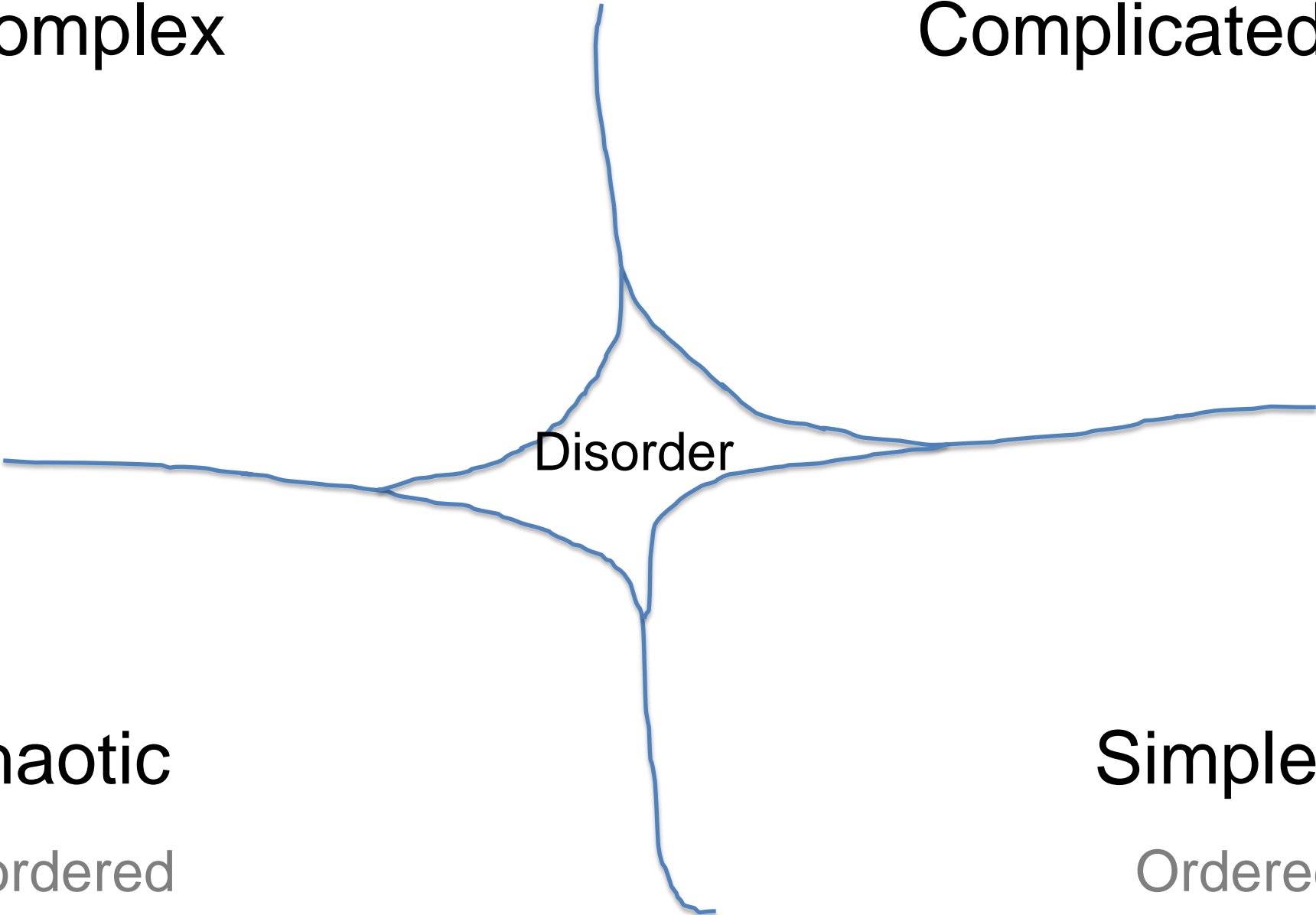
Disorder

Chaotic

Simple

Unordered

Ordered



**The relationship between
cause and effect**

Plausible

Probable

Complex

Complicated

only coherent in retrospect, and not repeatable

requires analysis or expertise

Disorder

not perceivable

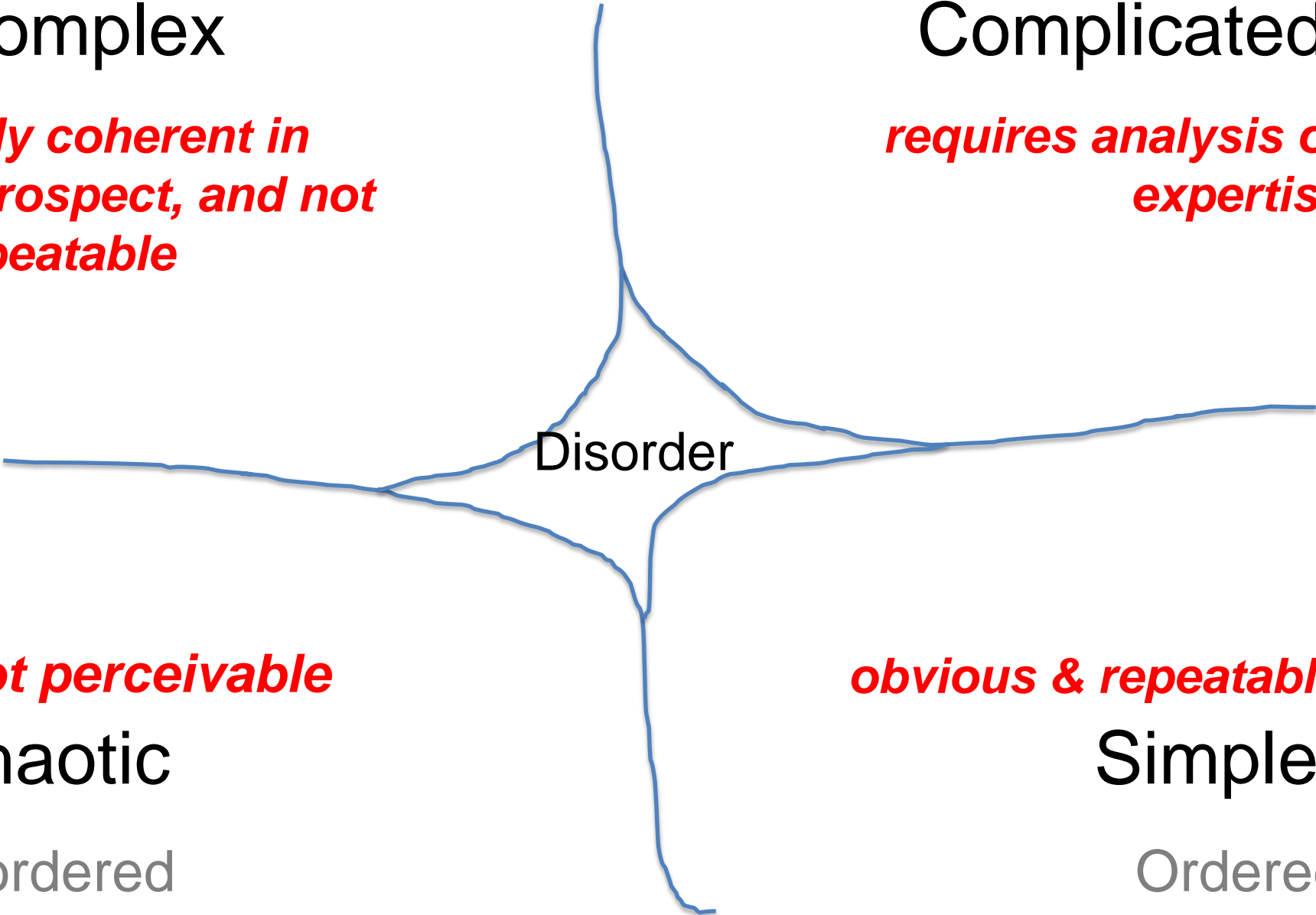
obvious & repeatable

Chaotic

Simple

Unordered

Ordered



**What practices are
appropriate?**

Plausible

Probable

Complex

Complicated

Emergent practices

Good practices

Disorder

Action

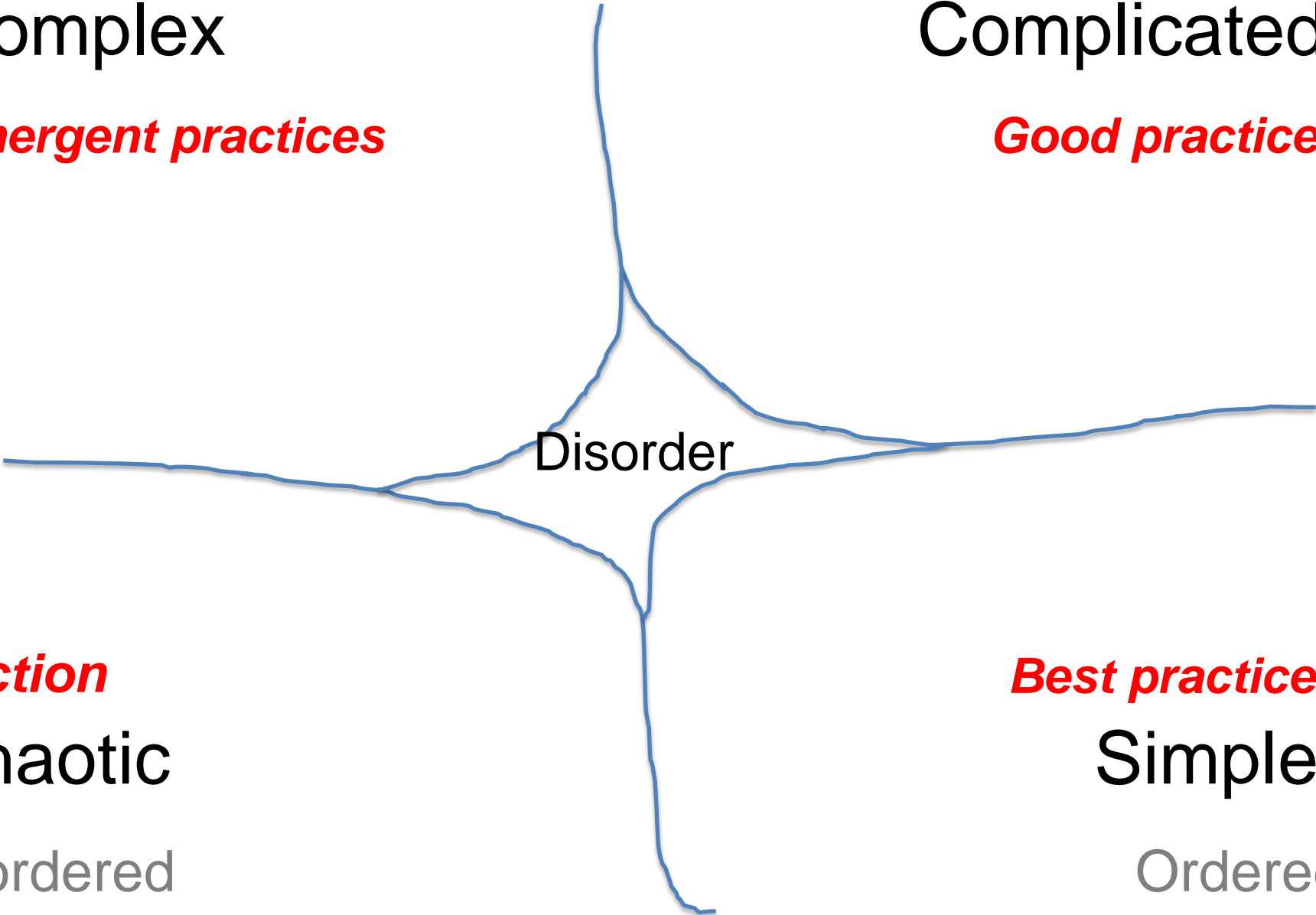
Best practices

Chaotic

Simple

Unordered

Ordered

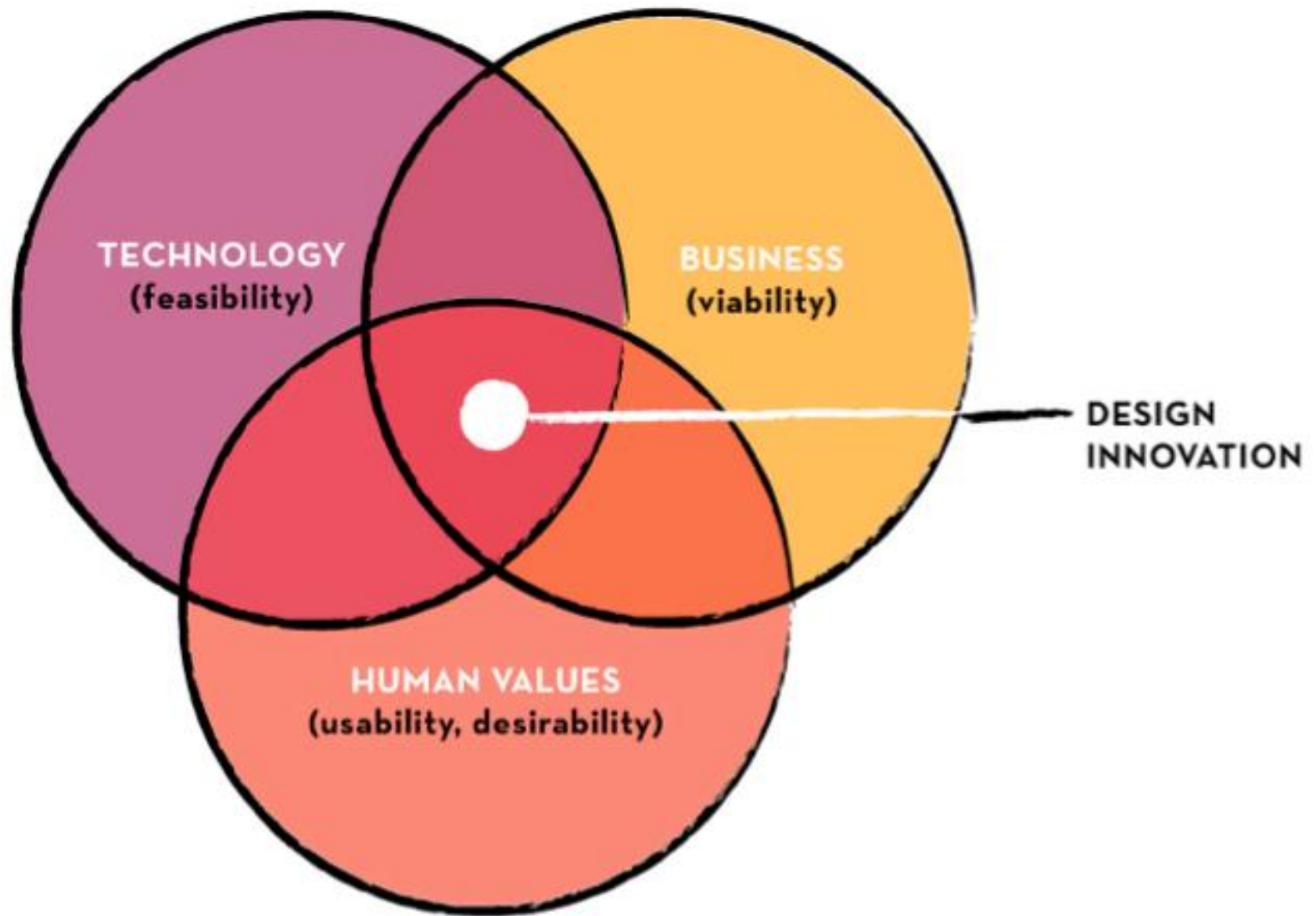


How to organise a Children's Party

Relisience vs Robustness

Effectiveness vs Efficiency

Design Thinking



George
Kembel

d.school,
Stanford
University



THE DESIGN OF BUSINESS



WHY DESIGN THINKING
IS THE NEXT COMPETITIVE
ADVANTAGE

ROGER MARTIN

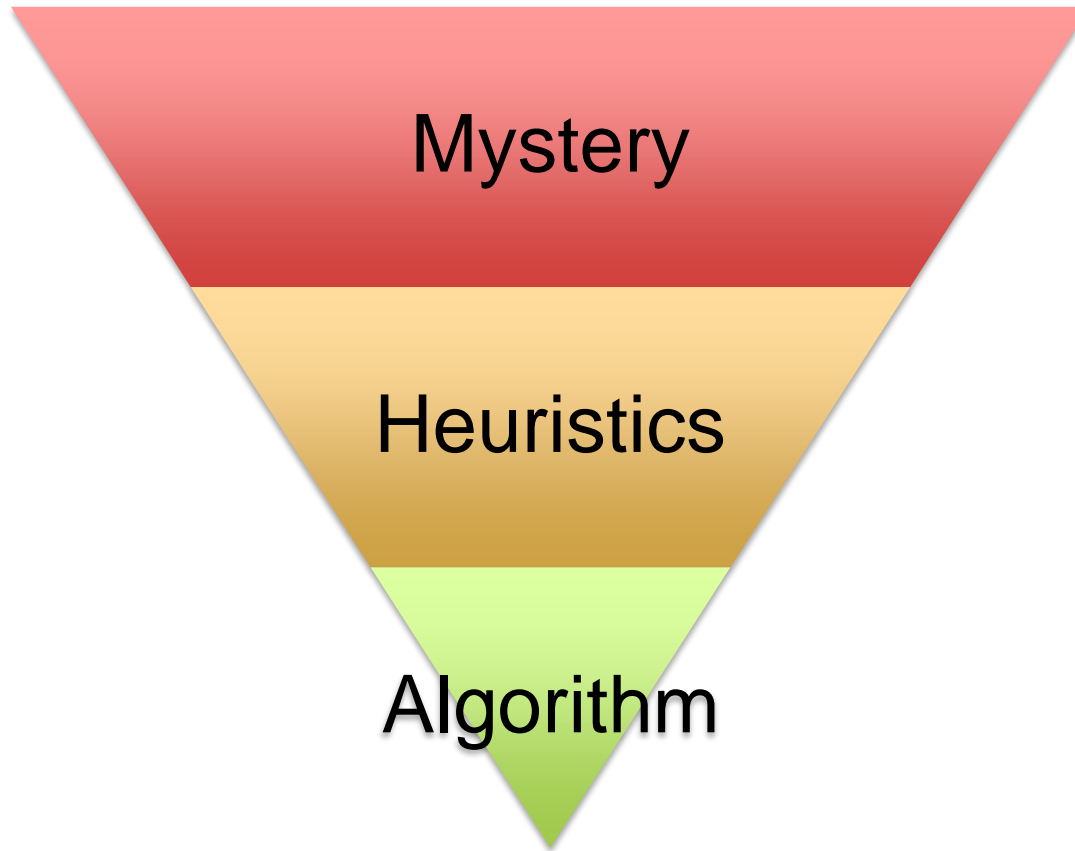
AUTHOR OF THE OPPOSABLE MIND

HARVARD BUSINESS PRESS

**“It is not possible to prove
any new thought, concept
or idea in advance.”**

– Charles Sanders Pierce

Exploration



Exploitation

Balance exploitation and exploration

Reliability vs Validity

The “Prediliction Gap”

Combining design thinking and complexity theory

What

**We have practices based
on these principles**



Probe, Sense, Respond

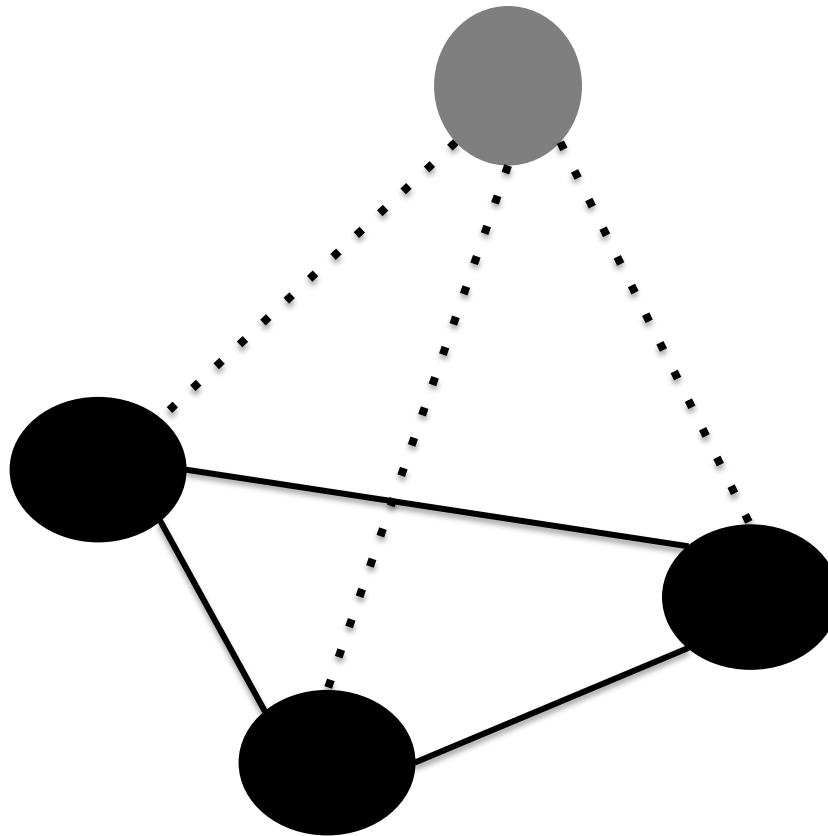


Explore, Exploit



Cynefin

Cognitive Distribution



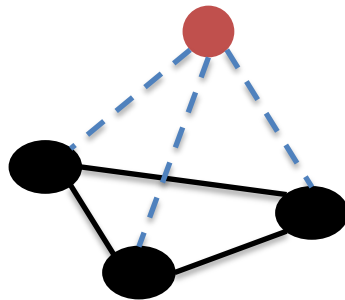




Complex Domain

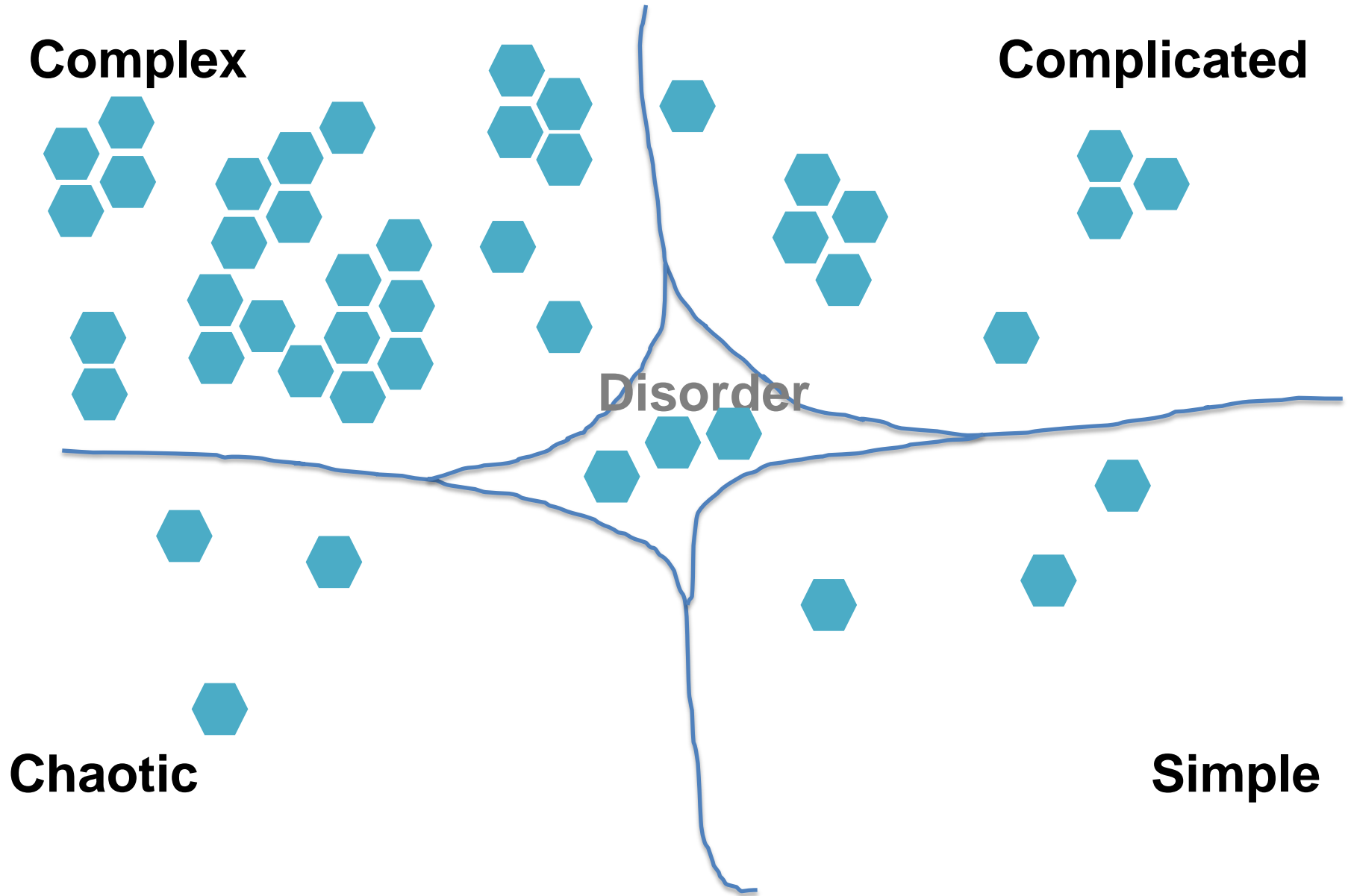
Probe, Sense, Respond

Frequent experiments
Pattern matching
Exploring hunches



15 – 30 people

Evaluating your system



Safe fail probes

Actions in the Complex Domain

Actions in the complex domain

In the complex domain we focus on safe-fail experiments rather than fail-safe design. For any coherent perspective or theory an experimental probe or series of probes are created. Experiments are not necessarily designed to succeed but to create insight and understanding about what is possible. Experiments can be parallel and may even contradict each other as the domain is unknowable.

Name of experiment:	
Description of experiment	Rationale for experiment
Indications of success	Indications of failure
Amplification strategy	Recovery strategy
Actions	Responsibility for actions

Success, Failure,
Amplification, Recovery

**“Shallow dives” into
Chaos**

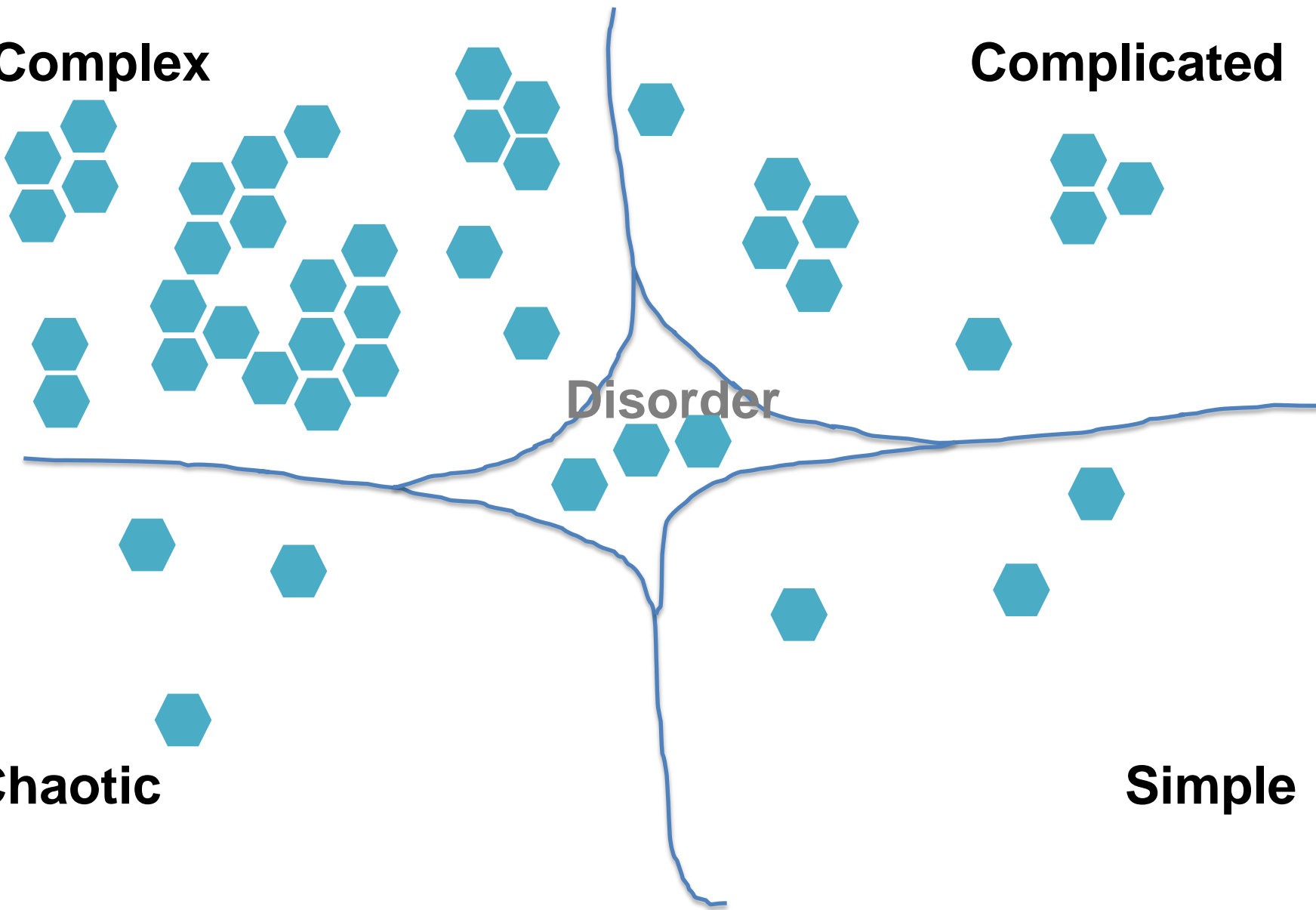
Complex

Complicated

Disorder

Chaotic

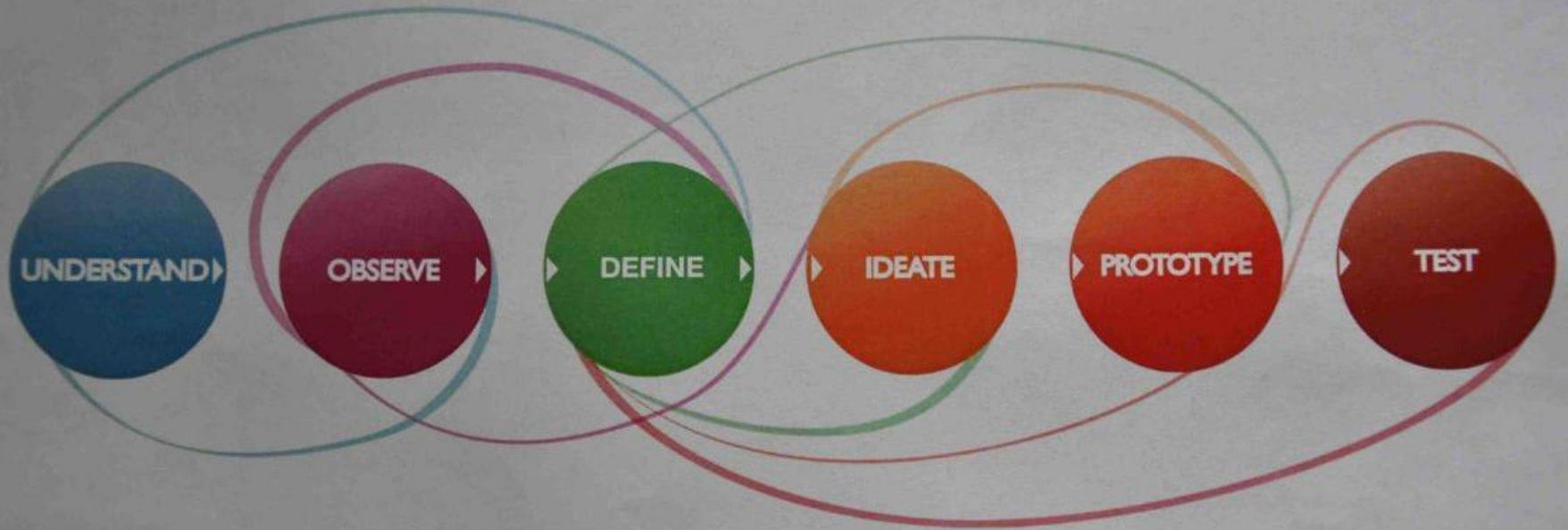
Simple



Design Thinking

Non-linear design
thinking practices

Design Thinking



Create space for the
wildly unexpected

EMP

big idea

port

why not

REFRAME

reframe the need based on insights you discovered

Zach

(name)

needs

a way to show appreciation

= gratitude

immediately by giving the gift
up at having been part of the
additional social connection

Zach = "B"

for

it's not

it's a

showing off

have it. He doesn't

situation of the other person

in Zach

(name)

life

what if gift giving was more
like a conversation where he

can uniquely express gratitude
& have that really valued by
not misunderstood.

metaphor

at himself or
let a great guy help

CREATE

generate unexpected alternatives as possible!
as many

- Gifts common to shared experiences

really don't know how to inspire

Friends Interests
Friends Experiences
Common Experiences

Common Experiences

Possible gifts
that would have
meaning

Sender's Interests
Sender's Experiences

Experiences with gift

Feedback to sender

Gifts are that many
"list of ideas"
- shared party
- having shoes
- it was the
- the party
- gift
- I'd get to be
- more involved
- The party was
- time it was the
- "It's very broken"
- "the woman would love
- etc"

List of possible gifts

With the popularity
idea

Iterate between the

fun & play off each other - that
interaction would be more
valuable than the money

List of desired gifts

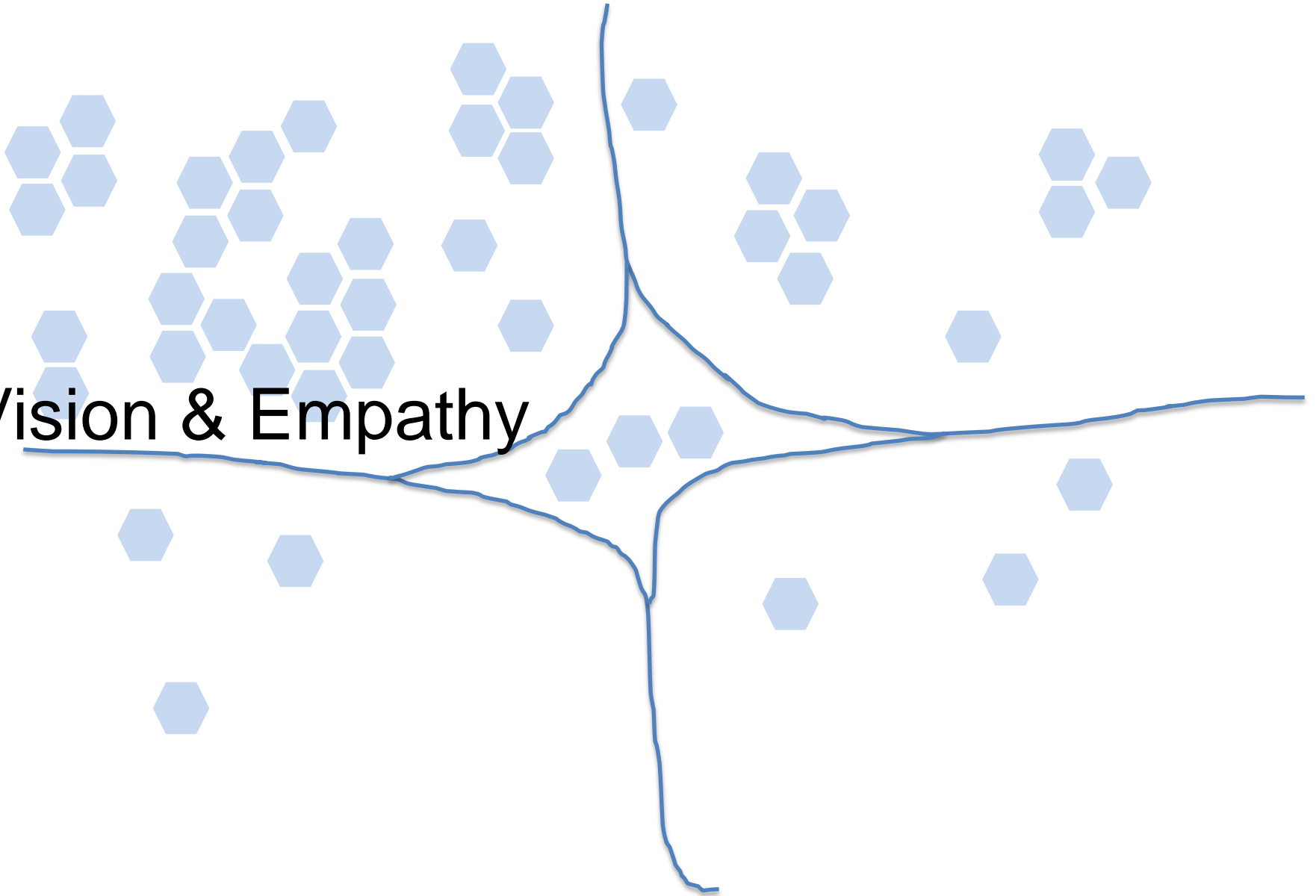
1
2
3
4
5
6
7
8
9
10

6 years

stretch... With on your ideas... go for many ideas... throw in wild ideas!



Vision & Empathy



“MOST Organizations
have what appear to be
suicidal tendencies”



We live in a world of
complexity

Agile adoptions need
to leverage emergence
in complexity

Our journey must
embrace vision with
hunches, exploration
and empathy

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