

REALITY STRIKES BACK



A CARTOON GUIDE TO COMPLEXITY

VIRPI OINONEN

I CAN'T TAKE
THIS ANYMORE!
I HATE UNCERTAINTY,
COMPLEXITY, THE
MESSINESS!



Complexity is my favourite subject as a cartoonist.

The gap between how we imagine the world works (orderly, logical, predictable) and how it actually works (rather less so) is simultaneously very funny and intensely frustrating.

Most organisations are built on the assumption that the world will behave itself. It won't. It never has.

This, I think, is a bit of a problem. If we can only operate in a predictable, linear world how are we supposed to tackle the not so linear problems of our day?

A few years ago, the cartoon on this cover went mildly viral. My inbox promptly filled with messages, almost all beginning the same way: "I saw your cartoon. I feel like I'm the woman at the door." Quite a lot of people, it turned out, had been standing at that door. Quietly. For years.

This book is for them – and for anyone else who has glimpsed the gap between organisational mythology and operational reality, and rather than closing the door and getting on with it, decided that something should probably be done..

The cartoons in this book are communication tools. They also function, in a pinch, as therapy.

To everyone at the door: you have my deepest respect, and my sincere condolences.

Virpi Oinonen
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Espoo
10 March 2026

Basis KINDLY SPONSORED THE BOOK
(EVEN THOUGH THEY HAD ZERO SAY ON THE CONTENT)
WWW.BASIS.CO.UK

COMPLEXITY



CERTAINTY

BUMMER



THAT'S ONE WAY TO LOOK AT IT.



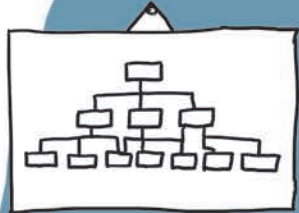
BUT ONLY ONE...

THIS IS OUR HERO WHEN HE WAS STILL ON TOP OF HIS GAME.

THINGS WERE PREDICTABLE

CHANGE WAS SLOW

EFFICIENCY
SWEET
EFFICIENCY

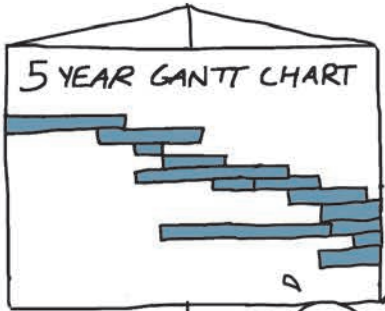
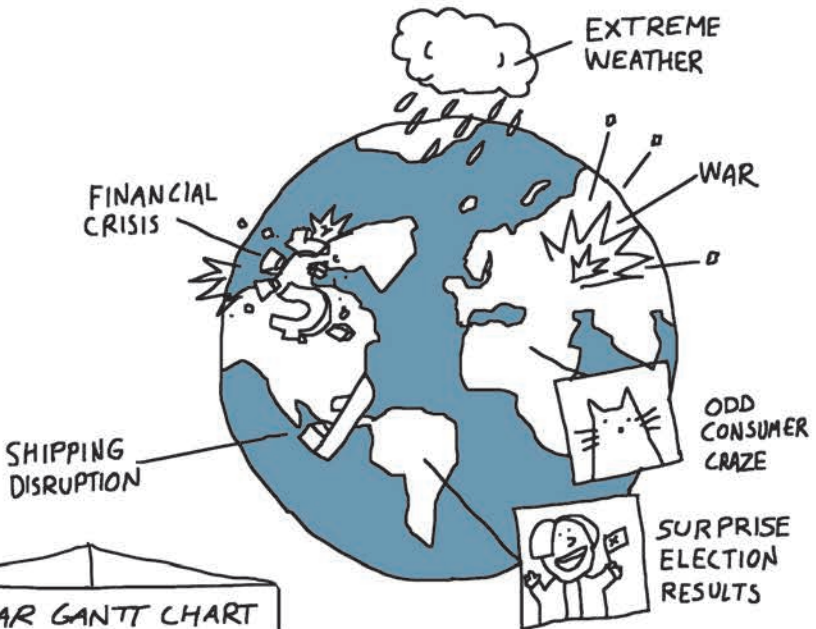


MBA '97



THERE WAS ORDER IN THE WORLD !

BUT THEN THINGS STARTED TO CHANGE...



OH GREAT!
YET ANOTHER
5-YEAR PLAN
RUINED!

SUDDENLY EVERYTHING SEEMED...

UNPREDICTABLE...

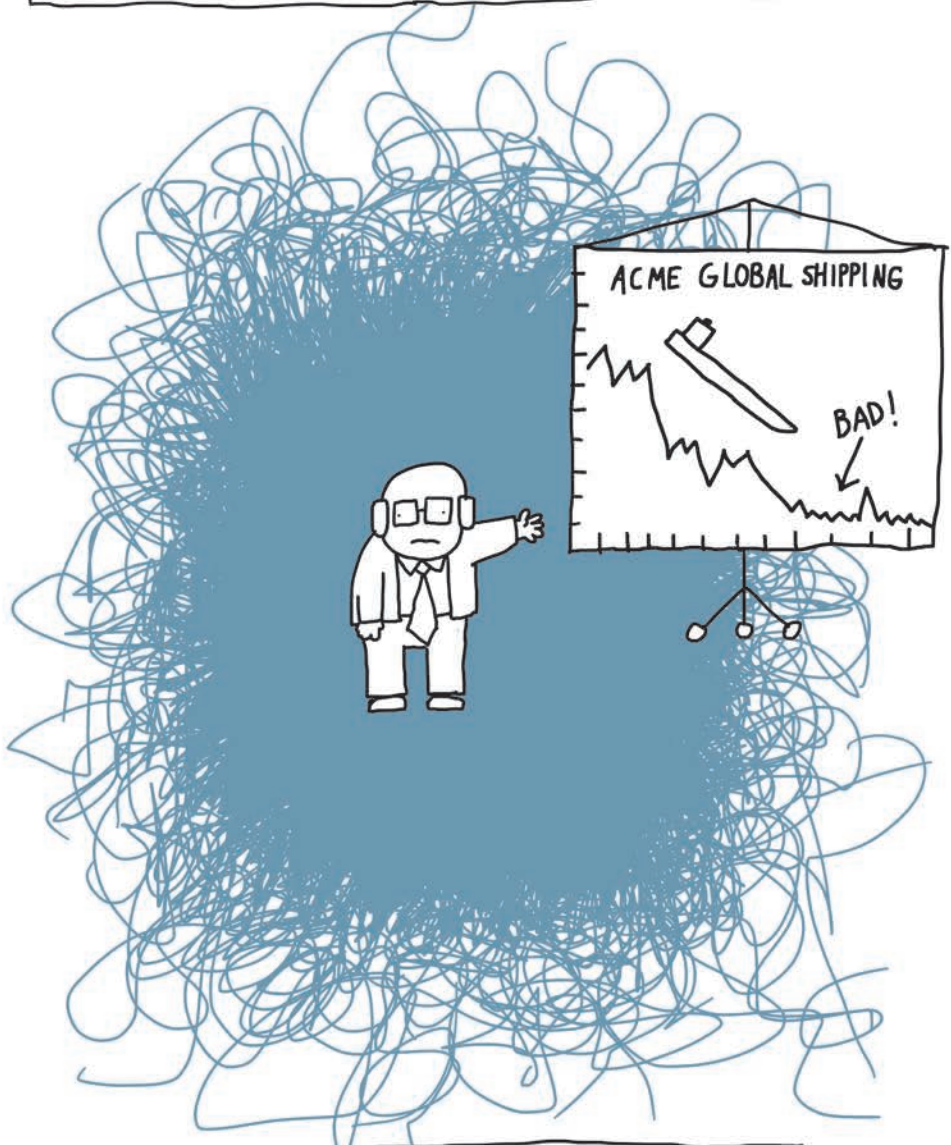
UNSTABLE...

... AND MESSY.



PREVIOUSLY SUCCESSFUL STRATEGIES WERE'NT AS EFFECTIVE.

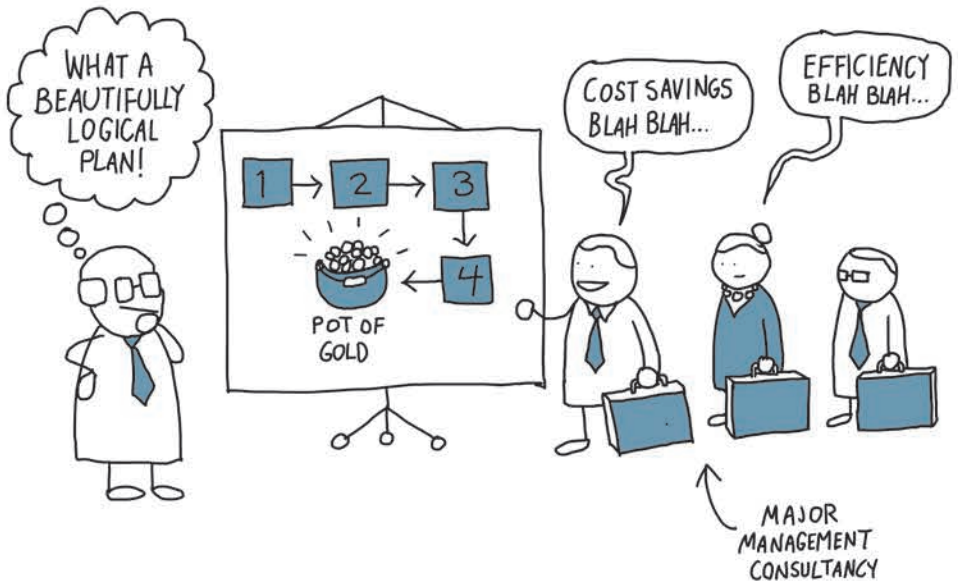
THE COMPANY BOARD WERE LOSING THEIR PATIENCE.



OUR HERO HAD TO DO SOMETHING.

SO HE DID WHAT HE HAD ALWAYS DONE WHEN
FACED WITH PROBLEMS.



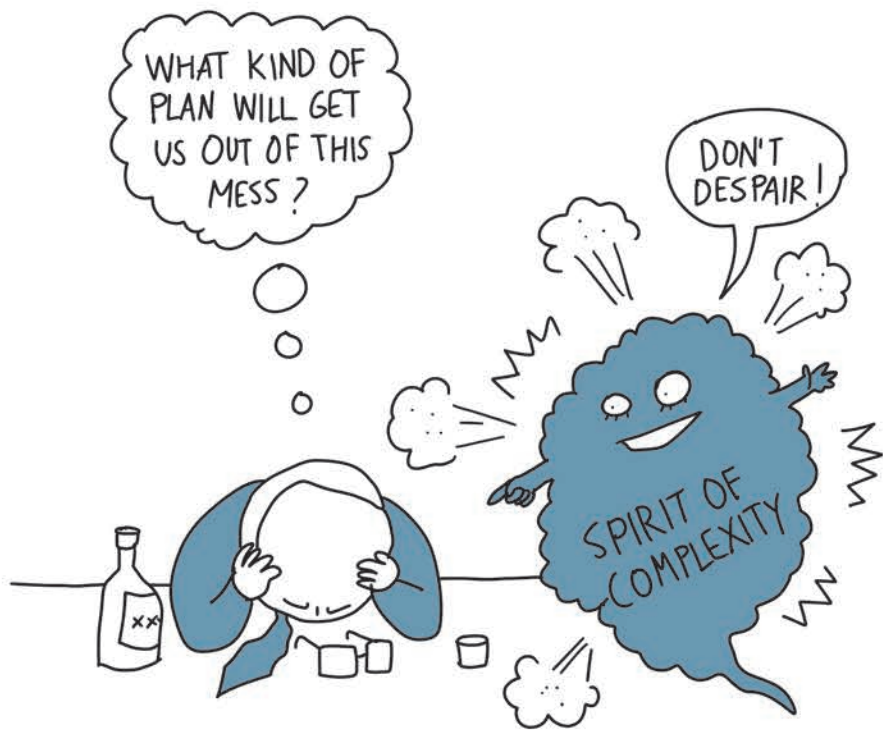


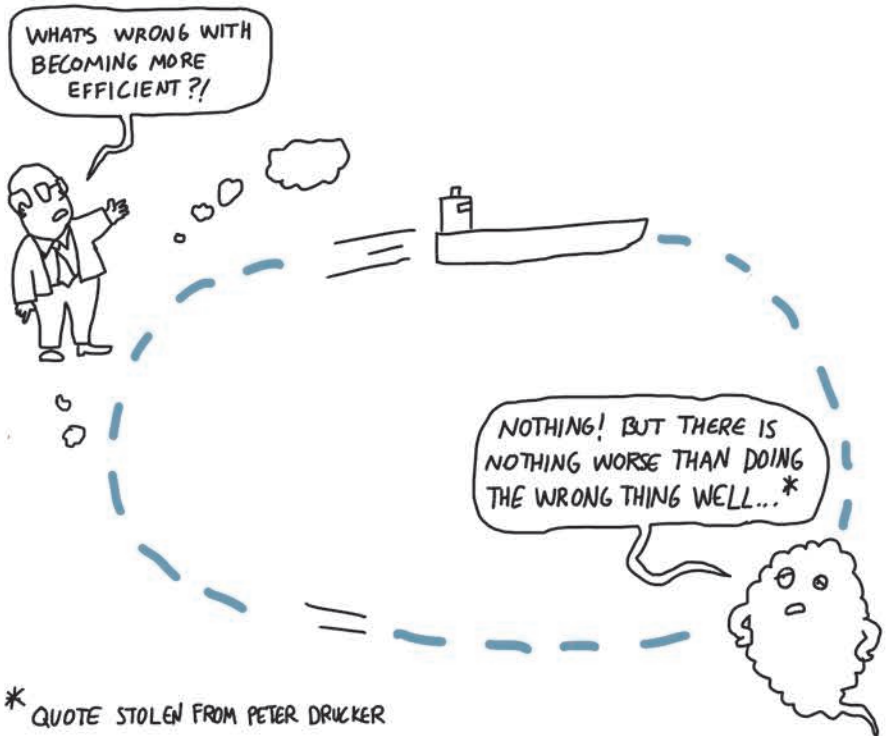
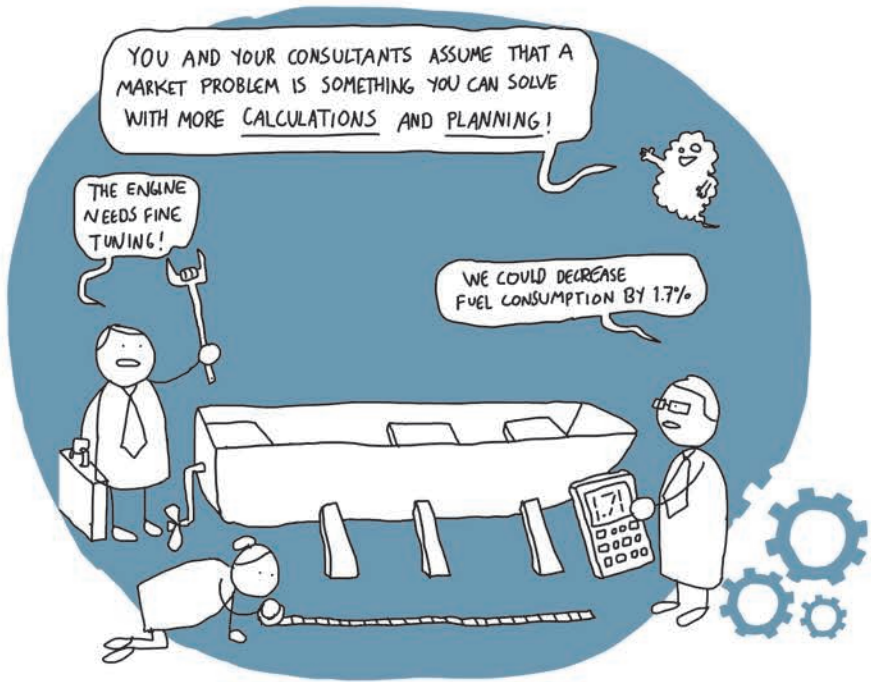
6 MONTHS LATER...



BUT THEN...

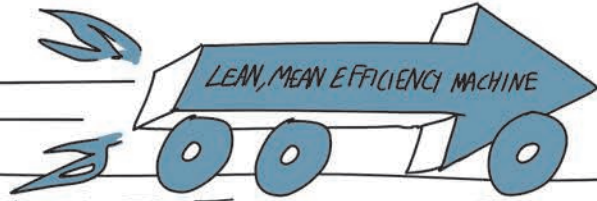
IN AN HOUR OF NEED A FRIEND APPEARED!



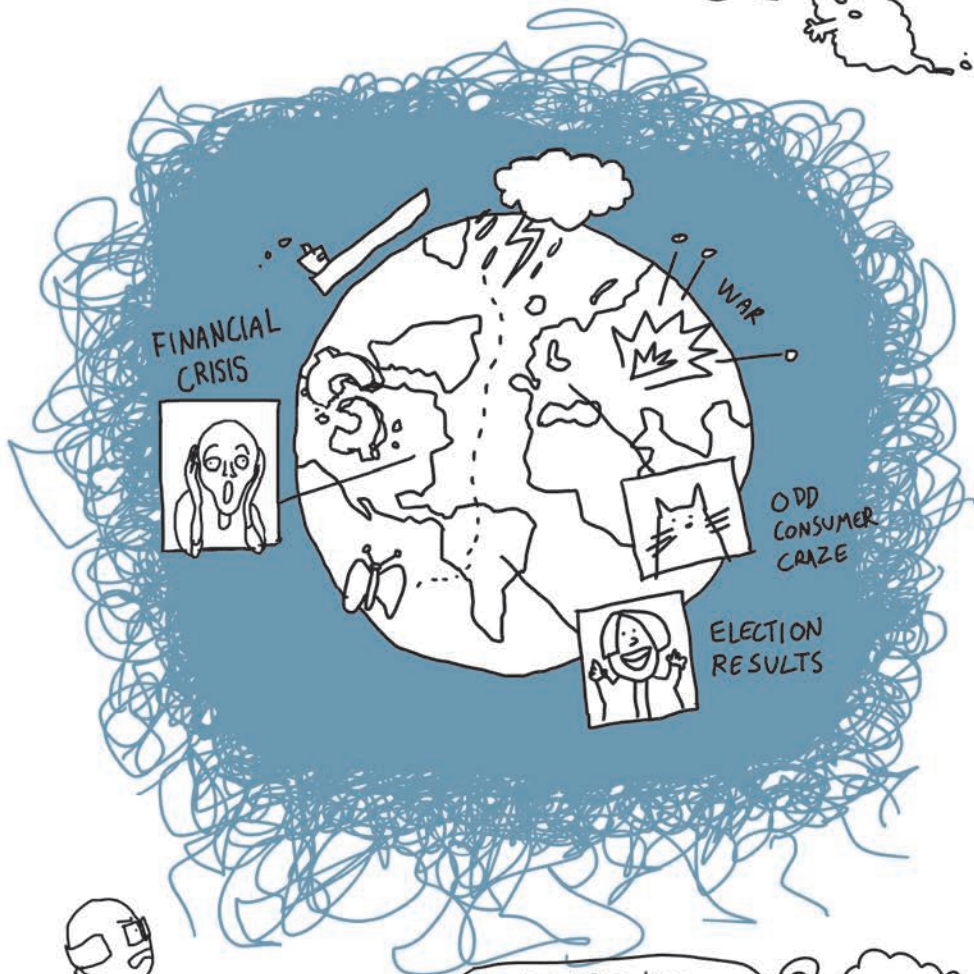


* QUOTE STOLEN FROM PETER DRUCKER

WHEN THE ENVIRONMENT CHANGED YOU COULD NOT CHANGE COURSE.
YOU OPTIMISED YOUR COMPANY OUT OF EXISTENCE.



THE REAL ISSUE IS THAT YOU LIVE IN AN INCREASINGLY
COMPLEX AND UNPREDICTABLE WORLD. YOUR CALCULATIONS
AND EXCESSIVE PLANNING ARE AN ATTEMPT TO CONTROL THE
UNCONTROLLABLE!



NONSENSE!

THE WORLD HAS
OF COURSE ALWAYS BEEN
COMPLEX - BUT HE'S NOT
READY FOR THAT YET.



WHAT DO YOU MEAN

COM

PLEX

ITY?

COMPLEXITY IS EVERYWHERE!

MARKETS, LIKE BATTLEFIELDS AND ECOSYSTEMS, ARE COMPLEX SYSTEMS - THEY ARE DYNAMIC AND OFTEN CONSTANTLY IN MOTION.

NO PLAN SURVIVES CONTACT WITH THE ENEMY.

BUT I LIKE PLANNING!



HELMUTH VON MOLTKE
19TH CENTURY
GERMAN FIELD MARSHAL

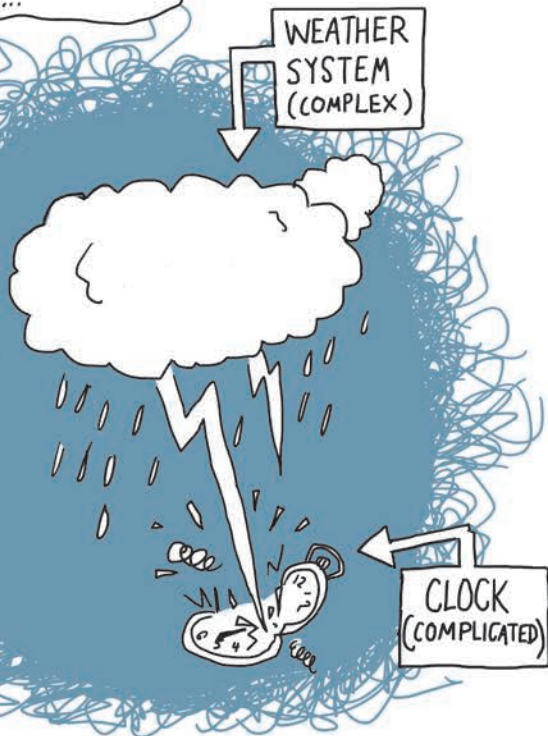
COMPLEX PHENOMENA HAVE THE POWER TO KICK YOUR COMPLICATED AND EFFICIENT SYSTEMS INTO OBLIVION...



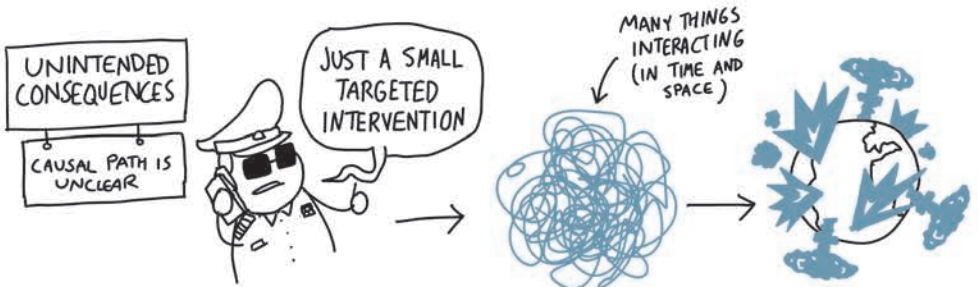
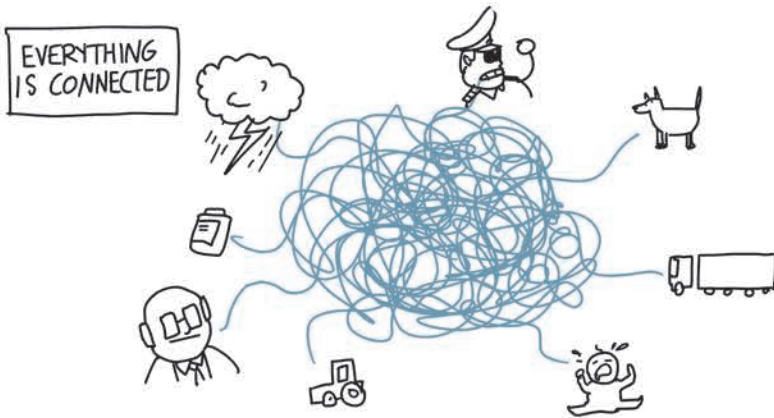
WEATHER SYSTEM (COMPLEX)

ALL PROBLEMS ARE EITHER CLOUDS OR CLOCKS. ONE OF THE PROBLEMS WE HAVE AS A CULTURE IS THAT WE TAKE CLOUDS AND WE PRETEND THEY ARE CLOCKS.

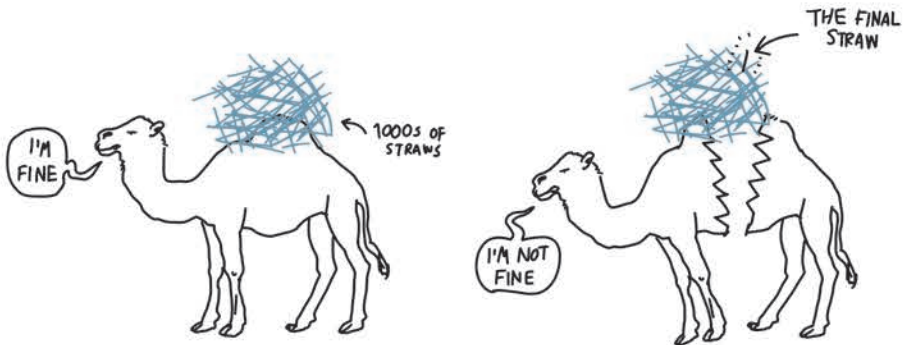
KARL POPPER
PHILOSOPHER
OF SCIENCE



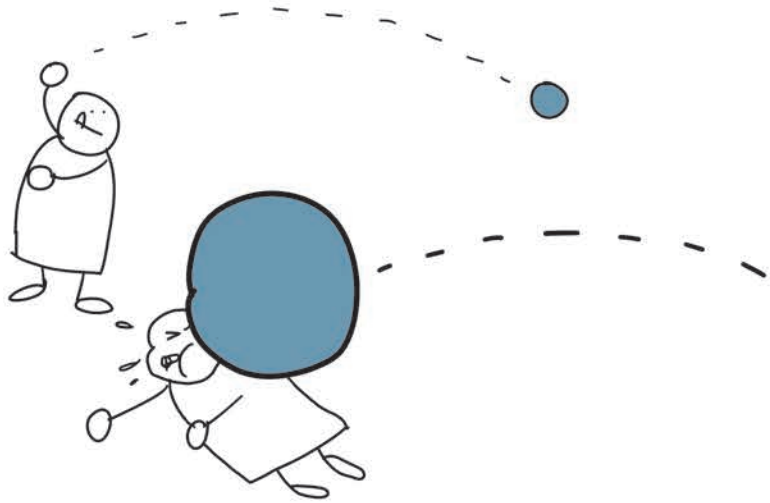
Some elements of complexity



NON-LINEARITY
(CAUSE AND EFFECT ARE NOT PROPORTIONAL)

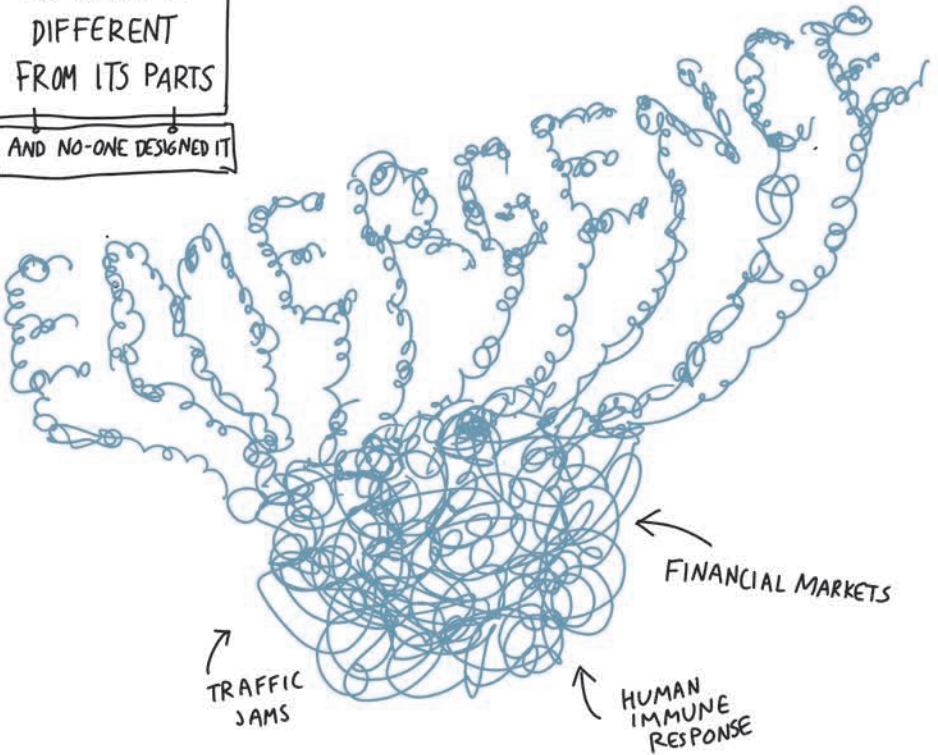


FEEDBACK
LOOPS



THE WHOLE IS
DIFFERENT
FROM ITS PARTS

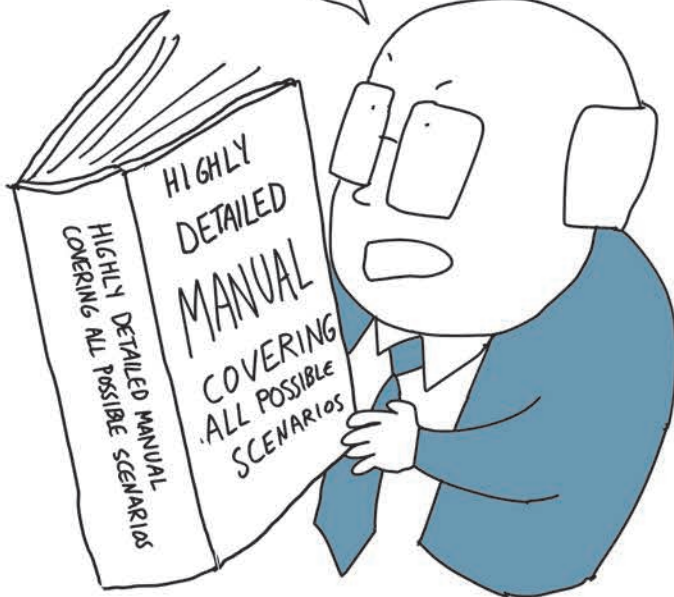
AND NO-ONE DESIGNED IT



EVERYTIME WE JOKE THAT "THERE'S NO INSTRUCTION MANUAL" FOR A SITUATION, WE TAP INTO AN INNATE UNDERSTANDING OF COMPLEXITY.*



HMPH!
IF WE HAVE ALL THE DATA
WE CAN PRODUCE AN
INSTRUCTION MANUAL
FOR EVERYTHING!



*Quote stolen from Jen Briselli. For a really good simple introduction to the concept of complexity watch Briselli's animation "Complexity informed strategy": <https://vimeo.com/1078413936?fl=pl&fe=sh>

COMPLEXITY SCIENCE IS DEFINED BY A TYPE OF SYSTEM THAT CUTS
ACROSS OTHER ACADEMIC SUBJECT MATTERS.*

PHYSICS

SOCIOLOGY

NEUROSCIENCE

ECOLOGOLOGY

AGRICULTURE

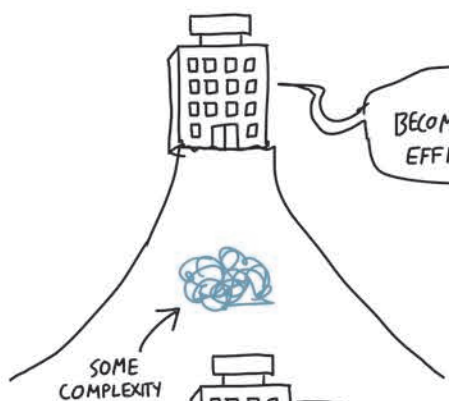
CLIMATE
SYSTEMS

WHEN YOU DEAL WITH COMPLEXITY
EXACT PREDICTION IS IMPOSSIBLE.
IT'S NOT SLOPPY SCIENCE.

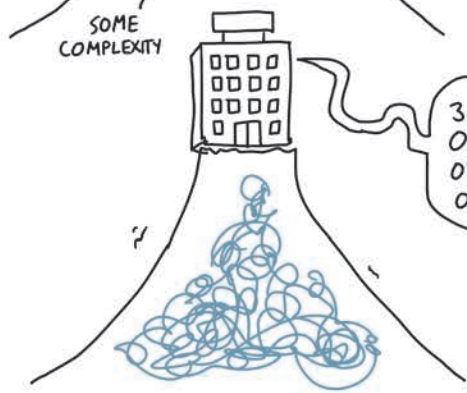
ECONOMICS

*The Santa Fe Institute is the world's first and most influential research centre dedicated to complexity science. It founded as an alternative to the increasing specialisation observed in mainstream science.

IGNORE COMPLEX SYSTEMS AT YOUR PERIL. THEY CAN CHANGE ABRUPTLY- ESPECIALLY IF YOU TREAT THEM AS LINEAR, PREDICTABLE SYSTEMS.



WE MUST BECOME A LEAN, MEAN EFFICIENCY MACHINE!



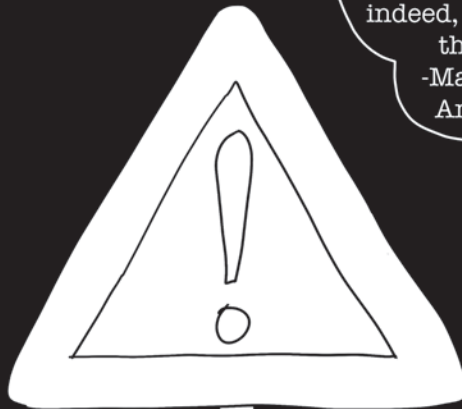
3 WORDS: OPTIMISE, OPTIMISE, OPTIMISE!



"The inevitable never happens.
It is the unexpected always."
-John Maynard Keynes

"History does not crawl;
it jumps."
-Nassim Nicholas Taleb

"Never doubt that a small
group of thoughtful,
committed citizens can
change the world;
indeed, it's the only thing
that ever has."
-Margaret Mead,
Anthropologist



TIPPING POINT
AHEAD

"History is much more the product
of chaos than of conspiracy.
The world is far too complex to
be easily manipulated."
-Zbigniew Brzezinski,
Former U.S. National
Security Advisor

"There are decades where
nothing happens;
and there are weeks where
decades happen."
-Attributed to Lenin

WHILE EFFICIENCY IS OF COURSE HUGEY IMPORTANT, IT CANNOT BE YOUR SOLE FOCUS.



Black Swan effects are necessarily increasing, as a result of complexity, interdependence between parts, globalization and the beastly thing called 'efficiency' that makes people now sail too close to the wind*.



NASSIM NICHOLAS
TALEB

BLACK SWAN =
A HIGHLY IMPROBABLE,
UNPREDICTABLE EVENT

CORPORATE
STRATEGY



*Nassim Nicholas Taleb: Antifragile: Things That Gain from Disorder



THERE'S A CONFLICT
BETWEEN HOW THE
WORLD WORKS, AND
HOW YOU WANT IT
TO WORK.

SOME PEOPLE GET IT,
BUT FACE AN UPHILL
BATTLE TRYING TO
EXPLAIN IT.



UM...



– Gregory Bateson

The major problems in the world are the result of the difference between how nature works and the way people think.



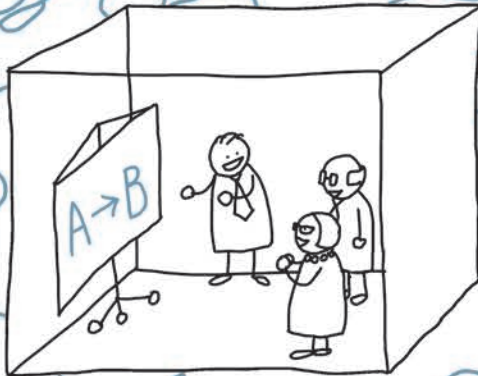
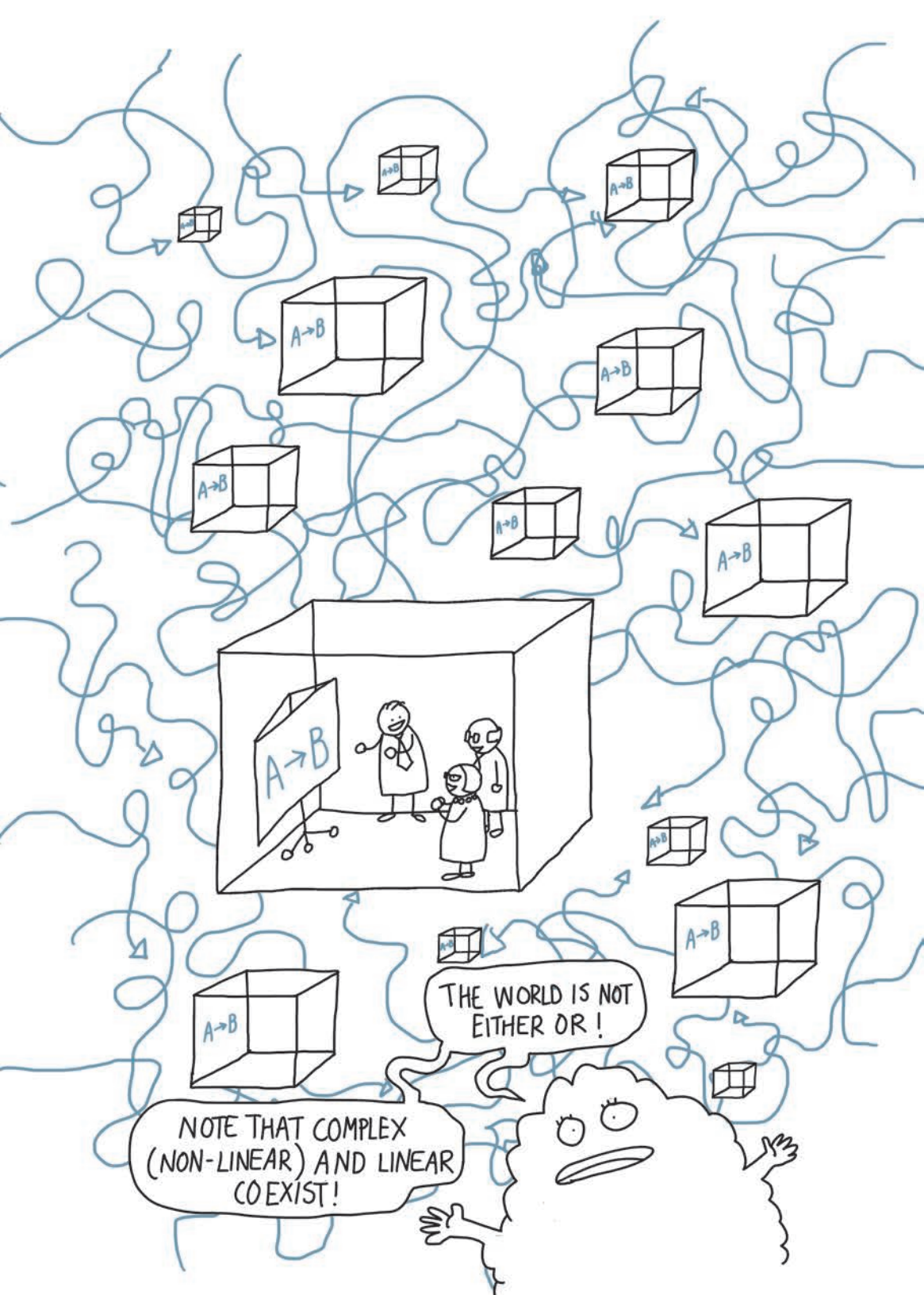
– Elinor Ostrom

To explain the world of interactions and outcomes occurring at multiple levels, we also have to be willing to deal with complexity instead of rejecting it.



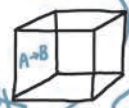
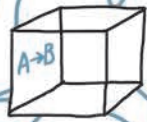
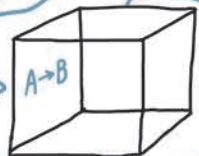
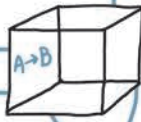
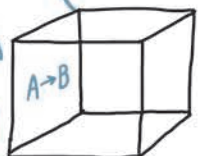
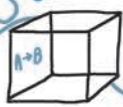
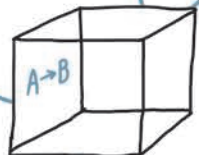
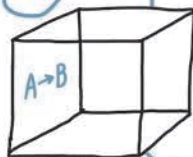
– Donella Meadows

We can't control systems or figure them out. But we can dance with them!



NOTE THAT COMPLEX
(NON-LINEAR) AND LINEAR
COEXIST!

THE WORLD IS NOT
EITHER OR!





BUT WE CURRENTLY BEHAVE
AS IF THE WORLD FOLLOWS
A LINEAR LOGIC ONLY.
RESULTING IN A...

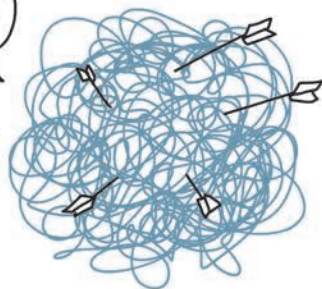
SIM MATCH

... BETWEEN THE PHENOMENON
AND YOUR ATTEMPT TO DEAL WITH IT.



VERY RATIONAL
LINEAR SOLUTION

LOL



I THINK IT'S
MOCKING US



PEOPLE HAVE TRIED TO WARN ABOUT THIS MISMATCH, BUT I GUESS THE MESSAGE HAS NOT BEEN THAT POPULAR.

Variety
absorbs
variety

ASHBY'S LAW

When the variety or complexity of the environment exceeds the capacity of a system (natural or artificial) the environment will dominate and ultimately destroy that system.

Organisations fail not because they lack control, but because they use the wrong kind of control for complex environments.

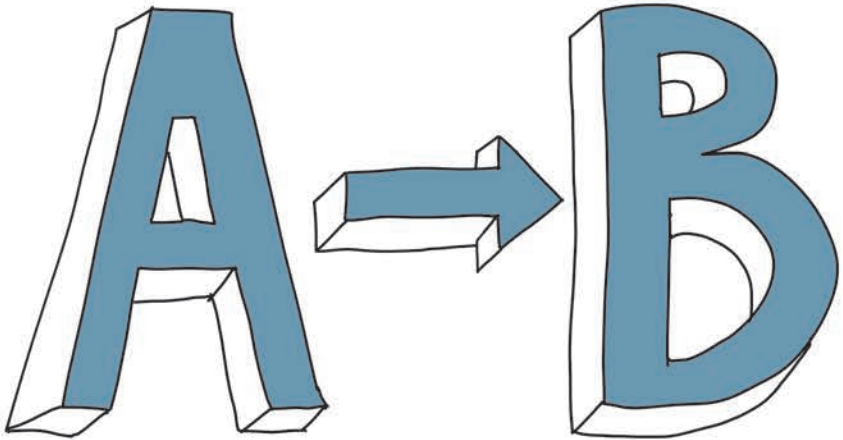
WILLIAM R.
ASHBY

STAFFORD
BEER

A LOT OF PEOPLE "GET" COMPLEXITY ON AN INTUITIVE LEVEL.

BUT MANAGERS WHO HAVE SPENT THEIR WHOLE CAREERS OPTIMISING EFFICIENCY IN ORGANISATIONS SEEM TO STRUGGLE WITH IT.

MAYBE IT'S BECAUSE A CERTAIN ASSUMPTION IS BAKED INTO MOST EFFICIENCY FOCUSED WORK METHODS. NAMELY...



SIMPLE
LINEAR CAUSALITY



YOU MIGHT AS WELL
SAY YOU MEAN ME!



THERE IS NO SUCH
THING AS UNCERTAINTY,
ONLY SLOPPY ROOT CAUSE
ANALYSIS!



ALL YOU HAVE TO DO
IS TO DRILL DOWN TO
THE ANSWER WITH SMART
QUESTIONS...



THE SOLUTION
OR
THE ROOT CAUSE



BEHOLD:
THE ROOT
CAUSE!



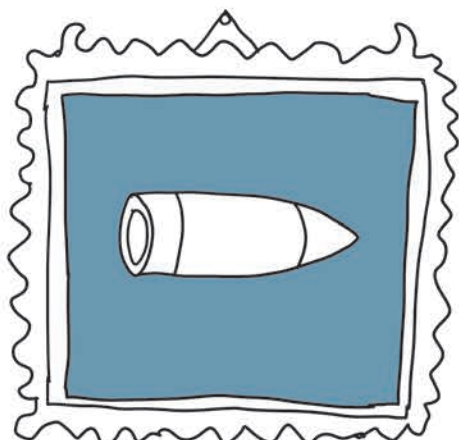
BECAUSE IT WASN'T REAL.
IT ONLY WORKED
IN THE REALM OF
YOUR OWN LINEAR
IMAGINATION.

WHA..
WHY IS IT
DISINTEGRA-
TING?!



EPISTEMIC
BLACK
HOLE

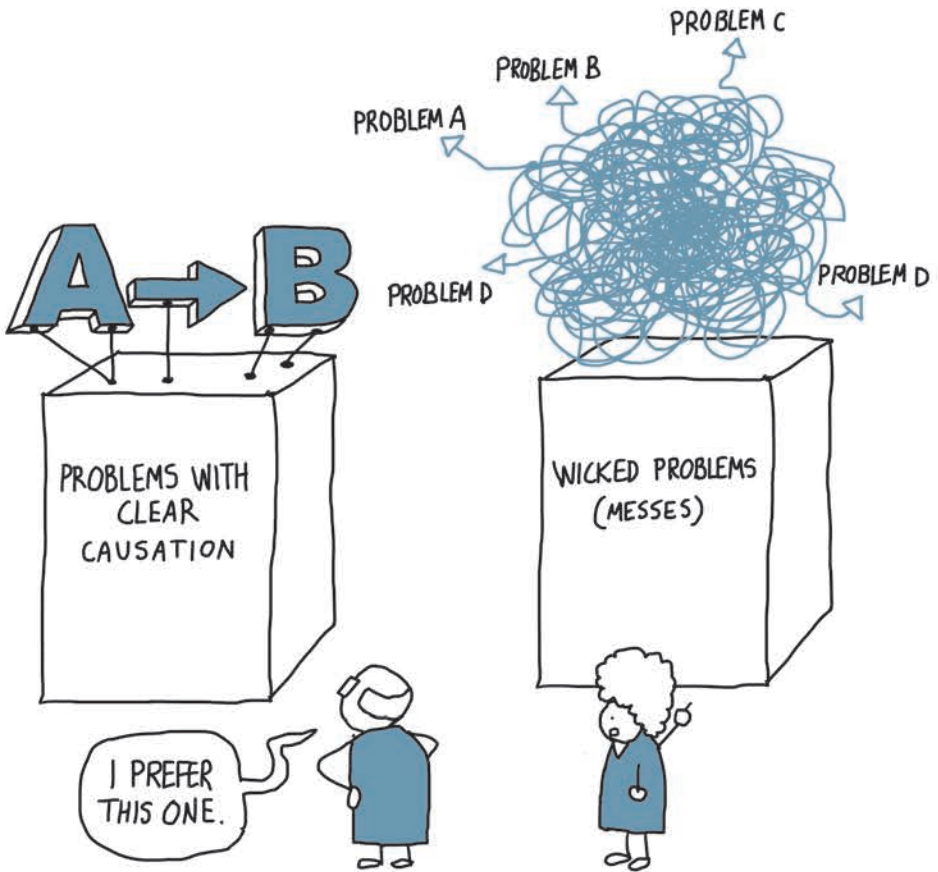
THE
MUSEUM
OF
CAUSAL ART



THE SILVER BULLET



THE SMOKING GUN



Managers are not confronted with problems that are independent of each other; but with dynamic situations that consist of complex systems of changing problems that interact with each other.

I call such situations messes....
Managers do not solve problems,
they manage messes.

RUSSELL ACKOFF

IT'S IMPORTANT TO UNDERSTAND THE HISTORICAL CONTEXT
THAT PRODUCED OUR CURRENT FOCUS ON EFFICIENCY.
EVERYTHING IS ABOUT...



STANDARISATION AND
← SCALABILITY →

THE SHADOW OF
INDUSTRIAL ERA
THINKING LOOMS
STRONG.

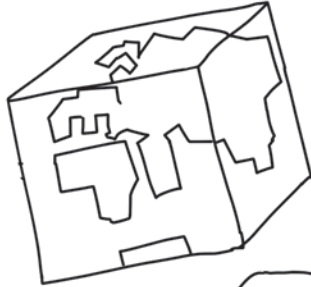
FREDERICK WINSLOW TAYLOR

OH HI

THE
PRINCIPLES OF
SCIENTIFIC
MANAGEMENT

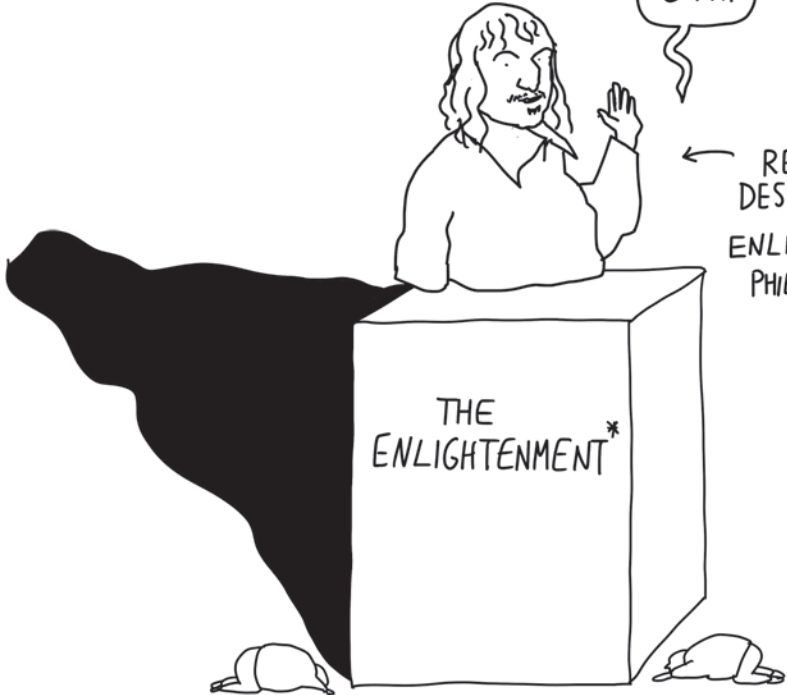


THE ROOTS OF SCIENTIFIC MANAGEMENT CAN BE TRACED BACK TO THE MECHANISTIC RATIONALISM* OF THE ENLIGHTENMENT.

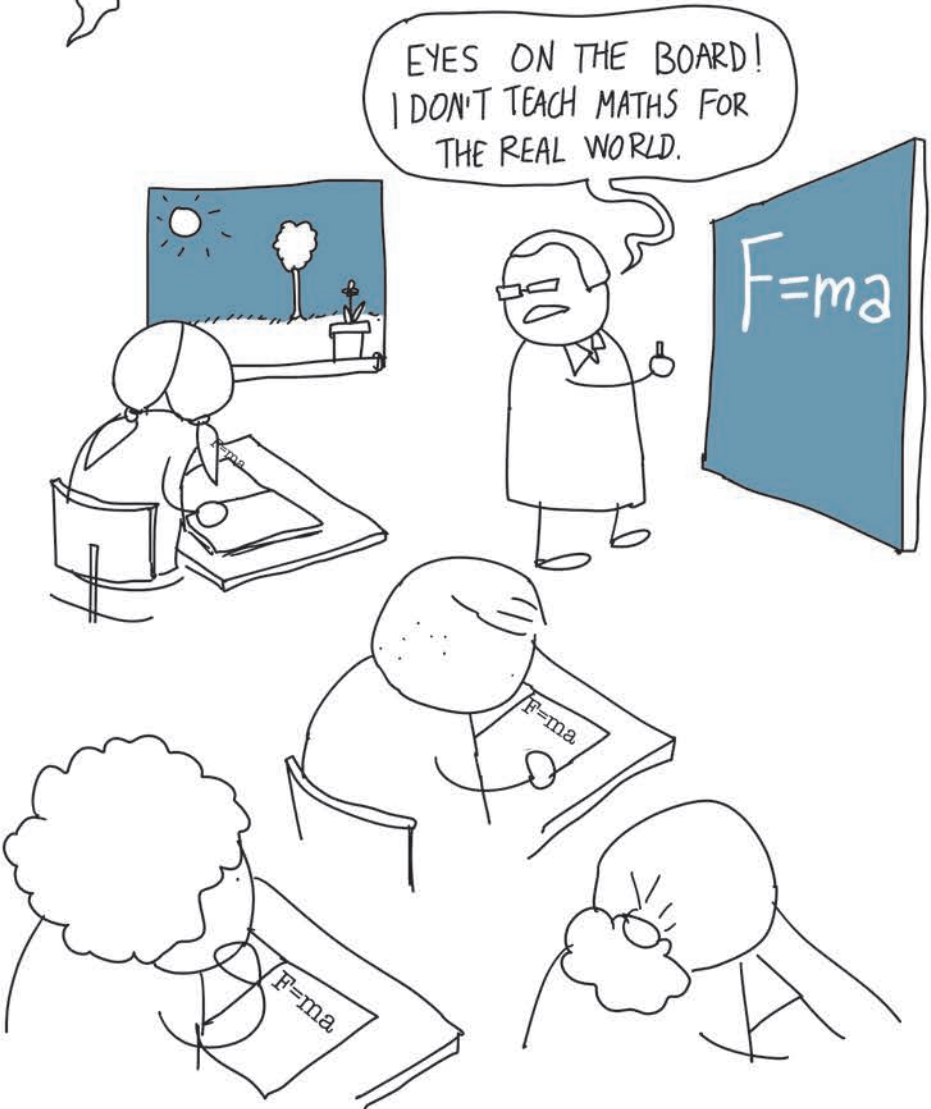
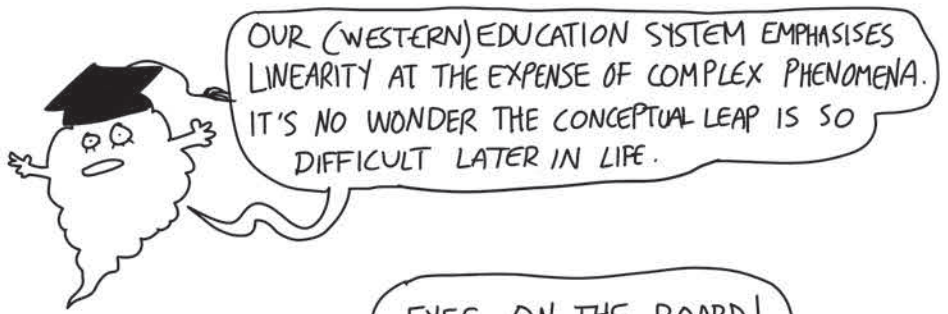


OH HI

← RENÉ DESCARTES
ENLIGHTENMENT
PHILOSOPHER



*The world is a machine. The whole equals the sum of its parts.



Cartoon inspired by an example shared by Professor Neil Johnson in podcast Simplifying Complexity: episode "The Sandpile model", 10 July 2023.




YOU'RE STILL IN THE
GRIP OF NEWTONIAN PHYSICS.

WHILE IT EXPLAINS A LOT, IT
DOESN'T COVER ALL PHENOMENA*
SCIENCE HAS EVOLVED TO DEAL WITH
COMPLEX, NON-LINEAR REALITY
-AND SO SHOULD YOU.

LISTEN MATE,
STOP HOLDING
ONTO ME LIKE
YOU'RE ABOUT
TO DROWN!

I DON'T LIKE
THINGS THAT DON'T
HAVE ONE ROOT
CAUSE!

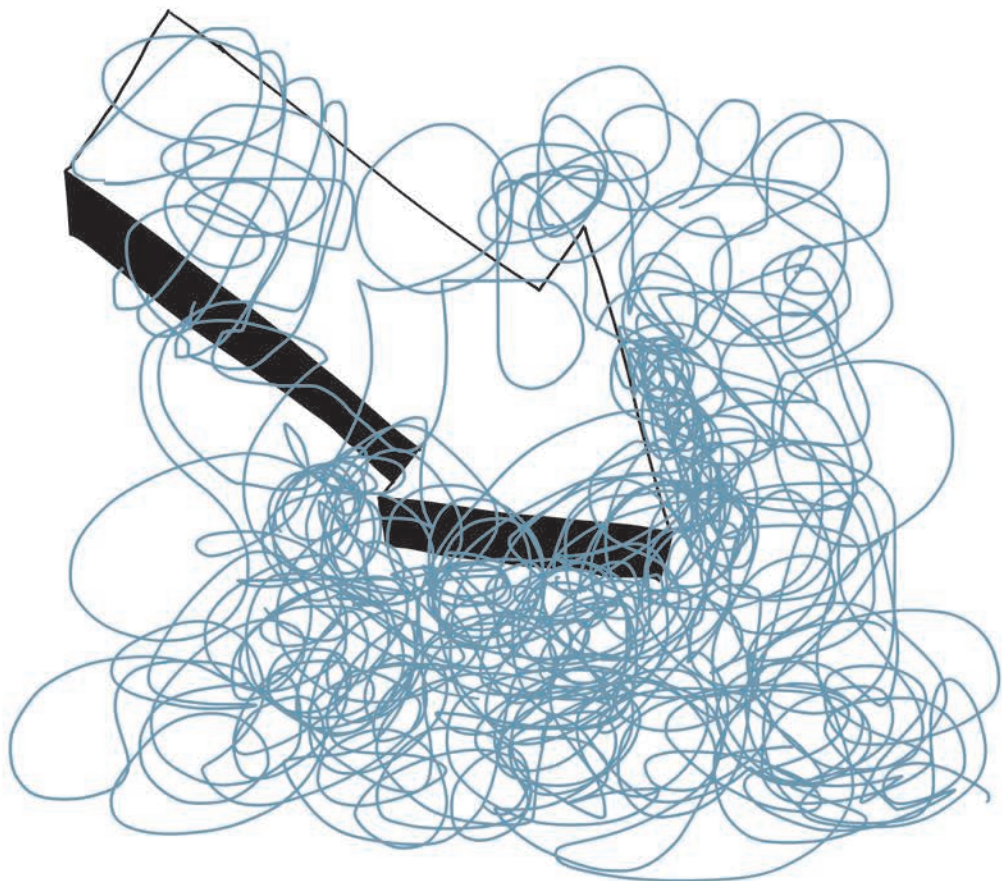
SIR
ISAAC
NEWTON
(FICTIONAL
SCENE)



BUT TAYLOR ONLY MEASURED WHAT WAS MEASURABLE.
HE APPLIED LINEAR THINKING IN THE RIGHT PLACES!



YOU AND YOUR PEERS, HOWEVER, HAVE TAKEN
MEASURING AND THE UNDERLYING ASSUMPTION OF SIMPLE
LINEARITY INTO REALMS IT DOES NOT BELONG.



WHEN SIMPLISTIC LINEAR THINKING GETS APPLIED
IN COMPLEX ENVIRONMENTS, THE END RESULT IS OFTEN...



**UNINT
CONSEQ**



**ENDED
UENSES**

CAUSAL
**CAUTIONARY
TALES**

STARRING PEOPLE WHO LOVED SIMPLE,
STRAIGHTFORWARD CAUSAL EXPLANATIONS

HOW THEY
THOUGHT
THE WORLD
WORKS

HOW
THE WORLD
ACTUALLY
WORKS



AAAAA...

CASE: PROHIBITION



ALCOHOL IS EVIL.
IT CAUSES CRIME,
HEALTH PROBLEMS,
MORAL DEGRADATION...

THE BAN ON ALCOHOL LED TO
FOLLOWING UNINTENDED CONSEQUENCES...

... THE RISE OF ORGANISED CRIME ...

... CORRUPTION

... UNEMPLOYMENT

... AND LOSS OF TAX REVENUE

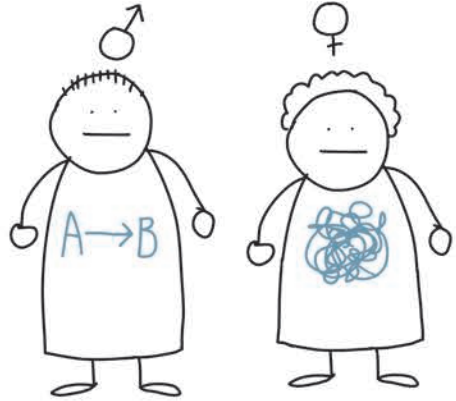


WANNA
INCREASE
YOUR WEEKLY
ORDER OF
WHISKEY?

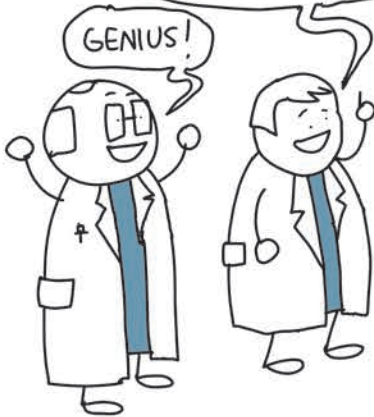


CASE: MEDICAL RESEARCH

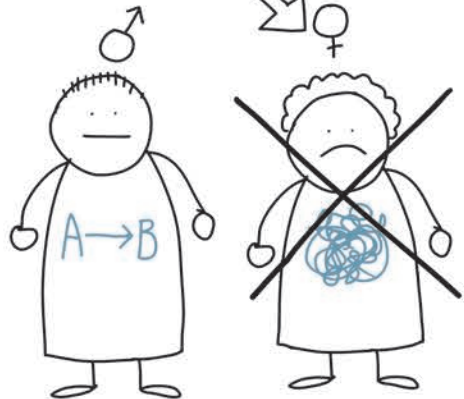
HORMONE FLUCTUATIONS
IN WOMEN MAKE RESEARCH
DIFFICULT! SO MANY
VARIABLES AND INTERACTIONS!



HEY I KNOW!
LET'S REDUCE THE NUMBER
OF VARIABLES BY ONLY
CONDUCTING RESEARCH
ON MEN!



Thanks to this "simplifying omission"*
in medical research women face excess
risk of adverse drug reactions
— which occur approximately
twice as often in women
as in men**.



*This also raises a bias question: whose complexity gets dismissed as "noise"?
**Zucker & Prendergast (2020), *Biology of Sex Differences* (Springer/Nature):
<https://link.springer.com/article/10.1186/s13293-020-00308-5>

CASE: FAILURE DEMAND.*

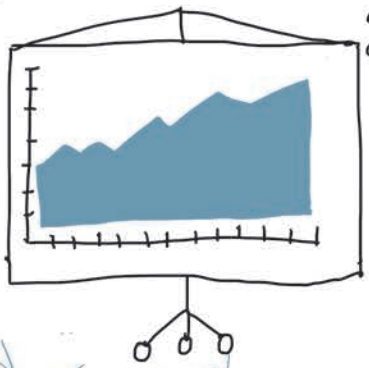
ADMINISTRATOR



WE TOLD DOCTORS TO LIMIT THEIR APPOINTMENTS TO 10 MINUTES AND NOW OUR GP SURGERY TREATS 20% MORE PATIENTS!

WOW!

CLAP CLAP



YEAH, BUT THAT 20% CONSISTS OF RETURNING PATIENTS! THEY COME BACK BECAUSE WE CAN'T "PROCESS" THEIR COMPLEX ISSUES IN 10 MINUTES!

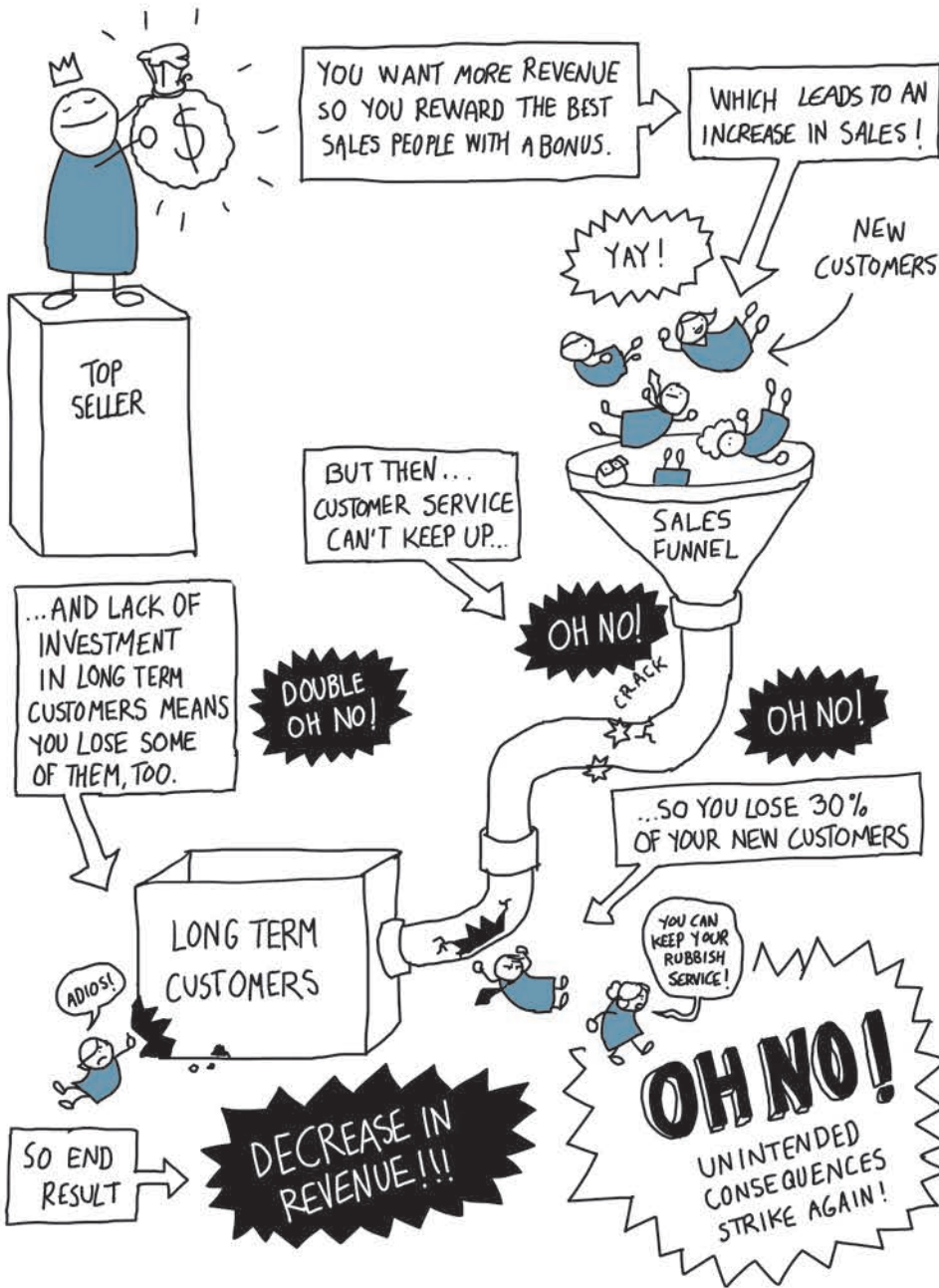


I'M DIABETIC AND I HAVE A BIT OF A DRINKING PROBLEM



* Failure demand is caused by a failure to resolve an issue for the customer. The customer then has to come back again and again. This costs more than if the organisation had invested in solving the issue in one go.

CASE: PERFORMANCE BASED PAY

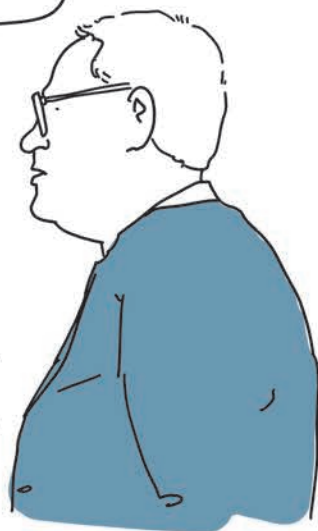


When a measure
becomes a target,
it ceases to be
a good measure*

“Any observed statistical regularity
will tend to collapse once pressure
is placed upon it for control purposes”.

ECONOMIST CHARLES GOODHART

*Goodhart's principle, sharpened by Marilyn Strathern

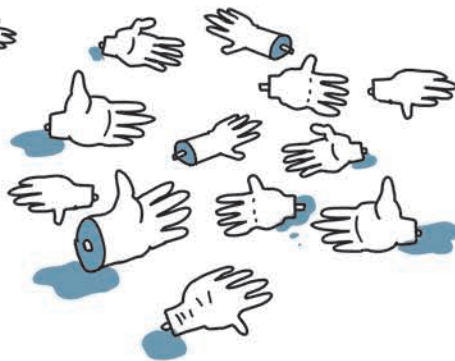


WHENEVER YOU CREATE
OUTCOME-BASED TARGETS IN A
COMPLEX ENVIRONMENT THERE
IS A RISK OF...

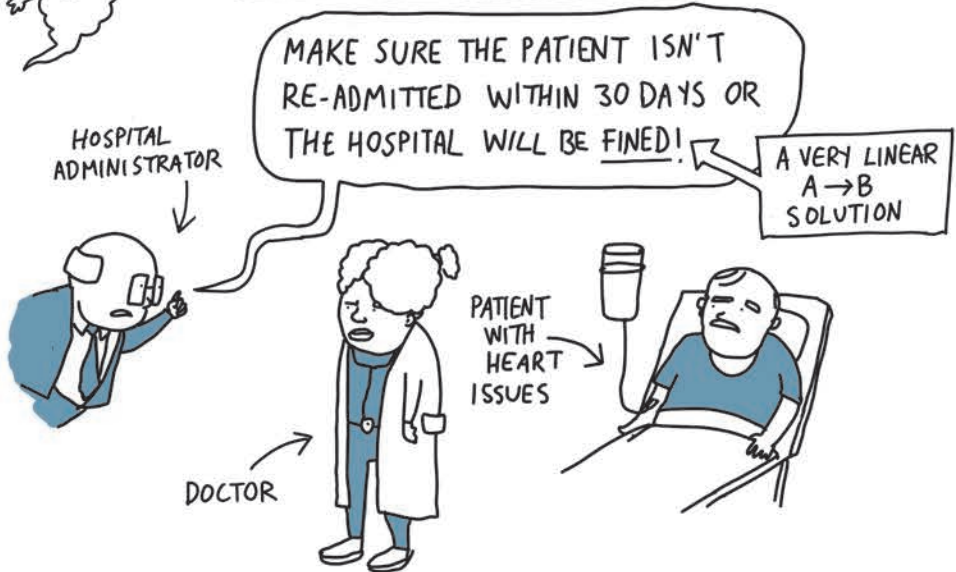


...
*P*erverse
incentives

ALL HANDS ON DECK,
AS YOU REQUESTED.

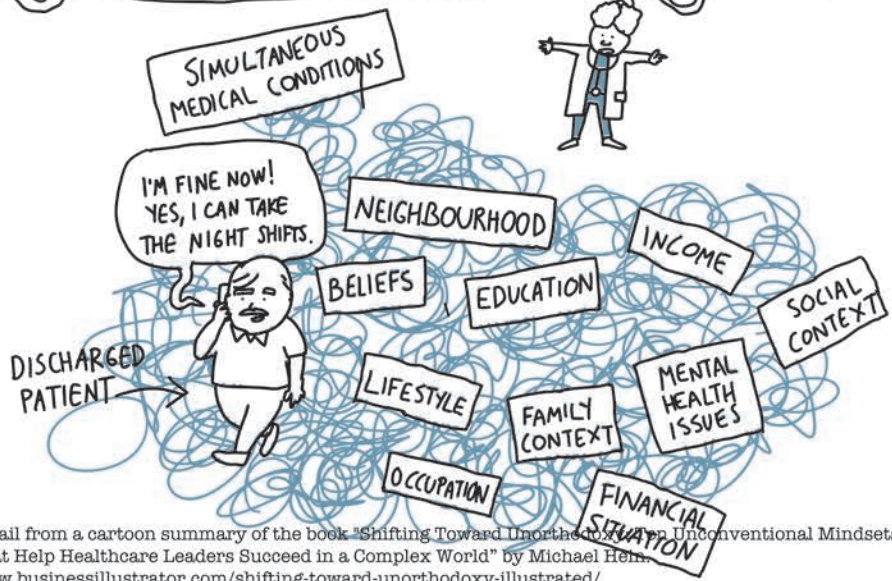


THESE EXAMPLES ARE EVERYWHERE. TAKE THIS COMMON PRACTICE IN US HOSPITALS FOR EXAMPLE.

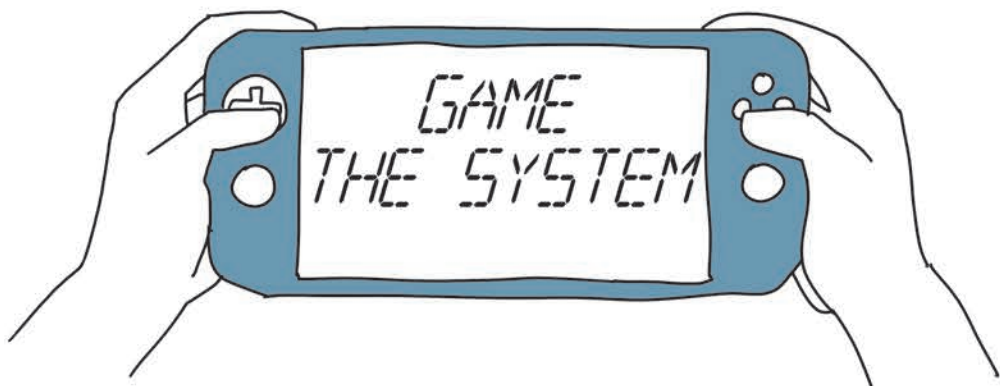


THE PROBLEM IS THAT RE-ADMISSION ARE OFTEN THE RESULT OF COMPLEX INTERPLAY OF FACTORS.

THE HOSPITAL CAN'T CONTROL THESE!



IN THESE KINDS OF SITUATIONS IT'S
NO SURPRISE THAT PEOPLE THEN



OH NO! YOU AGAIN!
WE'LL MARK YOU
DOWN AS A
"VISITOR."

A RATIONAL
ACT GIVEN
THE CONTEXT



IN THE PUBLIC SECTOR AND IN NON-PROFITS
IT CAN RESULT IN SOMETHING CALLED...



IMPACT THEATRE.

EXCELLENT!
YOU'VE HIT YOUR
TARGET!

OUR DOCTORS PROCESS 20%
MORE PATIENTS!

HEY DOC,
SORRY TO
BOTHER YOU
AGAIN, BUT
I'M STILL ILL.

ME
TOO

AND
ME

SHHH!

I HATE
PRESENTING
THIS BS.



ADMINISTRATOR

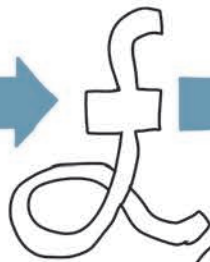
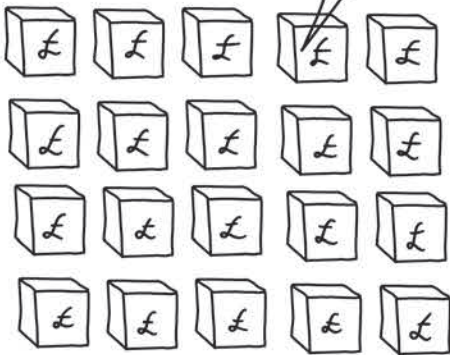


DOCTOR

WHEN DEALING WITH COMPLEX HEALTH OR SOCIAL ISSUES IT'S OFTEN CHEAPER AND MORE EFFECTIVE TO PROVIDE A CUSTOM SOLUTION THAN FOLLOW A STANDARD PROCESS.



STANDARDISED AND CHEAP PACKAGES OF INTERVENTION

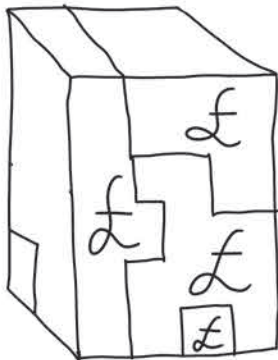


I'M STILL HOMELESS

AND I HAVE A DRUG PROBLEM



INITIALLY MORE EXPENSIVE ...



... BUT CHEAPER IN THE LONG RUN



I'M NO LONGER HOMELESS AND I HAVE A JOB!



It is impossible for organisations to “demonstrate their impact“ if they work in complex environments. Asking them to do so requires them to create a fantasy version of the story of their work. This corruption of data makes doing genuine work harder because it is difficult to learn and adapt from corrupted data*.



TOBY LOWE



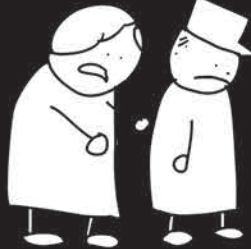
States and institutions prefer simplified, measurable, universal models over "messy", local, context-sensitive reality. It is an ADMINISTRATIVE NECESSITY, not malice.*



JAMES C. SCOTT,
POLITICAL SCIENTIST



BUT NOTHING
GROWS HERE
NOW!

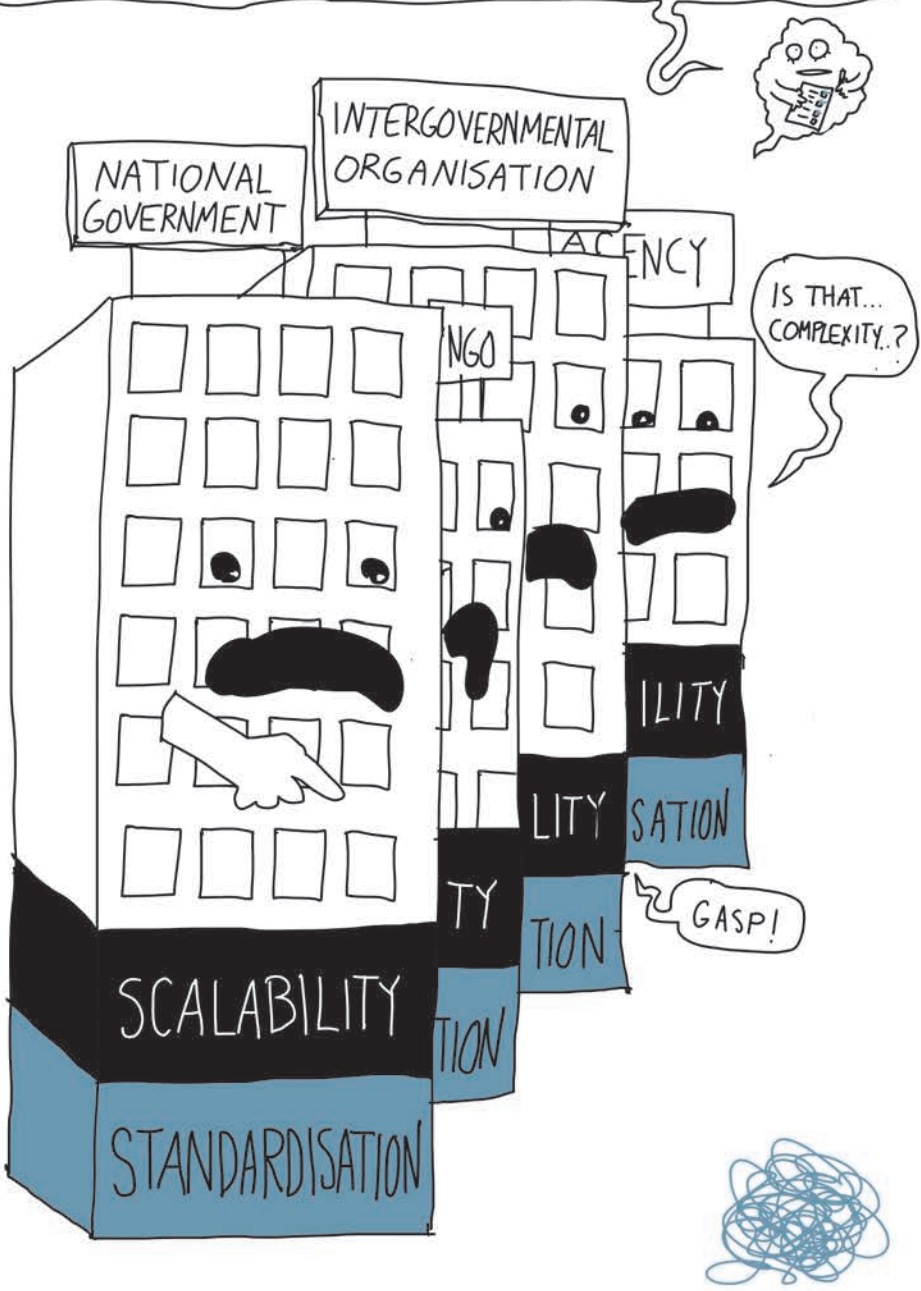


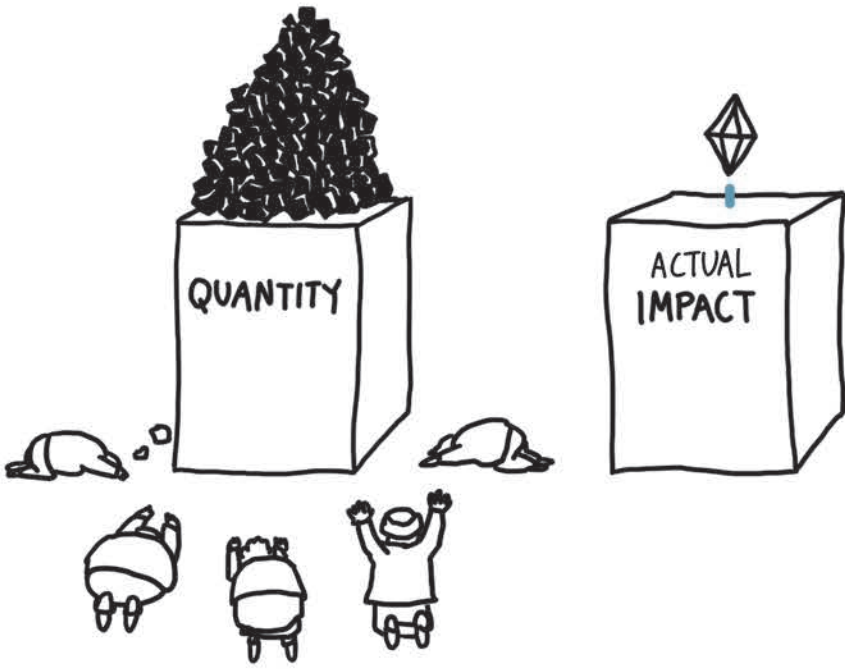
YES, BUT
REPORTING
WILL BE
EASIER!



*James C. Scott: *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (emphasis mine)

CONTEXT-BLINDNESS IS NOT LIMITED TO SCIENCE. POLICY IS ANOTHER AREA WHERE THERE'S A REAL AVERSION TO COMPLEX LOCAL REALITIES.







IF THERE IS ONE WORD I WANT YOU
TO TATTOO ON YOUR FOREHEAD IT'S...

CONTEXT

IT'S THE FASTEST
BOAT IN THE MARKET!

BUT YEAH...
TIDE.





THE SCIENTIFIC METHOD HAS RIGOROUSLY SOUGHT TO ELIMINATE CONTEXT SINCE 1687.*

TURNS OUT IN MANY CASES CONTEXT WAS THE VARIABLE THEY WERE LOOKING FOR.

RESEARCHER

THIS SEED IS THE BOMB.



CONTROLLED TEST ENVIRONMENT

$A \rightarrow B$

FARMER

NO IT'S NOT!



THE REAL WORLD



*Newton's Principia Mathematica planted the idea that nature obeys universal laws expressible in mathematics, applying identically everywhere. The ultimate context-free vision of knowledge.



THE ASSUMPTION THAT THE WORLD WORKS IN A PREDICTABLE WAY IS BAKED INTO MANY FIELDS OF SCIENCE AS WELL AS PRACTICAL TOOLS AND FRAMEWORKS.

WE FOR EXAMPLE TEND TO ASSUME THAT EVERYTHING IS **NORMAL**LY DISTRIBUTED.

LIKE HEIGHT.

MOST PEOPLE ARE OF AVERAGE HEIGHT



VERY FEW VERY SHORT PEOPLE

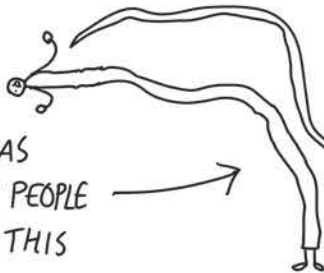


NORMALLY DISTRIBUTED:
A PERSON'S HEIGHT DOES NOT GET AMPLIFIED WHEN SHE INTERACTS WITH HER ENVIRONMENT.

VERY FEW VERY TALL PEOPLE

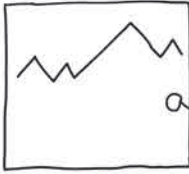


IF HEIGHT WAS NON-LINEAR SOME PEOPLE MIGHT LOOK LIKE THIS

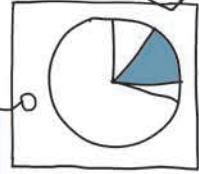


SHOPPING FOR CLOTHES IS A NIGHTMARE

MANAGEMENT
CONSULTANCY



GOVERNMENT
POLICY



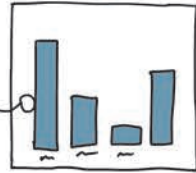
THE
WORLD IS
NORMAL

DRUG TRIAL
DESIGN

A ≡
B ≡
C ≡



ECONOMIC
FORECAST



BUT NOT ALL PHENOMENA FOLLOW A NORMAL DISTRIBUTION. EVEN THE ONES THAT SEEM TO DO SO, CAN TURN INTO SOMETHING UNPREDICTABLE WHEN INTERACTING WITH ITS ENVIRONMENT.



OMMM...



SUCH A STABLE CURVE! WE CAN BUILD OUR WHOLE SYSTEM ON IT!



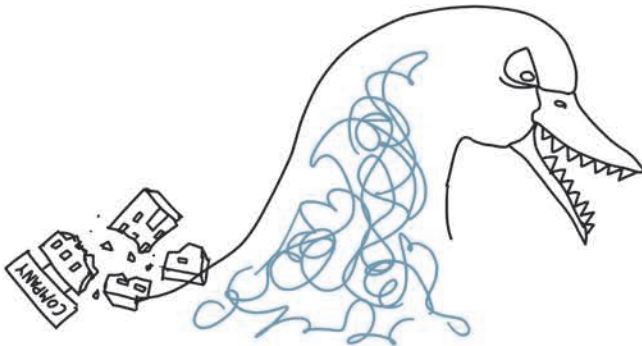
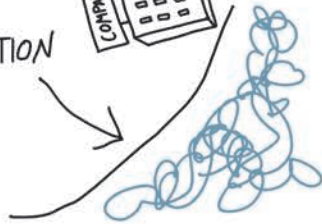
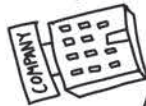
INTERACTION
FEEDBACK



WHAT IS HAPPENING..?



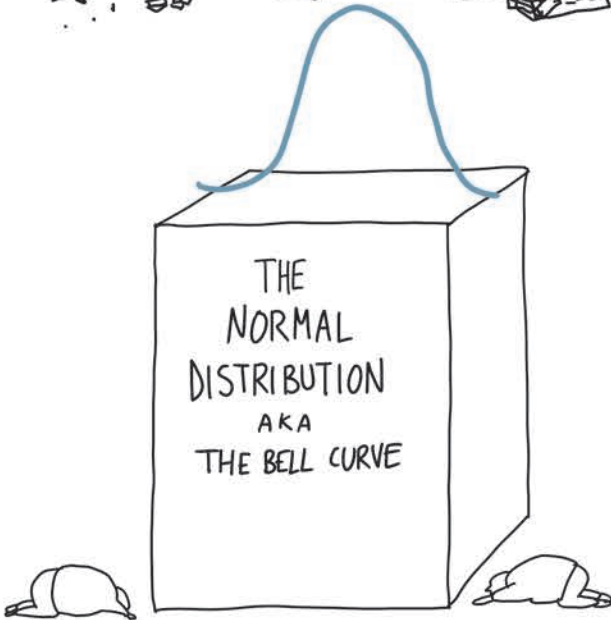
NON-LINEAR
"FAT-TAIL"
DISTRIBUTION





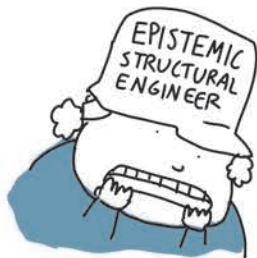
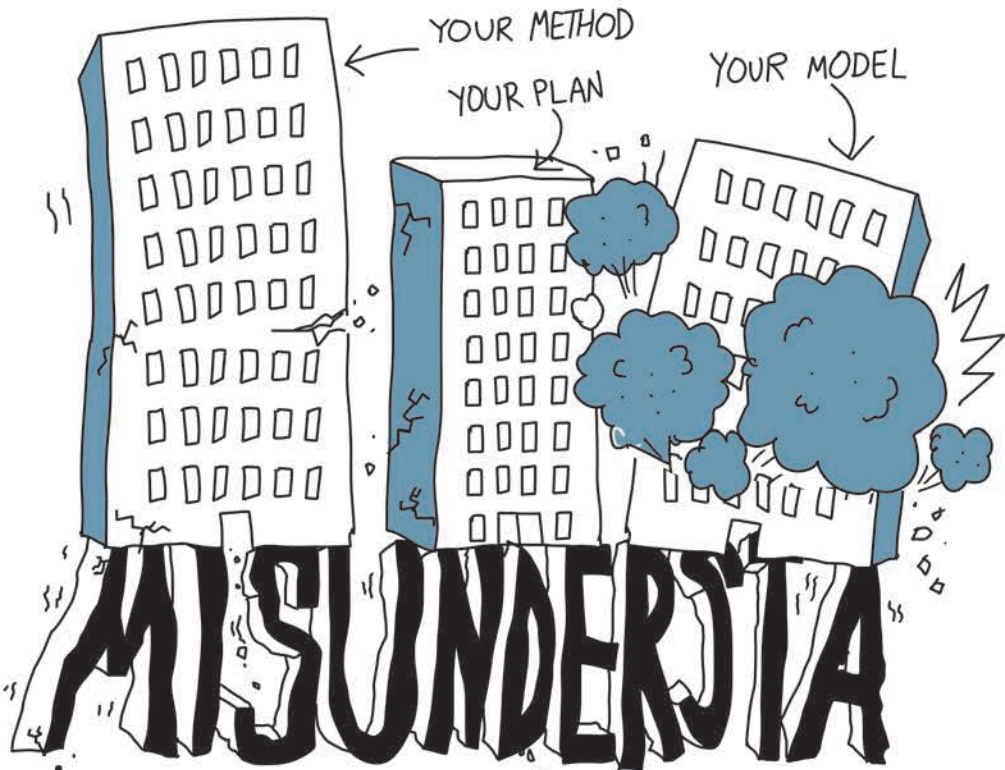
When you have fat tails,
averages are meaningless and
forecasts are dangerous.

NASSIM NICHOLAS TALEB





WHY IS IT SO IMPORTANT TO KNOW WHAT KIND OF PROBLEM YOU'RE DEALING WITH?
BECAUSE EVERYTHING YOU BUILD ON TOP OF A MISUNDERSTANDING WILL BE ON SHAKY GROUND.





SO HOW CAN YOU TELL YOU'RE DEALING WITH A COMPLEX PROBLEM?

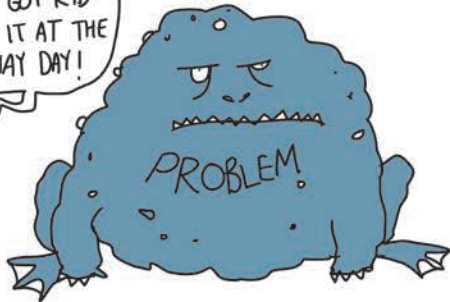
SOME TELLTALE SIGNS



THE RECURRING PROBLEM



I THOUGHT WE GOT RID OF IT AT THE AWAY DAY!



BUT IT THRIVED THERE!



THERE IS NOT HERE.



THE PILOT THAT DOESN'T SCALE



PEOPLE CHANGE THEIR BEHAVIOUR IN RESPONSE TO YOUR INTERVENTION

THE SMART HOOVER IS ATTACKING ME!

CALLS MUST BE RESOLVED IN UNDER 4 MINUTES OR NO BONUS!

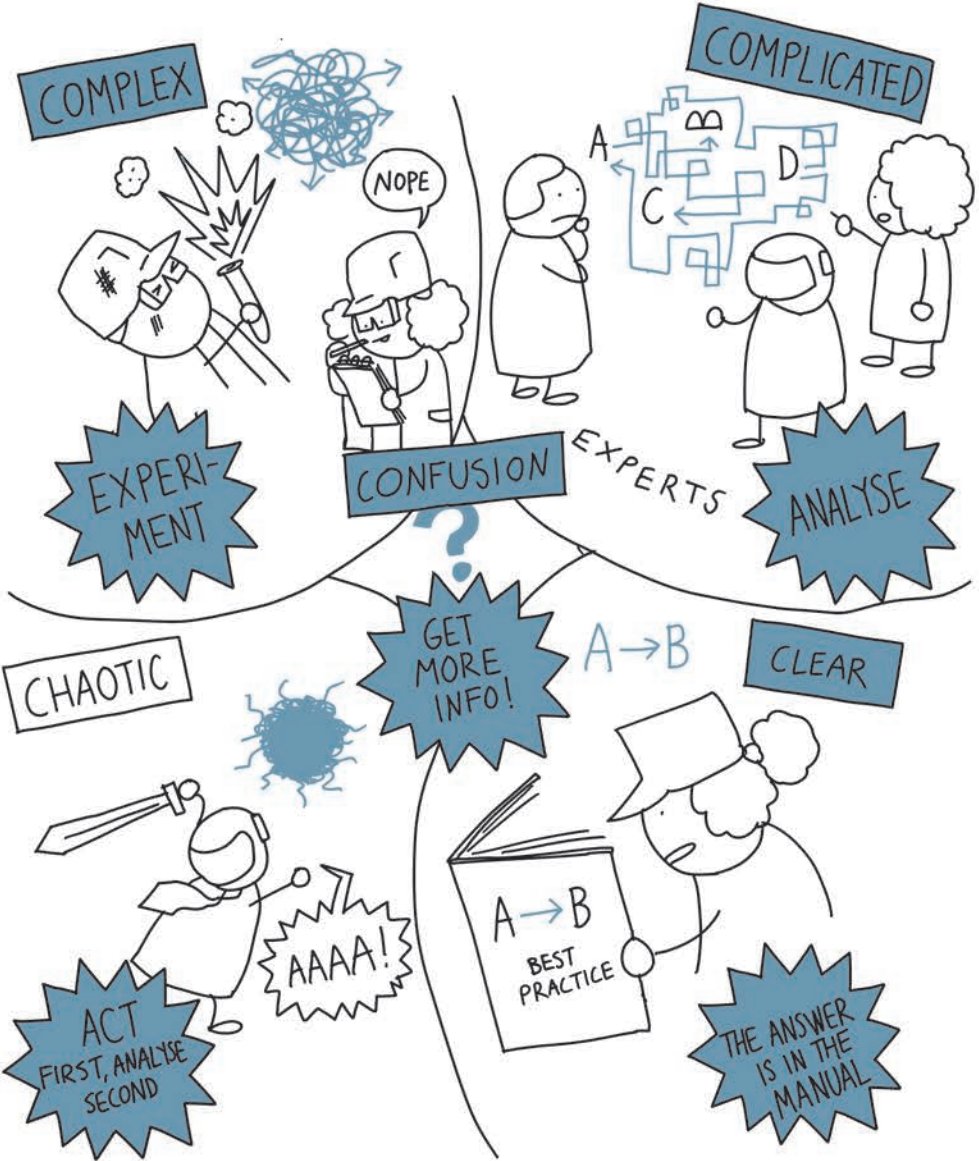
CURRENT CALL: 3:59

I UNDERSTAND.. HAVE YOU TRIED..



SO LONG SUCKER

THE CYNEFIN FRAMEWORK IS ONE WAY TO ASSESS WHAT KIND OF PROBLEM YOU'RE DEALING WITH SO YOU CAN CHOOSE THE RIGHT TOOLS TO TACKLE IT.



I KNOW IT SCARES YOU,
BUT IF THE PROBLEM IS COMPLEX YOU
CAN'T PRETEND IT'S COMPLICATED!

COMPLEX

COMPLICATED

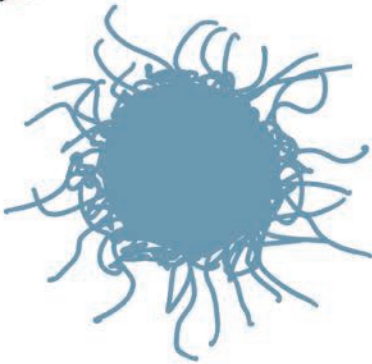


CONFUSION

?

CHAOTIC

CLEAR



~~✂~~ MOTIVATIONAL POSTER

Choose

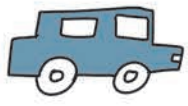
TO INTERACT WITH

Reality

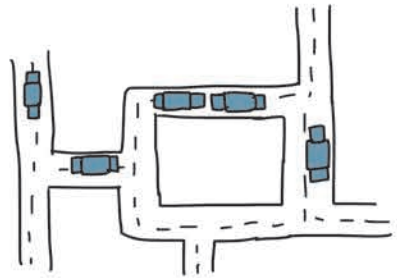


LET'S PRACTICE!

COMPLICATED OR COMPLEX?



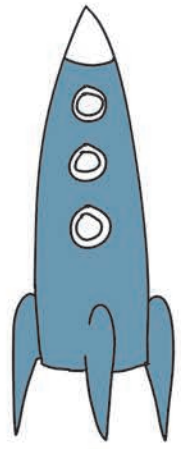
A COMPLICATED B COMPLEX



A COMPLICATED B COMPLEX



A COMPLICATED B COMPLEX



A COMPLICATED B COMPLEX



A COMPLICATED B COMPLEX

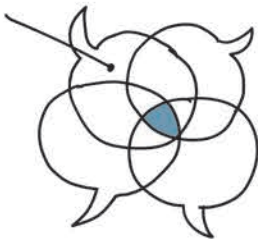


A COMPLICATED B COMPLEX

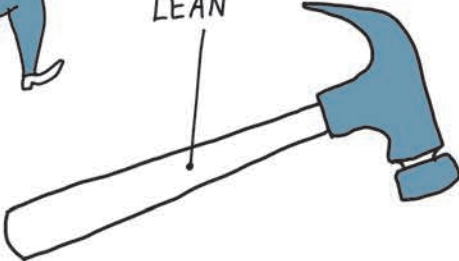
WHEN YOU UNDERSTAND THE DOMAIN WHERE YOUR PROBLEM BELONGS YOU CAN CHOOSE THE APPROPRIATE TOOLS TO TACKLE IT.



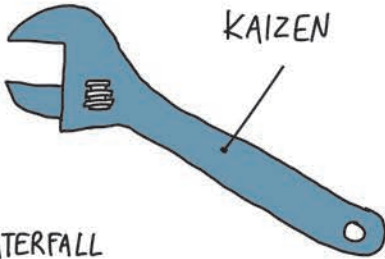
COLLECTIVE
SENSEMAKING



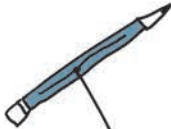
LEAN



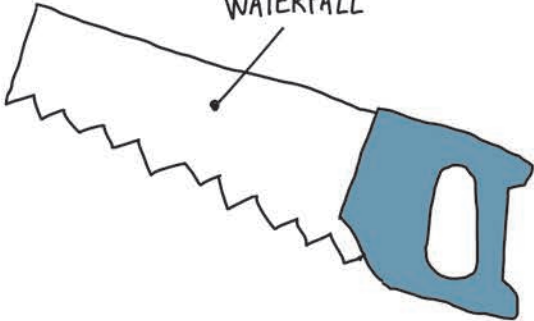
KAIZEN



DESIGN
THINKING



WATERFALL



AGILE

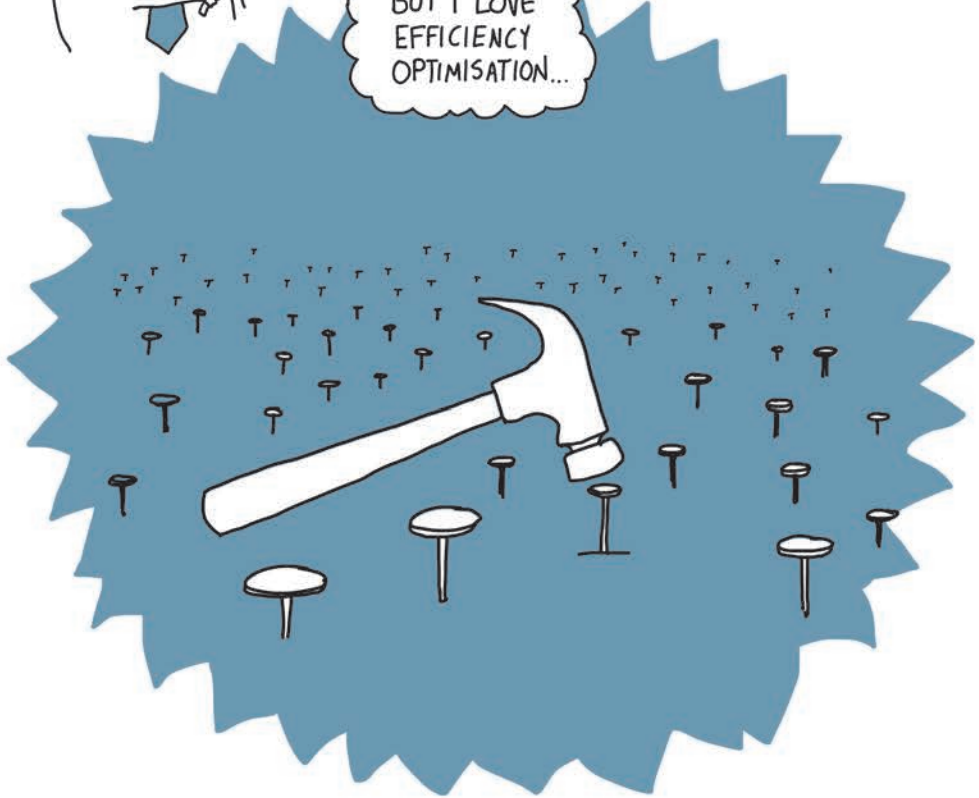


ETC
ETC
ETC

NOT EVERYTHING IS ABOUT
OPTIMISING EFFICIENCY.



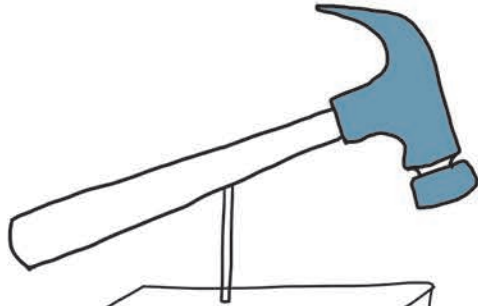
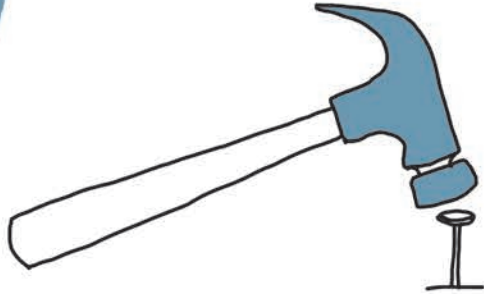
BUT I LOVE
EFFICIENCY
OPTIMISATION...



If all you have is a hammer,
everything looks like a nail.



ABRAHAM MASLOW, PSYCHOLOGIST



THE ANSWER
TO EVERYTHING



MOST ORGANISATIONS TRY TO ENGINEER
UNCERTAINTY OUT OF EXISTENCE.

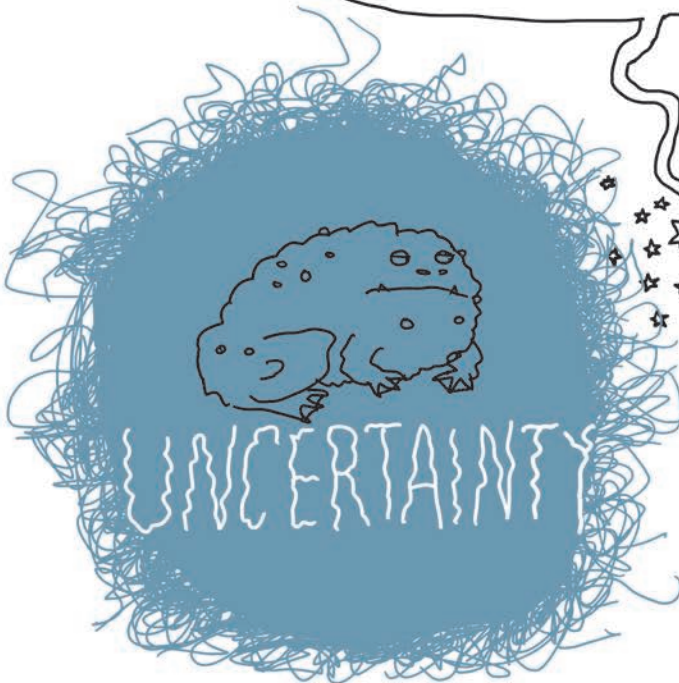
THIS IS A FOOL'S ERRAND.



$$\eta = \frac{P_{out}}{P_{in}} 100 = \frac{P_D}{P_{in}} 100 = \frac{E_a I_a}{V_{DC} I_a} 100$$

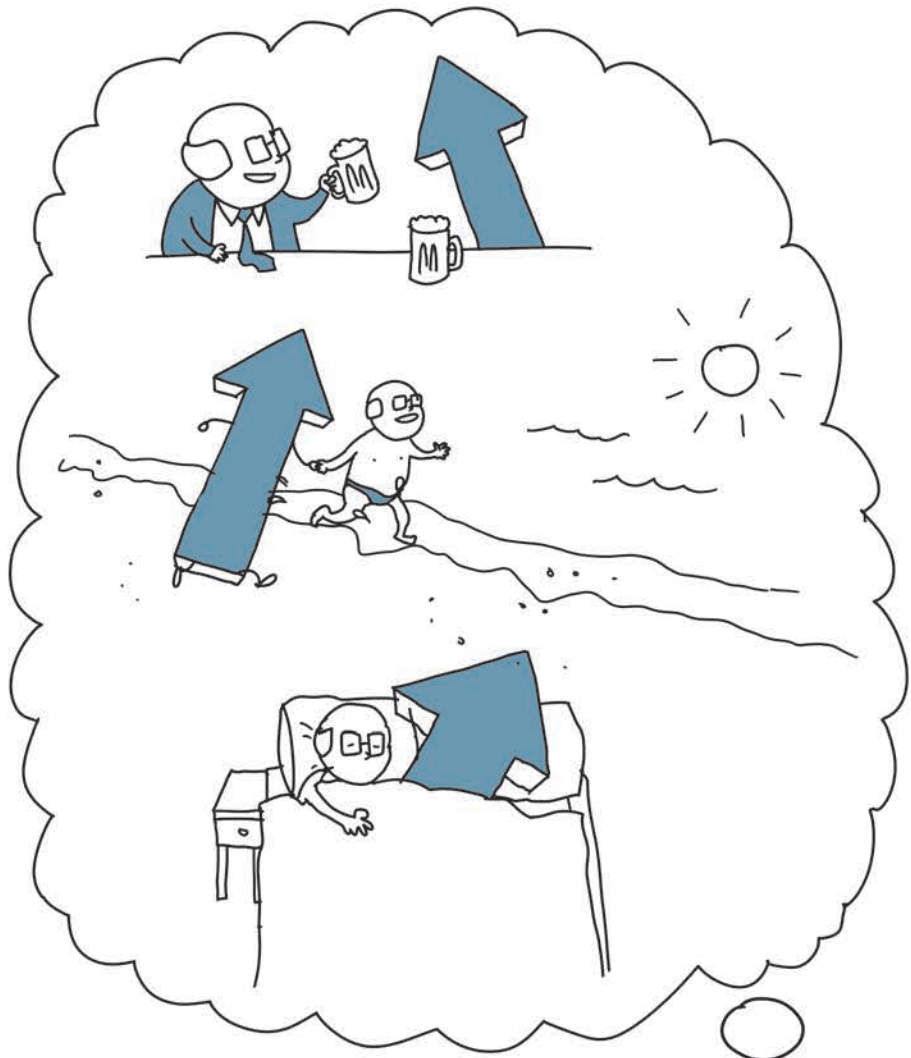
$$\eta = \frac{E_a}{V_{DC}} \quad (T_{loss} = 0) \quad \text{!!!!!!}$$

UNCERTAINTY BE GONE!!!



ENGINEER*

*Fun factoid: There is research on the low ambiguity tolerance of engineers.
See for example: <https://doi.org/10.1080/10429247.2018.1503037>

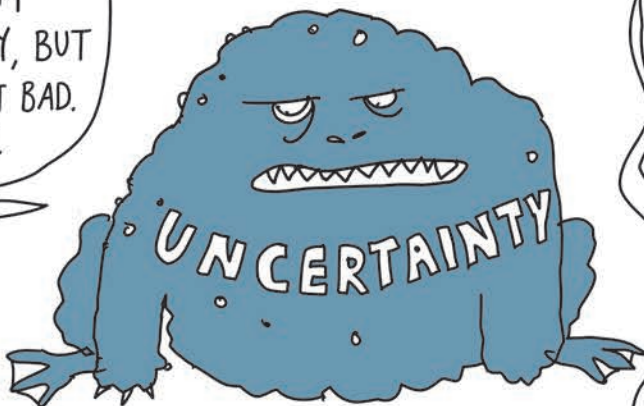


HEY I KNOW
YOU AND LINEARITY
ARE CLOSE...
I'M NOT ASKING YOU TO
GIVE UP ON LINEAR
THINKING!



WHAT I'M TRYING TO SAY, IS THAT YOU HAVE TO LEARN TO ACCEPT UNCERTAINTY...

I KNOW I'M NOT PRETTY, BUT I'M NOT THAT BAD. HONEST.



...AND LET GO OF THE IDEA OF **CONTROL**

WHICH, TO LARGE EXTENT, HAS BEEN AN *illusion* ANYWAY.

IN COMPLEXITY UNCERTAINTY IS A FEATURE, NOT A BUG.

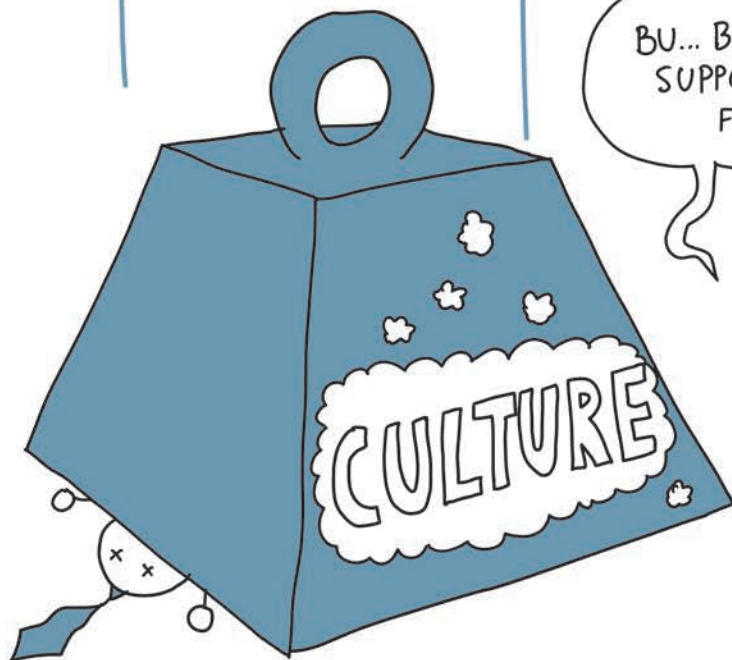
NORA BATESON



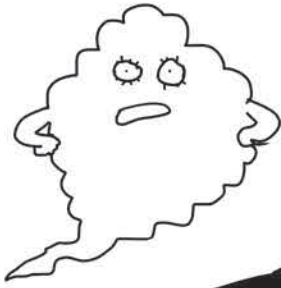
WANTING TO GET
RID OF UNCERTAINTY
IS ESPECIALLY SILLY
IF YOU'RE DEALING
WITH HUMANS...



BU... BUT IT WAS
SUPPOSED TO BE
FLUFFY!

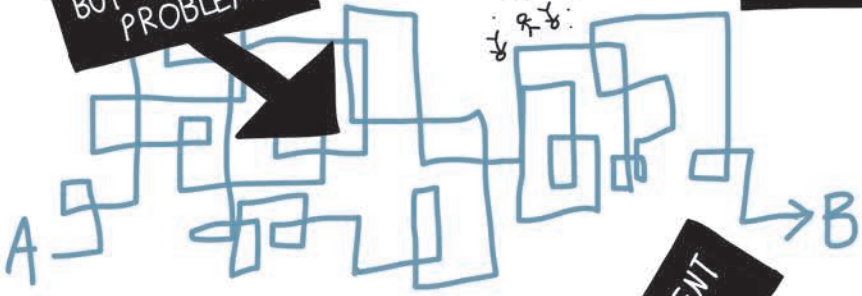


ADDING HUMANS TO THE MIX
CAN MAKE ALMOST ANYTHING COMPLEX...



A COMPLICATED
BUT SOLVABLE
PROBLEM

ADD
HUMANS



A MOMENT
LATER

THIS MEANS WAR!

IT'S YOUR FAULT!

NO! YOUR FAULT!

RESPECT MY AUTHORITY!

F**K U!

GOD TOLD ME TO DO IT

WE DON'T TRUST YOU.

FEELING IS MUTUAL

HE'S SO CHARISMATIC

HE'S A DANGEROUS IDIOT!

IT'S COMMON SENSE.

IT'S THEIR FAULT!

HANG 'EM!

WE WANT ANSWERS!

ROLES

MORAL REASONING

SOCIAL NORMS

AFFILIATIONS

RELIGION

IDENTITIES

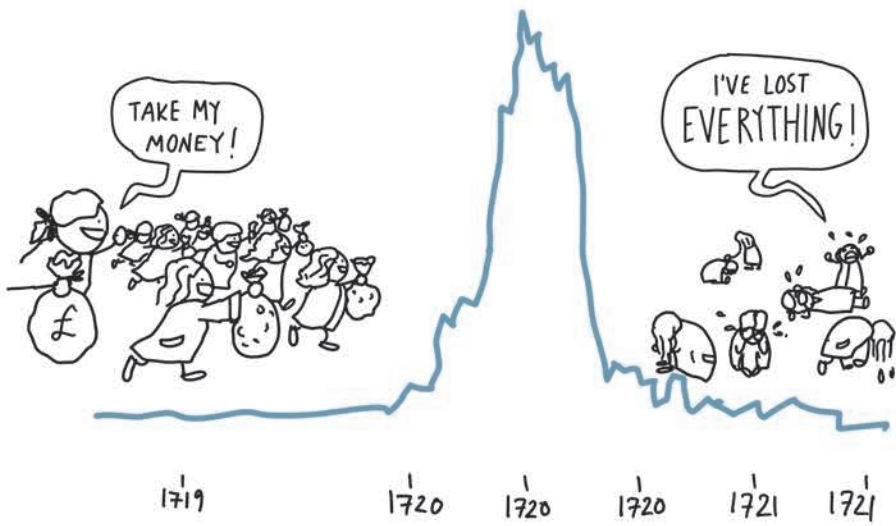
CULTURE

WORLDVIEW

In science, when human behavior enters the equation,
things go nonlinear.
That's why Physics is easy and Sociology is hard*.



NEIL DEGRASSE TYSON,
ASTROPHYSICIST

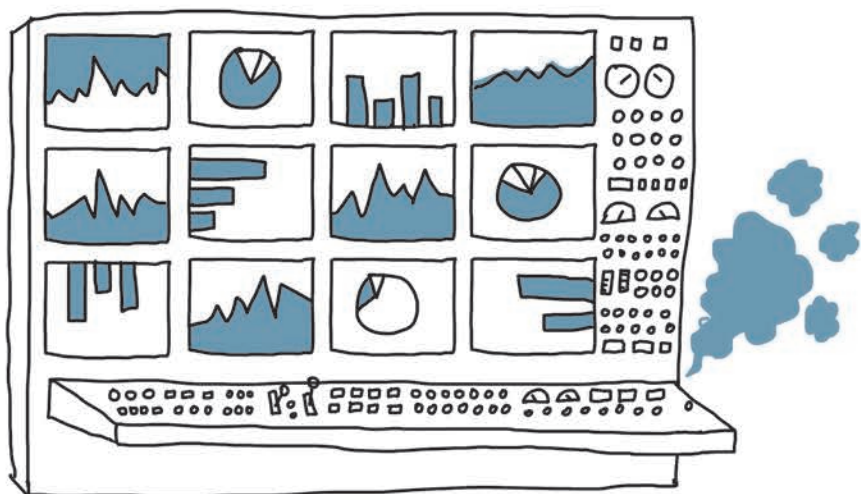


I can calculate
the motion
of heavenly bodies,
but not the madness
of people.


SIR ISAAC
NEWTON



Sir Isaac Newton lost a considerable amount of money during the South Sea Bubble, a speculative financial frenzy that occurred in England in the early 18th century.

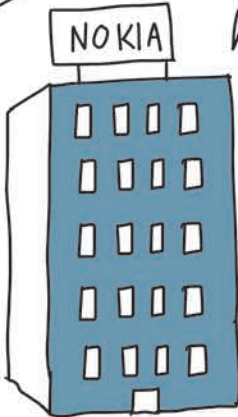


OH WE'RE GOOD.
WE DON'T NEED TO DEAL
WITH "CULTURE" AND
OTHER HUMANISTIC FLUFF.
WE'VE GOT **BIG DATA**
AND **AI**!



NOKIA, THE FORMER MOBILE PHONE GIANT, MISSED SIGNALS THAT THE MARKET IS SHIFTING BECAUSE IT COULD NOT HANDLE "FLUFFY" ETHNOGRAPHIC INFORMATION. THEY WERE ALL ABOUT BIG DATA.

DRAMATISED
SCENE AT NOKIA HQ



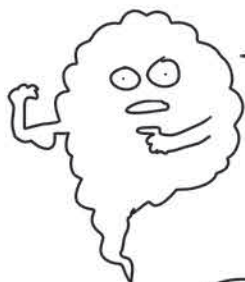
WANG'S SAMPLE
SIZE IS 100 !!!

LOL.
TINY DATA.
COME BACK
WHEN YOU
HAVE REAL
NUMBERS

Just relying on Big Data alone increases the chance that we'll miss something while giving us this illusion that we already know everything

TRICIA WANG
TECHNOLOGY ETHNOGRAPHER
(FORMERLY AT NOKIA)





ALWAYS REMEMBER:
THE ASSUMPTIONS BAKED INTO
HARD DATA CAN MAKE IT WEAK.

WE'RE HARD DATA!

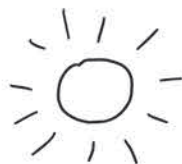
WE'RE OBJECTIVE,
VERIFIABLE & QUANTIFIABLE
AND WE'RE GOING TO
KICK YOUR SOFT
SUBJECTIVE BUTT!

YOU'RE JUST
A SISSY
ANECDOTE!

62.5

CHECK OUT
THIS KPI!

Story

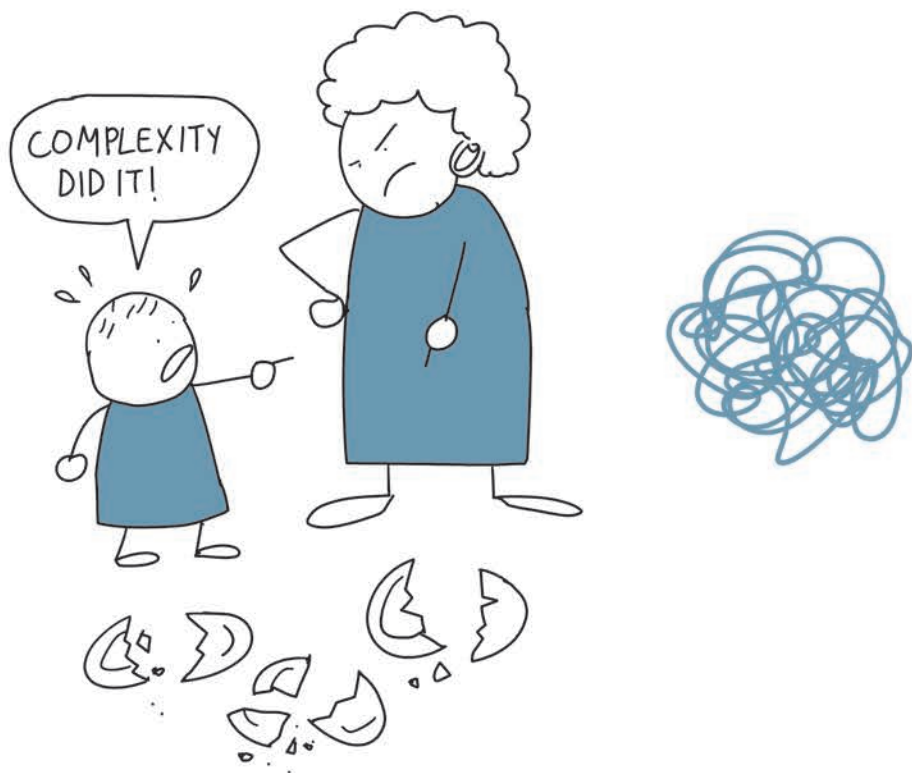


WTF..? CONTEXT
IS CHANGING...

62.5

SO STRONG
AND YET SO
WEAK.

Story





WHAT TO DO WHEN ACCOUNTABILITY MEETS COMPLEXITY - INTERESTING QUESTION!

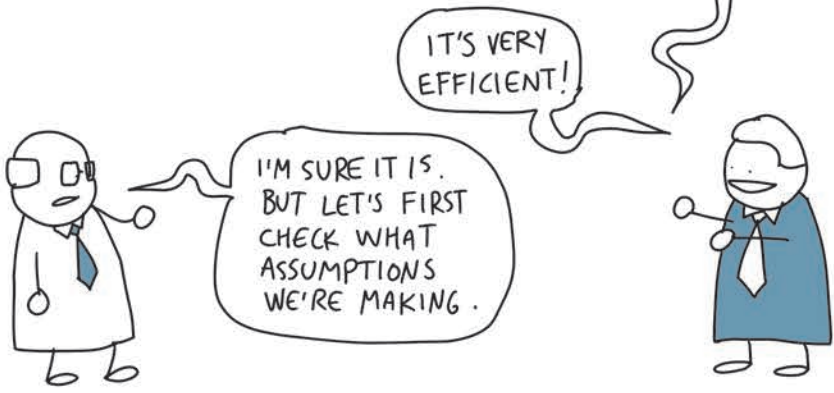
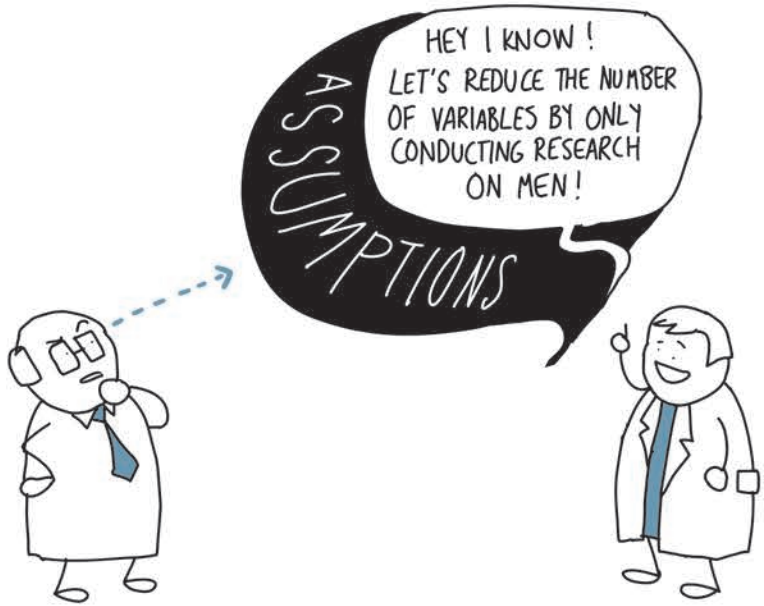
LET'S LOOK AT AVIATION CRASH INVESTIGATIONS.

HOW NOT TO DO A CRASH INVESTIGATION



HOW TO DO A CRASH INVESTIGATION



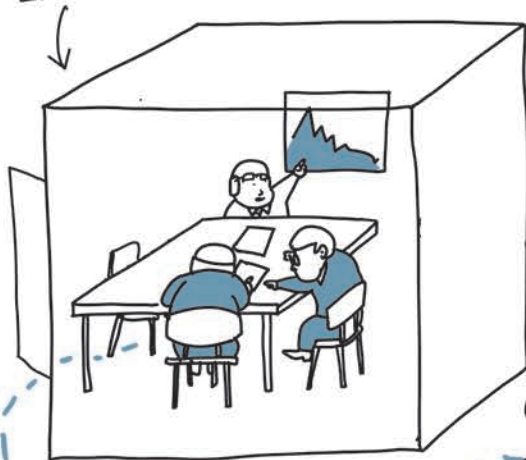


IT'S YOUR JOB TO
MAKE SURE SIGNALS ARE
NOT SUPPRESSED.

EPISTEMIC HUMILITY SHOULD BE
YOUR GUIDING PRINCIPLE.



EXECUTIVES



SO THIS
KEEPS
HAPPENING?

DO YOU KNOW
HOW TO FIX IT?

WHY DIDN'T
YOU SUGGEST
ANYTHING?

YEP.

YEP.

I DID.

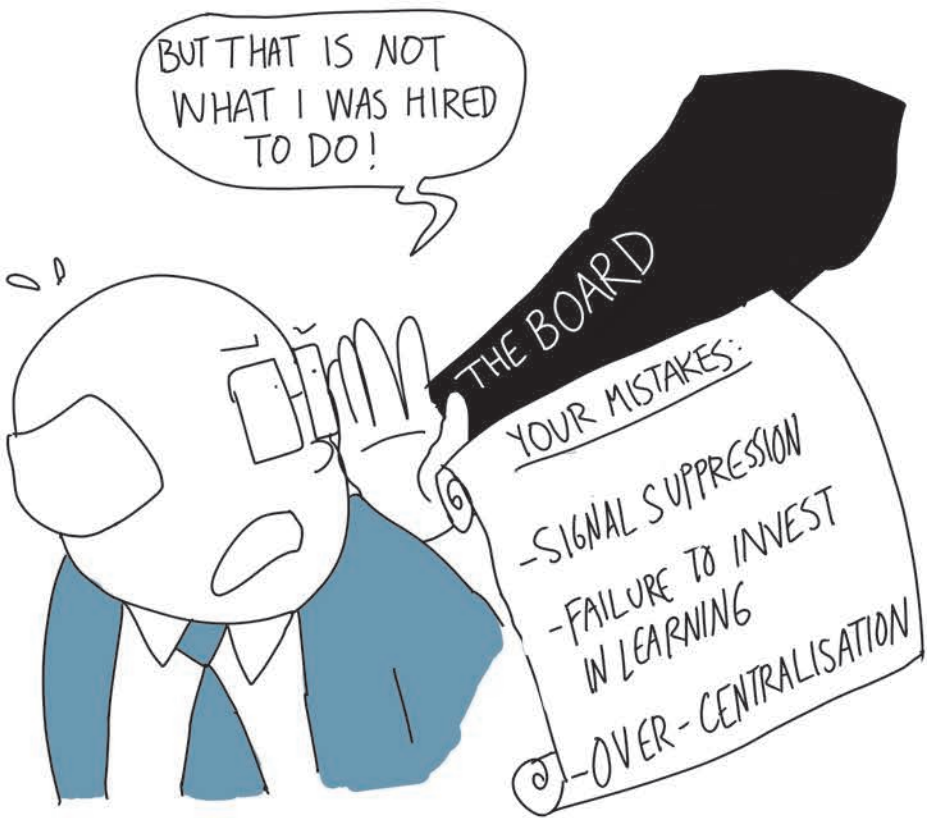


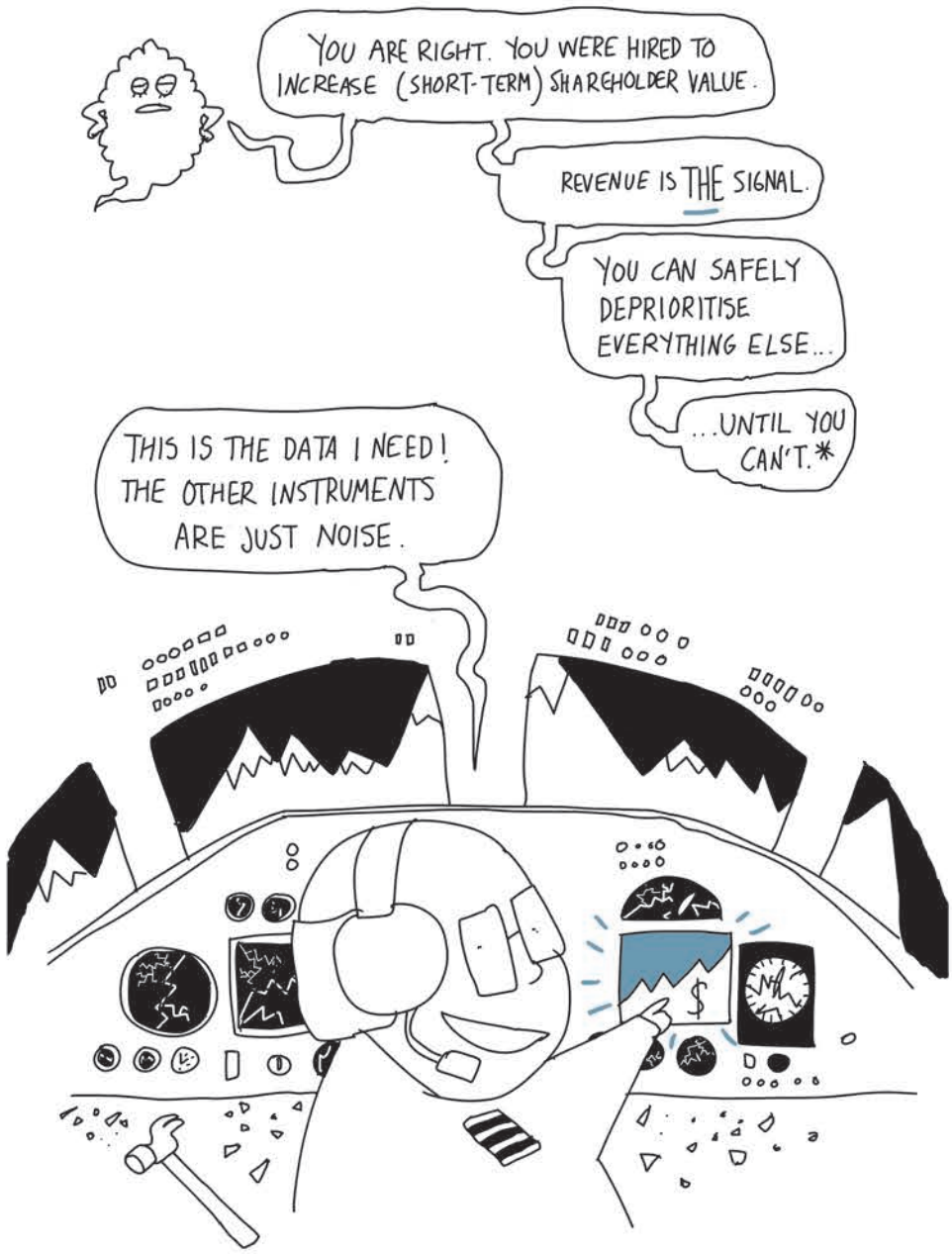
WE HAVE
A PROBLEM.

GO AND FIND
OUT YOURSELF



" SUGGESTION BOX
-WHERE IDEAS GO
TO DIE"





YOU ARE RIGHT. YOU WERE HIRED TO INCREASE (SHORT-TERM) SHAREHOLDER VALUE.

REVENUE IS THE SIGNAL.

YOU CAN SAFELY DEPRIORITISE EVERYTHING ELSE...

...UNTIL YOU CAN'T.*

THIS IS THE DATA I NEED! THE OTHER INSTRUMENTS ARE JUST NOISE.

*The average lifespan of an S&P 500 company in the US has fallen from 67 years in the 1920s to just 15 years in 2017

<https://www.imperial.ac.uk/business-school/blogs/executive-education/why-companies-die/>



SO WHAT HAVE YOU LEARNED ABOUT COMPLEXITY AND LEADERSHIP SO FAR?



THAT IT'S A BIT LIKE NAVIGATION IN UNPREDICTABLE WATERS.

TOOLS HAVE TO BE NAVIGATIONAL RATHER THAN PREDICTIVE.



YES!



IT'S ALSO WORTH LETTING GO OF THE TRADITIONAL IDEA OF CONTROL.

IT'S A DANGEROUS FICTION.

(EVEN THOUGH IT MIGHT HAVE MENTAL HEALTH BENEFITS).



NOW THAT YOU'VE ACCEPTED COMPLEXITY & UNCERTAINTY AS UNAVOIDABLE PARTNERS ON YOUR JOURNEY, WE CAN MOVE ONTO PRACTICAL WAYS TO FRUITFULLY CO-EXIST WITH THEM.

WHAT TO DO?

ADAPTATION
OVER PREDICTION
RESILIENCE
OVER EFFICIENCY

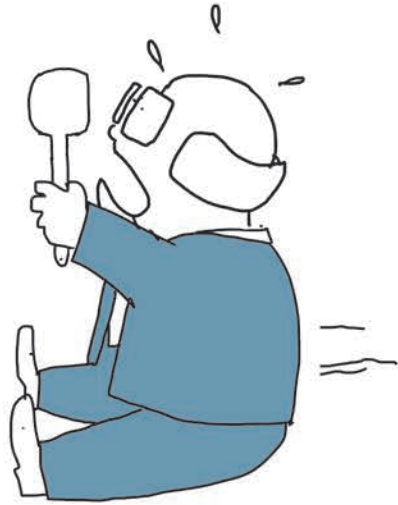


COMPLEXITY IS NOT JUST
DESTROYED PLANS AND FRUSTRATION!

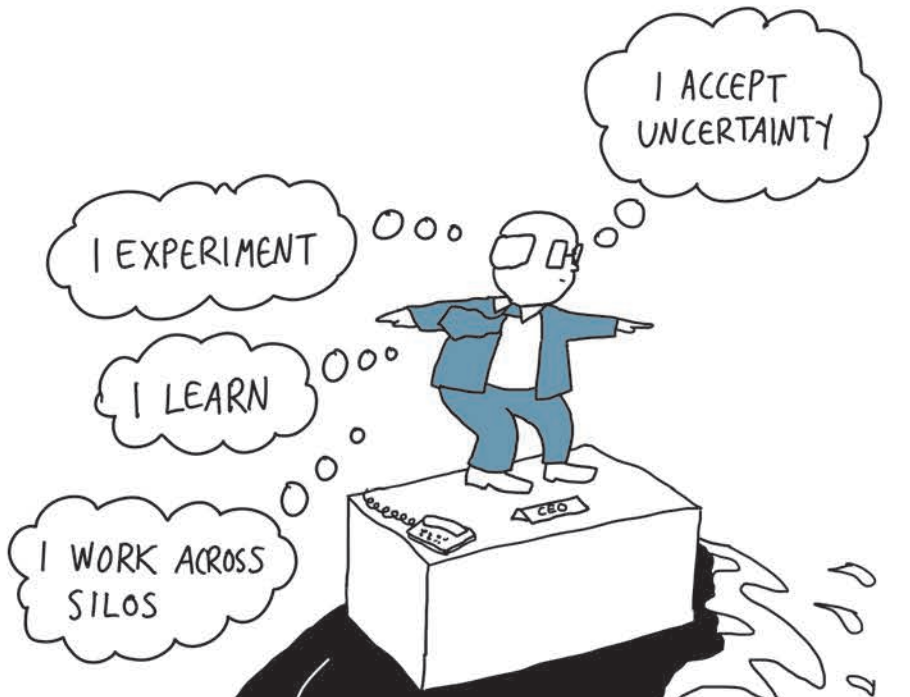


DISORDER
(TEMPORARY)

ORDER
(ALSO TEMPORARY)



.. BUT COMPLEXITY ALSO OFFERS OPPORTUNITIES
TO THOSE WHO ARE WILLING TO WORK
DIFFERENTLY.



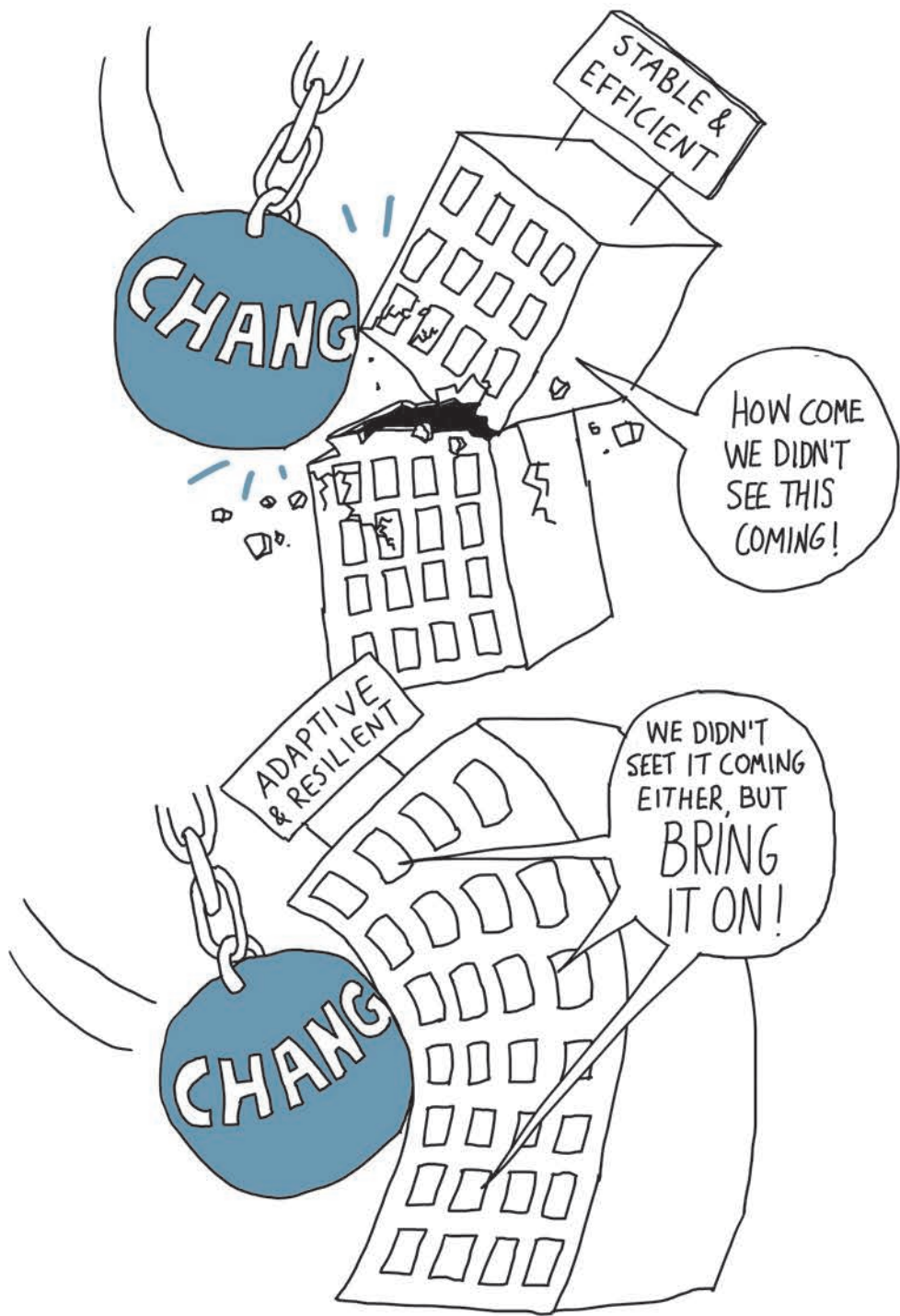
I EXPERIMENT

I LEARN

I WORK ACROSS
SILOS

I ACCEPT
UNCERTAINTY





CHANGE

STABLE & EFFICIENT

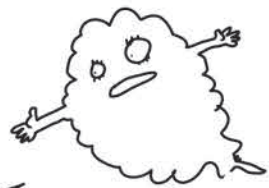
HOW COME WE DIDN'T SEE THIS COMING!

ADAPTIVE & RESILIENT

CHANGE

WE DIDN'T SEET IT COMING EITHER, BUT BRING IT ON!

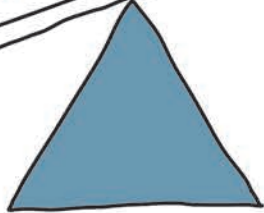
YOU HAVE TO EMBRACE
DIFFERENT WAYS OF OPERATING
WITHIN YOUR COMPANY



FIND A BALANCE
OF SOME SORT



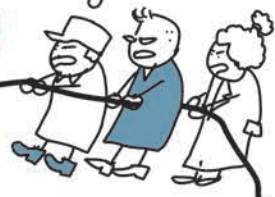
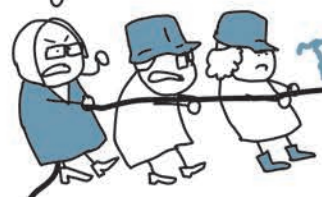
EFFICIENCY *Adaptation*

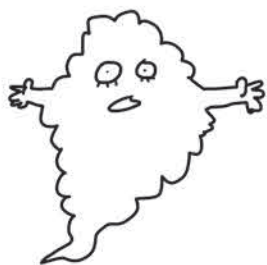


THERE WILL BE TENSION. THAT'S OK.
INTERESTING SOLUTIONS CAN COME OUT
OF THE TENSION. YOU HAVE
TO LEARN TO MANAGE IT.

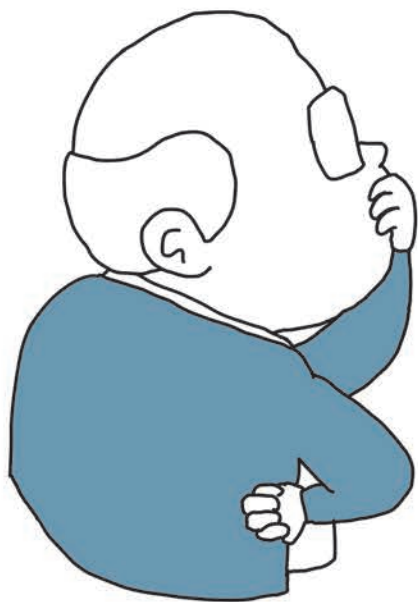


TENSION





WHAT APPROACH YOU CHOOSE
DEPENDS ON THE TYPE OF ISSUE
YOU ARE DEALING WITH.



EXPERI



MANY METHODS THAT ARE DESIGNED FOR UNCERTAINTY INCLUDE EXPERIMENTATION.

SMALL, SAFE TO FAIL INITIATIVES, MIND YOU!



ENT

T

A

T

I

ON



MODERATE SUCCESS.





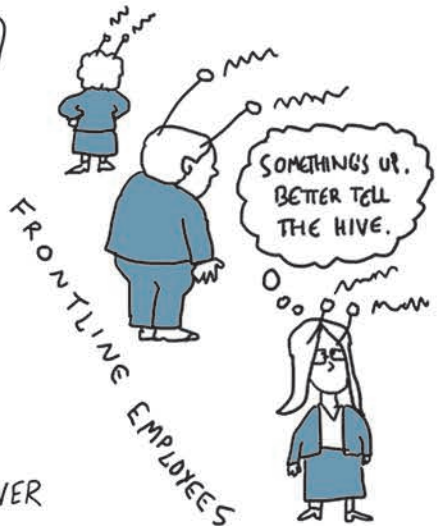
ESTHER DUFLO
ECONOMIST

Our intuition from the comfort of our offices on how people live their lives on the ground are just mostly worthless*.

The world is getting more volatile everywhere. What you have to do as a company is that you have a quick feedback loop from the market that picks up these signals, and a structure that is very agile and externally focussed**.



PAUL POLMAN, FORMER CEO OF UNILEVER

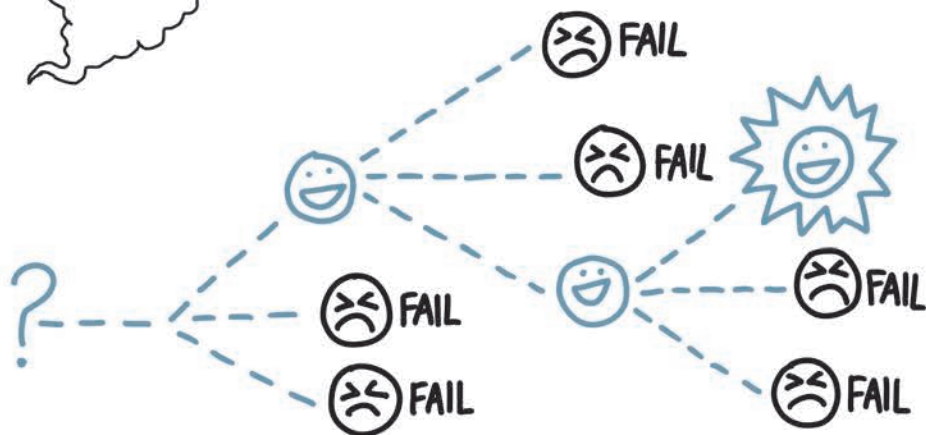


* <https://hbr.org/podcast/2019/11/a-nobel-prize-winner-on-rethinking-poverty-and-business>

** <https://frompoverty.oxfam.org.uk/paul-polman-on-capitalism-leadership-sustainability/>

EXPERIMENTATIONS

OPEN AND CLOSE DIFFERENT OPTIONS.

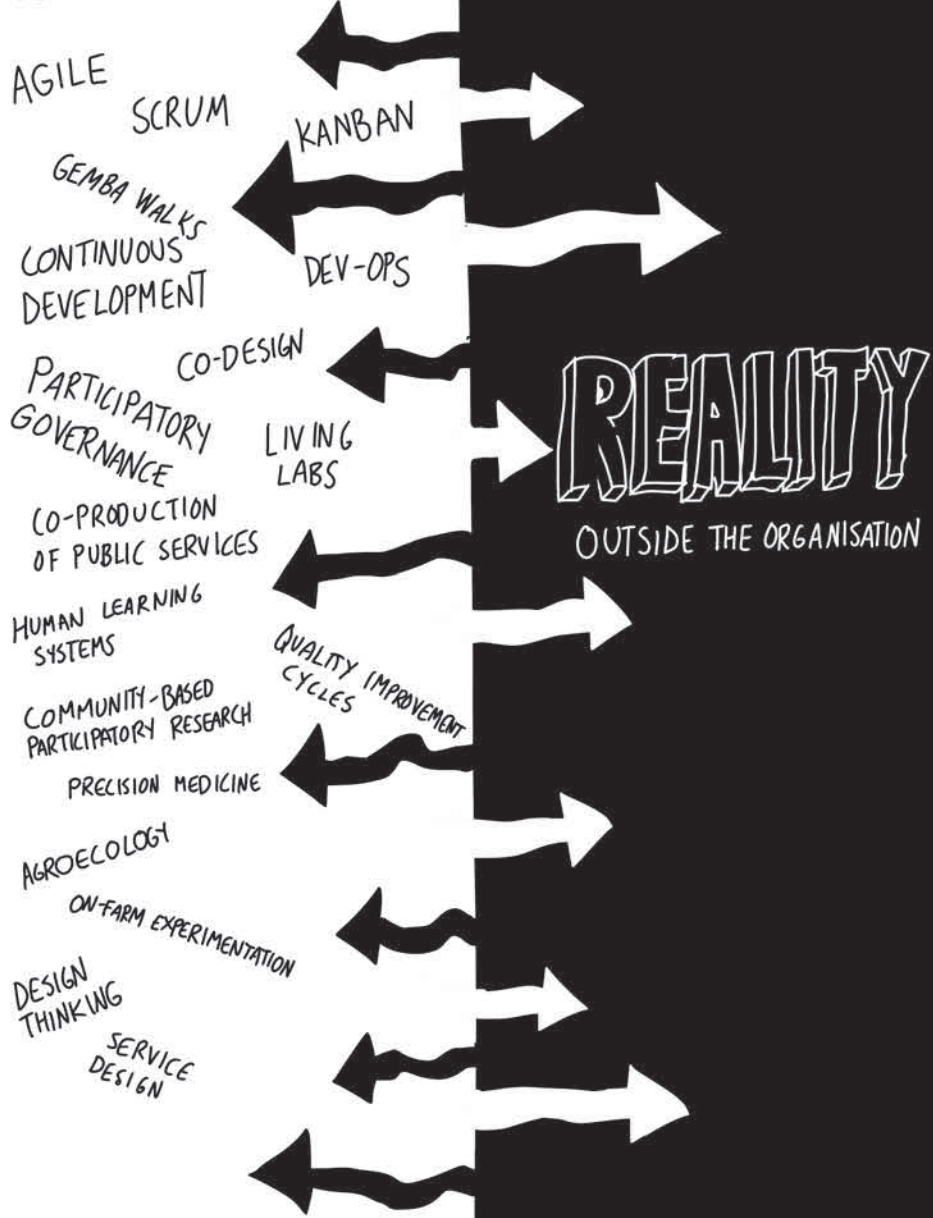


THIS APPROACH IS NOT JUST FOR PRODUCT INNOVATION.
YOU COULD USE THE SAME APPROACH AS A WAY TO
FEEL YOUR WAY OUT OF NASTY SITUATIONS THAT DEFY
CONVENTIONAL PROBLEM SOLVING.



THERE ARE MANY APPROACHES AND FRAMEWORKS THAT ARE BASED ON CONSTANT

FEEDBACK.



AGILE IS PROBABLY ONE OF THE BEST KNOWN "REALITY FRIENDLY"
RESPONSIVE APPROACHES TO WORK.



EVEN THOUGH IT WAS CREATED FOR SOFTWARE DEVELOPMENT,
THE PRINCIPLES CAN BE APPLIED IN OTHER COMPLEX
ENVIRONMENTS AS WELL.

THE AGILE MANIFESTO*

Individuals and interactions
over
processes and tools

Working software
over
comprehensive documentation

Customer collaboration
over
contract negotiation

Responding to change
over
following a plan

That is, while there is value in the items on
the right, we value the items on the left more.

I DON'T THINK THAT STUFF WILL FLY
WITH THE LEGAL DEPARTMENT.

OR ANY DEPARTMENT, REALLY.



*<https://agilemanifesto.org/>

IN THE MORE TRADITIONAL "PLAN-BUILD-EVALUATE" WAY OF WORKING THE RISK IS THAT YOU PUT A LOT OF EFFORT AND RESOURCES INTO CREATING SOMETHING THAT BECOMES OBSOLETE REALLY QUICKLY...



BUT... IT'S WHAT YOU WANTED!

BUT WE SPENT 200 YEARS ON IT!

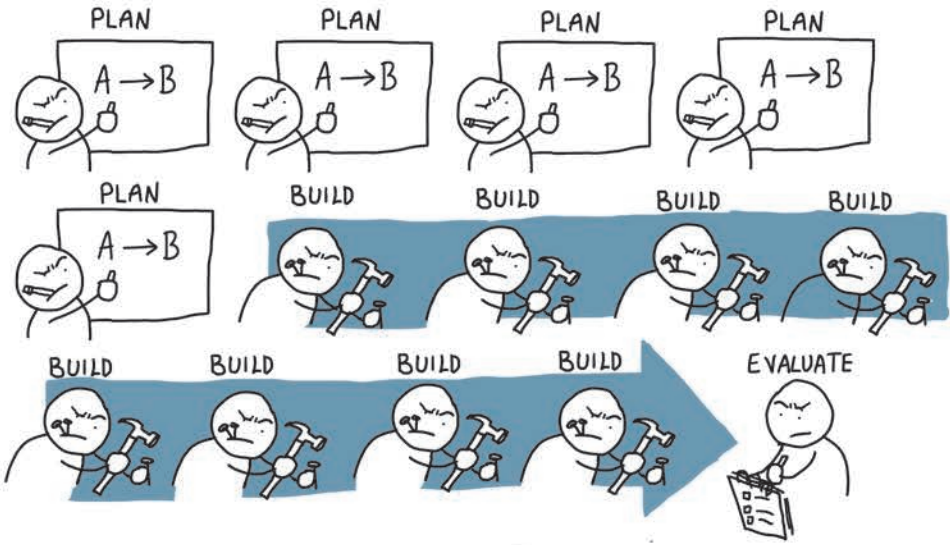
THIS IS NOT WHAT WE NEED!

THAT WAS THEN.

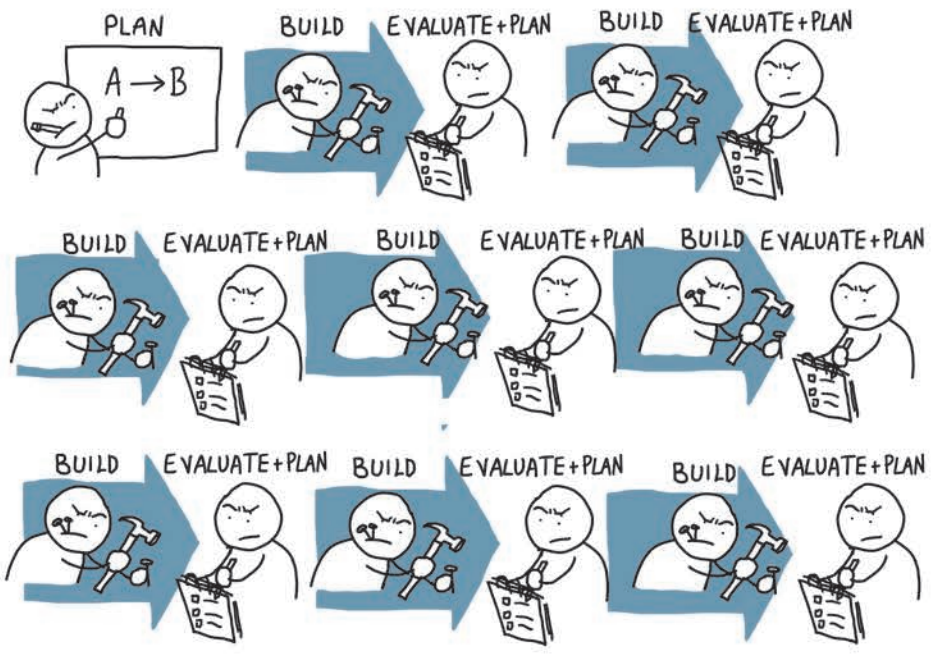
BOOHOO. NOT MY PROBLEM.

* DON'T TAKE THIS EXAMPLE LITERALLY. CONSTRUCTION INDUSTRY IS WHERE "PLAN-BUILD-EVALUATE" KIND OF WORKS.

CLASSIC "PLAN-BUILD-EVALUATE" PROJECT:



AGILE PROJECT:

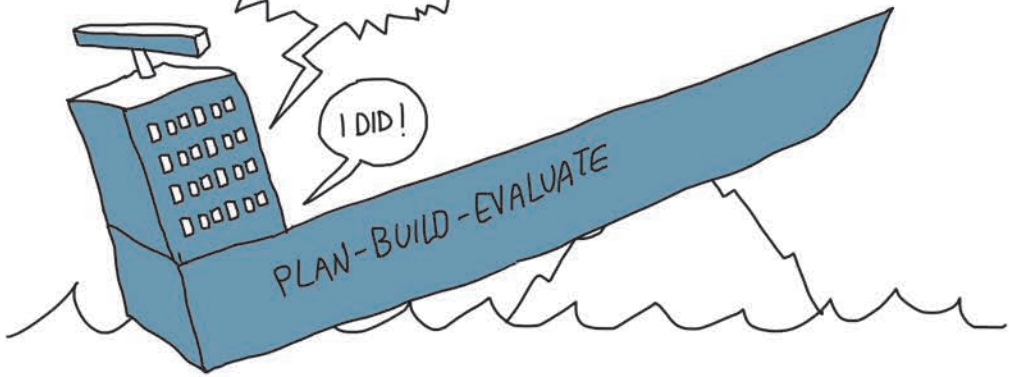


THE TRADITIONAL WAY TO RUN A PROJECT IS TOO SLOW FOR UNCERTAIN AND FAST PACED ENVIRONMENTS - INFORMATION MOVES TOO SLOWLY! FEEDBACK LOOPS ARE FEWER.



WHY DIDN'T YOU STEER AROUND IT???

I DID!



AT AN ORGANISATIONAL LEVEL YOUR
STRATEGIC APPROACH BECOMES LESS ABOUT

GRAND PLANS

AND MORE ABOUT
SMALLER ITERATIVE STEPS

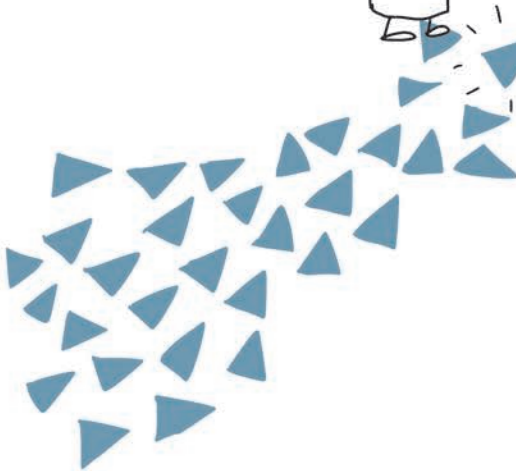


WE CAN'T REACH
THAT, BUT WE
CAN DO THIS.

BUT IT LOOKS
SO UNGLAMOROUS

GRAND

PLAN



THE NEXT POSSIBLE
BEST THING
(GIVEN THE CONTEXT)



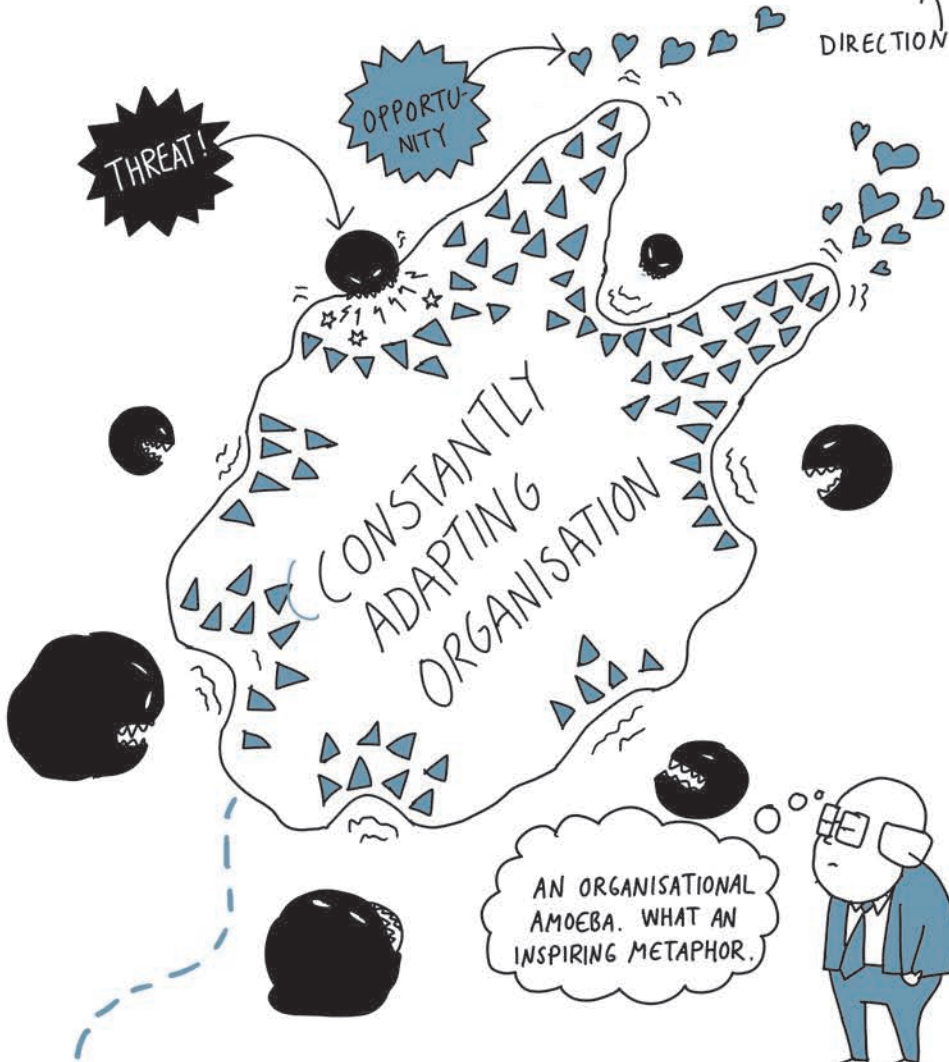
We let go of the present, which we have in our power, and look forward to that which depends upon chance, and so relinquish a certainty for an uncertainty.

SENECA THE YOUNGER,
ROMAN PHILOSOPHER
AND STATESMAN



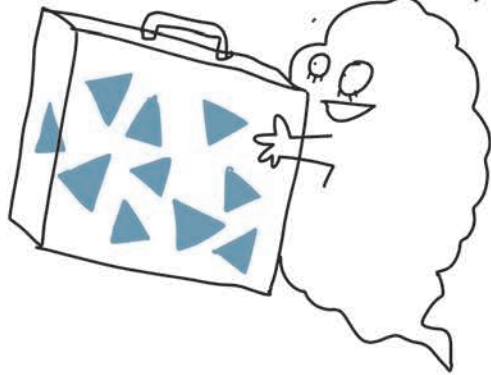


CONSTANT SMALL LOCAL
DECISION MAKING AND RESOURCE
ALLOCATION COULD IN THEORY TURN
THE ORGANISATION INTO A SUPER
ADAPTIVE ORGANISATIONAL ORGANISM!



MANY PEOPLE ADVOCATE THAT ORGANISATIONS ADOPT A "PORTFOLIO OF BETS" APPROACH WHEN OPERATING IN UNCERTAINTY.

ARE YOU SUGGESTING I TAKE UP GAMBLING .





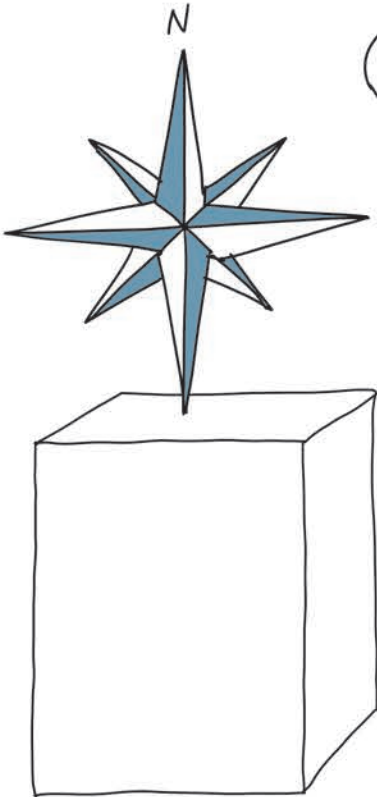
INCREMENTAL EXPERIMENTATION
DOES NOT MEAN DIRECTIONLESS.

YOUR PURPOSE, YOUR WHY,
YOUR REASON TO EXIST
BECOMES EVEN MORE IMPORTANT.

IT HELPS YOU NAVIGATE.

BUT IT DOES NOT
DICTATE A DESTINATION.

YOU NEVER
ARRIVE.



NOT
RELEVANT.
THE PURPOSE
OF MY COMPANY
IS TO STAY
ALIVE.



CHANGE

THE

CONTEXT

TO CHANGE BEHAVIOUR

WHAT LOOKS LIKE A PEOPLE
PROBLEM IS ACTUALLY
AN ENVIRONMENT PROBLEM.*



CHIP & DAN HEATH

*From the Heath brothers' book Switch: How To Change Things When Change Is Hard



IN A COMPLEX ENVIRONMENT YOU
DON'T "SOLVE PROBLEMS", YOU INFLUENCE
THE ENVIRONMENT*
(INCENTIVES, RELATIONSHIPS, SOCIAL NORMS,
PHYSICAL SPACE ...)

THE FRUSTRATED
MANAGER WHO
WANTS EMPLOYEES
TO COLLABORATE
WITH EACH OTHER

BONUSES
LINKED TO
INDIVIDUAL
PERFORMANCE

BEHAVIOUR

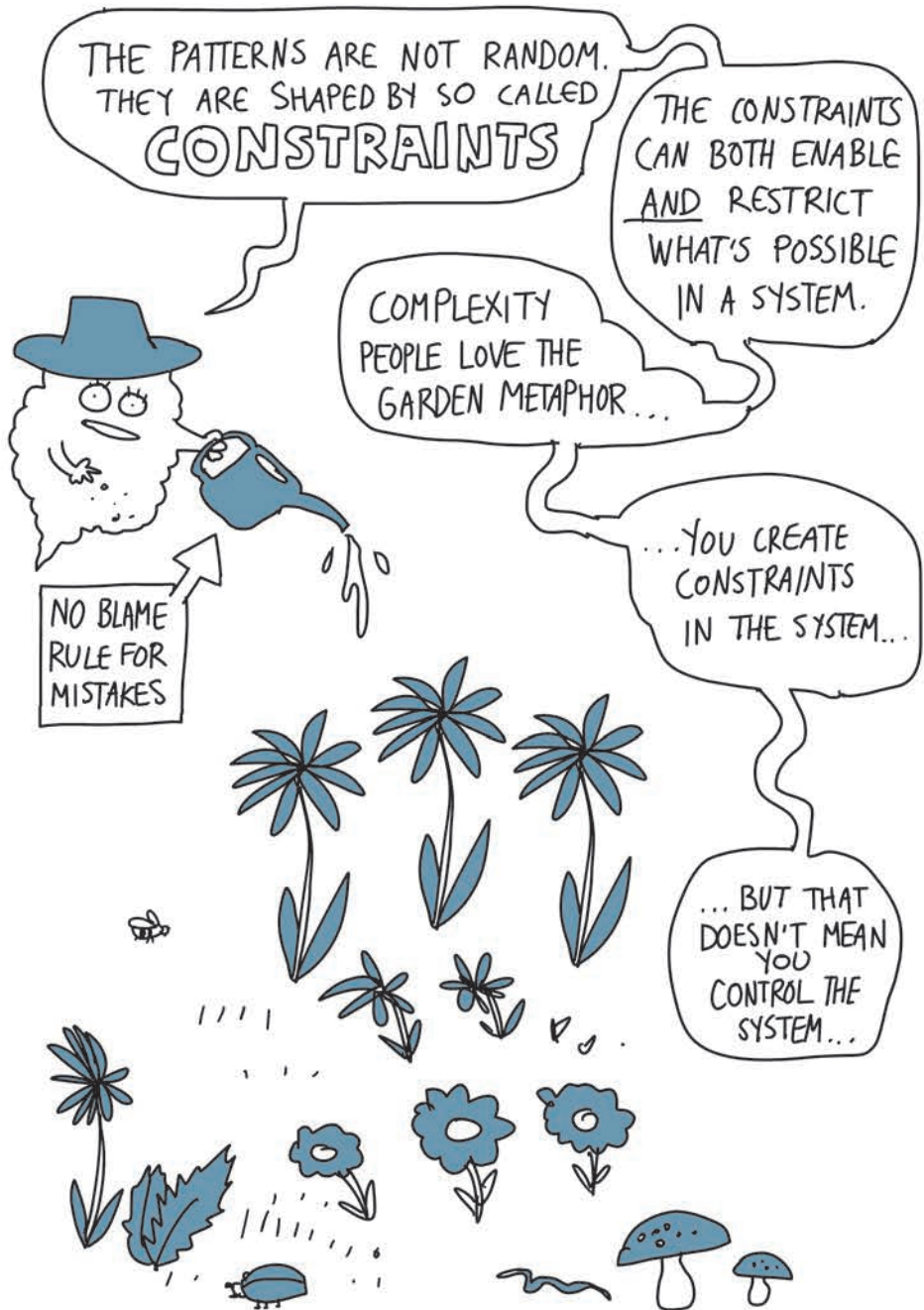
SILOED
COMMUNICATION

RIGID
HIERARCHIES

NO OPPORTUNITIES
FOR INFORMAL
SOCIAL INTERACTION
& TRUST BUILDING

INCENTIVES
& SOCIAL NORMS
FAVOURING COMPETITION

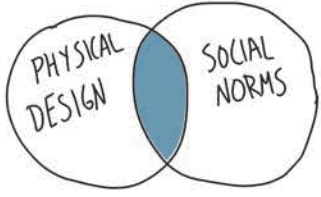
*Or "constraints".



*In complex systems, causality operates through constraints rather than through linear push-pull mechanisms – you cannot identify a single causal mover because the system is shaped by context-sensitive constraints operating simultaneously at multiple levels.

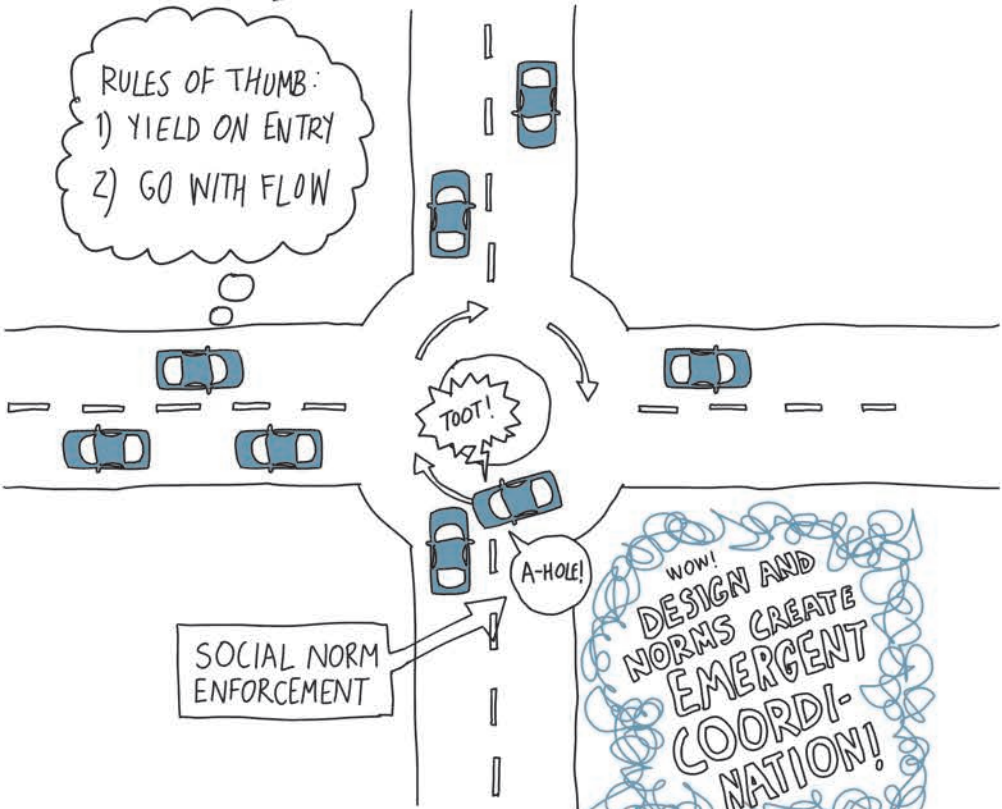
A BEAUTIFUL MARRIAGE OF 2 CONSTRAINTS:

THE MAGIC OF ROUNDABOUTS



CONSTRAINTS, NOT COMMANDS

RULES OF THUMB:
1) YIELD ON ENTRY
2) GO WITH FLOW



WOW!
DESIGN AND
NORMS CREATE
EMERGENT
COORDINATION!

ENABLING CONSTRAINTS WORK BETTER IN A COMPLEX ENVIRONMENT.

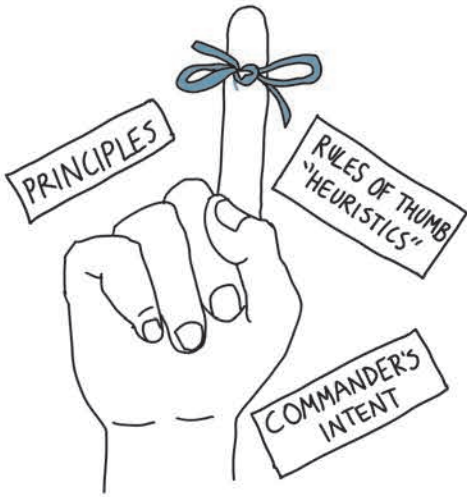


GOVERNING CONSTRAINTS

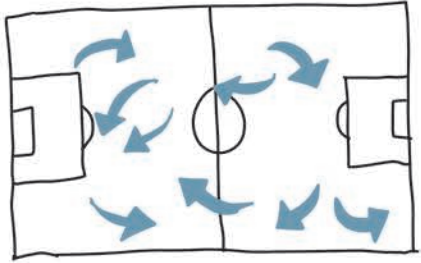
ENABLING CONSTRAINTS



RESTRICT BEHAVIOUR



ALLOW FOR ADAPTATION WITHIN GUIDING PRINCIPLES.



WITH COMPLEXITY FRIENDLY APPROACHES
COMES INCREASED

AUTONOMY

THIS MEANS WE NEED EMPLOYEES WHO CAN

THINK

-NOT JUST EXECUTE ORDERS...

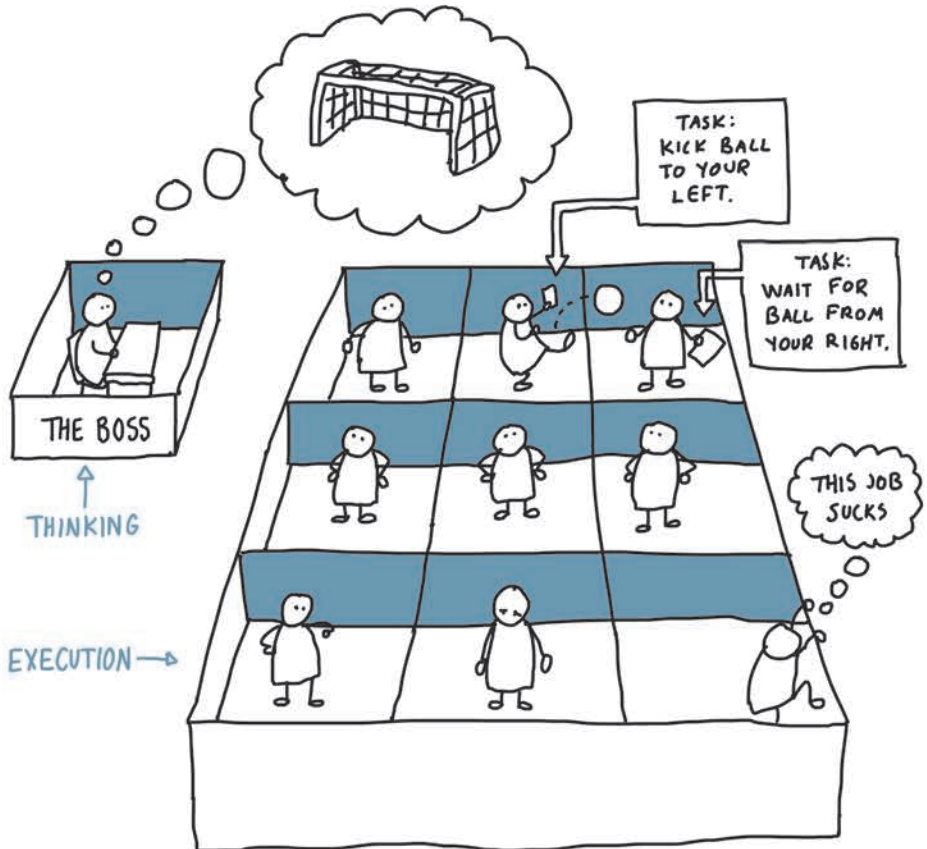


WHAT?!
ARE YOU ASKING ME TO
PUT IT BACK IN NOW?!



UNFORTUNATELY OUR ORGANISATIONS ARE STILL MODELLED AFTER 19TH CENTURY FACTORIES WHERE TASKS WERE SIMPLE AND WHERE ONLY MANAGERS HAD TO THINK. THIS MAKES ORGANISATIONS STUPID.

IF "EFFICIENT" ORGANISATIONS PLAYED FOOTBALL.



* Referencing "Krasnovian football" in Stanley McChrystal's book 'Team of Teams - New Rules of Engagement For a Complex World

DUMB ORGANISATIONS TYPICALLY LACK FEEDBACK FROM THE DOERS TO THE THINKERS.



HERMETICALLY SEALED
EXECUTIVE PLANNING CUBE



I CAN SUBMIT PROPOSALS ONCE A QUARTER.



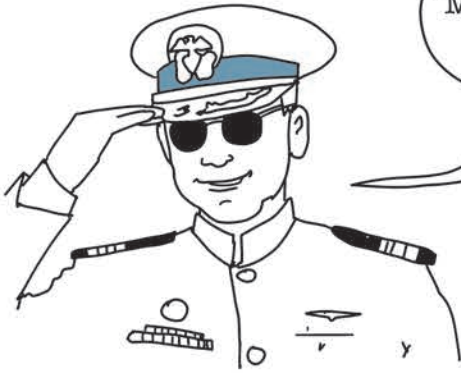
MIDDLE MANAGER

I CAN'T PROPOSE ANYTHING.



FRONTLINE WORKER

REPEATING



DAVID MARQUET
NUCLEAR SUBMARINE CAPTAIN

Move the authority where
the information is*.



AFTER ALL,
I'M CLOSER TO
THE PROBLEM.



Never tell people how to do things.
Tell them what to do and they will
surprise you with their ingenuity**.



US GENERAL GEORGE S. PATTON

*From David Marquet's talk www.youtube.com/watch?v=OqmdLcyES_Q (Based on his book Turn The Ship Around!)

**From General Patton's book War As I Knew It www.hoover.org/research/german-view-patton



GIVE ME EXAMPLES OF ORGANISATIONS THAT ARE ABLE TO OPERATE EFFICIENTLY AND ADAPTIVELY ?!



SPECIAL OPERATIONS FORCES COMBINE STANDARD MILITARY PROCEDURES AND ADAPTIVE, HIGHLY AUTONOMOUS WAYS OF OPERATING.



THE COMMANDER'S INTENT

I TELL YOU WHAT TO ACHIEVE AND WHY IT MATTERS - YOU DECIDE HOW TO ACHIEVE IT.



IF SPECIAL OPERATIONS WERE RUN LIKE A TRADITIONAL HIERARCHICAL ORGANISATION

BUT I FILLED IN THE "REQUEST FOR ORDERS" FORM ON TUESDAY !!!

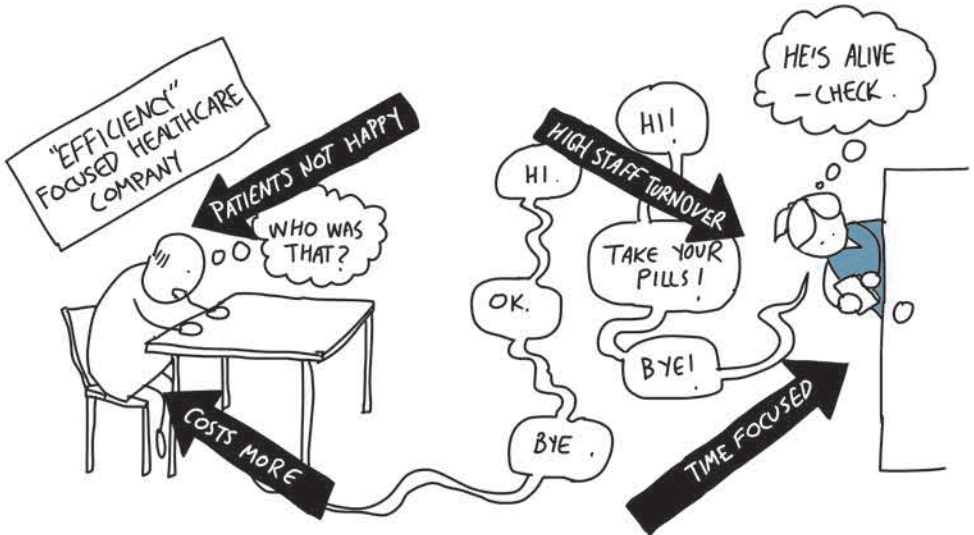
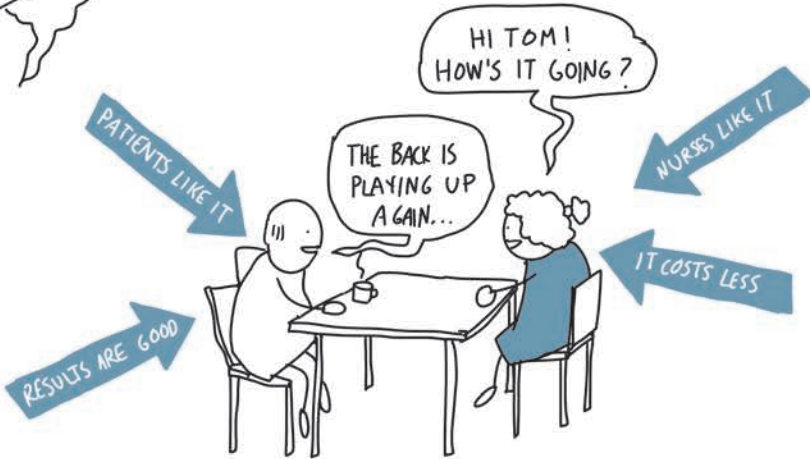
OOH. THE ENEMY SPOTTED US. I HOPE THE ORDERS COME SOON!

WHAT DOES THE MANUAL SAY ABOUT SITUATIONS LIKE THIS?



BUURTZORG IS A LARGE DUTCH HEALTHCARE ORGANISATION THAT TRUSTS ITS NURSES TO MAKE DECISIONS AND MANAGE THEIR TIME IN SELF-MANAGED TEAMS.

TRUST, CONTINUITY AND CLINICAL JUDGMENT IS MORE IMPORTANT THAN TIME TRACKING*



* www.commonwealthfund.org/publications/case-study/2015/may/home-care-self-governing-nursing-teams-netherlands-buurtzorg-model

IT'S NICER TO WORK
HERE, AND IT'S NICER
FOR PATIENTS HERE.
THAT'S THE BIGGEST
DIFFERENCE.

WE'VE WORKED FOR MANY YEARS.
WE KNOW WHAT TO DO. IN
BIGGER ORGANISATIONS WE'RE
TOLD WHAT TO DO.

BUURTZORG
NURSES CHILA,
JOLANDA AND
MARIAN





YEAH WELL, HIGH LEVEL OF AUTONOMY DOES NOT WORK IN LARGE MANUFACTURING FIRMS. THEY ARE STILL RUN WITH TAYLORISTIC PRINCIPLES.



EXCEPT FOR THE LARGEST APPLIANCE MANUFACTURER IN THE WORLD.*

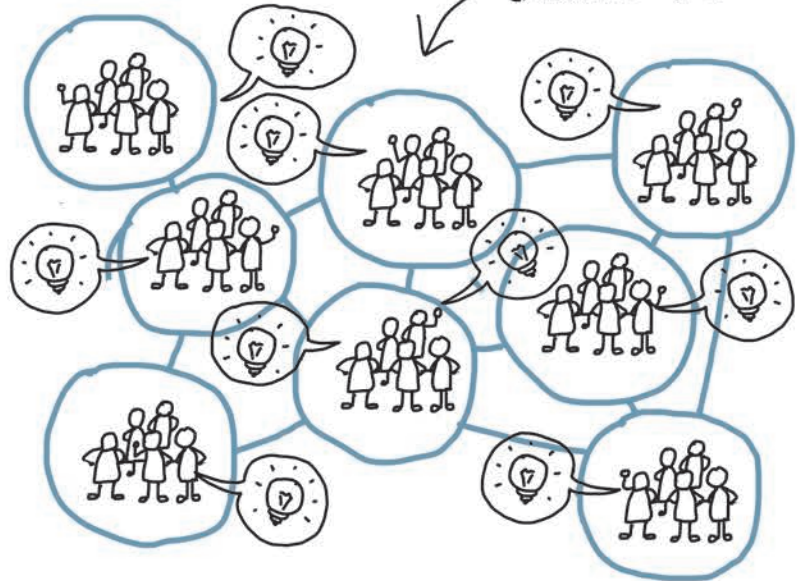
STRATEGIC DECENTRALISATION AT SCALE



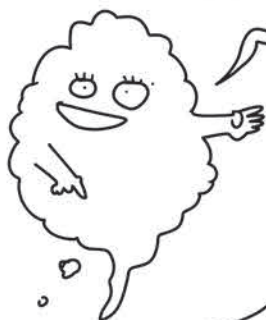
WE HAVE CREATED UNITS (MICROENTERPRISES) THAT ARE SELF-ORGANISED VIA OUR RENDANHEYI-MODEL. THIS ALLOWS UNITS TO GRASP OPPORTUNITIES AS THEY ARISE.

ZHANG RUIMIN
CEO OF HAIER

THOUSANDS OF MICRO-ENTERPRISES (TEAMS OF 8)



IN SOME CASES IT MIGHT BE WORTH TO RETHINK THE WHOLE ORGANISATIONAL MODEL. OTHERWISE YOU ARE JUST REARRANGING THE DECK CHAIRS.

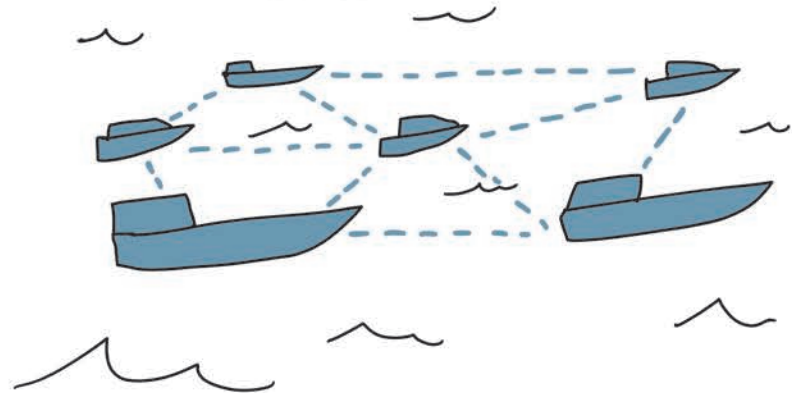


HOW COME WE DIDN'T SEE THIS COMING?!

WE DID!



INSTEAD OF ONE MASSIVE HIERARCHICAL "VESSEL" WHY NOT HAVE A FLEET OF SMALLER INTERCONNECTED VESSELS?



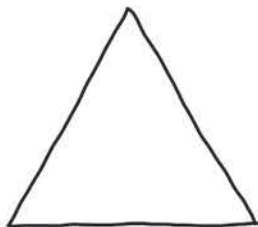


BY AUTONOMY
YOU MEAN
SELF-MANAGED
ORGANISATIONS?

THAT'S
MADNESS!

MORE AUTONOMY TYPICALLY
MEANS **TEAM**-LEVEL
AUTONOMY.

HIERARCHY



SELF-DIRECTED
TEAMS

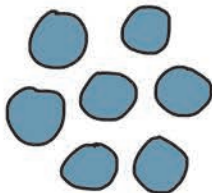
AGILE
TEAMS

INTERNAL
INCUBATOR



SKUNK WORKS

SELF-MANAGED
ORGANISATION



WHATEVER THE ORGANISATIONAL STRUCTURE,
THE ROLE OF **THE TEAM**
BECOMES VERY IMPORTANT.



**TEAM
POWER!**

DESIRABILITY!



FEASIBILITY!



VIABILITY!



IN PUBLIC POLICY LETTING THOSE CLOSEST TO THE PROBLEM
DECIDE WHAT THE SOLUTIONS ARE IS AN OLD PROPOSITION.

BUT IT'S EASY TO LOSE THIS ABILITY WHEN POWER HAS
RESIDED OUTSIDE LOCAL COMMUNITIES FOR SO LONG.



A core goal of public policy should be to
facilitate the development of institutions
that bring out the best in humans by
fostering trust and adaptive learning*.



CONTINUOUS

LEARN-

ING

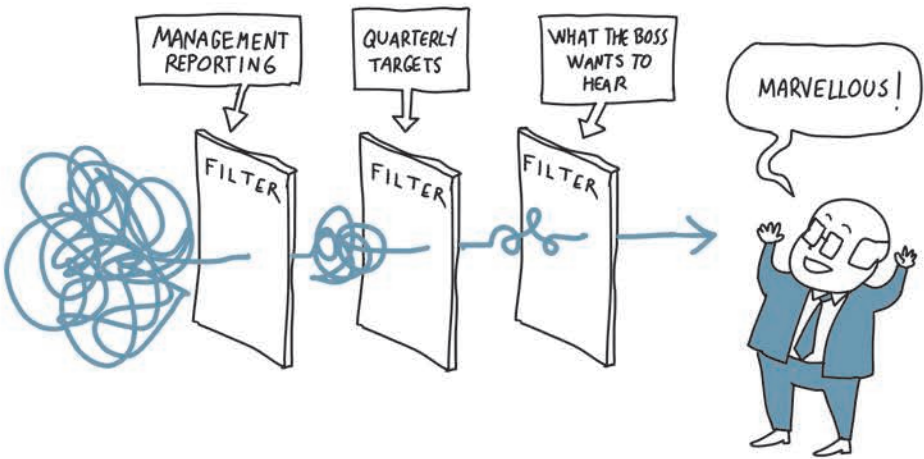
← SUCCESS

COCK-UPS
&
MISCALCULATIONS





IN A COMPLEX ENVIRONMENT LEARNING, OR SIGNAL PROCESSING
TO YOU ENGINEERING TYPES, BECOMES VERY IMPORTANT.
MAKE SURE YOUR ORGANISATIONAL LEARNING LOOP IS
1) FAST ENOUGH 2) ACCURATE ENOUGH &
3) HONEST ENOUGH TO CORRECT ERRORS
BEFORE THEY COMPOUND.



WHEN WORKING IN AN UNPREDICTABLE ENVIRONMENT YOU GAIN INFORMATION BY EXPERIMENTING. THIS MEANS THAT...



FAILURE IS FEEDBACK



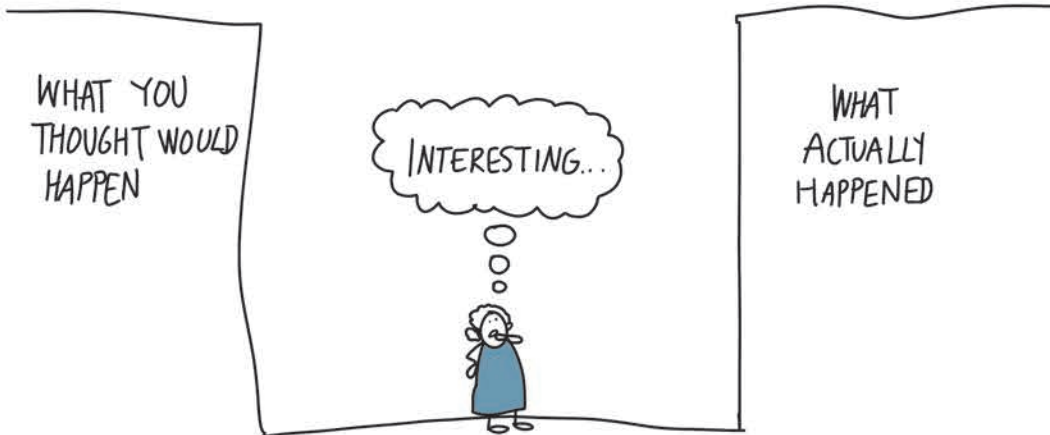
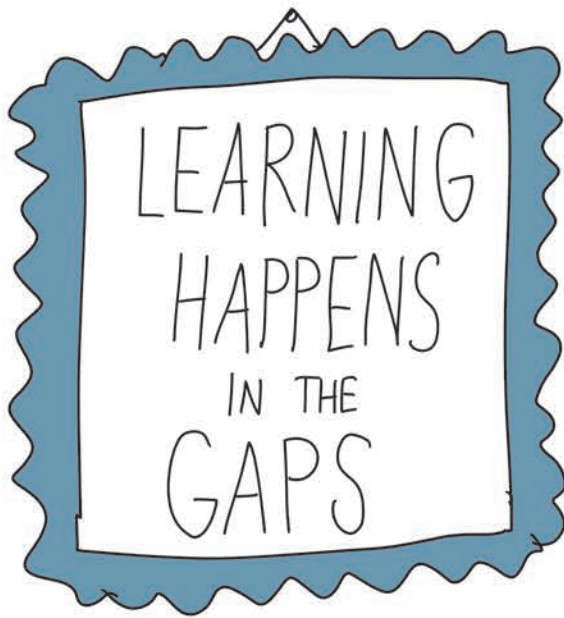
WE
FAILED!



WE GOT
DATA!

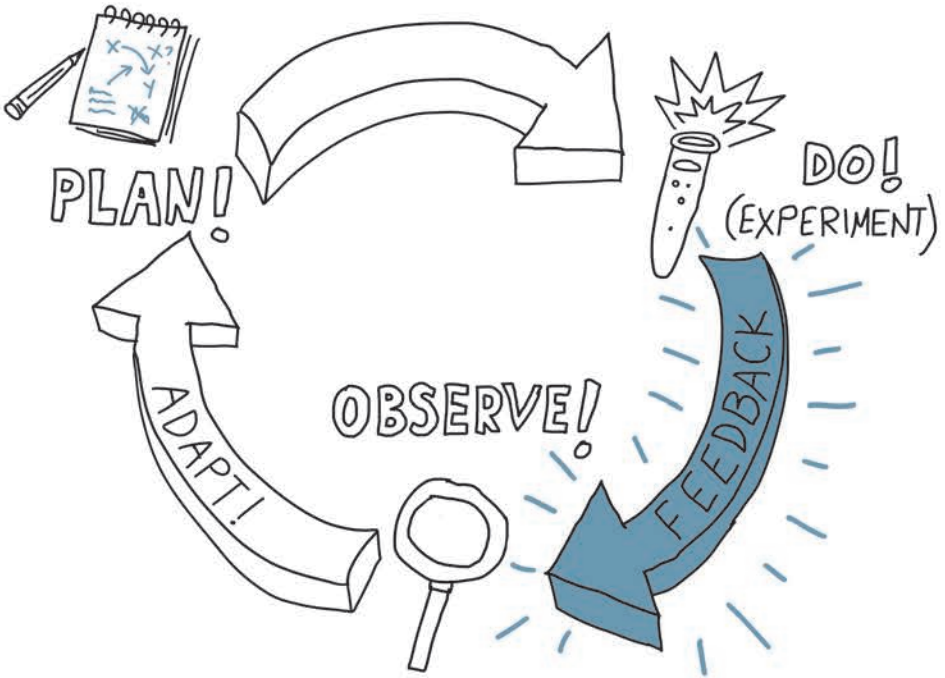








WORK METHODS DESIGNED
FOR UNCERTAINTY RELY HEAVILY ON
FEEDBACK LOOPS.



MAKES
A LOT OF
SENSE!

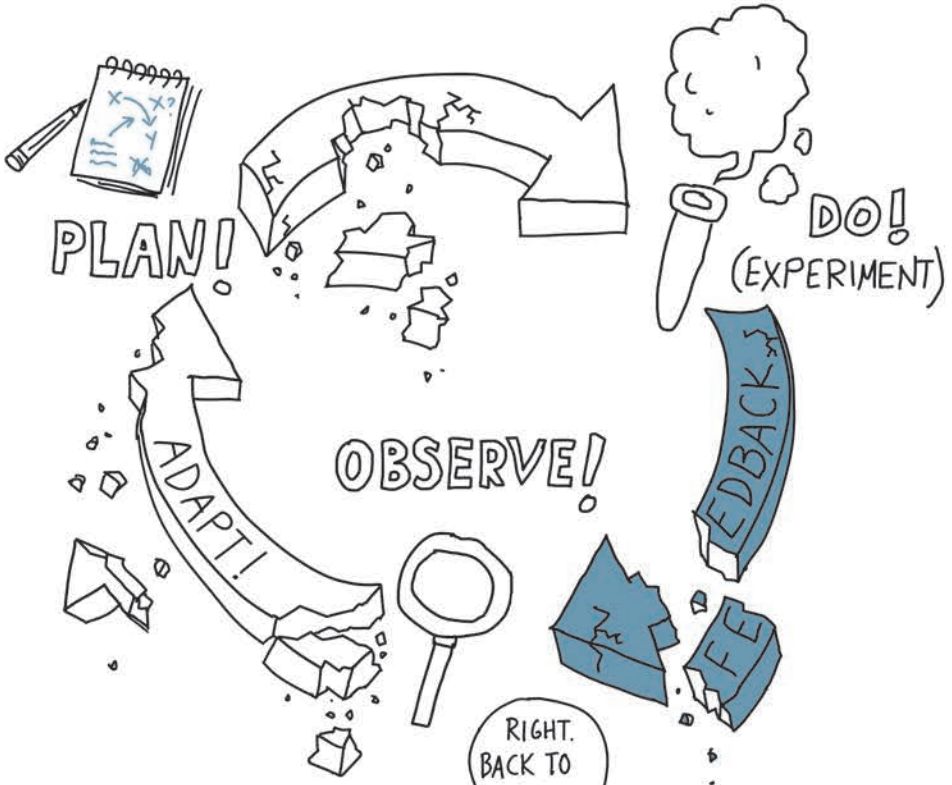


AGILE!

**DESIGN
THINKING!**



IT'S OF COURSE ALWAYS EASIER TO DRAW THESE FEEDBACK LOOPS, THAN USE THEM IN PRACTISE...



RIGHT. BACK TO WORK.





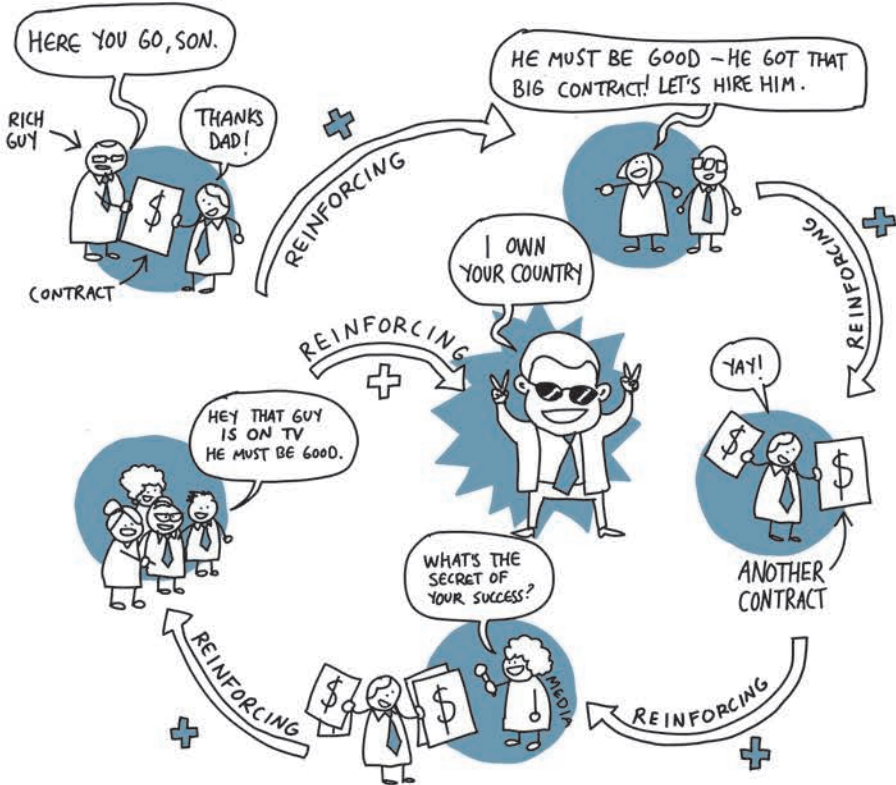
A USEFUL CONCEPT FROM SYSTEMS THINKING IS THE
REINFORCING LOOP

BEHIND SOME COMMON PROBLEMS THERE ARE REINFORCING LOOPS THAT AMPLIFY THE EFFECTS OF A PARTICULAR BEHAVIOUR OR DECISION.

SOME OF THESE DYNAMICS ARE SO FAMOUS THAT THEY HAVE NAMES LIKE "TRAGEDY OF THE COMMONS" OR "SUCCESS TO THE SUCCESSFUL"

Success to the Successful

(RICH GET RICHER)



It's not like this is a new insight: "For to every one who has will more be given, and he will have abundance; but from him who has not, even what he has will be taken away". — Matthew 25:29.

OH! ARE YOU TALKING ABOUT
SYSTEMS
THINKING? WE ENGINEERS UNDERSTAND IT WELL!

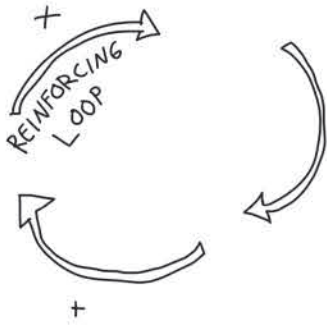
IT USES NEAT DIAGRAMS AND
FEEDBACK LOOPS!



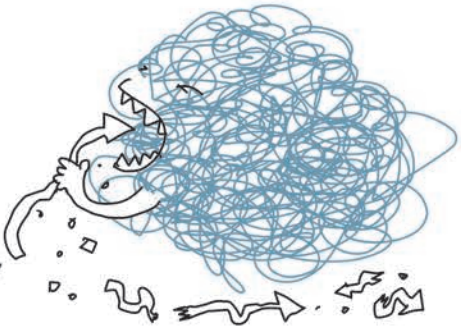
YES AND NO.



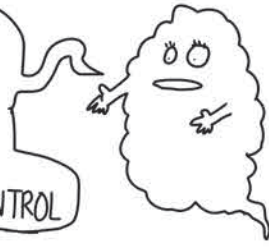
SYSTEMS THINKING IS USEFUL.
BUT REMEMBER THAT IF YOU'RE DEALING
WITH HUMANS COMPLEXITY IS NEVER
FAR AWAY...



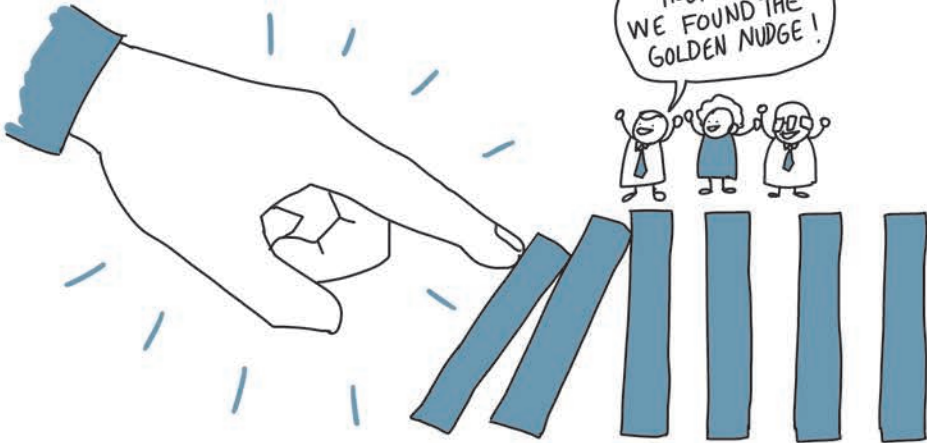
EATS DIAGRAMS FOR LUNCH



DON'T GET ME WRONG: SYSTEMS THINKING CAN BE USEFUL. THE PROBLEMS START WHEN PEOPLE THINK A SYSTEM IS FULLY KNOWABLE AND MAPPABLE AND THEY RELY TOO MUCH ON CONTROL THROUGH LEVERAGE POINTS.



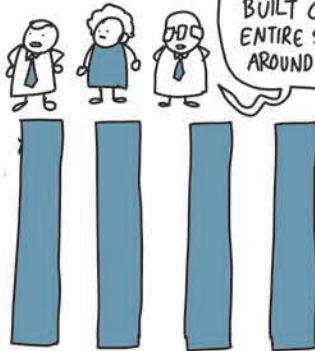
HODRAY!
WE FOUND THE
GOLDEN NUDGE!



THE SYSTEM

HM.
IT STOPPED
WORKING.

SHAME WE
BUILT OUR
ENTIRE STRATEGY
AROUND IT...

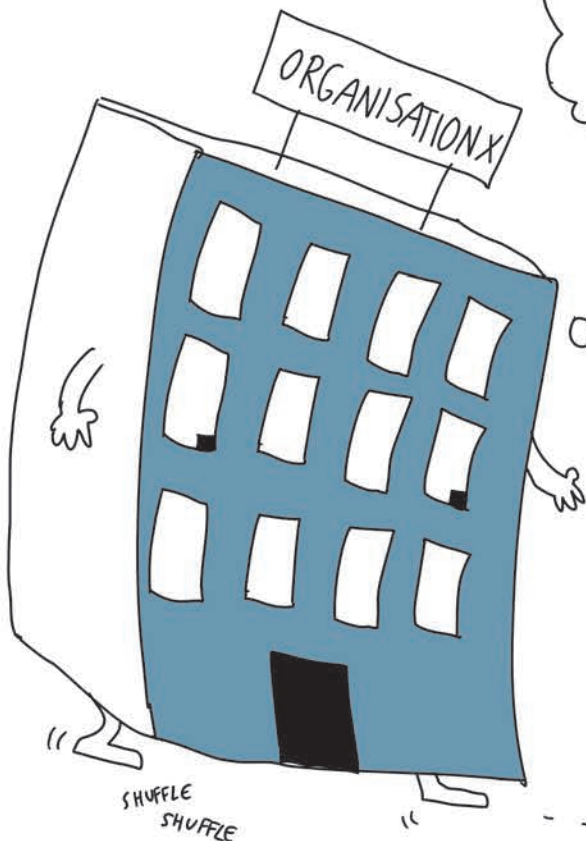


SUCCESS DEPENDS MORE ON ADAPTIVE CAPACITY
THAN OPTIMAL DESIGN.





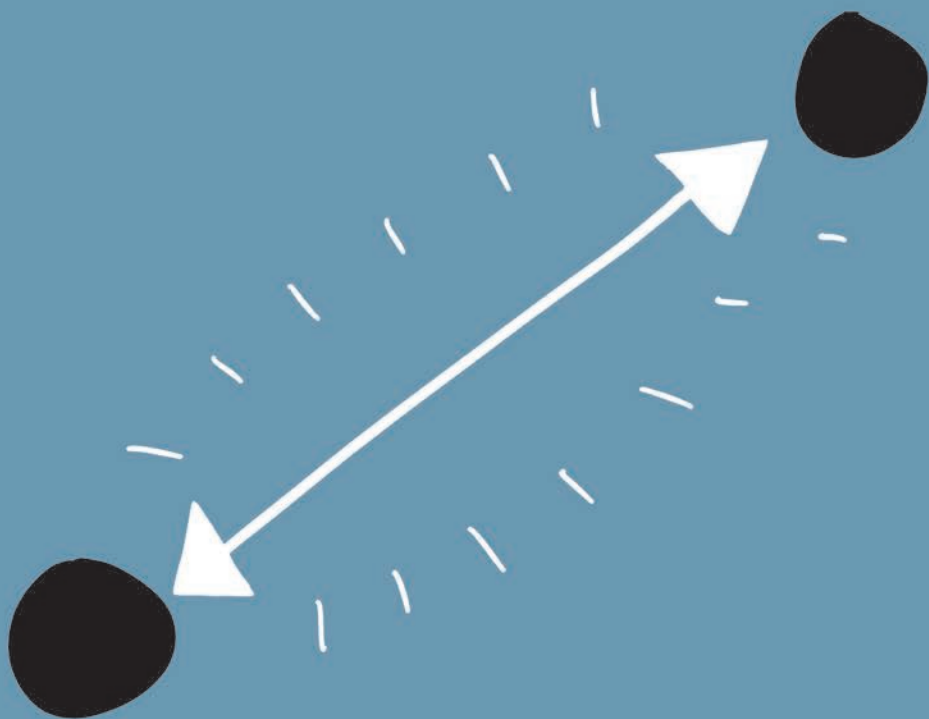
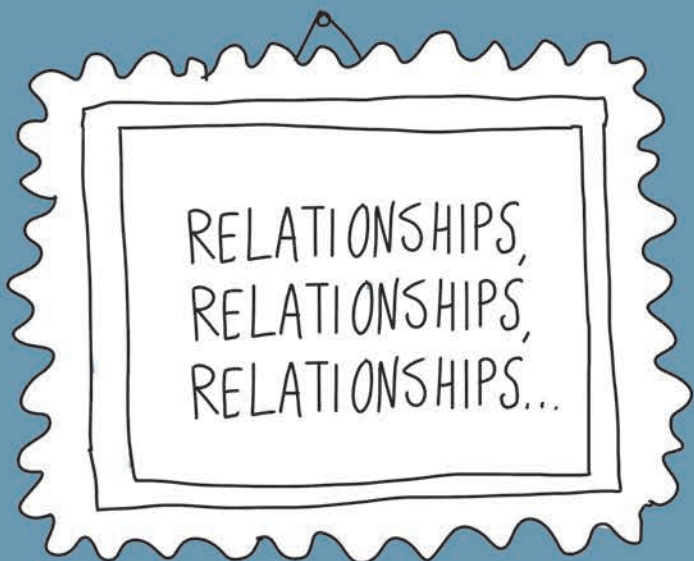
BECAUSE OF FEEDBACK LOOPS
A SYSTEM HAS A
MEMORY
OF SORTS.



IT'S THAT GUY
AGAIN WITH HIS
INANE IDEAS AND
CHARMLSS WAYS.
I'M GOING TO
IGNORE HIM
SO HARD...

BEHOLD THE
NEW STRATEGY!

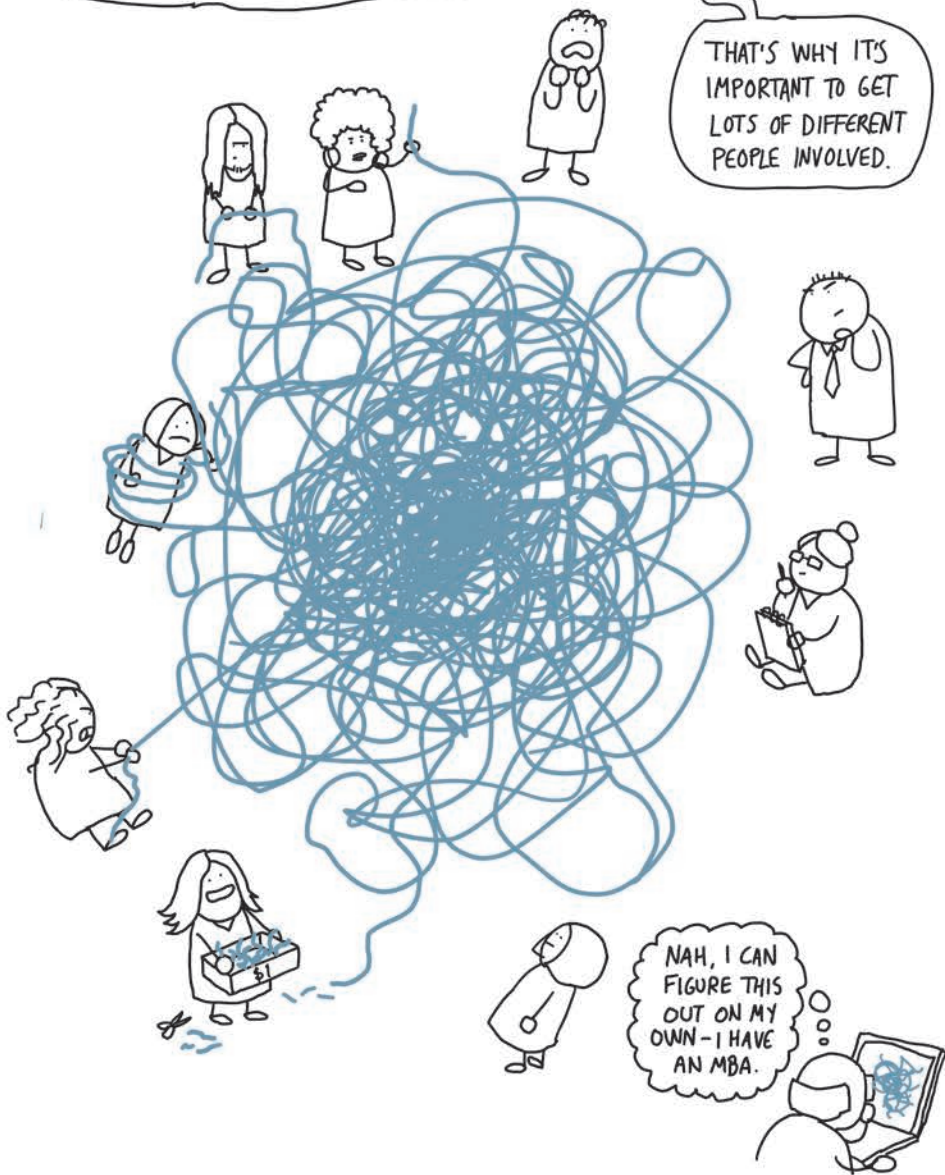




IF YOU ARE DEALING WITH A COMPLEX ISSUE
YOU NEED INFORMATION FROM AS MANY
ANGLES AS POSSIBLE. YOU CAN'T MAKE
SENSE OF IT ON YOUR OWN.

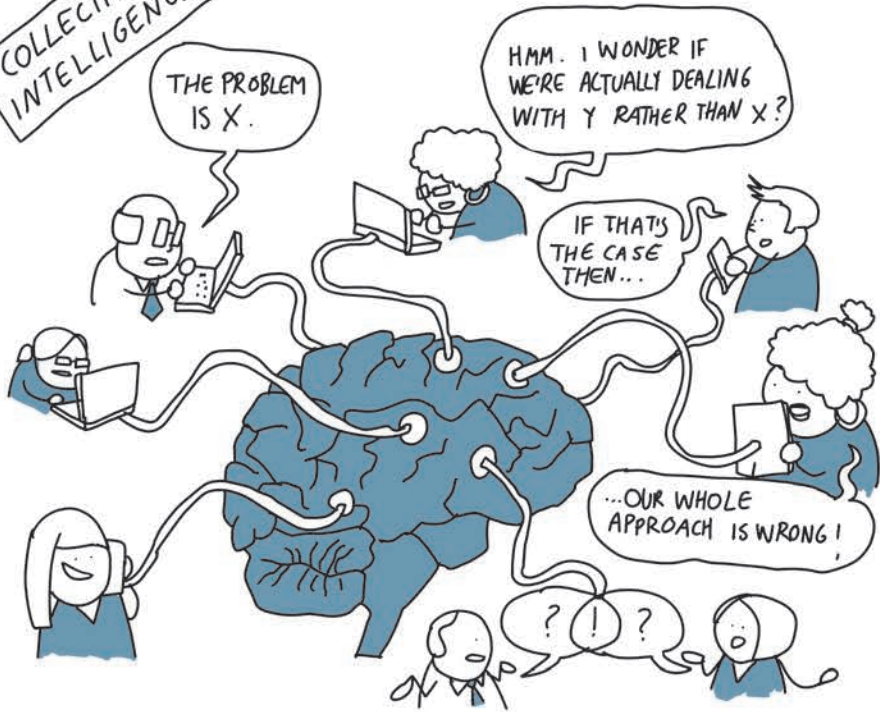


THAT'S WHY IT'S
IMPORTANT TO GET
LOTS OF DIFFERENT
PEOPLE INVOLVED.



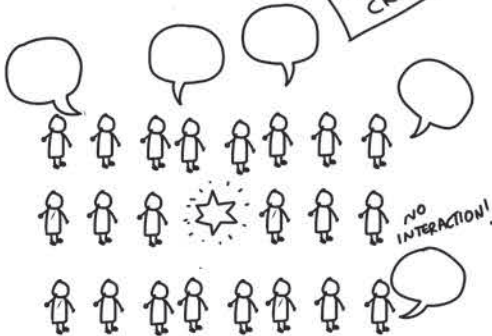
NAH, I CAN
FIGURE THIS
OUT ON MY
OWN - I HAVE
AN MBA.

COLLECTIVE INTELLIGENCE

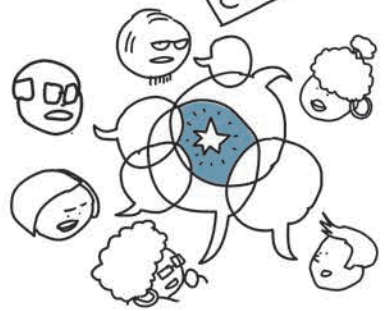


NB: THERE ARE DIFFERENT TYPES OF COLLECTIVE INTELLIGENCE. THEY ARE USEFUL FOR DIFFERENT TYPES OF PROBLEMS. FOR EXAMPLE:

FOR QUANTITATIVE ASSESSMENT: WISDOM OF CROWDS

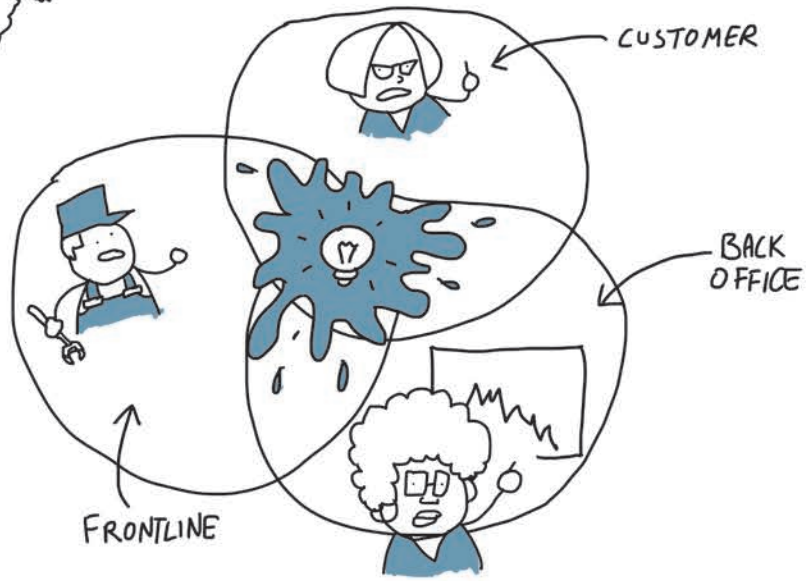


FOR OPEN ENDED PROBLEMS: COLLABORATION

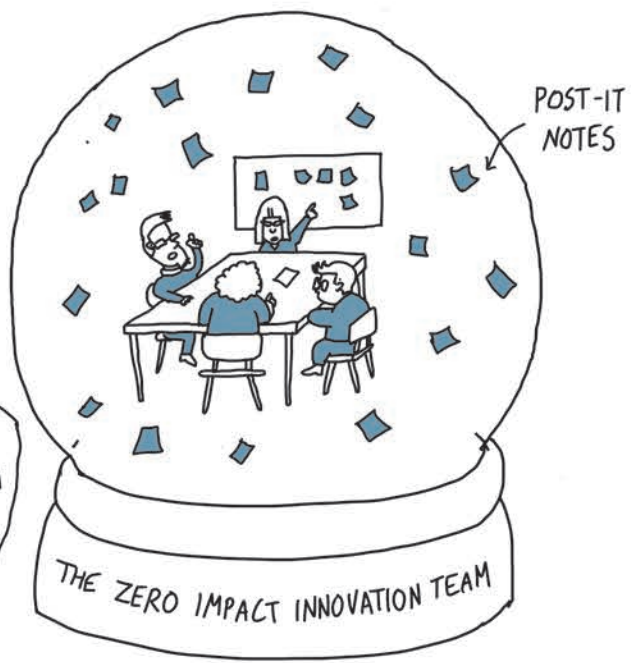




REMEMBER THAT INNOVATION HAPPENS AT INTERSECTIONS
— WHERE DIFFERENT PEOPLE AND IDEAS MEET.



YOUR INNOVATION
TEAM IS CUT OFF FROM
THE REAL WORLD
— AND THE REST OF
THE COMPANY.



3 CHEERS FOR THE BRIDGE BUILDERS



UNBRIDGEABLE
ORGANISATIONAL
DIVIDE

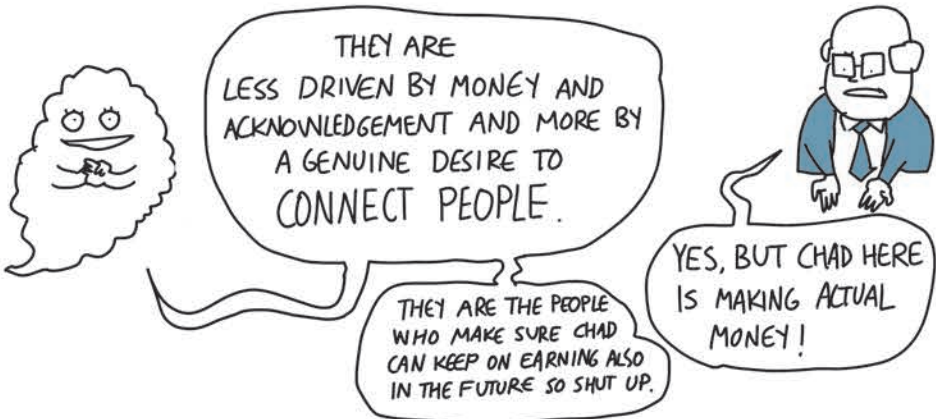
THEY ARE OFTEN THE ONES WHO NOTICE WHAT DOESN'T WORK AND ACTUALLY DO SOMETHING ABOUT IT.



I GET THAT YOU'VE BEEN ALLOCATED A BUDGET TO TRIM ONLY YOUR SIDE OF THE PITCH, BUT THIS IS JUST SILLY...

WHAT IF WE...





NETWORK WEAVER,
SYSTEMS CONVENER, BOUNDARY
SPANNER, BRIDGE-BUILDER, CULTURAL
BROKER, KNOWLEDGE BROKER, RELATIONAL
LEADER, CONNECTOR, COMMUNITY CATALYST,
SOCIAL BRIDGE...

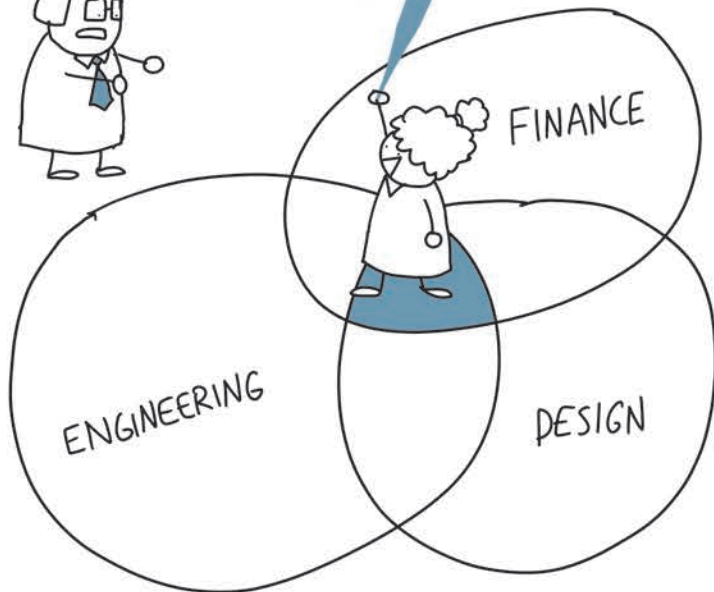


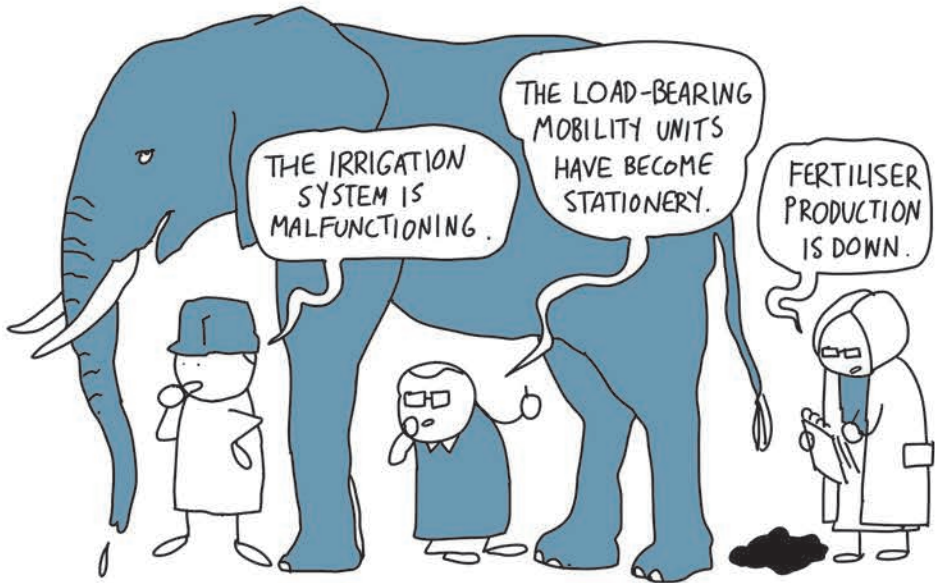
THERE ARE PEOPLE WHO MOVE NATURALLY BETWEEN WORLDS (DEPARTMENTS, DISCIPLINES, WAYS OF THINKING). YOU NEED THESE PEOPLE.



VENN
POWER!

I DON'T PAY
PEOPLE TO HAVE
MULTIPLE
INTERESTS!





A change in perspective is worth 80 IQ points*.



ALAN KAY,
COMPUTER SCIENTIST

*Another variation: "Context is worth 80 IQ points"



The environment people face is put there by their own actions. Environments are enacted, not encountered.

KARL E. WEICK

The organism influences its own evolution by being both the subject and the object of evolution. It is both the object of natural selection and the creator of the conditions of that selection.



RICHARD C. LEWONTIN



An organization is not a system. It is a pattern of interactions between people. There is no system to be acted upon; there are only people interacting with each other in the living present.

RALPH D. STACEY

Relationships are all there is. Everything in the universe only exists because it is in relationship to everything else. Nothing exists in isolation.



MARGARET WHEATLEY

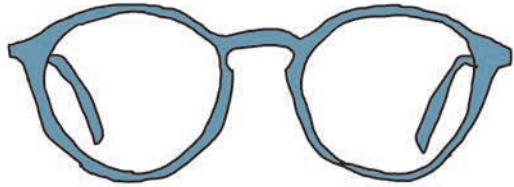
Karl E. Weick: *The Social Psychology of Organizing*

Richard C. Lewontin: "The Organism as the Subject and Object of Evolution.", *Scientific American*, vol. 239
Ralph D. Stacey, *Strategic Management and Organisational Dynamics: The Challenge of Complexity to Ways of Thinking About Organisations*, 5th ed.

Margaret Wheatley: *Leadership and the New Science*

DIFFERENT FRAMEWORKS, METHODS & TOOLS MAKE DIFFERENT ASSUMPTIONS ABOUT THE WORLD. THEY GUIDE YOUR INTERPRETATION OF EVENTS. IT TAKES MENTAL AGILITY TO JUMP BETWEEN THEM.

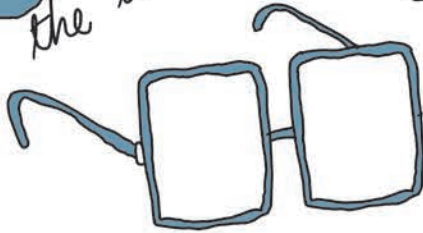
BUT JUMP YOU MUST.



All models are wrong, but some



The map is not the territory**



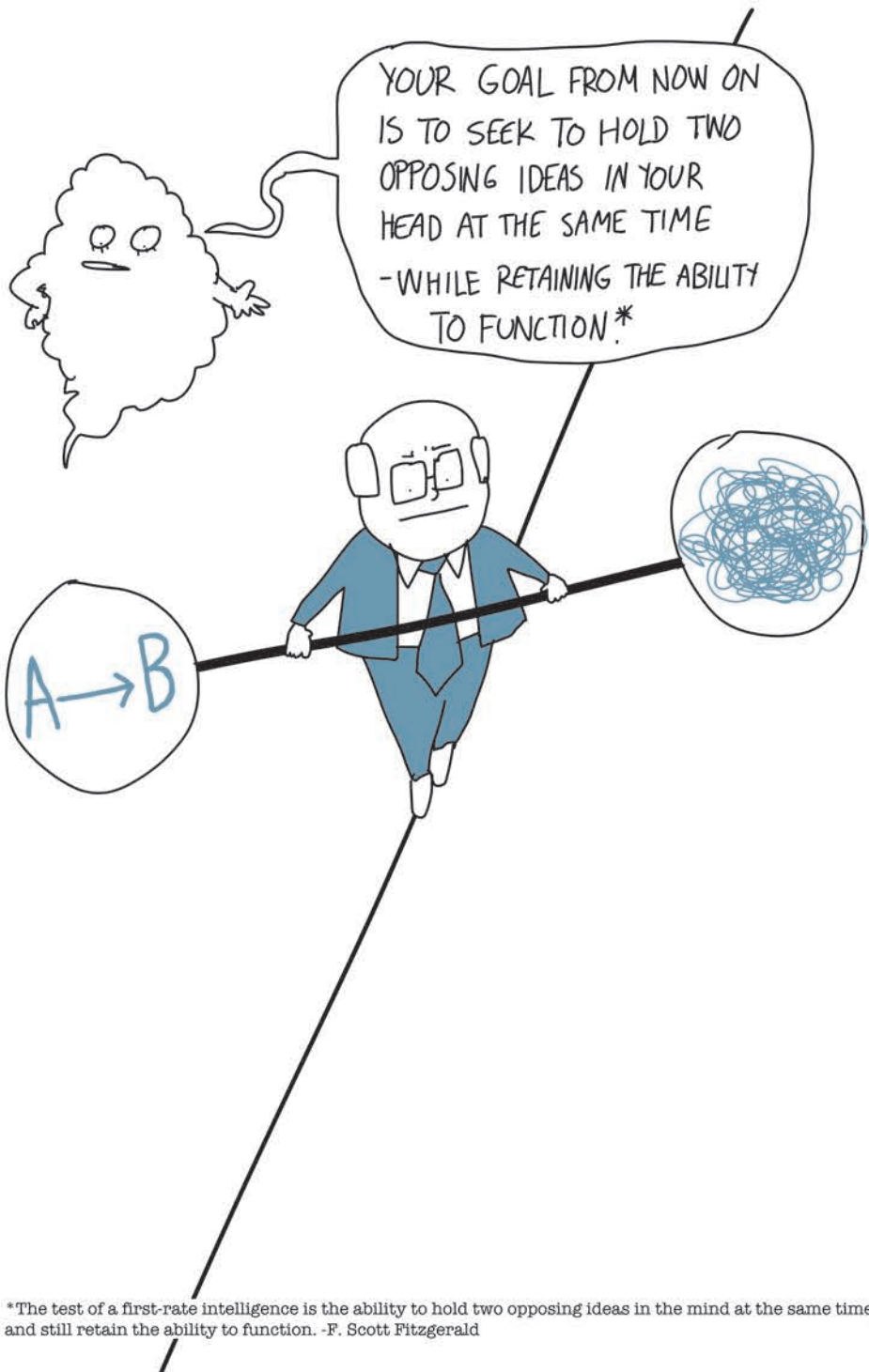
but some



*useful are

*Quote from the statistician George E.P. Box

**Quote from the scientist and philosopher Alfred Korzybski

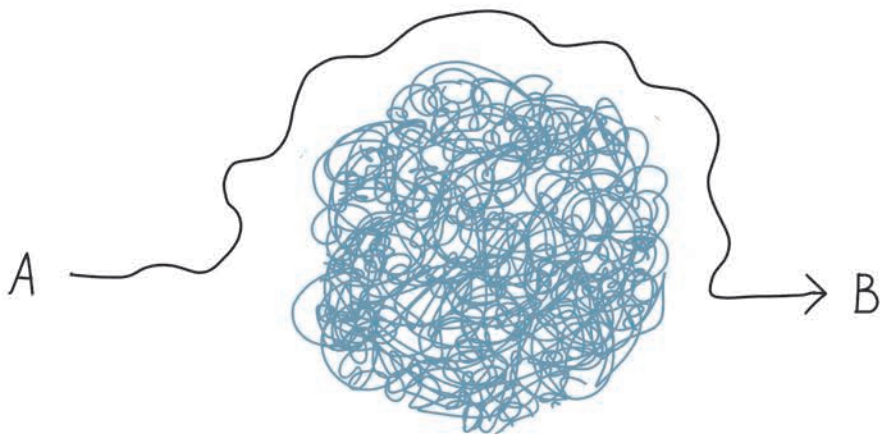
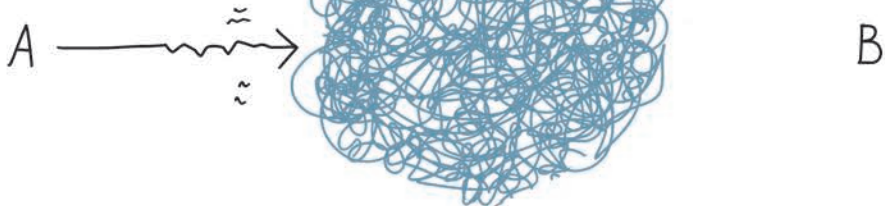


*The test of a first-rate intelligence is the ability to hold two opposing ideas in the mind at the same time, and still retain the ability to function. -F. Scott Fitzgerald



YOU CAN'T STRAIGHTEN THE WORLD FOREVER.

LEARN TO BEND.



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CARTOONS FROM THIS BOOK
IN YOUR WORK ?

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THANK YOU FOR SUPPORTING MY CARTOON-POWERED
ATTEMPTS TO MAKE SENSE OF BIG, MESSY TOPICS.

