Critical realism & realist evaluation:

An overview for everyone

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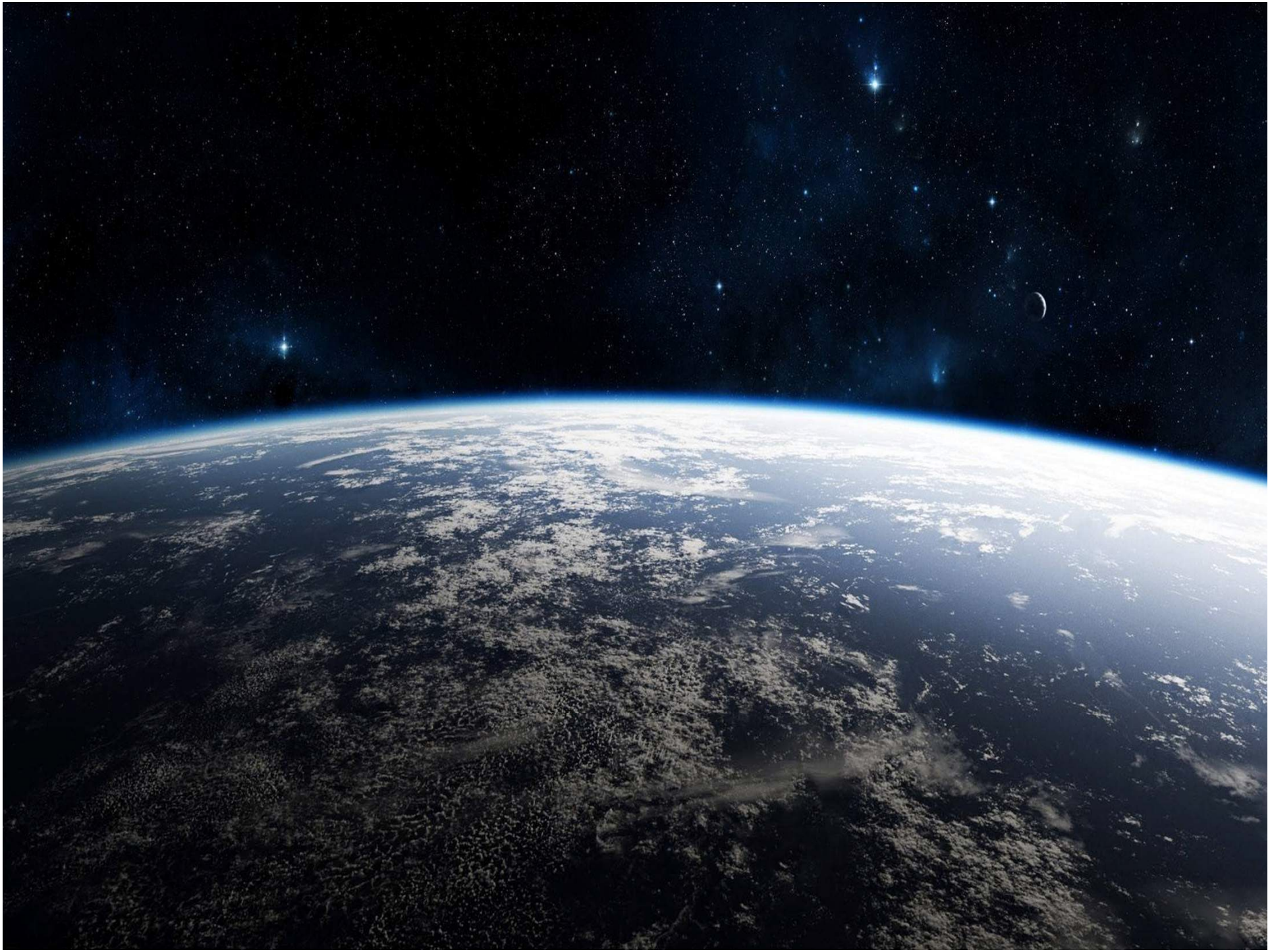



The wonder of:


Why?

Aims:

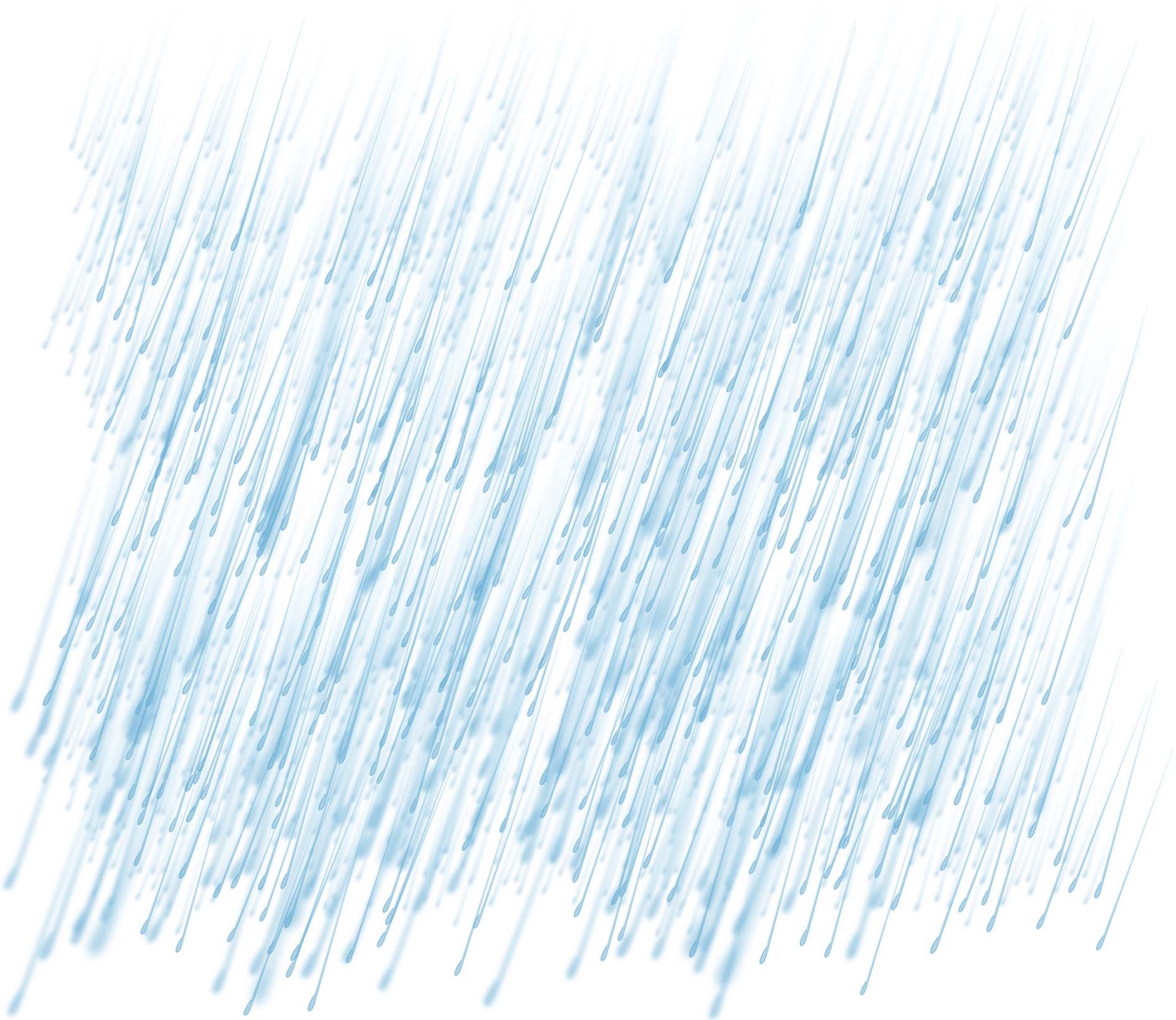
1. Cover key concepts
   Simple, complicated and complex

2. Overview the tenets of critical realism

3. Discuss the nature and use of realist evaluation


SAME OLD WAY
A NEW WAY

Why ?



Why ?

Why did the global recession happen ?

Lawson (2009)

Why do most criminals re-offend?

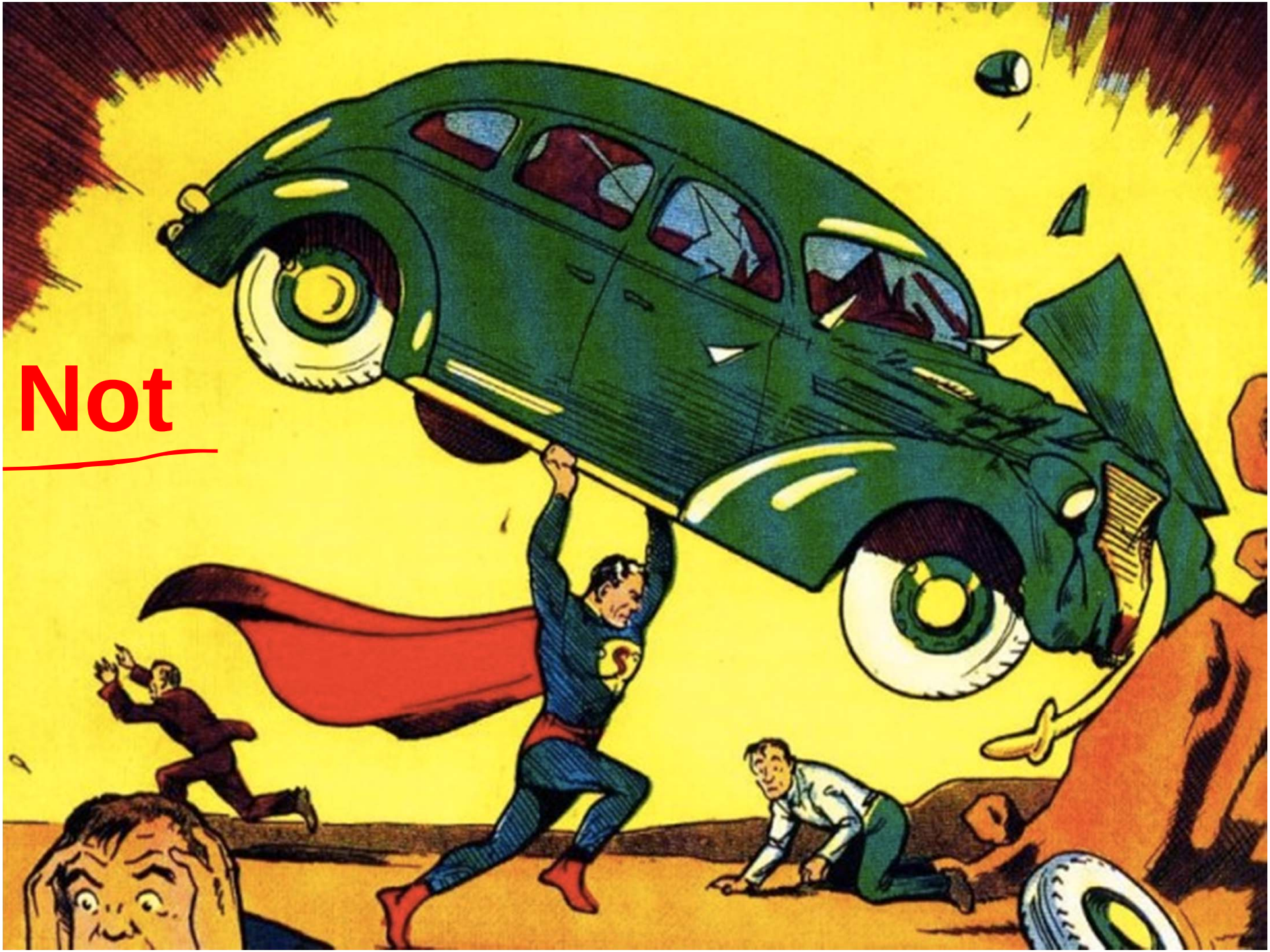
(Byrne 2002)

Why are people not accessing our exercise program?
(Clark et al 2005)

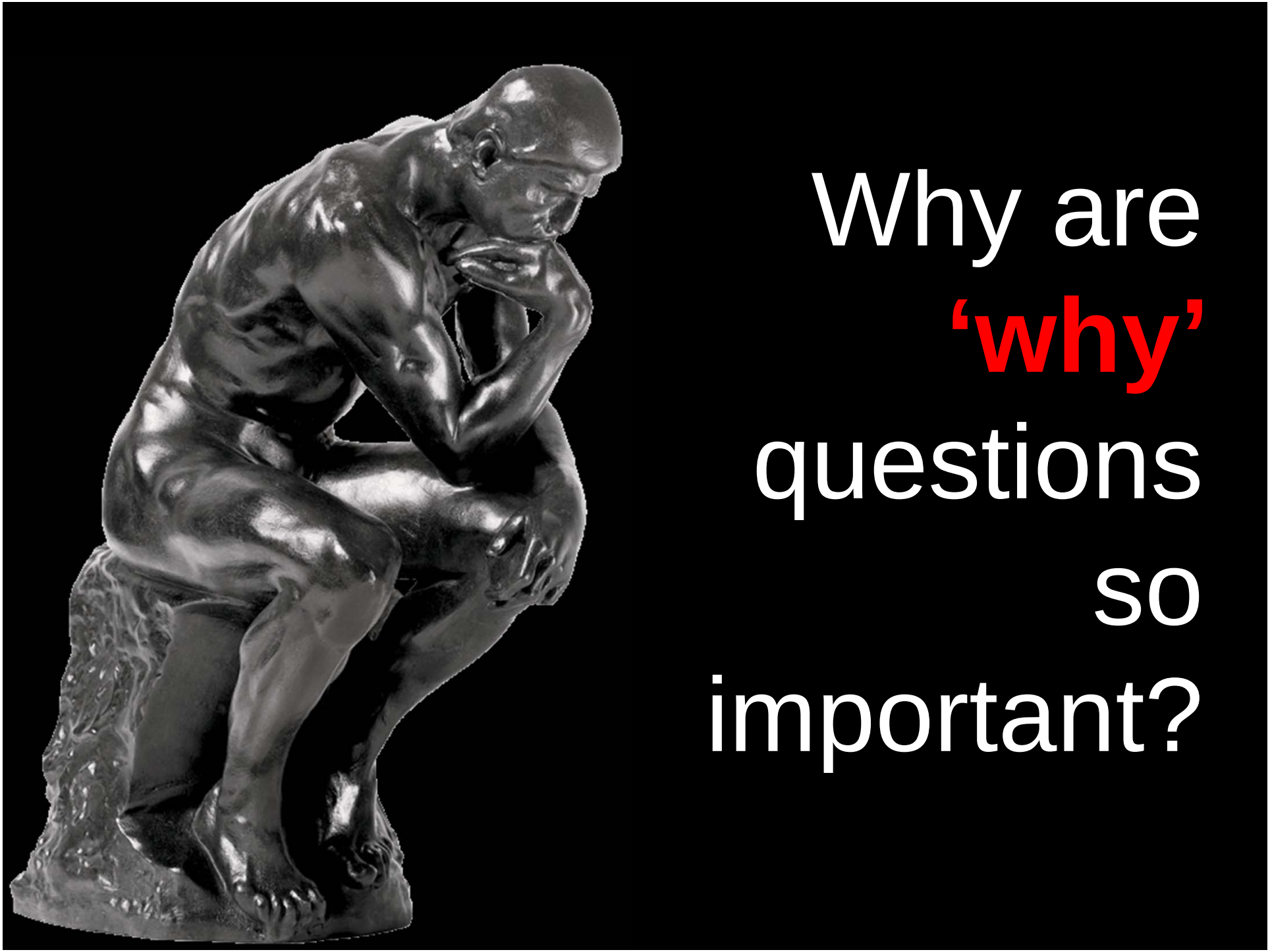

Why ?

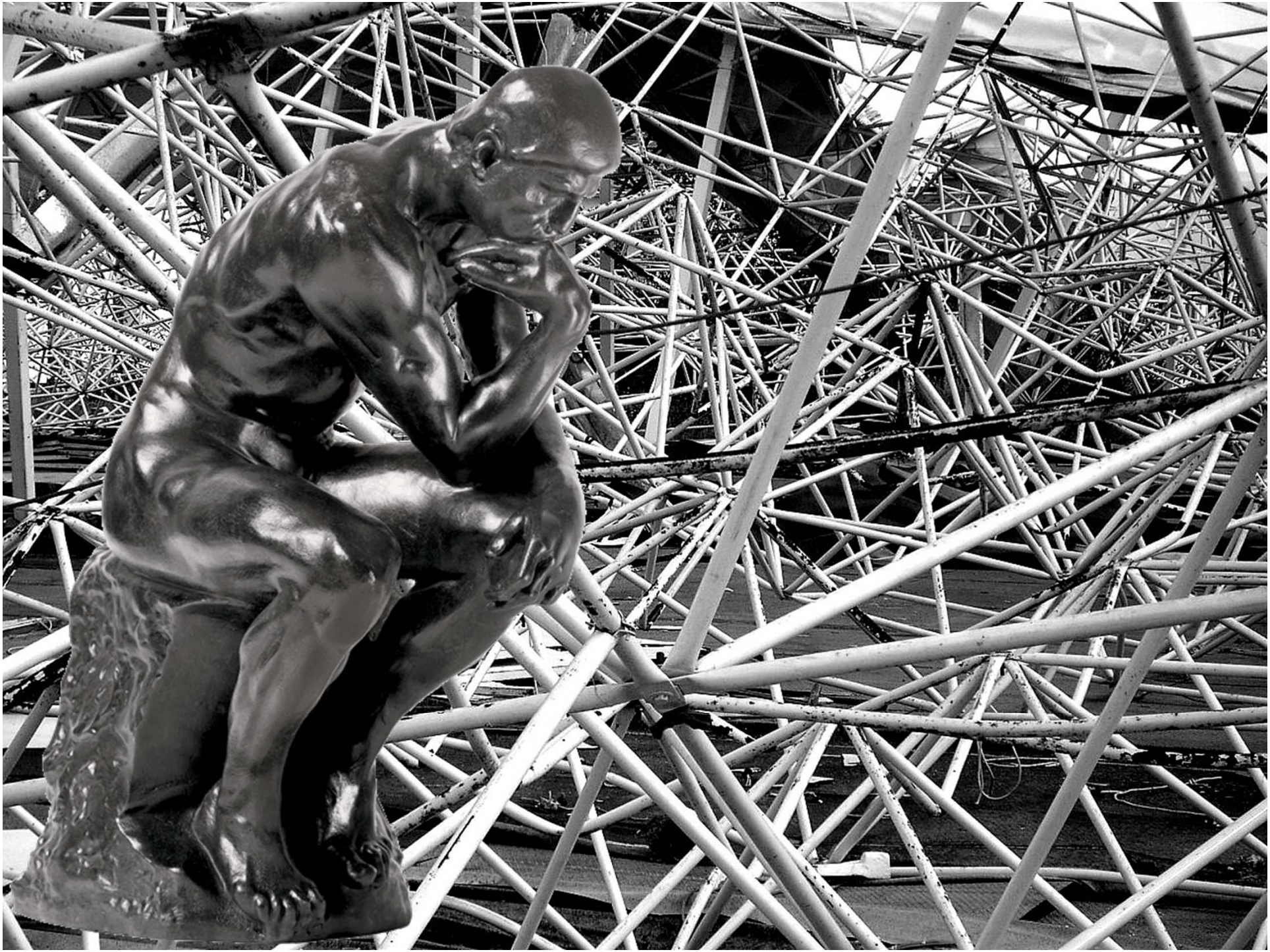

Not


Not
GUIMARÃES


Not


Moore
STEWART
20238


Why are
‘why’
questions
so
important?



More data

More data

More unexplained patterns and results than ever

More data

More unexplained patterns and results than ever

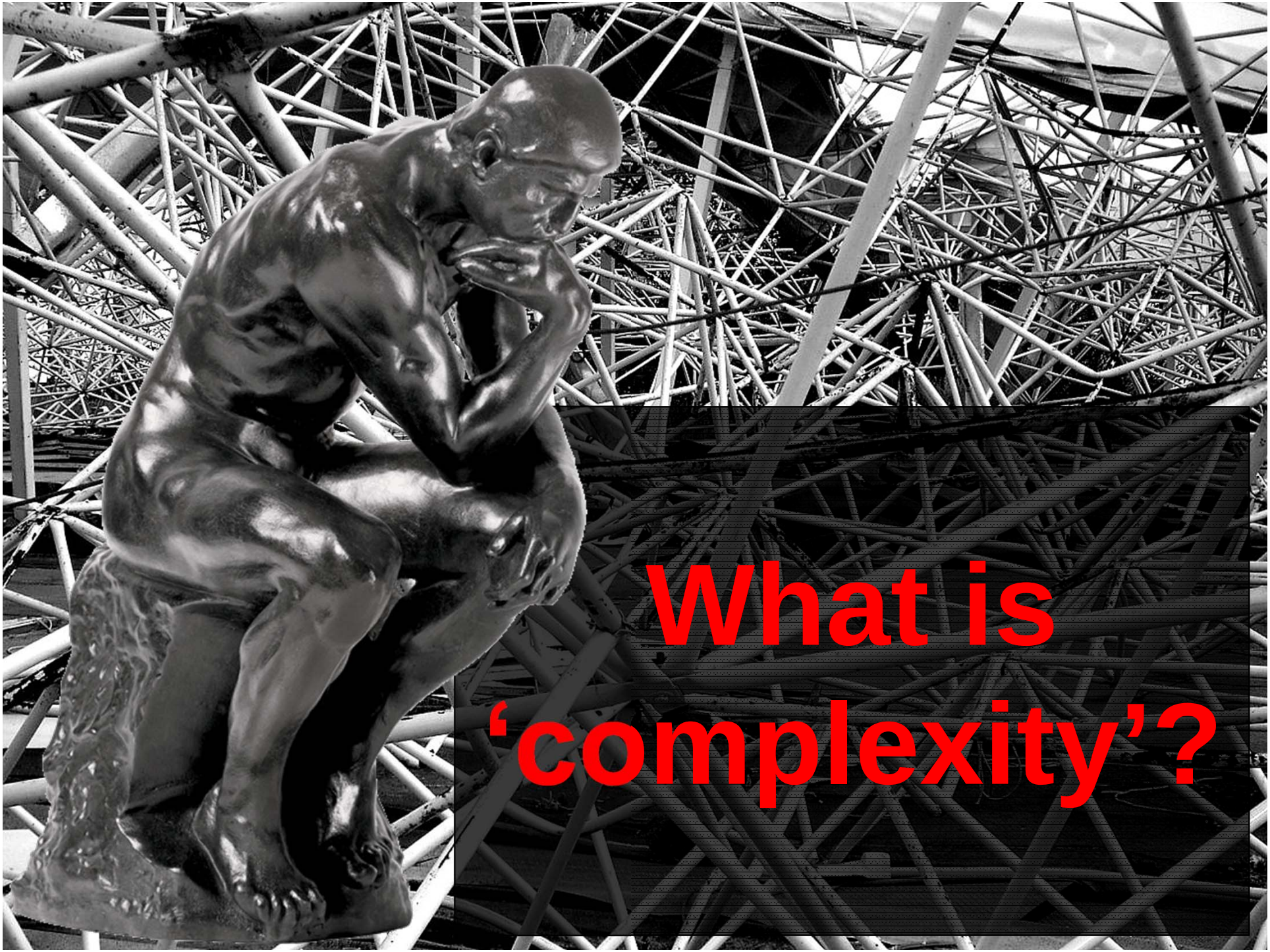
Plausible explanation is necessary for meaningful change

More data

More unexplained patterns and results than ever

Plausible explanation is necessary for meaningful change

Greater recognition of complexity in theory and policy


What is
‘complexity’?

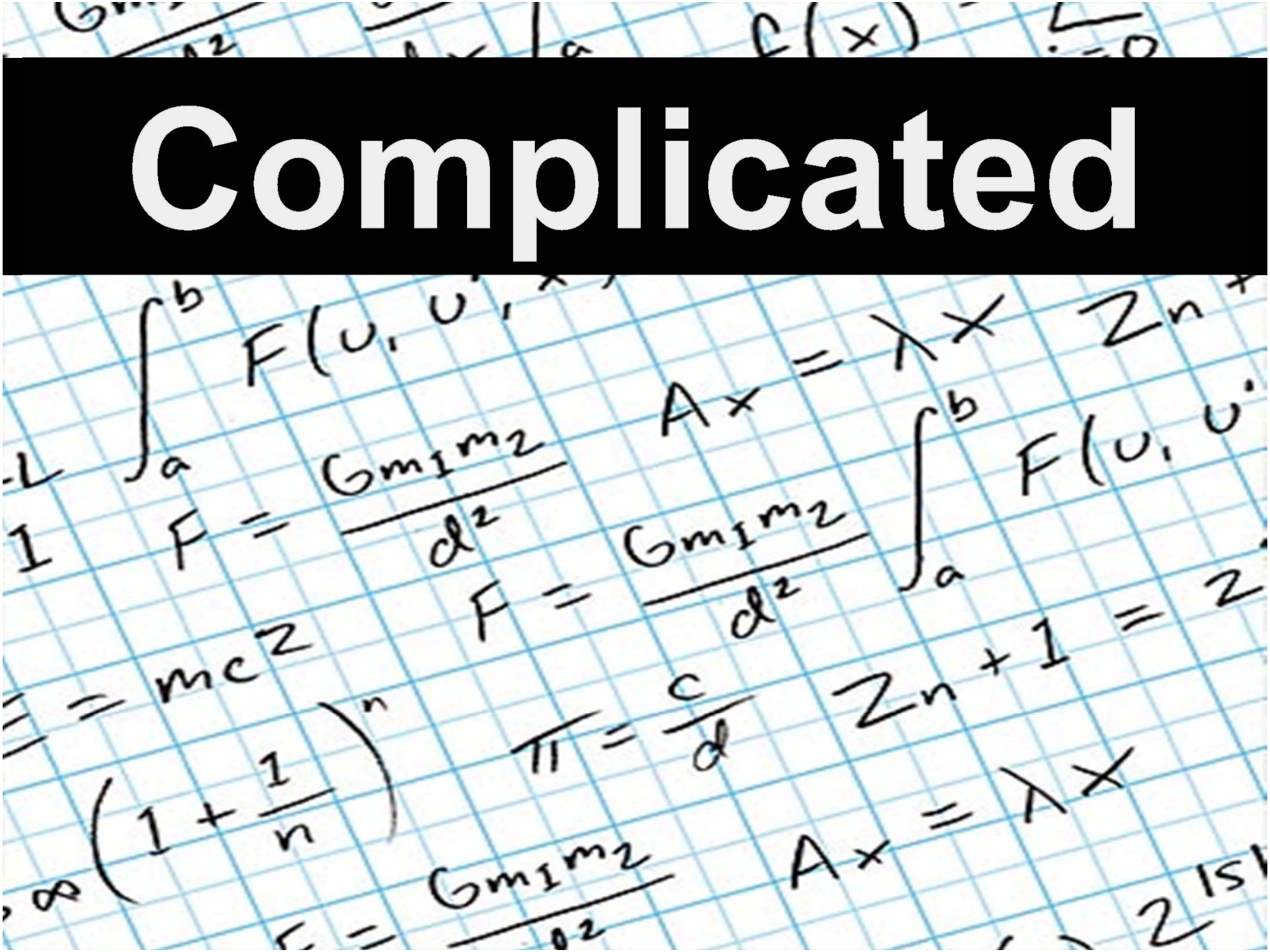
Simple

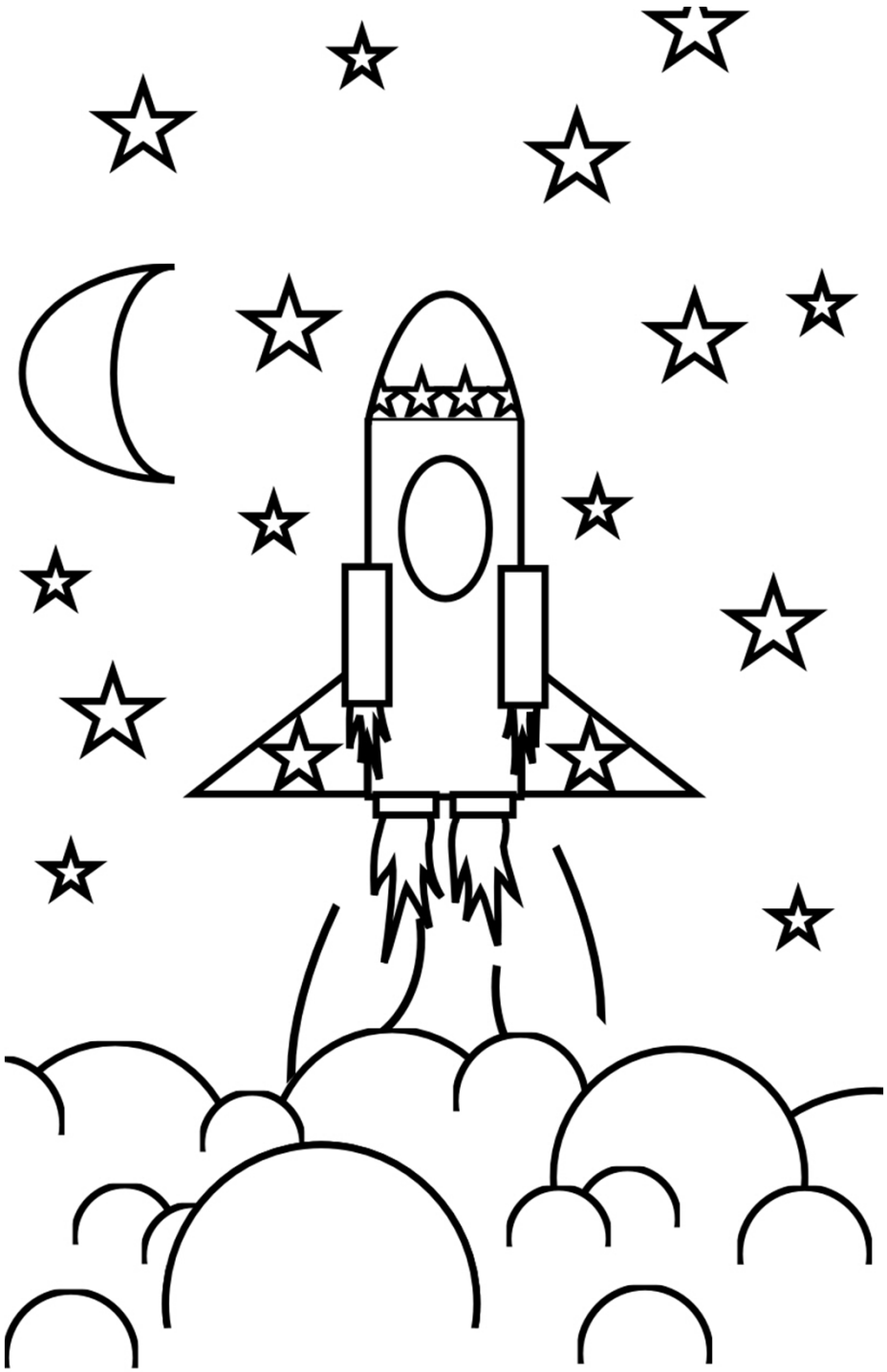
Complicated

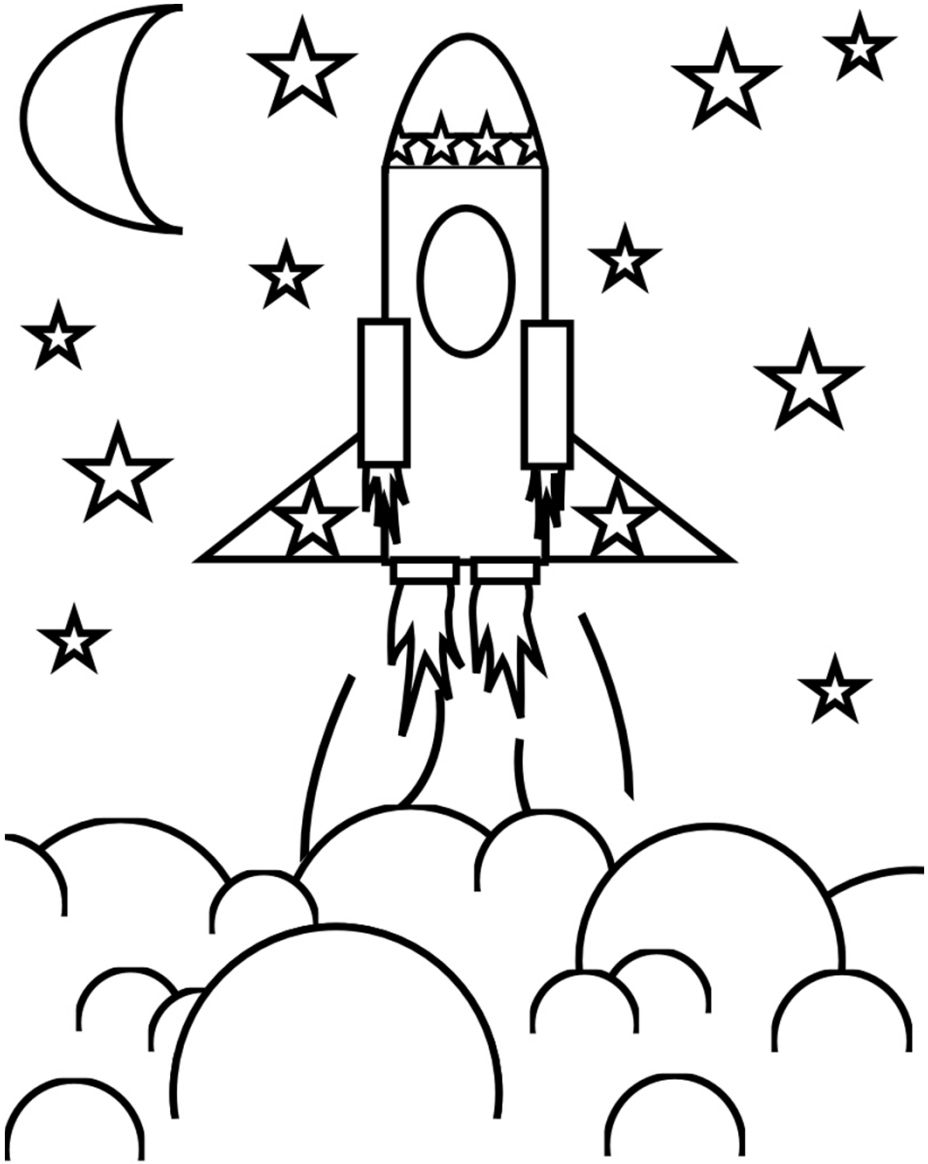
Complex

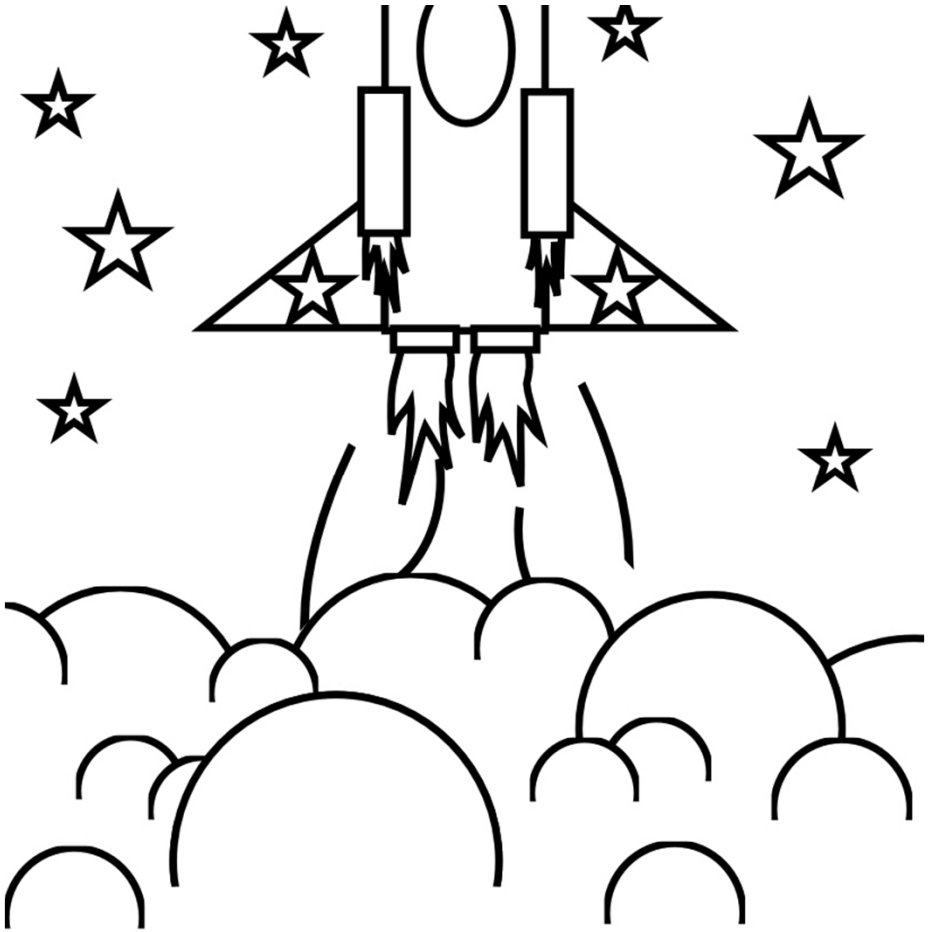
Simple.

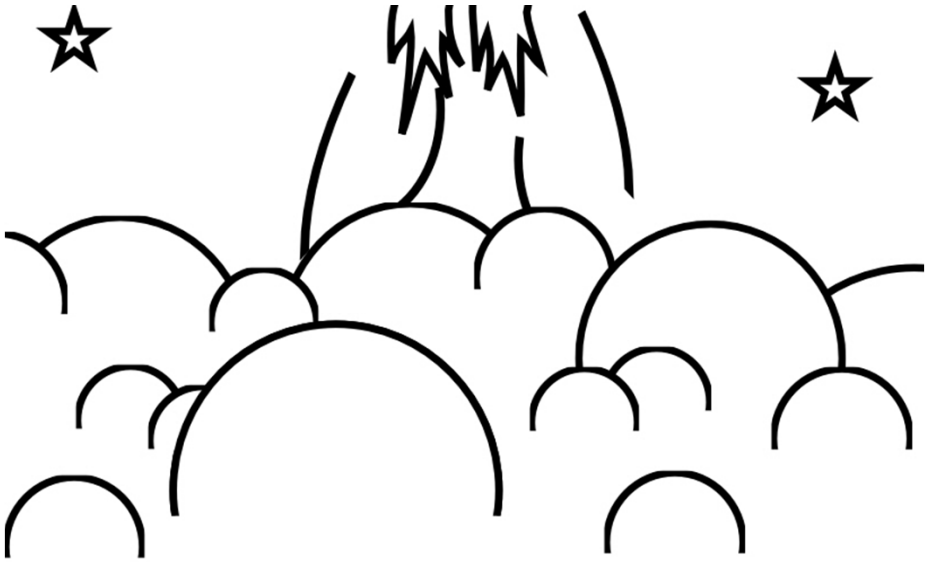
Complicated

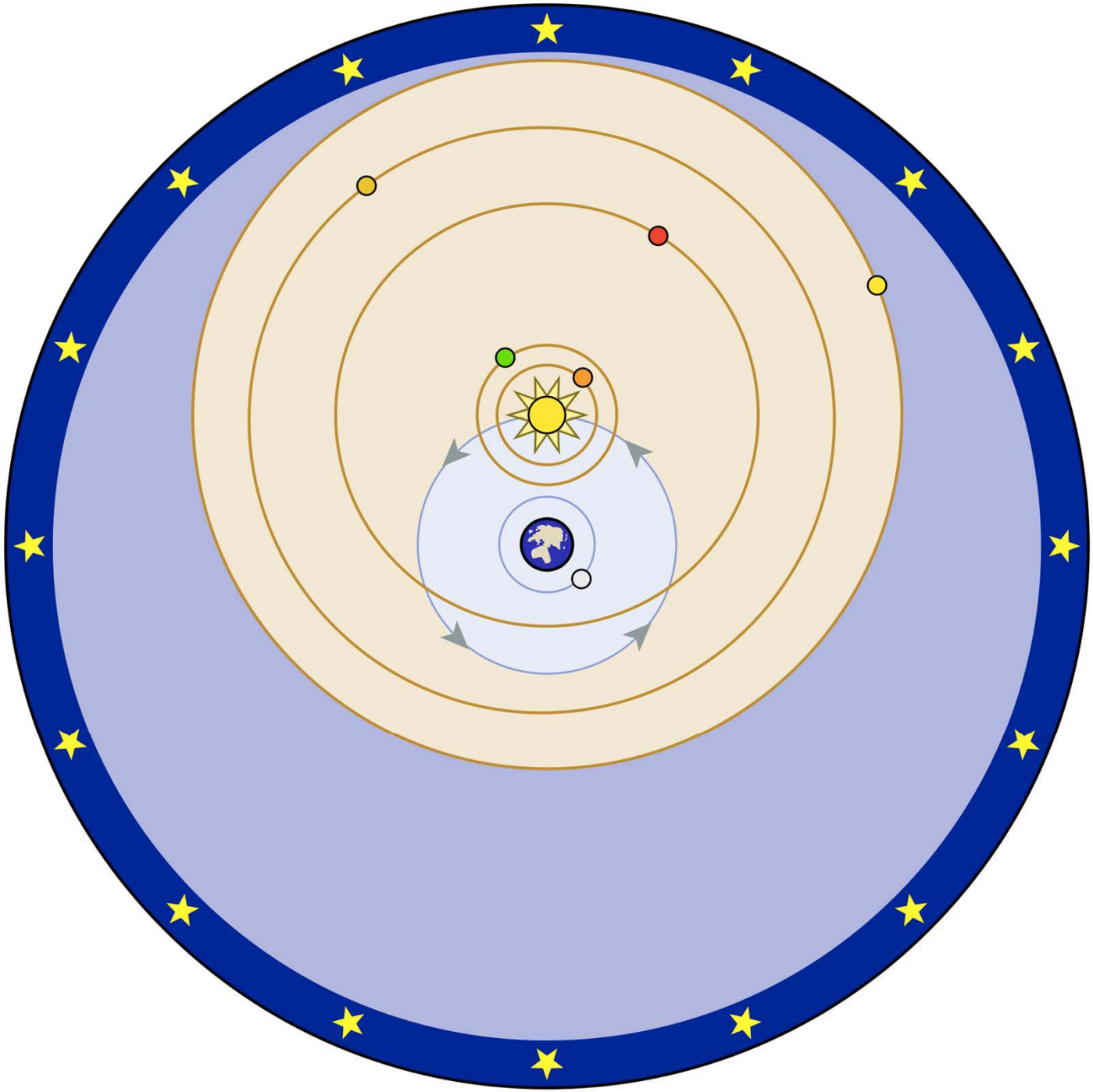

Complicated

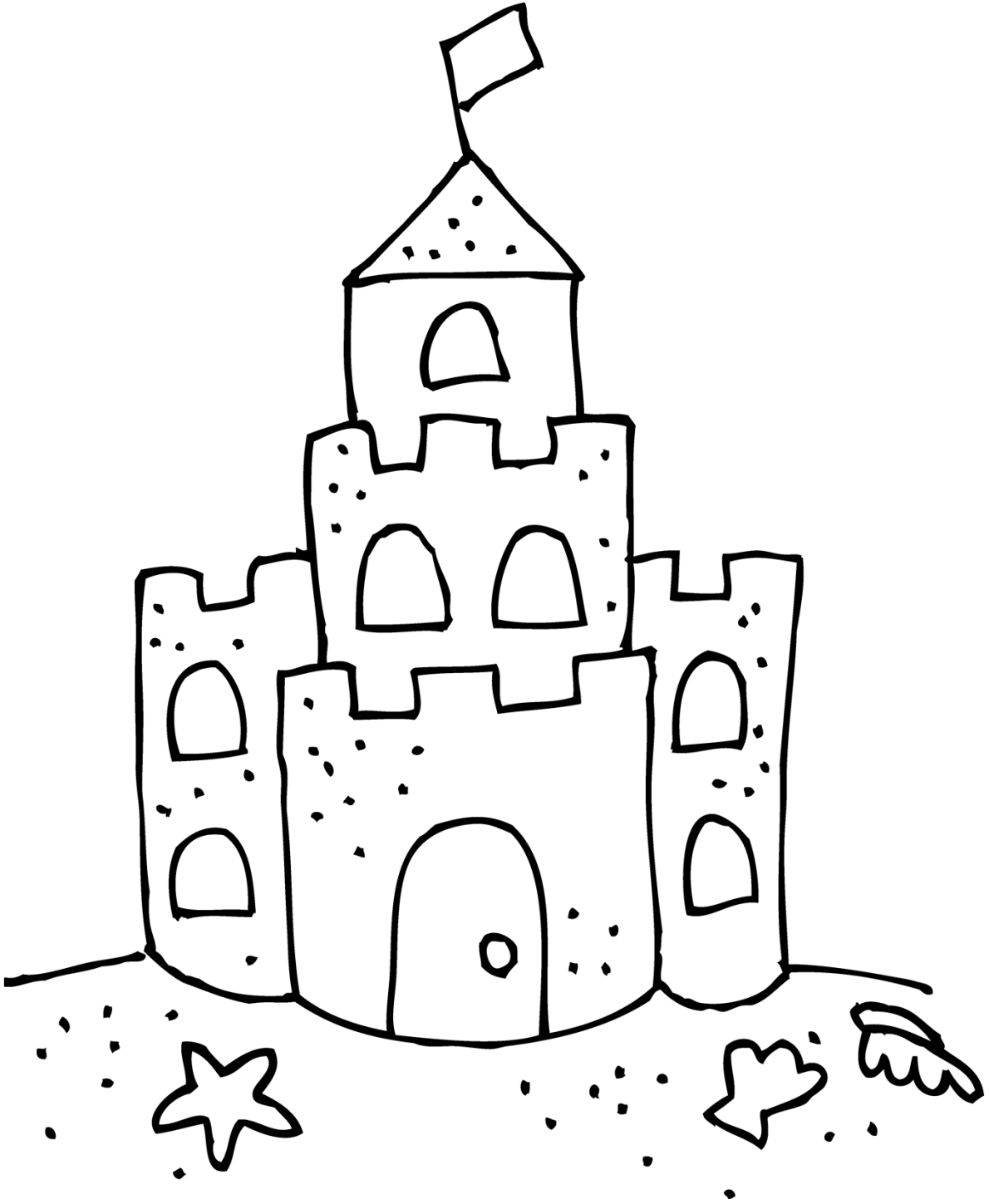


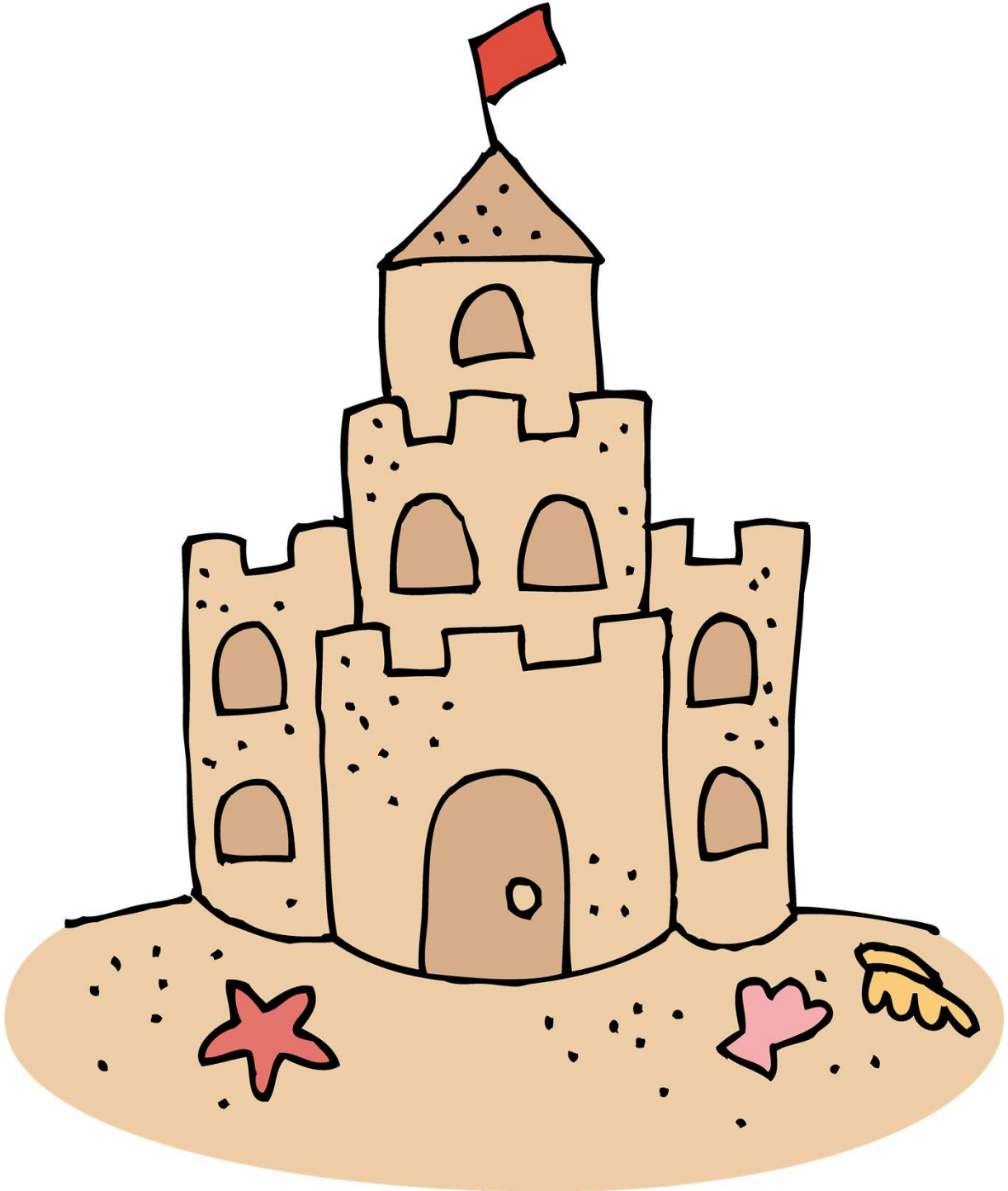


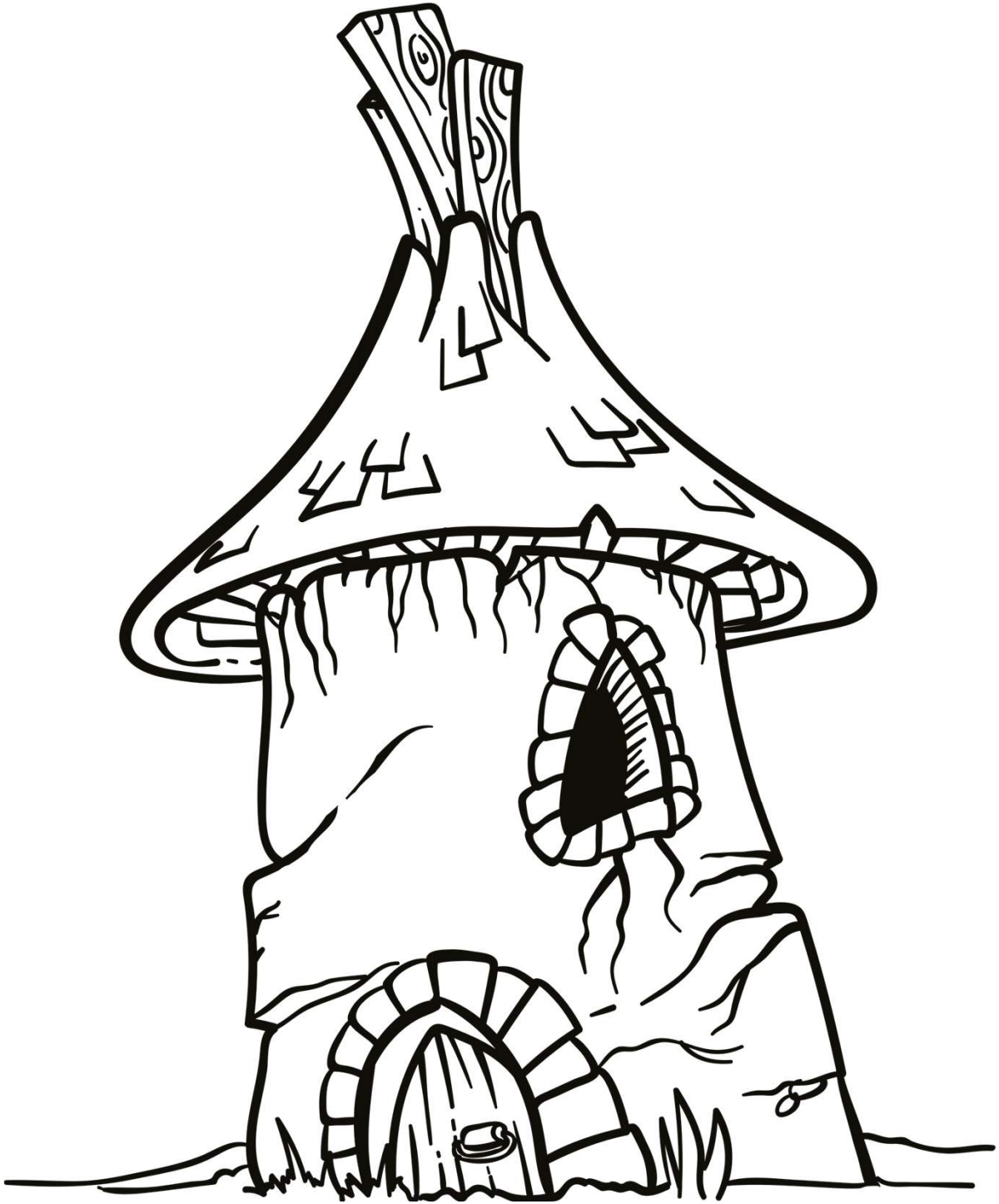












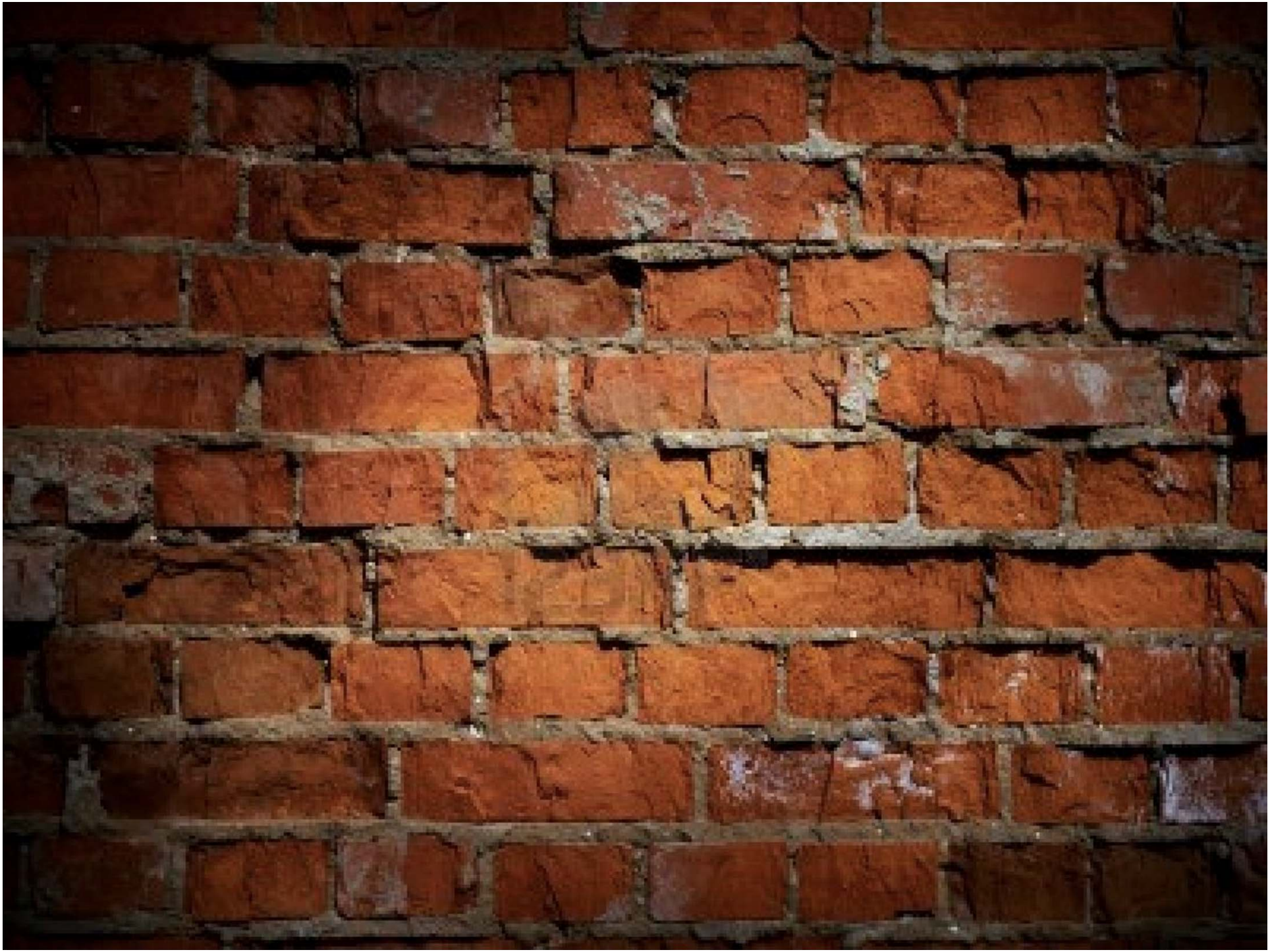

Shutterstock

Inconsistent findings…

Heart failure disease management programs

Cardiac rehabilitation

Remote / telehealth monitoring programs



EUROPEAN SOCIETY OF CARDIOLOGY®

European Journal of Heart Failure
doi:10.1093/eurjhf/hfq164

EDITORIAL

What heart failure programme works best? Wrong question, wrong assumptions

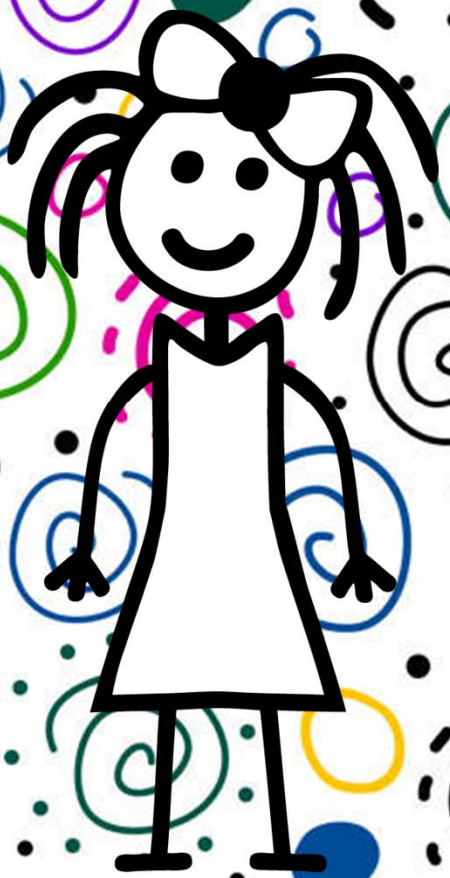
Alexander M. Clark[1]* and David R. Thompson[2]

[1]University of Alberta, 3rd Floor, Clinical Sciences Building, Edmonton, AB, Canada T6G 2G3; and [2]Cardiovascular Research Centre, Australian Catholic University, Melbourne, Victoria 3065, Australia

Complex


Complex

Complex



Glouberman & Zimmerman (2002)
Shiell et al (2008)

Complicated

Requires formulae

Uses expertise

Draws on precedence

Past experience can clearly inform current situation

If steps are followed, success is relatively well assured

Glouberman & Zimmerman (2002)
Shiell et al (2008)

Complicated versus Complex

Requires formulae

Uses expertise

Draws on precedence

Past experience can clearly inform current situation

If steps are followed, success is relatively well assured

Formulae have limited application

Many factors involved

Past experience provides limited assurance of future success

Every situation is unique

If steps are followed, success is in doubt

Glouberman & Zimmerman (2002)
Shiell et al (2008)

BMJ

BMJ 2012;345:e8316 doi: 10.1136/bmj.e8316 (Published 16 December 2012)

FEATURE

CHRISTMAS 2012: SPORT

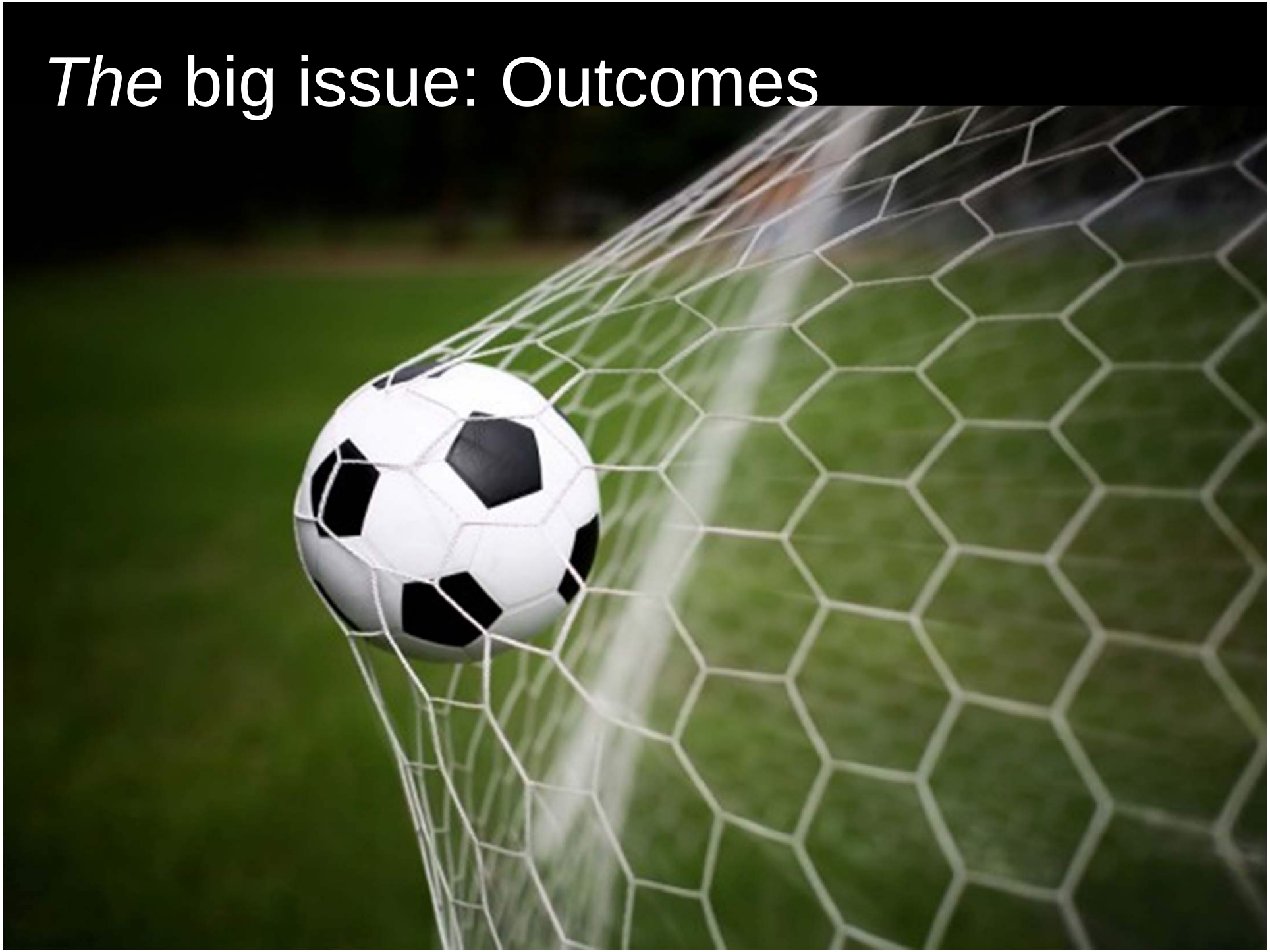
What football teaches us about researching complex health interventions

Football and healthcare are both complex adaptive systems. **Alex Clark and colleagues** wonder how and why football scores more highly when it comes to introducing interventions

Alexander M Clark *professor* [1], Thomas G Briffa *research associate professor* [2], Lorraine Thirsk *assistant professor* [3], Lis Neubeck *senior research fellow* [4], Julie Redfern *senior research fellow* [4]

[1]Faculty of Nursing, Clinical Sciences Building, University of Alberta, Edmonton, AB, Canada T6G1C9 ; [2]School of Population Health, University of Western Australia, Crawley, WA, Australia; [3]Faculty of Nursing, University of Alberta, AB, Canada; [4]George Institute for Global Health, University of Sydney, Sydney, NSW, Australia

The big issue: Outcomes



Who would you rather have on your team?

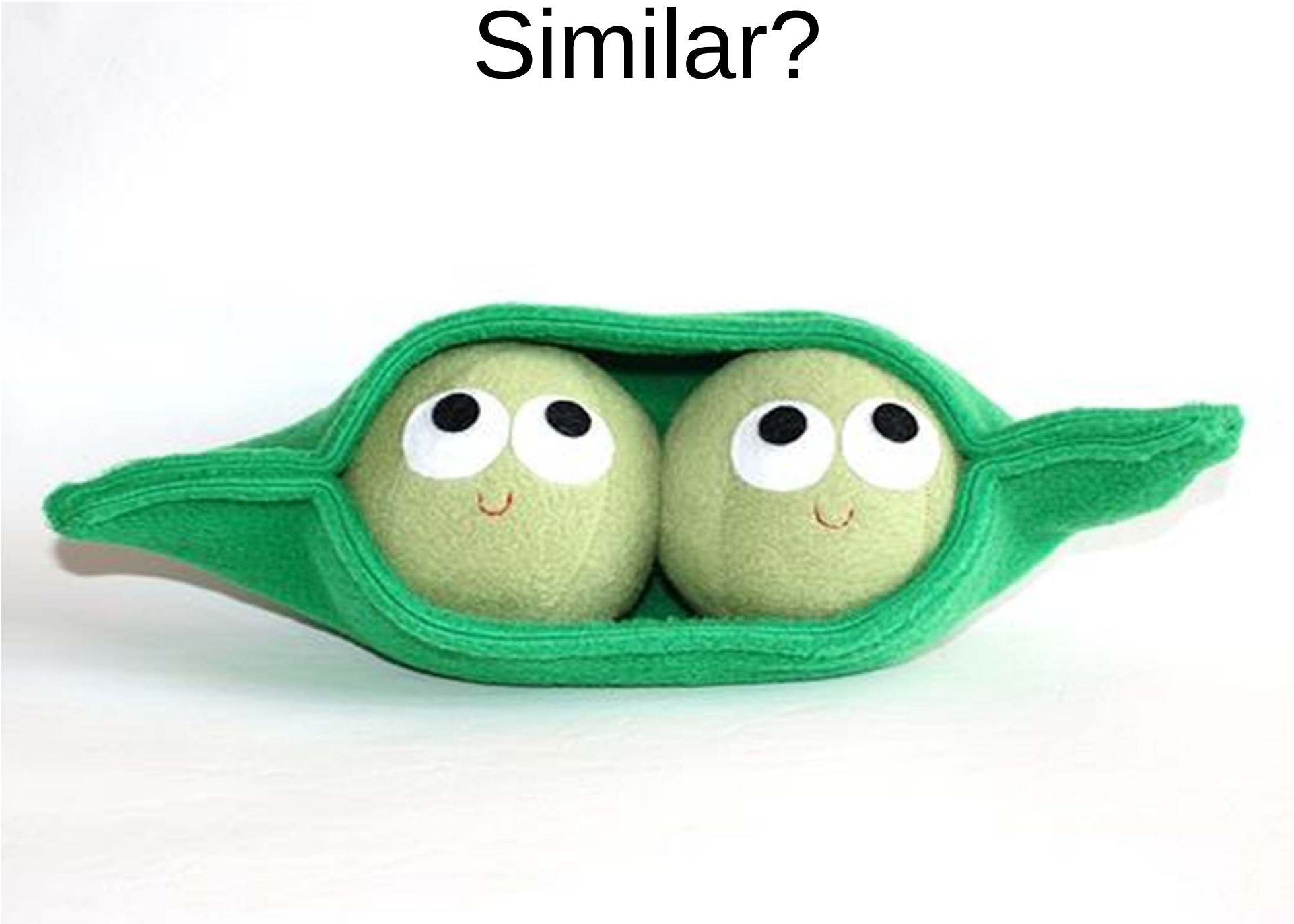
Clark or Messi?

"Spot the difference"


QATAR
AIRWAYS


21

Similar?



Similar?

Two legs + two feet

Brown mousey hair

Under 6’ tall

Top income decile

Score goals regularly


What matters more?
What matters most?


What matters more?
How to know what is most important?
How does context matter?
What matters most?


What matters more?
How to measure what is most important?
How to know what is most important?
How does context matter?
How do the parts interact?
How do things change over time?
What matters most?

What r

How t

How t

How

How

BMJ

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Who would you rather have as a player on your football team: Messi or Clark⇓? Both players share numerous characteristics, such as they both have brown hair, have the same size feet, and are less than 6 ft (1.8 m) tall. Each has scored many goals, playing in the number 10 jersey.

However, focusing on these overt characteristics is not a good basis for decision making. Close observation, informed assessment, and knowing the context of previous successes (goals against whom and on what occasion) provide more useful insights into the determinants of success in football. Lionel Messi, the Argentinean international professional player, is infinitely preferable to Alex Clark, an amateur from the University of Alberta, Canada. Yet research into complex healthcare interventions still focuses on easily described components of interventions and risks overlooking what really matters.

Complex versus complicated

Interventions in football and healthcare systems are "complex" rather than "complicated."[1] Phenomena are complicated when intervention outcomes can be reliably predicted from past behaviour with the help of mathematical analysis. Sending a

Complex interventions in football and healthcare have a range of shorter term and longer term outcomes (table 1⇓) and are composed of many components that are made up of smaller subcomponents (table 2⇓). Outcomes are generated by dynamic interactions between these components, not only with each other, but also with aspects of context and a wide range of other potentially influential laws, variations, and unpredictable factors (table 3⇓).

Because of this complexity, outcomes in football and healthcare are not chaotic (random over time) or uniform (identical over time). Rather, outcomes are somewhat patterned. Some football players successfully complete passes more often than others, and identical medical interventions can result in very different outcomes in different doctors' hands. But unexpected outcomes still occur. Messi still misses chances he should score from, and an intervention to promote diabetes self care that was effective in one setting,[4] and is supported by meta-analyses,[5] may not have benefits in another setting. Given their shared complexity, we suggest some lessons that healthcare research can learn from football.

Lesson 1: Ontology—bring complexity in

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BMJ

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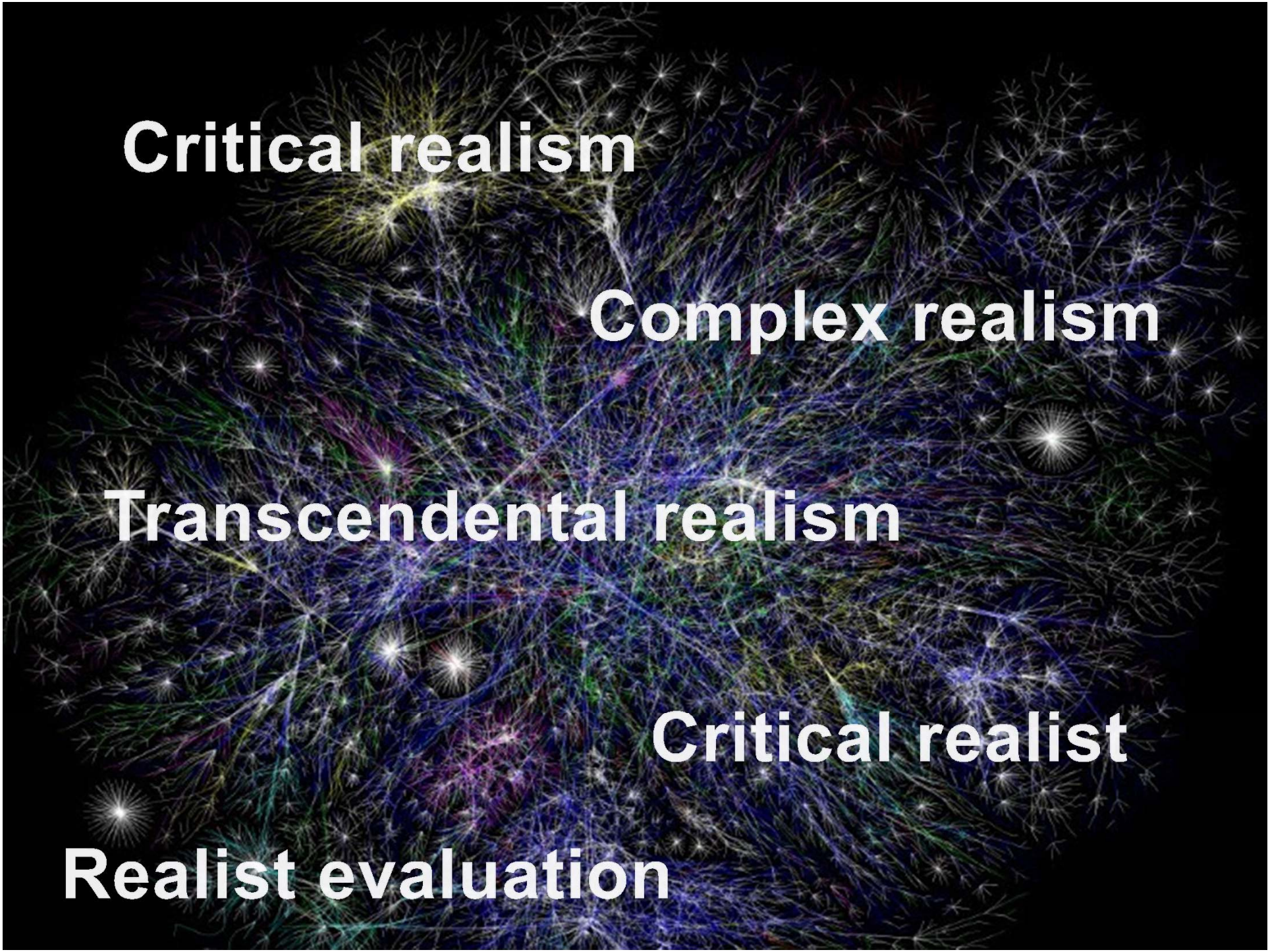
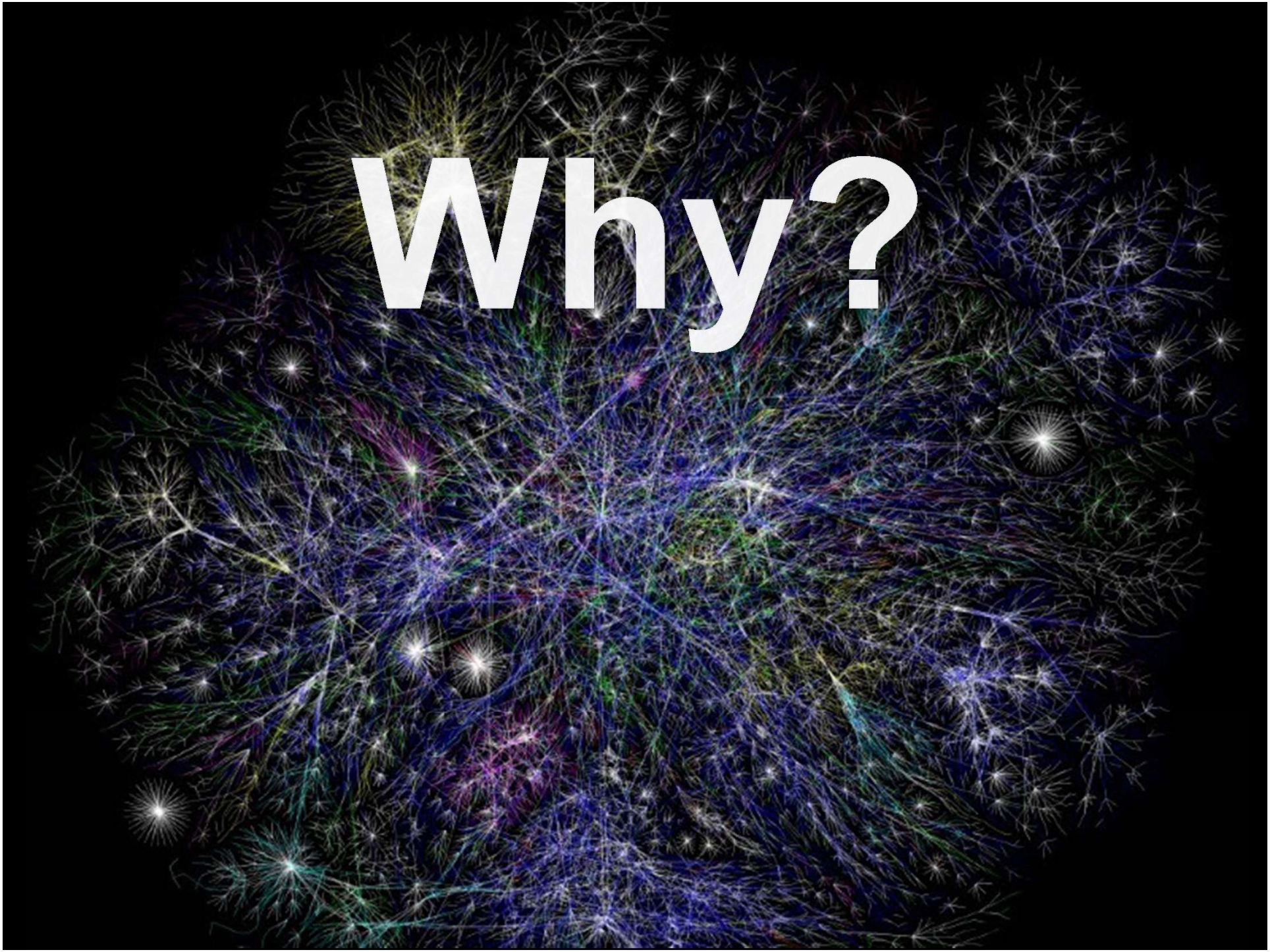
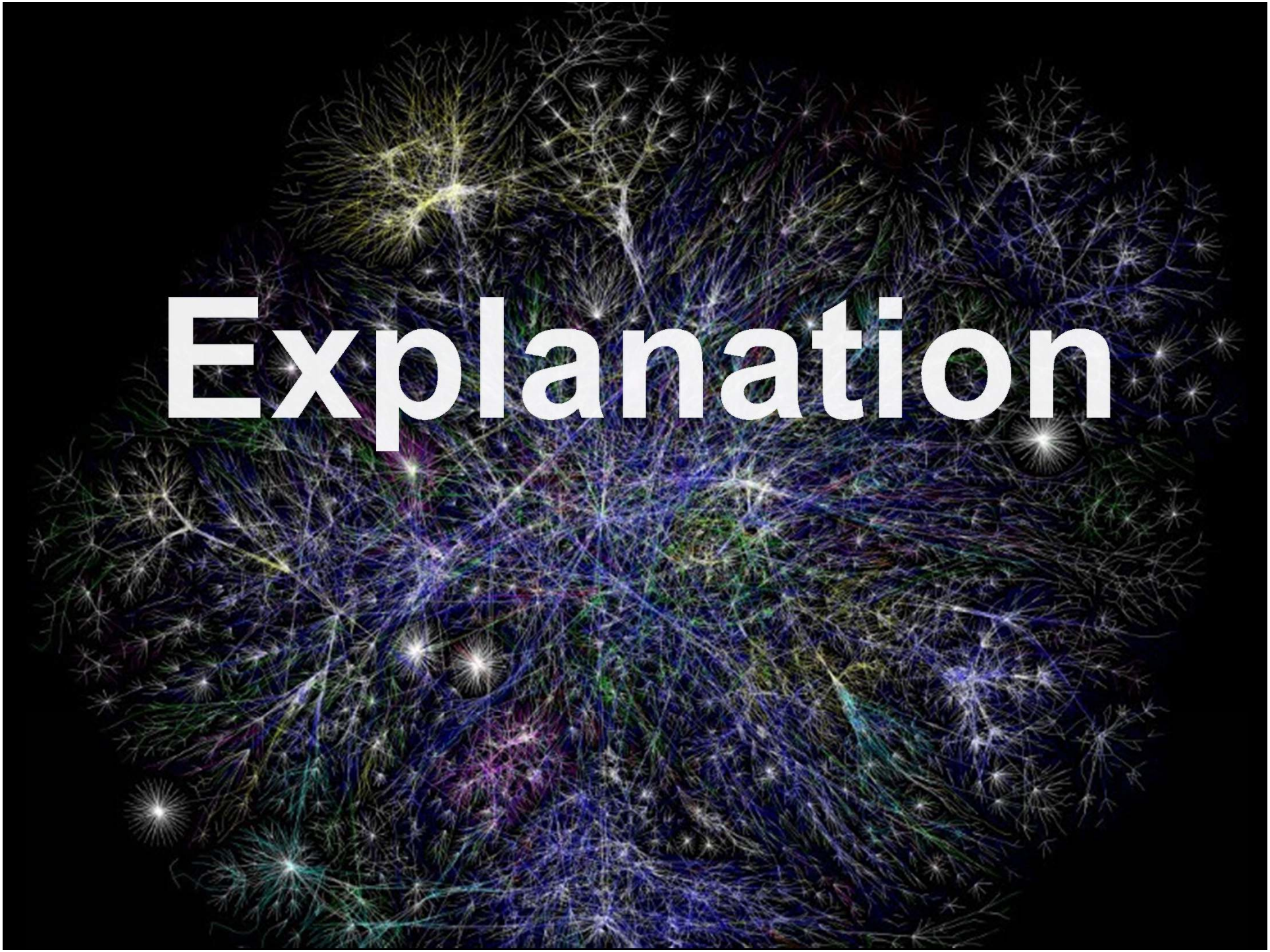
Lesson 1: Ontology—bring complexity in


17 JEWELS


Critical
realism


Critical realism
Complex realism
Transcendental realism
Critical realist
Realist evaluation


Why?


Explanation

Key papers:

Advances in Nursing Science
Vol. 31, No. 4, pp. E67–E79
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Complex Critical Realism
Tenets and Application in Nursing Research

Alexander M. Clark, BA(Hons), PhD, RN;
Sue L. Lissel, MA; Caroline Davis, PhD

Aim: To outline the main tenets of critical realism (CR), its use, and future application in nursing. **Background:** Little work has been done to discuss how CR can be applied to nursing research. **Findings:** The tenets of CR include recognition of reality independent of human perceptions, a generative view of causation in open systems, and a focus on explanations and methodological eclecticism using a postdisciplinary approach. Critical realism is useful for (1) understanding complex outcomes, (2) optimizing interventions, and (3) researching biopsychosocial pathways. Such questions are central to evidence-based practice, chronic disease management, and population health. **Conclusions:** Critical realism is philosophically strong and potentially useful for nursing research. **Key words:** *framework*, *nursing research*, *ontology*, *philosophy*, *realism*, *realist*, *theory*

What must reality be like for science to be possible?

Key reference: Bhaskar (1975)

Critical realist tenets:

1. Existence of independent reality
    - Fallibly known
2. Stratified emergent generative ontology
    - Actual, empirical and real
3. Explanatory focus
4. Recognition of agency and structure
5. Reality as a complex, open system
6. Methodological eclecticism and post disciplinarity

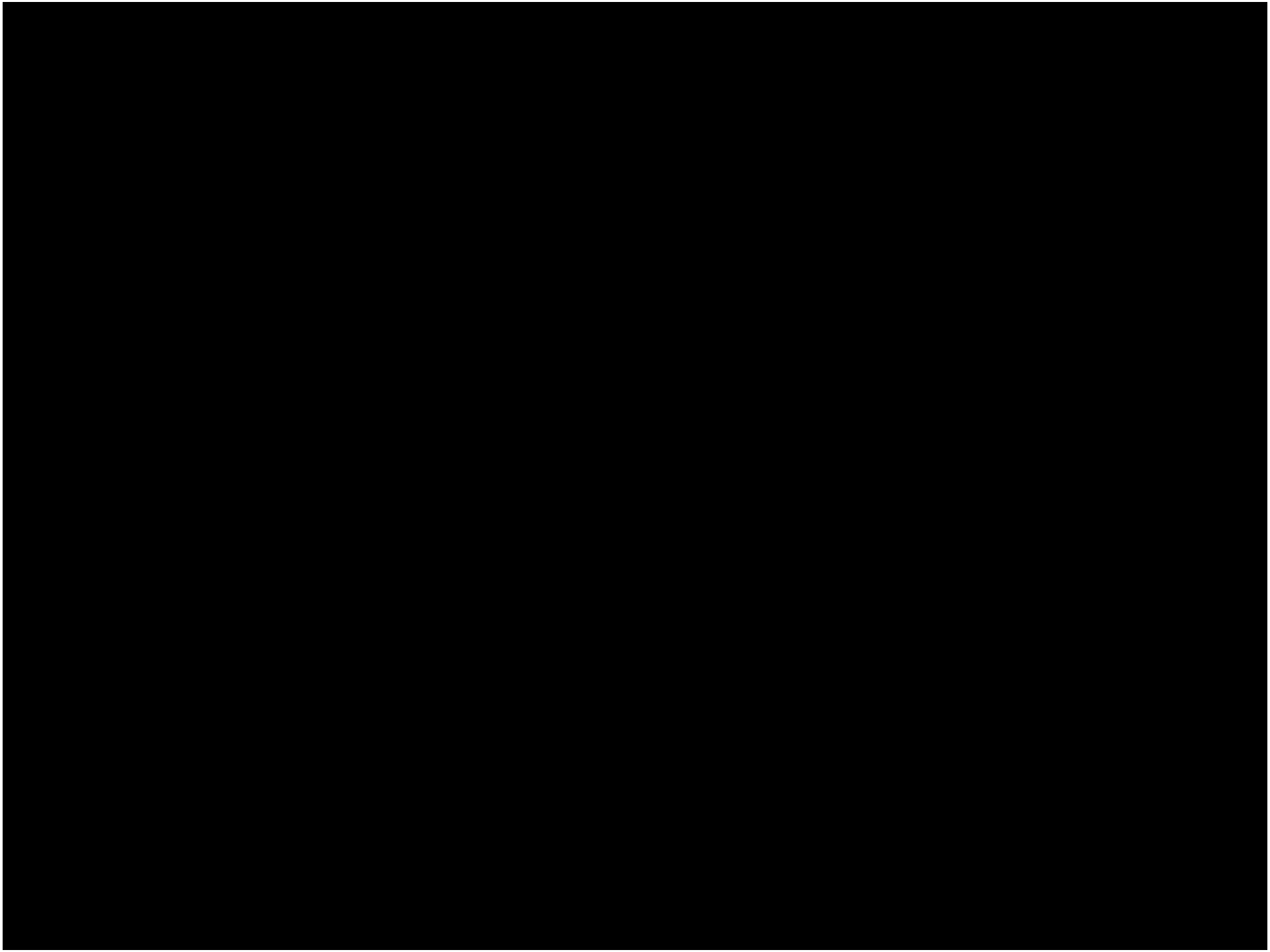
Existence of mind independent reality

Physical reality

Non-physical reality

- Social
- Cultural

Key reference: Williams (1999)

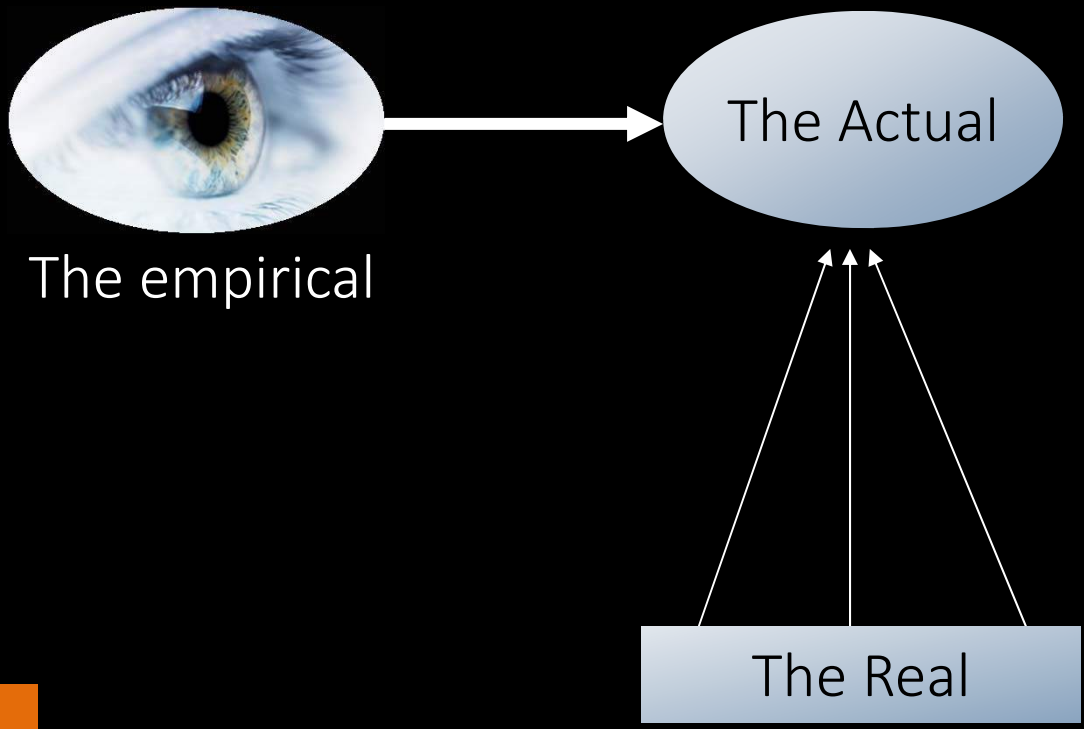


Stratified emergent generative ontology

The actual

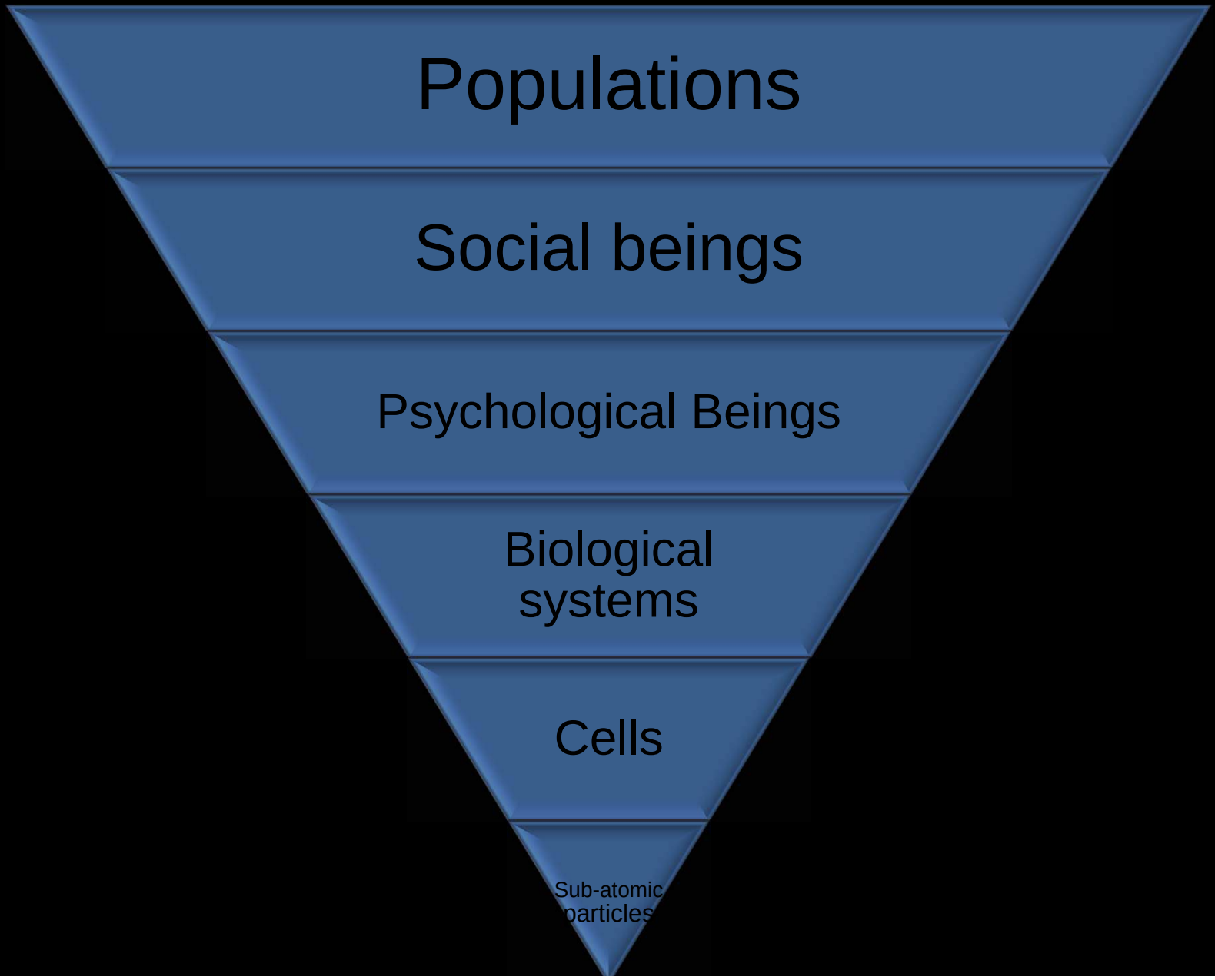
The empirical

The real

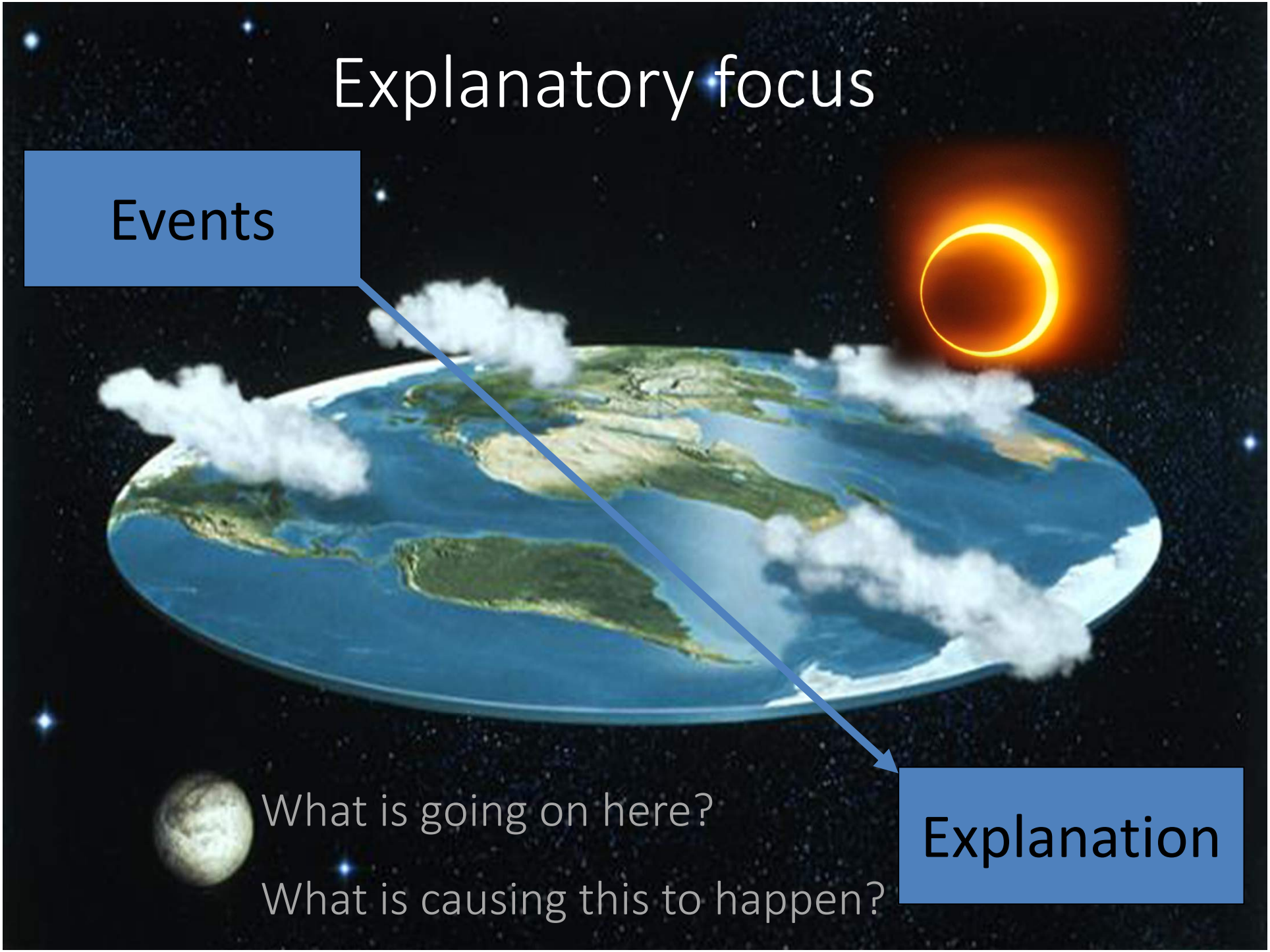


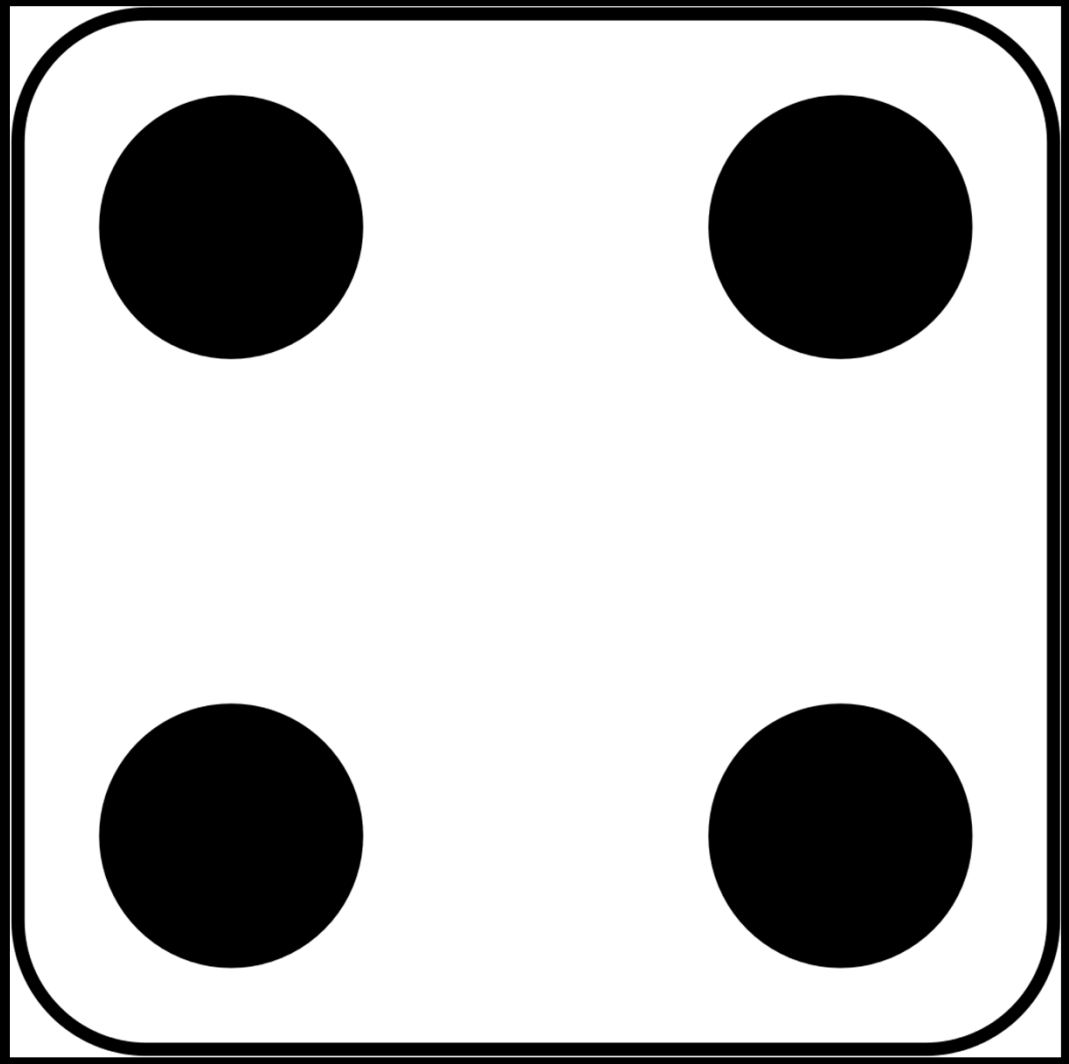
Key reference: Sayer (2000)

Stratification and emergence:



Explanatory focus



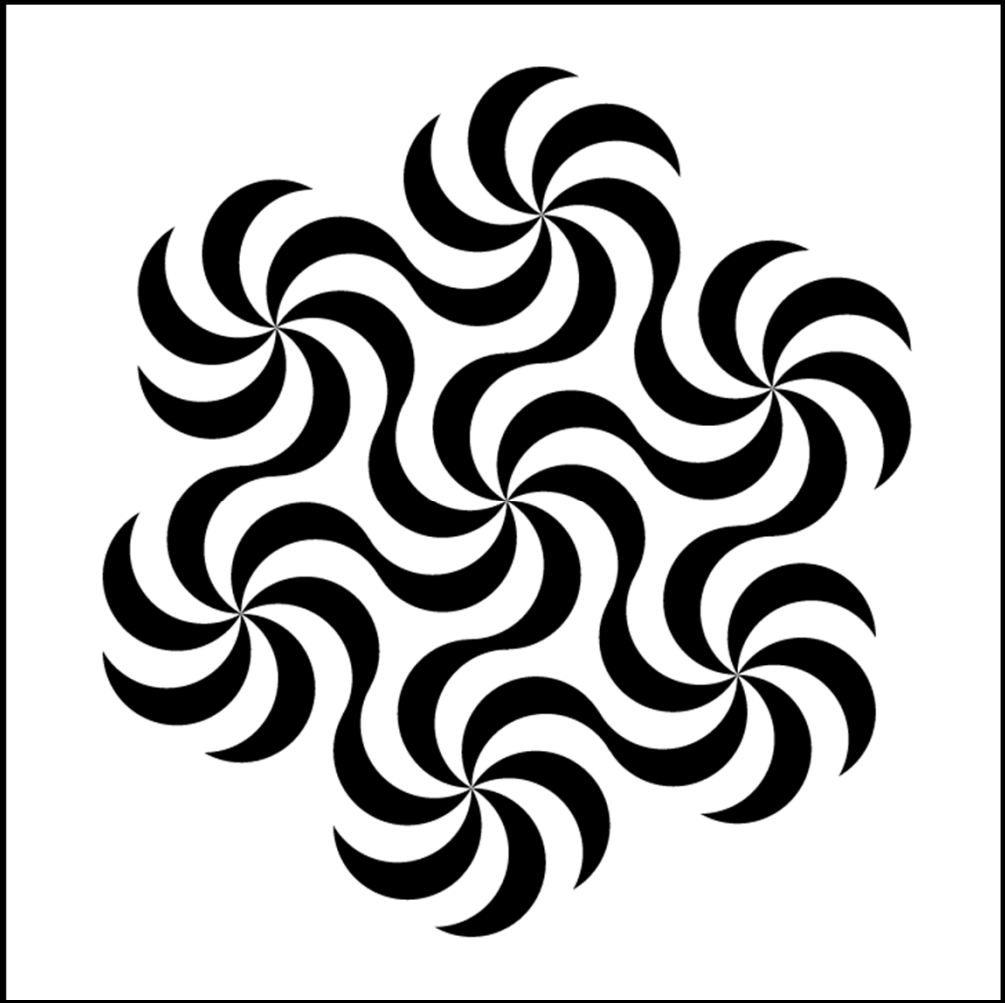


Recognizes agency & structure

Recognizes agency & structure

Reality as a complex, open system

The open-systems view



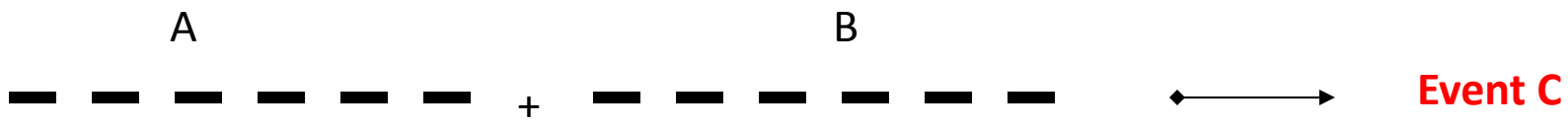
Key reference: Pawson and Tilley (1997)

Open Systems	Closed systems
Natural	Abstracted
Uncontrolled	Controlled
Observation	Manipulation
Complex	Simplified


The world as partially patterned
Demi-regularities
(Lawson 1997, 2003)

Linear Causation:

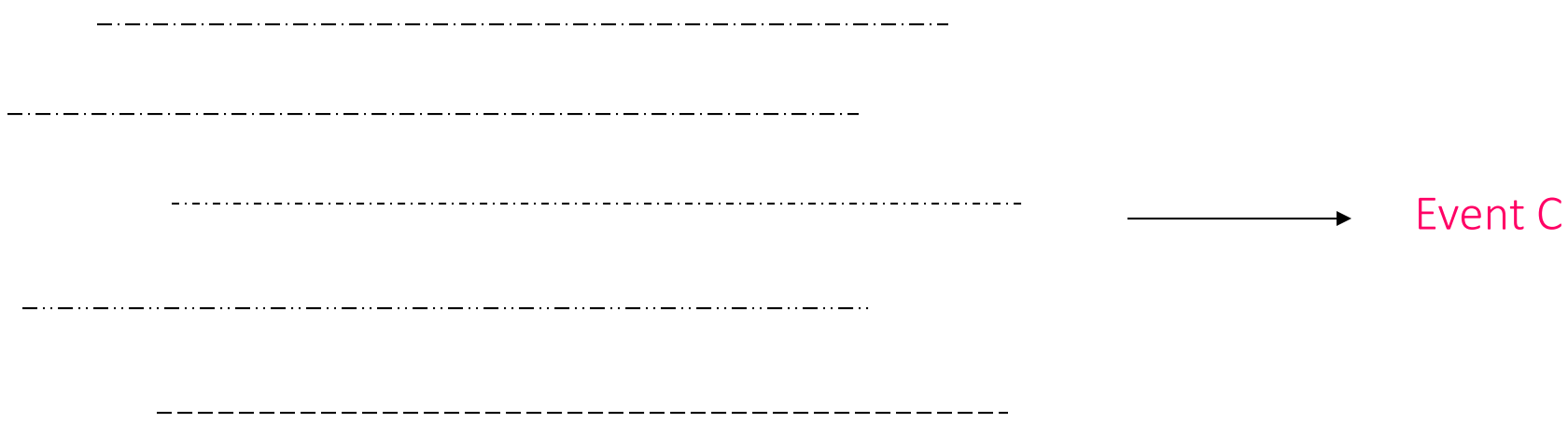
Successionist



Sedentary person + exercise program = Regular exercise

Generative Causation:

Generative




6

Methodological eclecticism & post-disciplinarity:

Led by:

Reality

Not:

Methodological predilection

Disciplinary lens

Key reference: Sayer (1999)

Methodological eclecticism & post-disciplinarity:

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What does CR research look like?

Ontology before method

Qualitative, mixed and quantitative methods

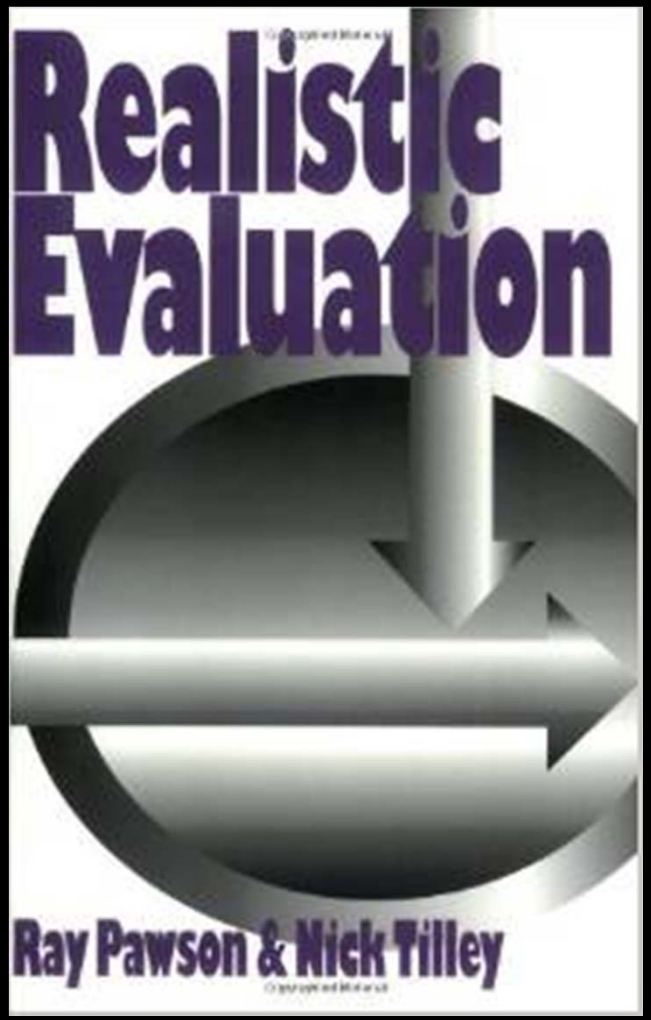
Focus on explanation

Complexity-ontology

Realist Evaluation:

‘What works
for whom,
when
and why?’

Pawson R & Tilley N
(1997) *Realist Evaluation.*
Sage, London



What works?

Origins of Realistic evaluation:

Programs:

- Lack of replicability of successful programs
- Lack of insight into reasons for variations
- Lack of explanatory power of existing approaches
- Lack of attention to ontology in existing research

What is missing from current research?

Explanation

Depth

Ontology

Clark et al (2005) *Jrnl Adv Nurs, 52*:4 362-371

Hoddinotta et al (2010) *Social Science & Medicine, 70*: 769-778

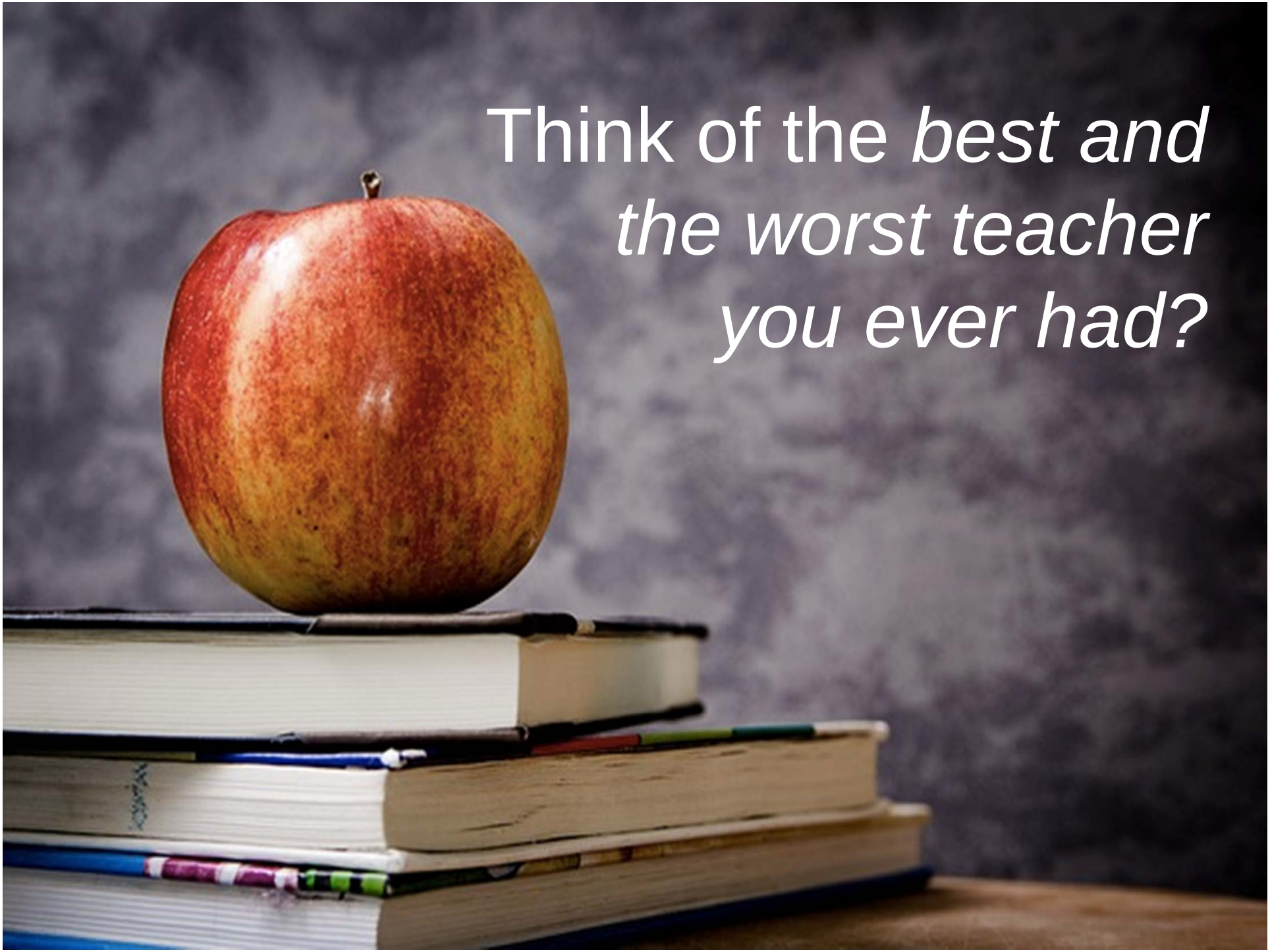
Greenhalgh et al (2007) BMJ *335*: 858-862

***From*:**

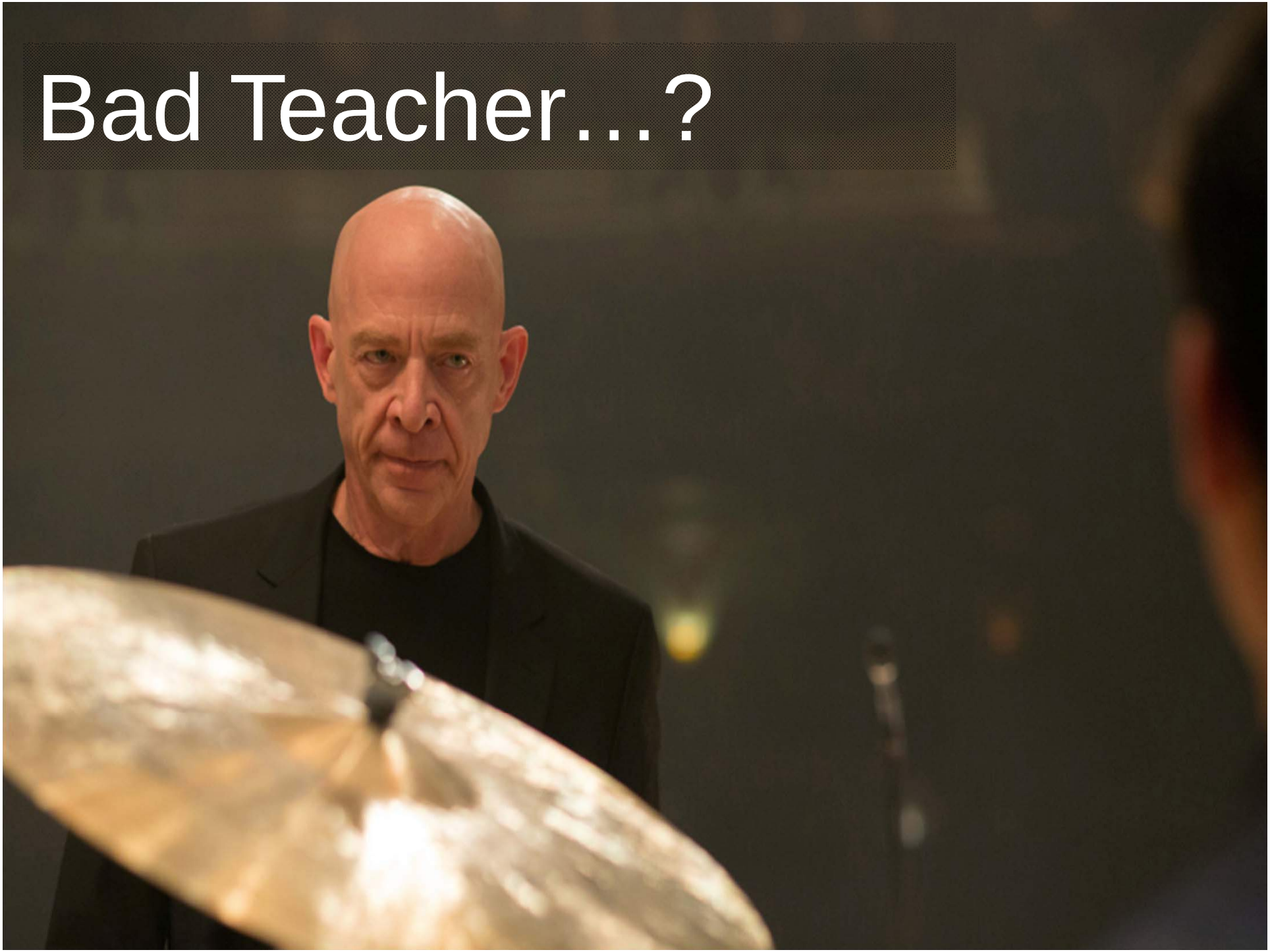
What works?

To:

What works for whom, when and why?


Think of the *best and the worst teacher you ever had?*

Bad Teacher…?



Good Teacher…?

From:

Incident in home➔ Warning but no arrest

To:

Incident in home➔ Mandatory arrest

Successful pilot ⬇DV

From:

Incident in home➔ Warning but no arrest

To:

Incident in home➔ Mandatory arrest

Successful pilot ⬇ DV

Ergo…hypothesis

Mandatory arrest policies will ⬇ DV

What happened?

Pilot:

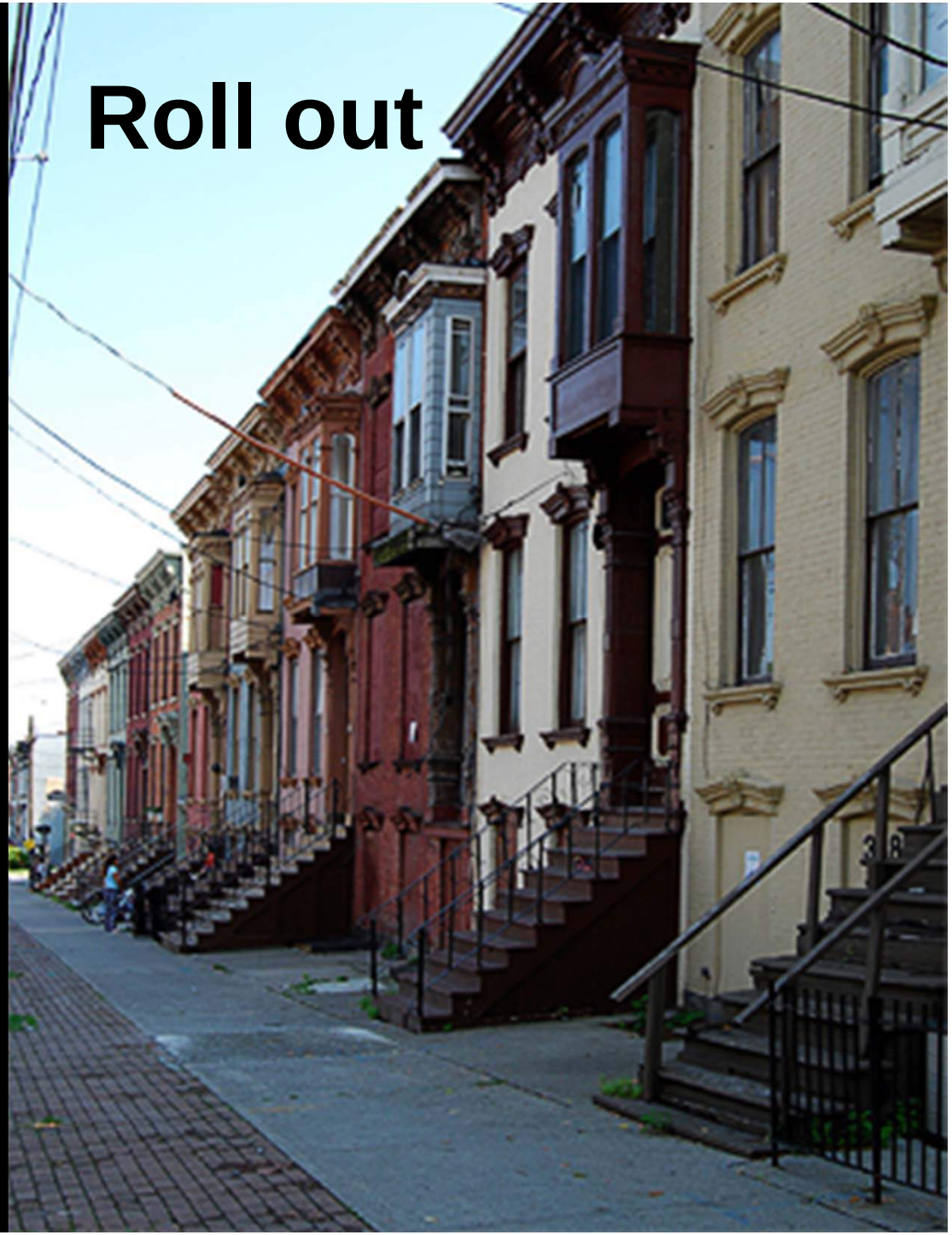
Pilot
(Context)

Arrested in public
(Intervention)

Public shame,
vilification
(Mechanism)

Reduction in DV
(Outcome)

What happened?



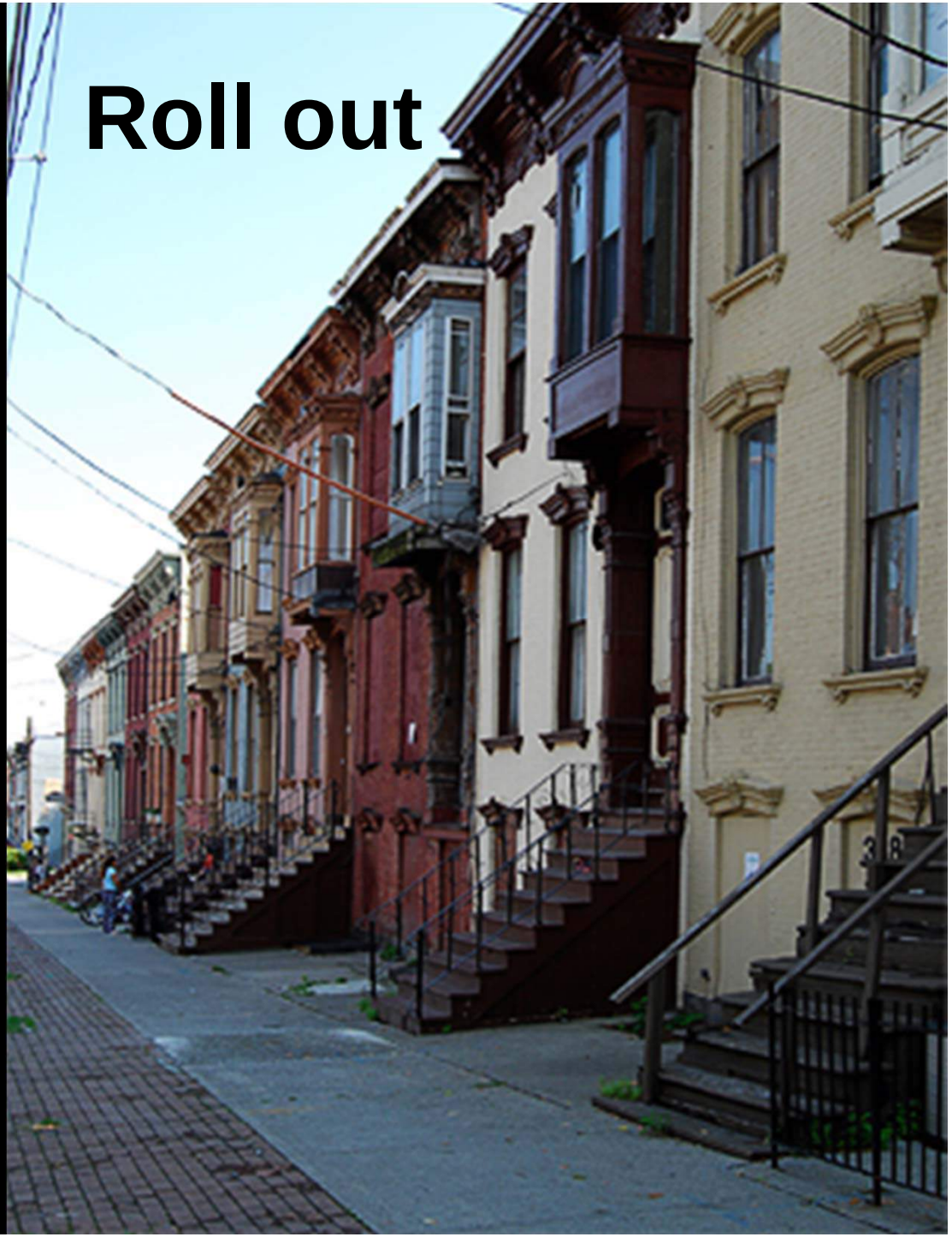
What happened?

Real world
(Context)

Arrested in public
(Intervention)

Annoyance
(Mechanism)

Increase in DV
(Outcome)



‘What works for whom, when and why?

What has the power?

Mechanism

Context

Outcome

Pawson and Tilley (1997)

When should you do a Realist Evaluation?

- Complex randomized trial evaluation
  - Measure *and also* explain outcomes
    - Lewin et al (2009) BMJ 339: b3496
  - Process evaluation
    - Medical Research Council (2014)
  - Dedicated realist evaluation
    - C-M-O

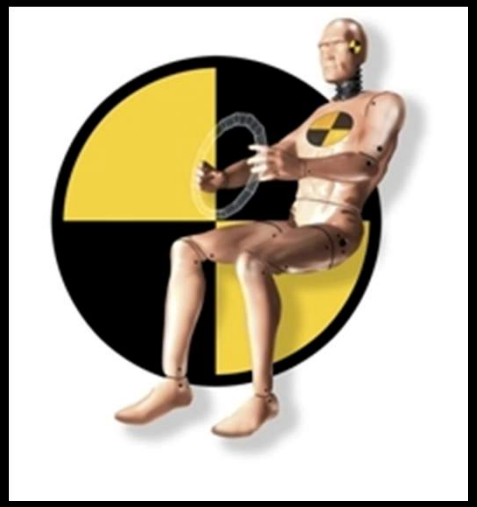
What is Realist Synthesis...?

“A new model for systematic review…”

What is it about interventions that gives them powers?

Outcomes, mechanisms and context

Name and shame interventions:



Criticisms of CR & RE:

RE is badly done

Marchel et al (2012) *Evaluation* 18: 192-212

CR is philosophically incoherent

Cruickshank(2004) *Sociology Review* 52:567-585

CR and RA are not well aligned

Porter (2015) *Evaluation 21 65-82*

1. Existence of independent reality
    - Fallibly known
2. Stratified emergent generative ontology
    - Actual, empirical and real
3. Explanatory focus
4. Recognition of agency and structure
5. Reality as a complex, open system
6. Methodological eclecticism and post disciplinarity

Closing thoughts:

Is your research approach simple, complicated or complex?

How could critical realism add value to seeing old problems in new ways in your work?

How could knowledge of mechanisms, context and outcomes help your research?

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What is critical realism and how can I use it?

Clark et al (2009) *Advances in Nursing Science* 31:4 67-79

What is complexity and complexity theory?

Clark et al (2012) *British Medical Journal* 345: e8316

How can I research complex interventions?

Clark et al (2013) Social Science & Medicine : 93:185-93.

Why?

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