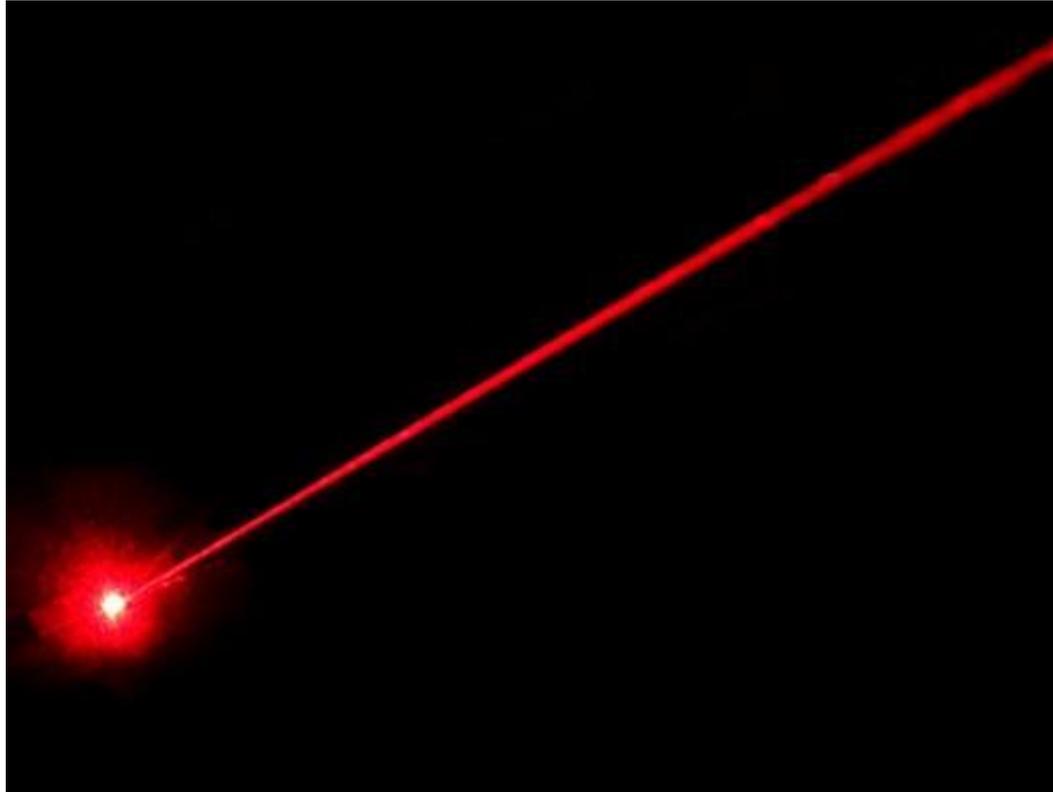


An introduction to realist methodologies and evaluation

Nick Emmel

1. Briefly consider the experimental approaches of RCT and process tracing as My methods of investigation.
2. Consider, in some detail, five principles of realist methodology, which may be applied to research practice including evaluation.
3. Briefly consider a realist research design.

The RCT: precise questions under narrow conditions—strong internal validity



'necessarily reductionist and laser-like precision, they typically zero in on very specific issues in constrained time and place' (Shelton, 2014:254)

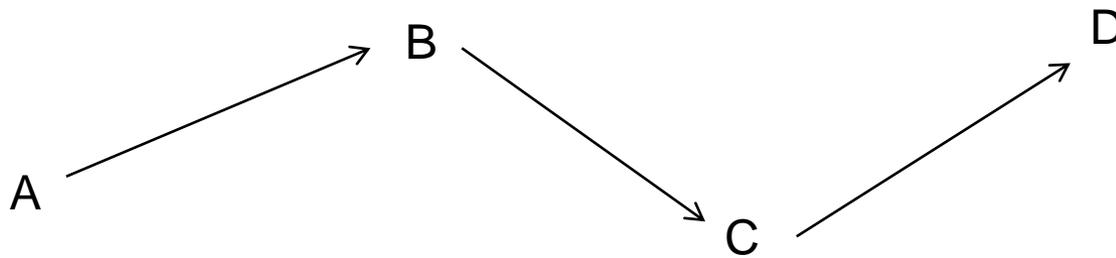


'comparing together instances in which the phenomenon does occur with instances in other respects similar in which it does not' (John Stuart Mill, 2005[1886]: 253)

causality is 'felt by the soul and not perceived externally in bodies ... a secret cause which separates and unites' (David Hume, 1949[1817]: 77)



Another successionist approach: process tracing (and also Theories of Change)



Where A, B, C, & D are directly observable events, or are worked out through their side-effects

Three limitations:

1. Mistaken mechanisms did A lead to B, or A` lead to B?
2. Paradoxical reactions C leads to D, but C may also lead to D`
3. Like the RCT, this method has strong internal validity, weak external validity.

(after Howick et al., 2013)

A real example, RCT investigations of infant feeding programmes in Tamil Nadu (TN) and Bangladesh (BD)

1. TN : $i.h.(i)c = a_1 + a_2 i.h._0(i) + a_3 b_m(i) e_m(i) + a_4 z(i)$
2. BD : $i.h.(i)c = a_1' + a_2' i.h._0(i) + a_3' b_{ml}(i) e_{ml}(i) + a_4' z'(i)$

‘two causal principles with nothing in common except their abstract form’.

The formula can be re-written so they do have one thing in common:

3. TN : $i.h.(i)c = a_1 + a_2 i.h._0(i) + a_3 b_{pw}(i) e_{pw}(i) + a_4 z(i)$
4. BD : $i.h.(i)c = a_1' + a_2' i.h._0(i) + a_3' b_{pw}(i) e_{pw}(i) + a_4' z'(i)$

The one thing in common is e_{pw} , (educated person with power) with support factors b_{pw} . Rewriting the equations in this way has abstracted them further from the real, in this case substituting an abstract powerful person for very real mothers and mother-in-laws. ‘This is’, to quote Cartwright and Hardie (2012: 86) ‘(nearly) vacuous’ (86).

In short:

As soon as we move away from discovering descriptive statements about 'what works' through establishing patterns of causality when things are quite simple, experimental methods become less valuable.

The problems we most often address in (evaluation) research are not simple, reality is complex.

For the rest of the talk, I want to think about methodologies (and methods) that seek to produce generative causal account of this complexity, answering questions about 'what works, for whom, in which circumstances, why, and how' (Pawson, 2002).

Five principles of realism

- 1) Both the material and social world are real.
- 2) All scientific enquiry is mediated by humans—there is no such thing as final truth or knowledge.
- 3) Interventions (and research) are ‘theory incarnate’
- 4) All (social) systems are open, yet context matters in every explanation.
- 5) Underlying that which we see (and measure) are powers, liabilities, and dispositions that shape what we observe, these mechanisms are causal.

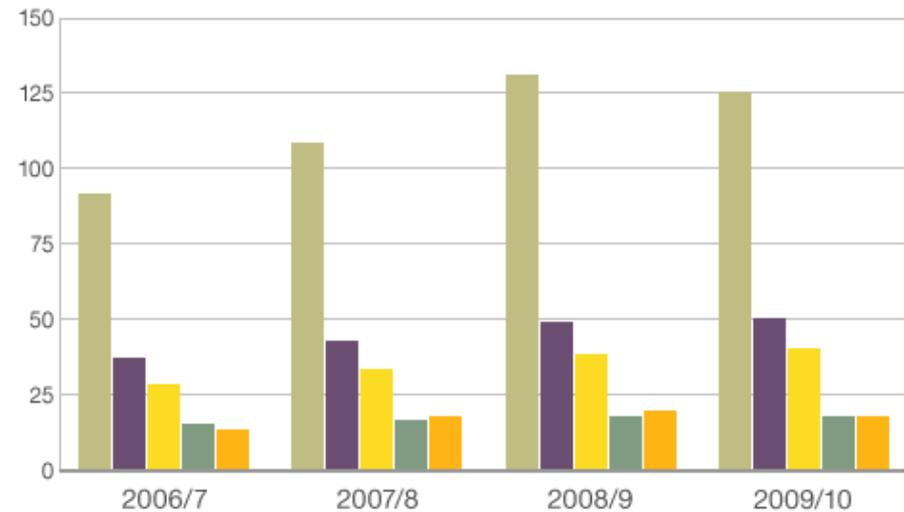
Both the material and social world are real...



Stop and search rates by ethnicity in England and Wales

Black Mixed Asian White Chinese or other

Per 1,000 people



Source: Home Office

Interpretation: both the material and social world are real

Things we traditionally deal with in research as variables—
culture, class, gender, religion, politics, ethnicity, GDP per capita,
visits to the doctor, & etc. —are not things at all, but real effects
that impact in some way on how things work.

Realism spatchcocks the variable.

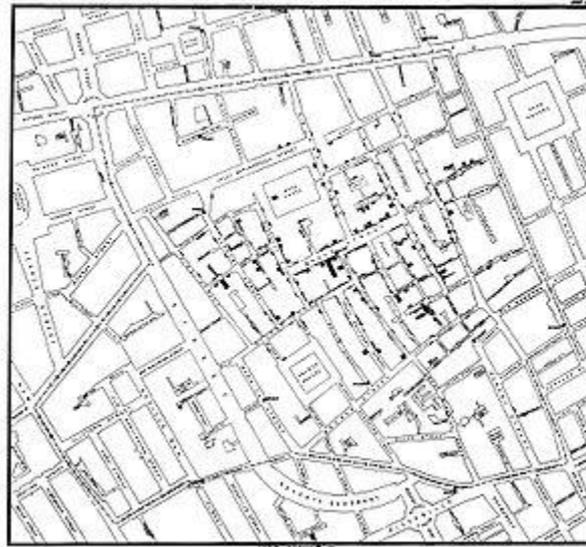
Reality is its messy self



‘A very small proportion of people in developed countries live in relative deprivation [based on] official statistics [but a] high non-response rate concentrated particularly among the poor presents a rosy picture, [but] most households have a cooker’ (Wilkinson, 1996:46)

All scientific enquiry is mediated by humans—
there is no such thing as final truth or knowledge.

Hypothesis



Analysis



→
The 'traditional' 'scientific' account of John Snow's investigation of cholera in Soho (Brody et al., 2000)

Bodged natural experiment (Southwark and Vauxhall vs. Lambeth Waterworks Companies)

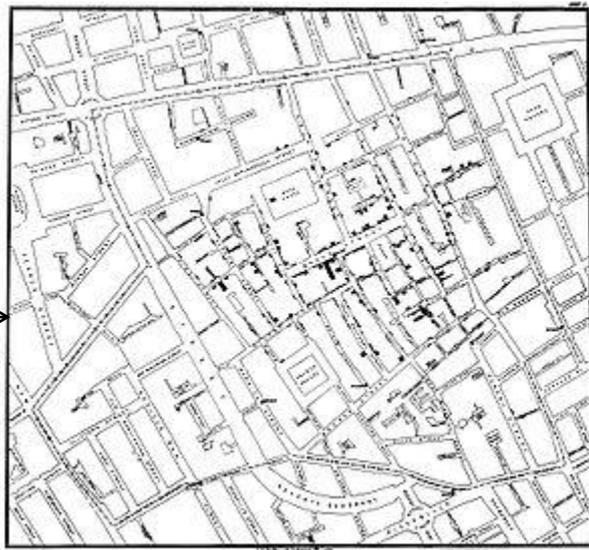
Observation of cholera cases (Albion Terrace, pit villages)

Effect of treatments (opium, etc.) on cholera victims

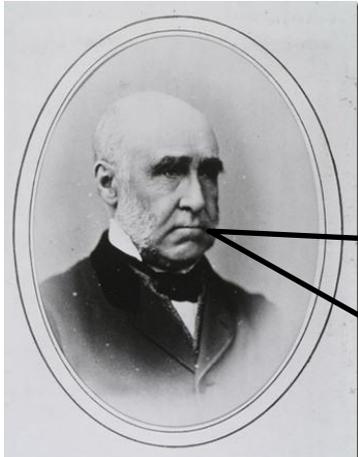
Cholera is a pathogen, communicated via the faeces of cholera victims ingested by others from contaminated water and food



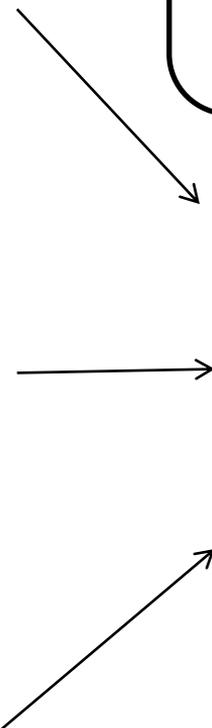
Another case, 1854 in Golden Square



Actually, it was much more like this (Eyler, 2001; Brody et al., 2000)



sewage contaminated water is a contributing factor [but the] 'exciting cause of cholera brews poison from air or water containing ample organic impurities' Sir John Simon



Interpretation: All scientific enquiry is mediated by humans—there is no such thing as final truth or knowledge.

We are always working towards a better understanding of how or why something works. We must accept we will never reach final proof or certainty.

(Scientific) realism is both creative and critical.

Interventions (and research) are ‘theory incarnate’

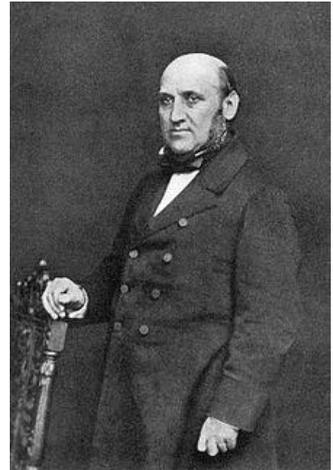
Once again my case is the investigation of the *Æ*tiology of cholera, this time through the work of a contemporary of John Snow, William Farr, Statistical Superintendant to the General Register Office. In 1852 he published the elevation theory of cholera:

cholera mortality varies inversely to elevation of habitation according to the formula:

$$C = C' (e'+a)/(e+a)$$

where C and C' are cholera mortality rates per 10 000 in two districts having mean elevations in feet of e and e', a is a constant.

Farr was, at the time, a miasmist, who observes that at the lowest elevation ‘the soil of the port may be viewed as a large basin full of an almost infinite variety of organic matters undergoing infusion and distillation [...] as the aqueous vapour which is given off ascends [...]’ (Farr, 1852:162-63)



Interpretation: Interventions (and research) are 'theory incarnate'

The currency of all research (and interventions) are ideas.

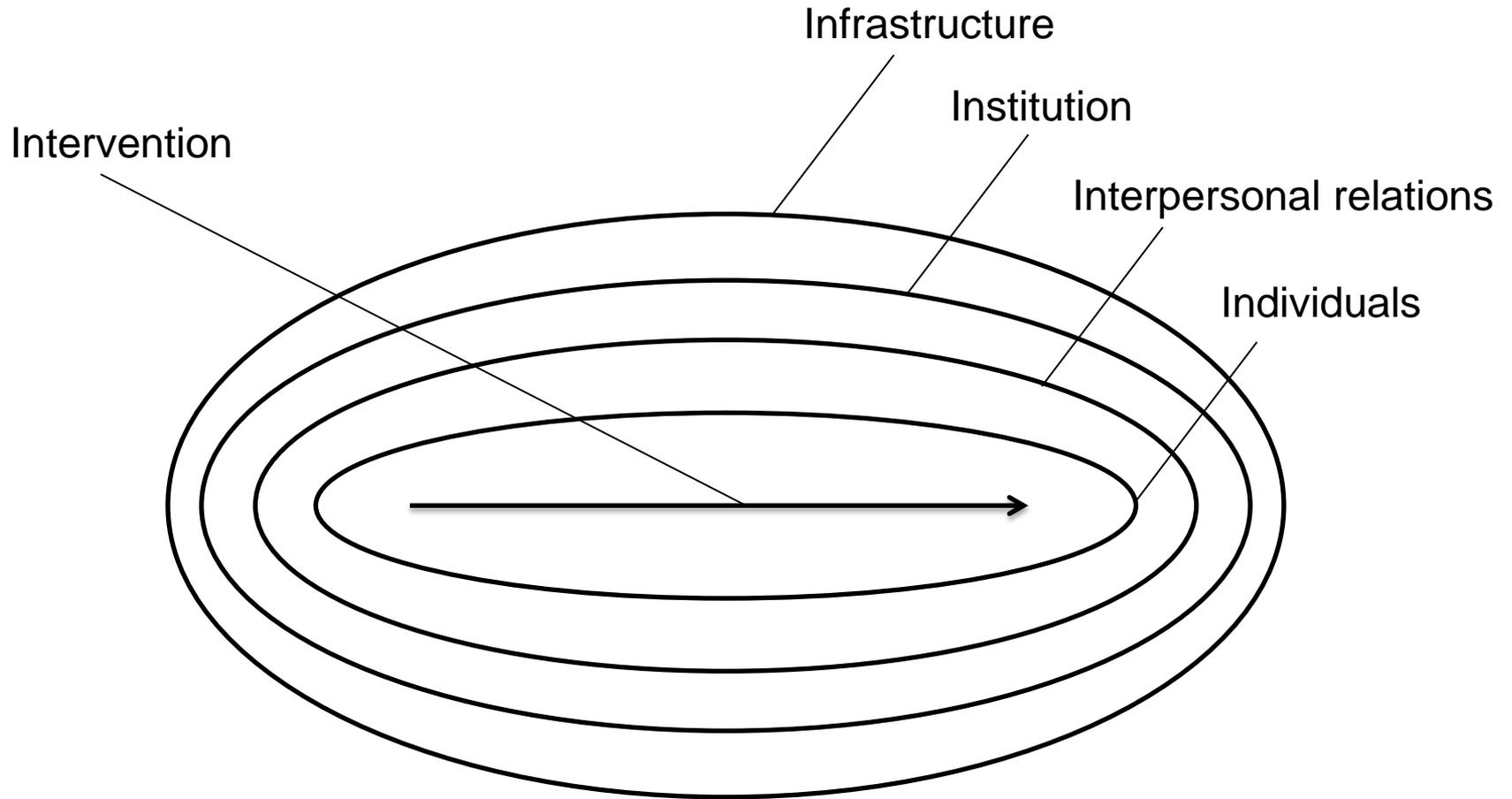
We zigzag between ideas and evidence, working out the relation between these (Lakatos, 1976).

All (social) systems are open, yet context matters in every explanation



What should we investigate and why to understand the likely educational attainment of this child at age 25 years old?

All (social) systems are open, yet context matters in every explanation



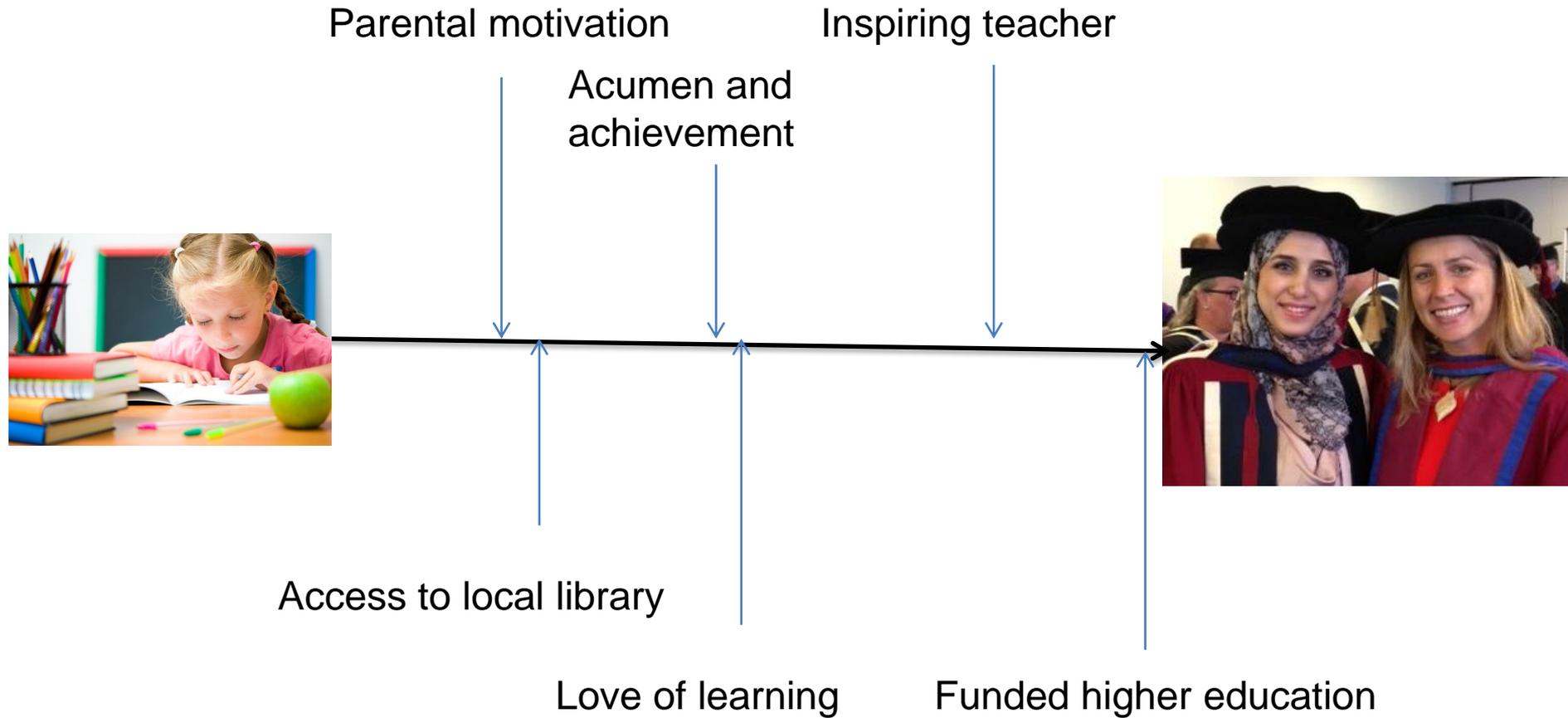
The intervention as a product of its context (after Pawson, 2002:32)

All (social) systems are open, yet context matters in every explanation

Interpretation: Boundaries are essential in any explanation of research / intervention

But these contexts do not moderate explanations, they are an integral part of the explanation from the research.

Underlying that which we see (and measure) are powers, liabilities, and dispositions that shape what we observe, these mechanisms are causal.

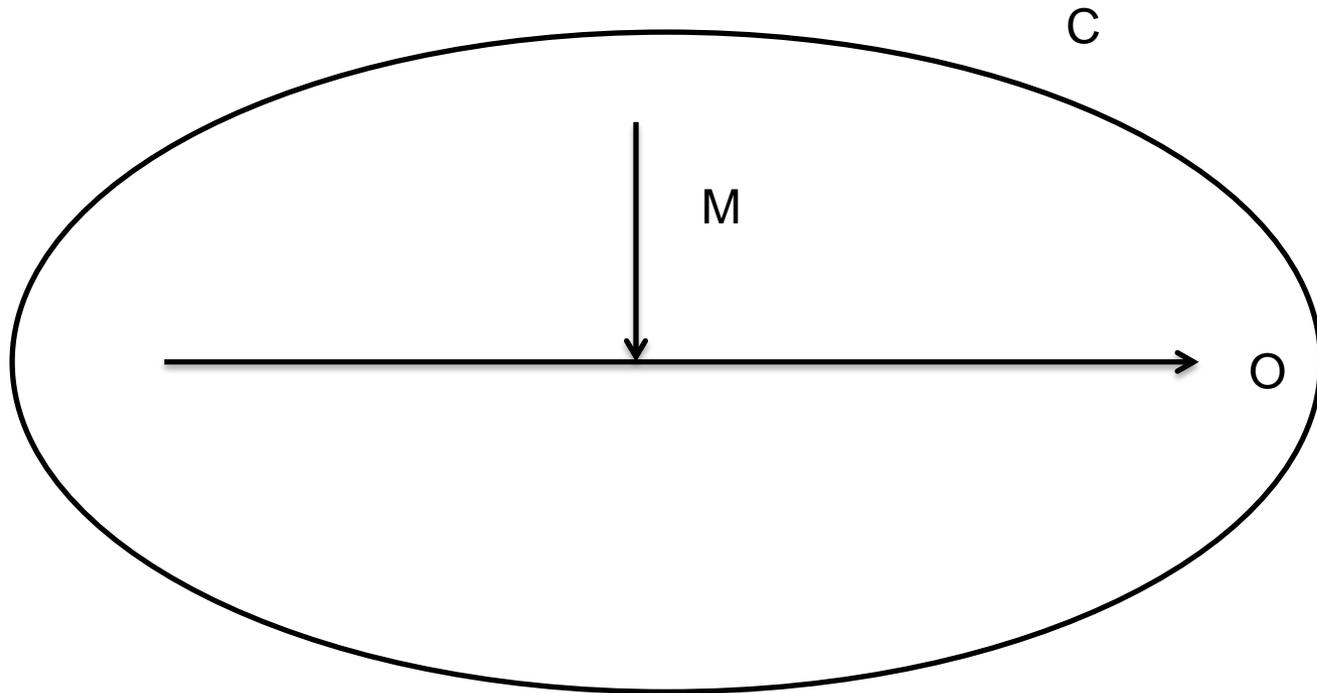


Interpretation: mechanisms are causal

Mechanisms may or may not be measurable—we can see some (e.g. local libraries), experience others (e.g. inspiring teachers), and theorise others (e.g. a love of learning is because ...)

Mechanisms are not 'things' (or mediators), they are part of an account of causality that only works if we explain (as best we can) the context in which they fire, and the outcome to which they contribute.

An explanation of 'what works, for whom, in which circumstances, why, and how'



A Context, Mechanisms, Outcome (a CMO) configuration
(Pawson and Tilley, 1997)



Patients at risk of pressure ulcers



'all other care is standard'



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A brief example

PRESSURE2—The RCT
Addressing the question 'what works'

The Mattress Study:

First, testing candidate theories: (theories of the middle range—hypotheses to be tested through further empirical enquiry) e.g.

Patients with advocates (carers) attending on admission to hospital receive more comprehensive assessment of risk that leads to specific interventions including allocation to alternating pressure and high-specification foam mattresses.

Self movement by patients is hindered by alternating pressure mattresses.

The frequency of repositioning by nurses will be influenced by the type of mattress the patient is allocated.

Second, purposefully choose a sample and methods in the service of testing theories (Emmel, 2013)—in this case methods of realist interviews, ethnographic observation, and focus groups.

Third, sift, winnow, and refine theory through working and reworking ideas in relation to evidence.

The external validity of realist methodologies

The currency of realist methodologies are ideas (theories) about 'what works, for whom, in which circumstances, why, and how'.

These ideas are transferred from investigation to investigation, and setting to setting, where ideas are worked out in relation to evidence.

This casing extends the methodological story I've told today. The five principles of realist methodology I have discussed today remain:

- 1) Both the material and social world are real.
- 2) All scientific enquiry is mediated by humans—there is no such thing as final truth or knowledge.
- 3) Interventions (and research) are 'theory incarnate'
- 4) All (social) systems are open, yet context matters in every explanation.
- 5) Underlying that which we see (and measure) are powers, liabilities, and dispositions that shape what we observe, these mechanisms are causal.

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