



ACADEMY for  
JUSTICE COMMISSIONING

## Evening Seminar

**Approaches to impact:  
what can be done in less than ideal  
circumstance**

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1 December, 2015

Supported by

**PERU** Policy Evaluation  
& Research Unit  
at Manchester Metropolitan University

# Overview

- What is impact evaluation why does it matter?
- Most common approach - counterfactuals & RCTs – the ideal???
- In what circumstances do they work?
- Alternatives to counterfactuals
- Realist methods – advantages/disadvantages
- Summary & conclusions

# Main messages

- Impact evaluation addresses the important **what works question**
- RCTs & counterfactuals insightful in **many circumstances** - good at **controlling bias** but may not always be practical or desirable
- Alternatives **are available** but often **less developed**
- **Realist evaluation** – an example of an alternative
- Strong on **explanation** less emphasis on controlling bias
- Good where intervention is emergent/developmental, small & sensitive to context

# Current emphasis on impact

- Managers/policy makers under pressure to **demonstrate impact**
- **Declining resources** = show effectiveness & value for money
- Cant address these challenges without **evidence** of what works, for whom & in what circumstances
- **Impact evaluation** key ingredient

# What is impact evaluation?

"An impact evaluation asks whether the desired impact was achieved and whether there were unintended side effects "(1)

# What is impact evaluation?

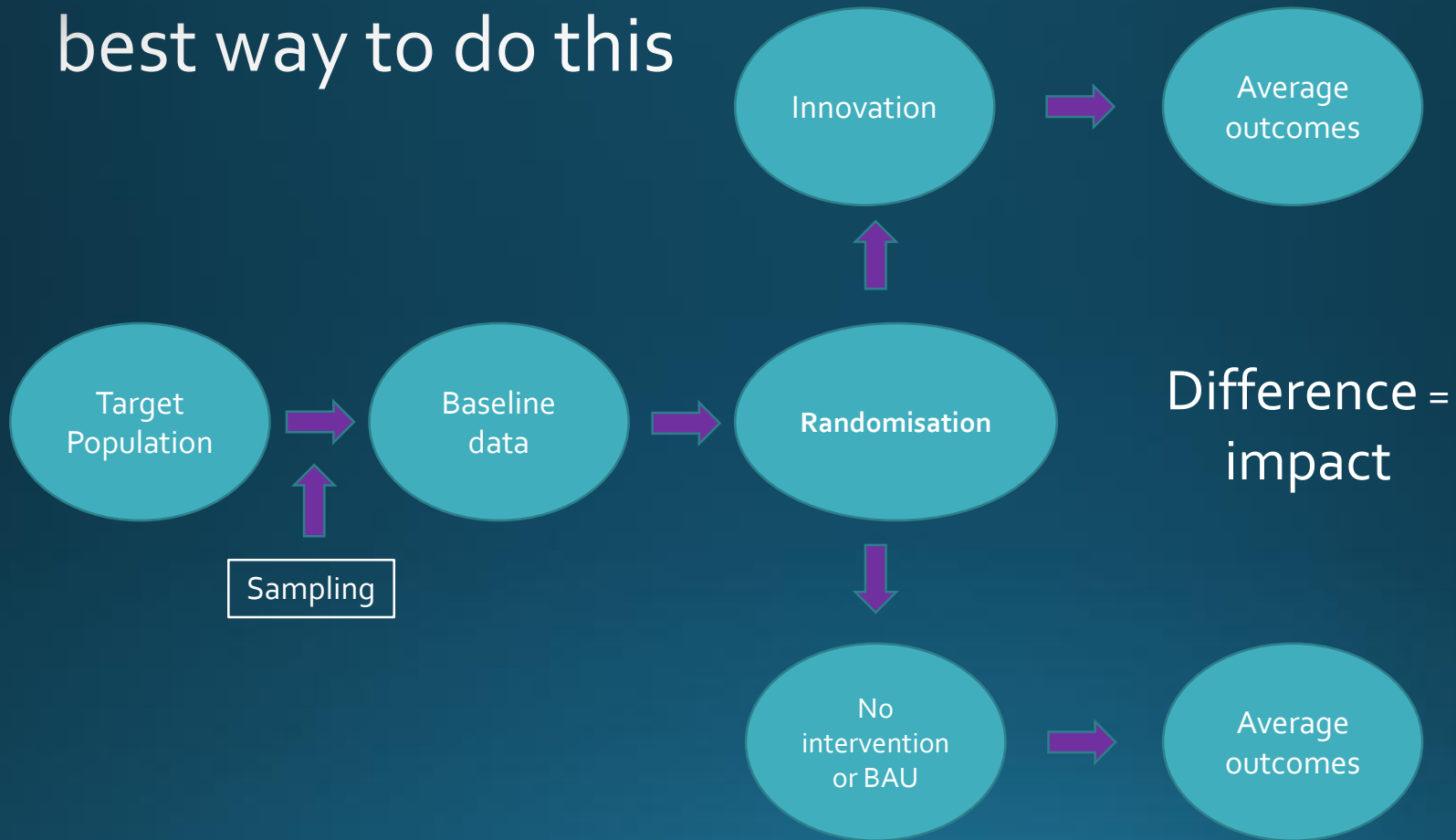
- Is the programme effective?
- Is there evidence of a **'causal relationship'**
- Positive or negative effects (level of certainty)
- Rule out or account for alternative explanations/other factors

“An impact evaluation asks whether the desired impact was achieved and whether there were unintended side effects” (1)

# The dominant approach – **counterfactuals & causation**

- Defined philosophical position - secessionist theories of causation - potential outcomes (modern expression of this idea)
- Defines impact statistical and quantitative terms <sup>(2)</sup>
- Concept of the counterfactual (single intervention)
- Every member of your target group as two potential outcomes
- One outcome in the treated condition & one in untreated condition
- We only see one (depending on whether the unit participates or not) but have to estimate the other
- On basis on statistical theory we do this in averages for samples

# Classic RCT – considered the best way to do this





# Alternatives to randomisation using counterfactuals

**Referred to as quasi-experimental or non-experimental**

Still based on potential outcomes, statistical and quantitative <sup>(2)</sup>

- We can make comparisons between (1) our participants' outcomes and (2) outcomes among a non-randomised comparison group (e.g. eligible non-participants, those excluded for other reasons)
- Or, compare outcomes pre-participation with post-participation
- Or, more complicated approaches: ITS, IV, RD, etc.

# Limitations of experiments

## **Nature of the intervention:**

- Too small to generate enough numbers (extreme case unit of analysis=1)
- Emergent
- 'spillovers'
- Complicated or complex (small operational changes v large policy changes)
- Impact varies (heterogeneity)

## Nature of the method:

- Limits to number of hypotheses
- Learning may not be applicable in different contexts (generalisability)
- Ignores features of context
- Random sampling

## Practicalities:

- Implications for delivery
- Ethical concerns
- Lack of support among practitioners
- Budget

# The alternatives

A lot of work has been done by researchers over the last 20 years or so in this area – particularly in International development & health research

- Number of different approaches <sup>(4)</sup>
- Approaches tend to be less mature
- Greater reliance on researcher judgement
- Essentially mixed methods – qualitative and quantitative data though tend to focus on the former

# Classifying alternatives

## Alternatives include:

- Case study approaches (QCA)
- Theory-driven/based approaches (process tracing, realist eval., CA)
- Participatory approaches

These approaches can be used in combination

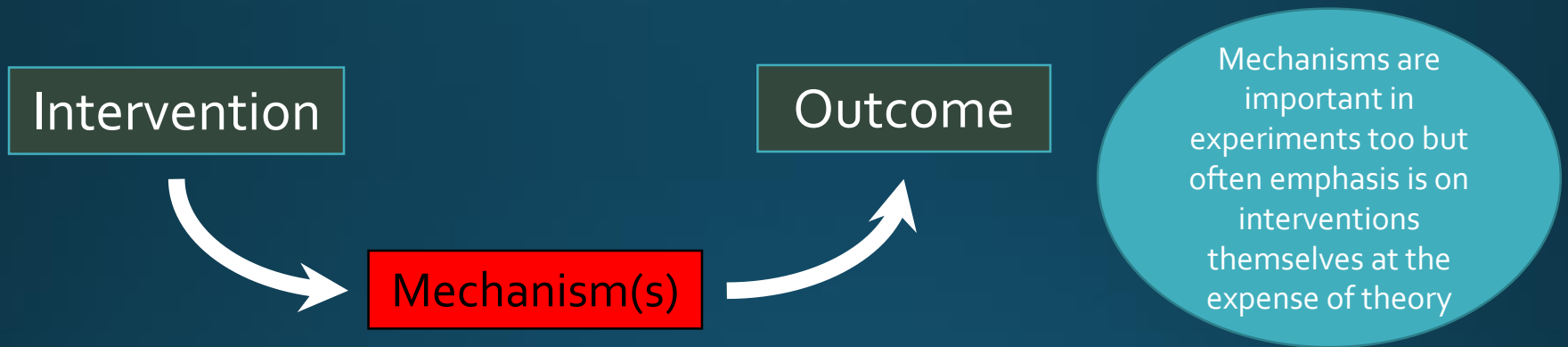
And in some cases in conjunction with counterfactual strategies, e.g. realist RCTs <sup>(5)</sup>

Some RCTs can also be theory-driven (mediator analysis)

# An example: realistic evaluation

- Based on ideas on causation developed in 1970s <sup>(6)</sup>
- Process of causation can be studied more directly
- As applied to evaluation (Pawson and Tilly, 1997) <sup>(7)</sup>:
  - programme theory in which we hypothesise about the outcomes we will achieve & how
  - Test whether these outcomes materialise as expected - regularities
  - Attempt to explain them – in terms of mechanisms & contexts

# No causation without explanation



## What are mechanisms?

mechanisms are a combination of resources offered by the social programme under study and stakeholders' reasoning in response <sup>(7)</sup>

## What are mechanisms?

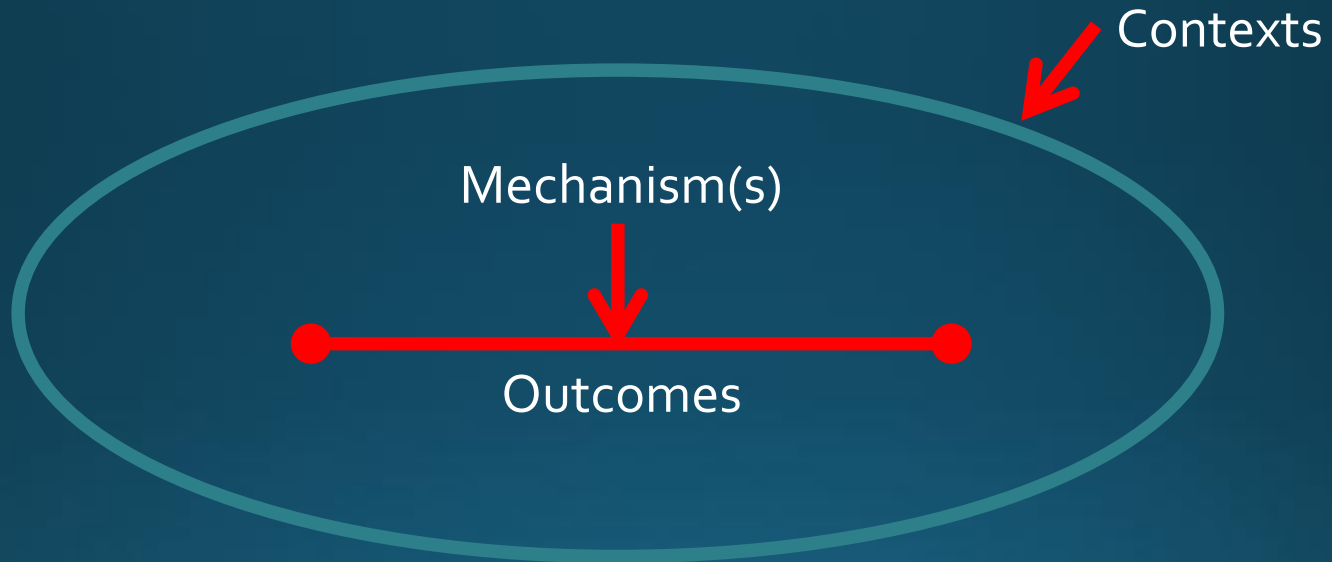
intervene between the delivery of program service and the occurrence of outcomes of interest. It focuses on participants' responses to program service. The mechanism of change is not the program service per se but the response that the activities generate <sup>(8)</sup>

# Realist approach – Specifying CMOs

## Start with a programme theory

- (O) Identify programme outcomes (demi-regularities) & confirm
- (M) Develop a range of theories about what mechanisms are triggered by our programmes and give rise to these outcomes
- (C) How context might support or hinder these mechanisms
- Collect data to test these theories

# Context, mechanism, outcomes





# Breakfast clubs – example mechanisms

(Pawson and Tilley, 2004) <sup>(9)</sup>

## Improvement in attainment:

- 'nutritious kick-start'
- 'summoning point' to prevent kids loitering or absconding
- 'energy diffuser' to soak up gossip and boisterousness
- 'informal face' to those uninspired by classroom and book learning.
- 'pre-assembly' enabling teachers to troubleshoot potential problems
- 'informal conduit' parents & teachers

## Failure to raise attainment:

- 'messaging about' if weak supervision
- 'den of iniquity' for planning the day's misdeeds
- 'cultural barrier' because inappropriate food

# Contexts

Mechanisms will only be activated under certain conditions – aspects of setting or context (Pawson and Tilley, 2004) <sup>(9)</sup>

Pawson and Tilly give example of prisoner education programme aiming to promote rehabilitation and cut future offending

- Mechanisms include: confidence, cognitive development, attainment etc.
- Contextual factors include:
  - Individual characteristics: ambition, literacy, drug/alcohol use
  - Classroom culture: violent/macho, surveillance
  - Outside: further education/training, stable home environment, etc.

# Advantages

- Better at handling complicated interventions
- Accounts for context
- Smaller programmes/samples
- Emergent interventions
- Emphasis on explanation of effects (new or uncertain)

# Disadvantages

- Mechanisms maybe unclear – difficult to rule out certain explanations
- Messy complicated programmes still difficult to handle
- Methods are less well establish – difficult to identify credibility
- No clear method of handling bias
- No easy interface with CBA

# Closing remarks

- Impact evaluations are important part of an evidence-informed approach
- Counterfactuals and experiments are not preferred or viable in all circumstances but have certain advantages (bias, CBAs, etc.)
- Alternatives are available but generally less well developed in terms of practical application
- Realist approaches good in situations where we have small samples & intervention is emergent & strongly context dependent
- Engage with experts in deciding which strategy is most appropriate
- Develop capacity in-house to act as intelligent consumer

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# References

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Additional material

Approaches to impact—  
what can be done in less than ideal circumstance

# Potential outcome model: An example\*

- Effects of village-heads being female rather than male (W. Bengal and Rajasthan)
- **Treatment:** village head appointed from women only shortlists
- Otherwise village head male
- Outcome – % budget devoted to supply of clean water
- **Hypothesis:** villages with female heads spend more resources on clean water

\* From Gerber, A S and Green D P (2012) Field experiments: design, analysis and interpretation, New York: W W Norton & Co.



# Potential outcomes

- Each village has two potential outcomes
- % of budget spent on water supply :
  - Treated condition: female head
  - Untreated condition: male head
- For **treated villages (female head)** we do not observe % of budget spent on water supply where a **male** is village head
- For **untreated villages (male head)** we do not observe % of budget spent where **female** is village head
- These are **counterfactuals**

| <b>Unit</b>    | <b>Outcome treated<br/>Female<br/>village<br/>head</b> | <b>Outcome untreated<br/>Male<br/>village<br/>head</b> | <b>Difference<br/>or<br/>treatment<br/>effect</b> |
|----------------|--|--|---|
| Village 1      | 15   | 10   | 5   |
| Village 2      | 15   | 15   | 0   |
| Village 3      | 30   | 20   | 10  |
| Village 4      | 15   | 20   | -5  |
| Village 5      | 20   | 10   | 10  |
| Village 6      | 15   | 15   | 0   |
| Village 7      | 30   | 15   | 15  |
| <b>Average</b> | <b>20</b>  | <b>15</b>  | <b>5</b>  |
|                |  |  |   |

| <b>Unit</b>    | <b>Outcome treated</b><br><b>Female village head</b> | <b>Outcome untreated</b><br><b>Male village head</b> | <b>Difference or treatment effect</b> |
|----------------|--|--|---------------------------------------|
| Village 1      | 15   | ?  | ?                                     |
| Village 2      | ?  | 15   | ?                                     |
| Village 3      | ?  | 20   | ?                                     |
| Village 4      | ?  | 20   | ?                                     |
| Village 5      | ?  | 10   | ?                                     |
| Village 6      | ?  | 15   | ?                                     |
| Village 7      | 30   | ?  | ?                                     |
| <b>Average</b> | <b>22.5</b>  | <b>16</b>  | <b>6.5</b>                            |
|                |  |  |                                       |



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Any Questions ?



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