

Interdisciplinary Research Questions

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SaciWATERs, Kathmandu

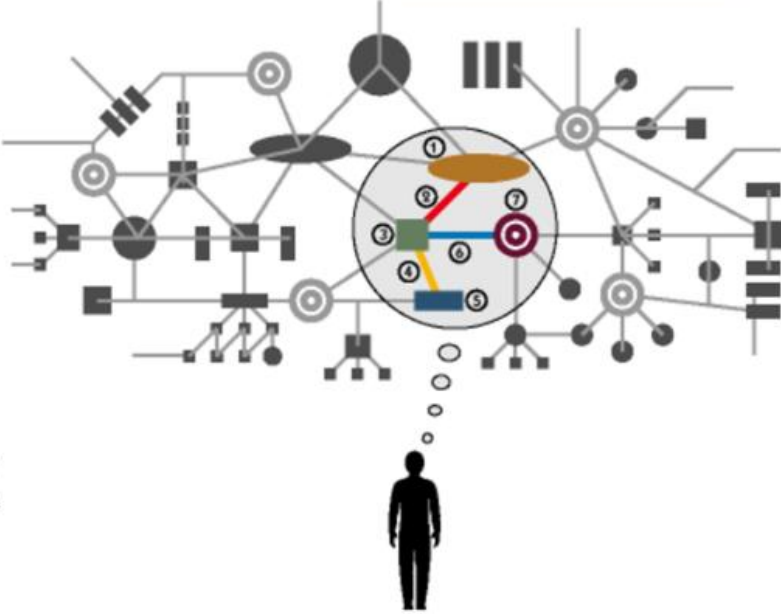


Generic image of a complex system

← Back **Conceptual Complexity & Diagrams** Integration & Diagrams ↑ Back

Due to the limited capacity of our working memory – 7 +/- 2 'chunks' of information – we cannot hold in our minds concepts, arguments, or problems that consist of more than 5 to 9 objects or relationships. This cognitive limitation severely restricts our ability to think about complicated things like complex systems. However, we can do what we often do, extend our intellectual abilities with external representations.

The particular affordances of diagrammatic representation – its ability to show many objects and relationships – make it an ideal external aid for thinking about conceptual complex problems i.e. ones with more than 7 objects or relationships. Diagrams provide an external mnemonic aid, enabling us to see complicated relationships and quickly move between various mind-sized groupings.



Reductionism is a natural result of our unconscious need to break things into mind-sized chunks. CSS, as a reaction against reductionism, must use all available means to help people understand that which they can't think about.

For example, even a simple model of evolution is more than a mind-full.

Evolution → (M)

Idiagram - Copyright © 1998 Marshall Clemens

<http://www.idiagram.com/>

[examples/vcss/ccad.html](http://www.idiagram.com/examples/vcss/ccad.html)

Two key characteristics:

1. Heterogeneity
2. Emergence



Types of research: research design examples

- A case study of....
- Historical analysis of...
- An ethnography of.....
- Comparative analysis of.....
- Participatory assessment of....
- Modelling of....

→ Your design?



Resources on case studies

<https://methods.sagepub.com/cases>

The screenshot shows the Sage Research Methods Cases website. At the top left is the Sage Research Methods logo. To the right are navigation options: 'Browse By' and 'Tools' with dropdown arrows, a search box containing 'Search all content' and 'Enter search terms...' with a magnifying glass icon, and 'Sign in:' with buttons for 'MY PROFILE' and 'INSTITUTION'. Below the search box is a link for 'Advanced search'. The main header area includes a 'Cases' icon and text, and a 'FREE TRIAL' button. The main content area has a dark blue background with the word 'Cases' in large white text. Below it is the text 'Learn about methods application and research design with stories from researchers in the field'. There is a search box for 'Search within Sage Research Methods Cases' and a link for 'Advanced Search'. A 'Case' card is highlighted, showing a green icon with a clipboard and the text 'Case', 'Conducting an Organizational Ethnography: Researching...', and 'Author: Adriana Berlingieri'. At the bottom, there is a 'Browse by' section with tabs for 'Discipline', 'Method', 'Academic Level', and 'Collections', and a link for 'Browse All Cases'. A faint background image of a hand holding a globe is visible on the right side.

Most of you will do **explanatory** research

that is

There is a '**why question**' that you would like to
answer



Basic structure of an explanatory question

Why does something (not) happen?

Translates into

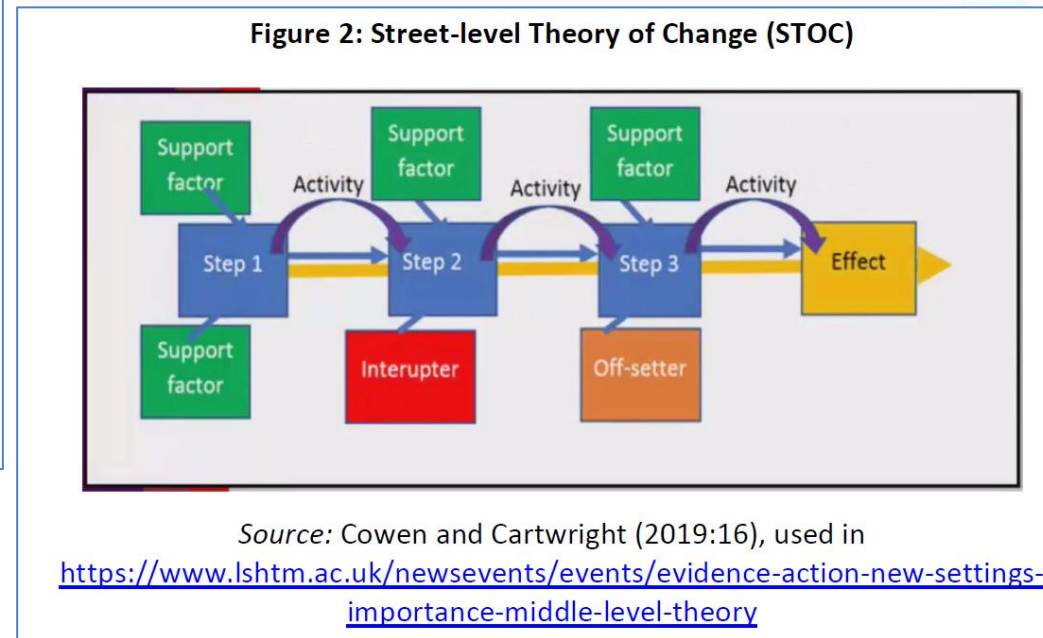
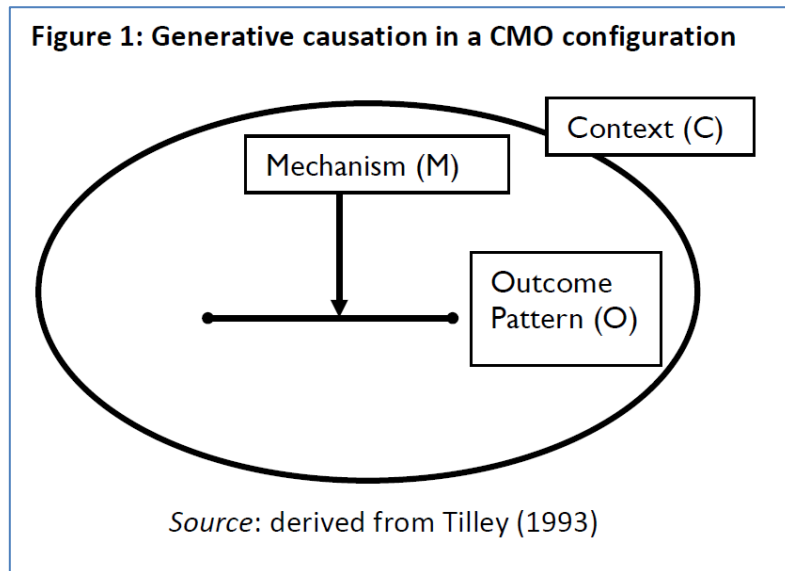
Some thing(s) cause something else

$A \rightarrow B$



More sophisticated version: CMO configurations (Context/conditions-Mechanism-Outcome)

- Technique from realist evaluation
- To explain particular outcomes (of programmes/interventions)
- But which can be used to design precise research questions



Examples of Development Studies PhD research questions reorganised as A → B

A	→	B
(How do) institutional practices and elite bargains	influence	the management of the mining sector in Sierra Leone ?
(How do) natural resource management in post-conflict settings	promote	sustainable peace?
(What) developments Qatar should take	to secure	sustainable water resources for more efficient provision of food and energy
(How do) the material characteristics of GM crops, and the social responses to biotechnology,	generate	agricultural deskilling/(re)skilling among small-scale peasant farmers



Example 1

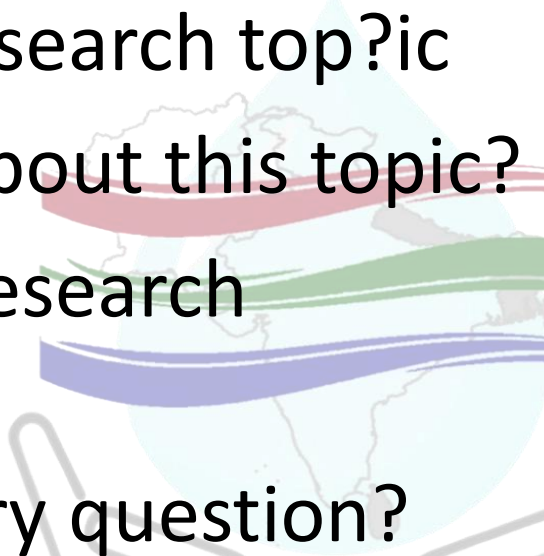
To assess the impacts on water security due to depletion of spring sources in rural areas of Kathmandu valley

- 1) What is the 'why' question underlying this research objective?
- 2) How can we reformulate this research objective as a research question?
- 3) What is the $A \rightarrow B$ structure implicit in that research question?
- 4) How can we make this into an interdisciplinary question?



Example 2

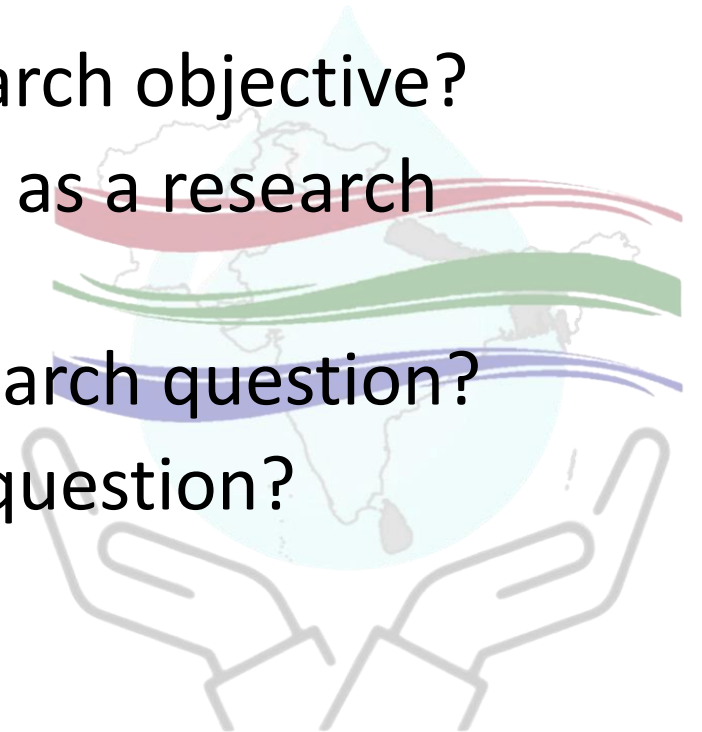
Assessment of water, sanitation and hygiene practices of floating population in Dhaka city

- 1) What is the 'why' question underlying this research topic?
 - 2) How can we formulate a research question about this topic?
 - 3) What is the $A \rightarrow B$ structure implicit in that research question?
 - 4) How can we make this into an interdisciplinary question?
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Example 3

To comprehensively investigate the extent of groundwater depletion in Bhramarpura Village and assess its impact on the daily lives of its residents, with a particular focus on women's household activities.

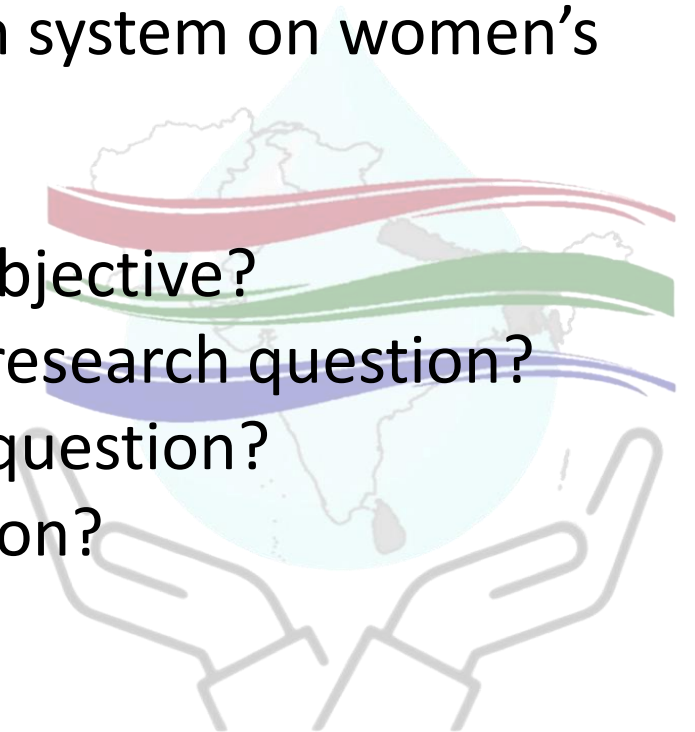
- 1) What is the 'why' question underlying this research objective?
- 2) How can we reformulate this research objective as a research question?
- 3) What is the $A \rightarrow B$ structure implicit in that research question?
- 4) How can we make this into an interdisciplinary question?



Example 4

a) to assess the effects of open and climate-smart agricultural production system on growth of cucumber plant, b) to quantify and compare the impact of open and climate-smart agricultural production system on yield, crop and water productivity of cucumber fruits, c) to assess and compare the effects of above-mentioned production system on fruit quality, and d) to compare the impact of open and climate-smart agricultural production system on women's economic status.

- 1) What is the 'why' question underlying this research objective?
- 2) How can we reformulate this research objective as a research question?
- 3) What is the $A \rightarrow B$ structure implicit in that research question?
- 4) How can we make this into an interdisciplinary question?



Delimit your question

- Space/location
- Time
- Factors/variables/causal mechanisms



EXTRA SLIDES



Methods for CRQ development

- **Mind-mapping and SPQR**

Alan Barker and Firoze Manji *Writing for Change* (2000)

<http://fahamu.org/WFCEng/sitemap.html>

- **Blaikie *Designing social research***

Blaikie, Norman. 2000. *Designing social research: the logic of anticipation*. Cambridge: Polity (chapter 3: Research questions and purposes; chapter 4: Strategies for answering research questions)

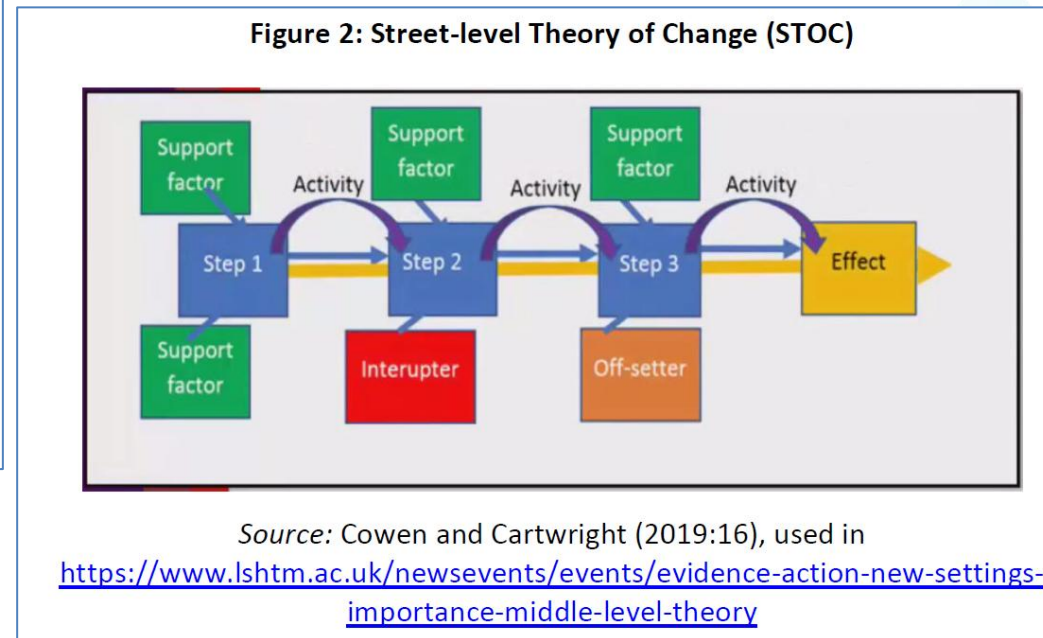
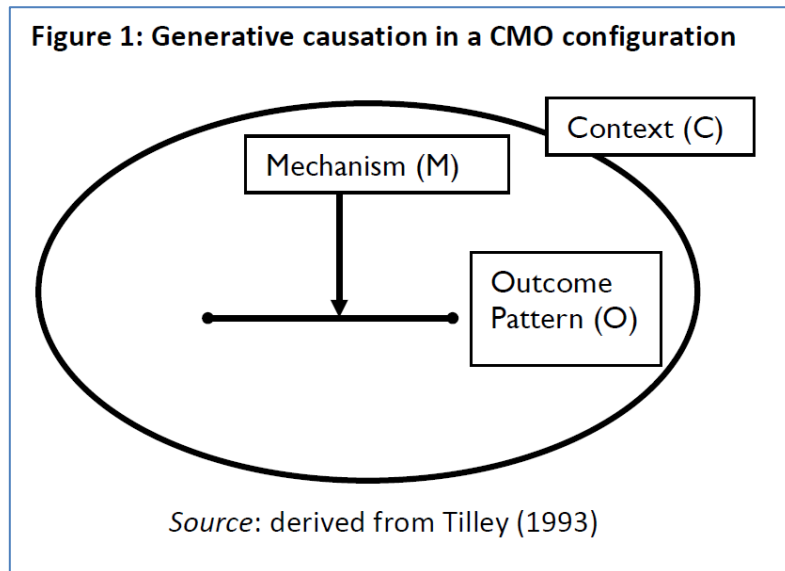
- **Concept specification (Britt)**

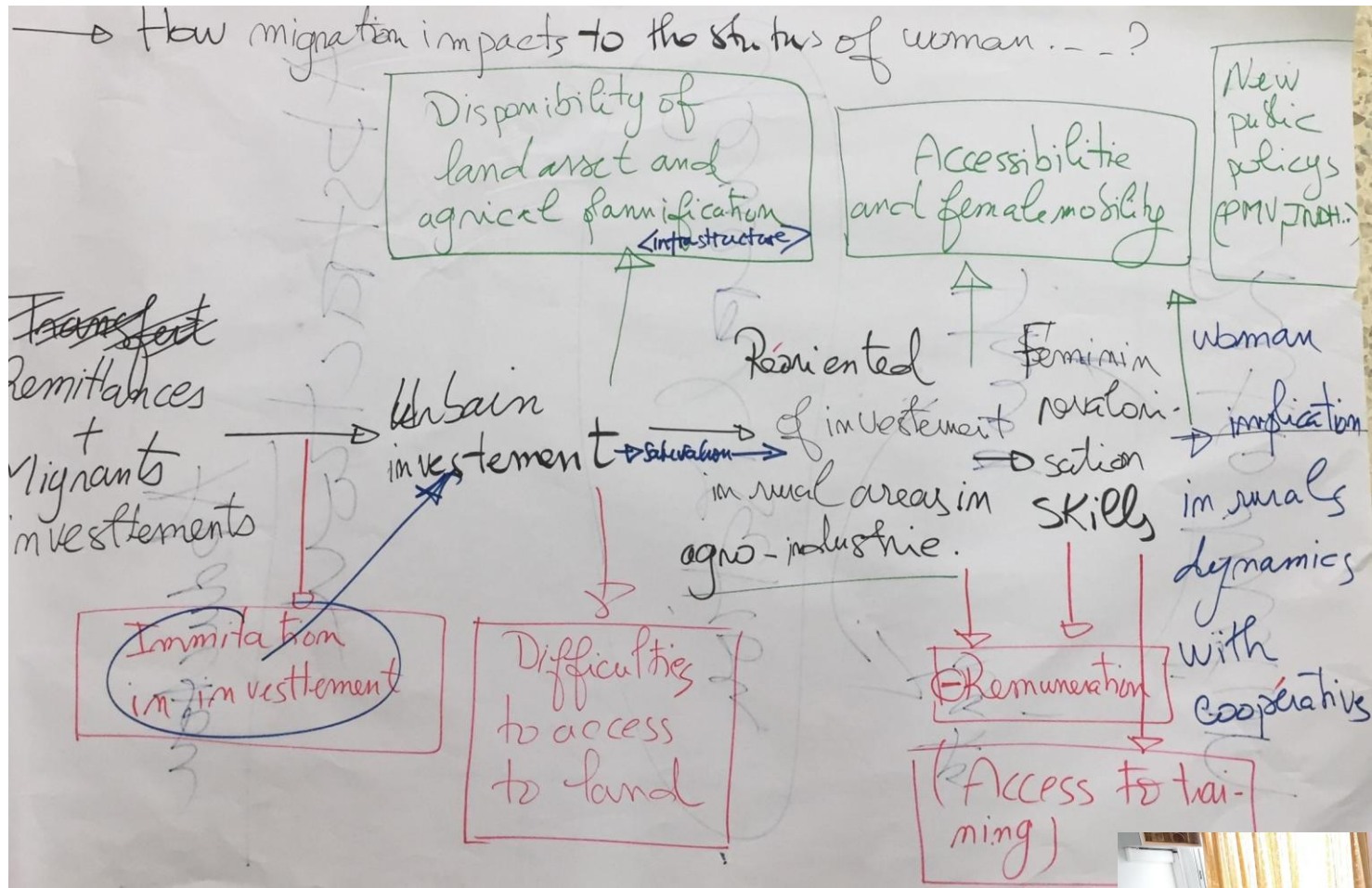
Britt, David W. 1997. *A conceptual introduction to modelling: qualitative and quantitative perspectives*. Lawrence Erlbaum Associates, Mahwah, New Jersey.

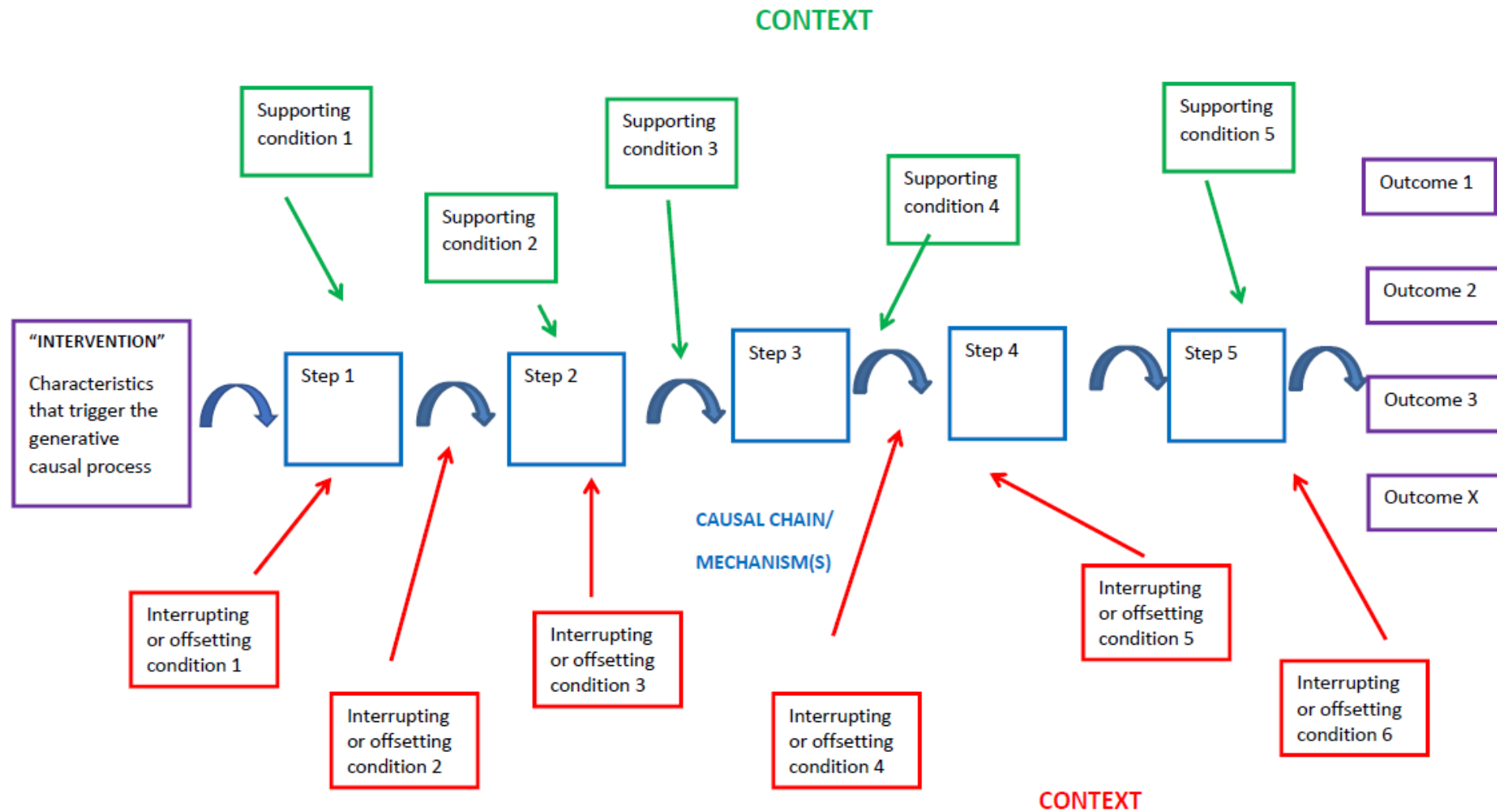


CMO configurations

- Technique from realist evaluation
- To explain particular outcomes (of programmes/interventions)
- But which can be used to design precise research questions

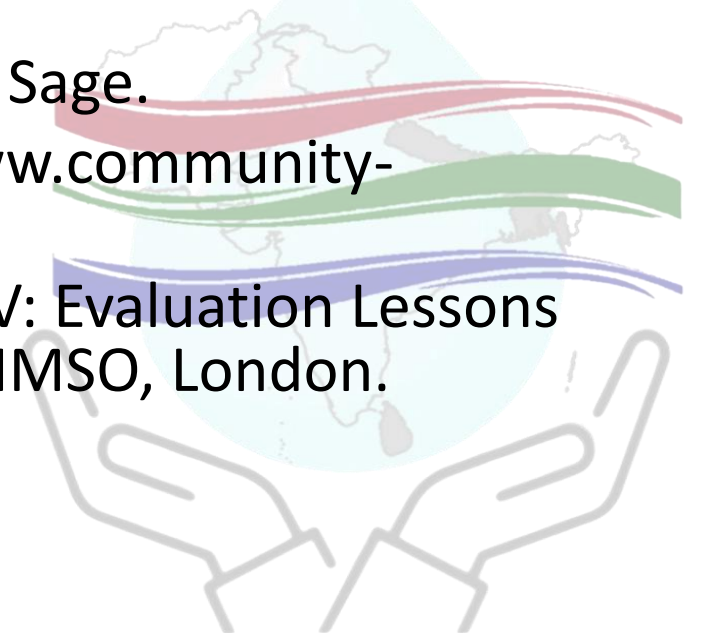






CMO references

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- Pawson, R. & Tilley N. (2004). Realist Evaluation. http://www.community-matters.com.au/RE_chapter.pdf, accessed 6 June 2019.
- Tilley, N. (1993). “Understanding Car Parks, Crime and CCTV: Evaluation Lessons from Safer Cities”, *Crime Prevention Unit Series Paper 42*. HMSO, London.



Type of research: qualitative and or quantitative?

Strategy/ approach

- A. Quantitative, positivist, deductive, objectivist but also realist
- B. Qualitative (fixed or flexible) interpretivist, inductive (grounded theory), constructionist, participatory (often placed as a separate type), but also realist

Design

- 1. Experimental or quasi-experimental (randomized control trials)
- 2. Cross sectional – hh survey
- 3. Longitudinal – time series
- 4. Case study
- 5. Comparative study (contrast)
- 6. Participatory assessments

NB: each research design can be implemented as a quantitative, a qualitative study or as a mix

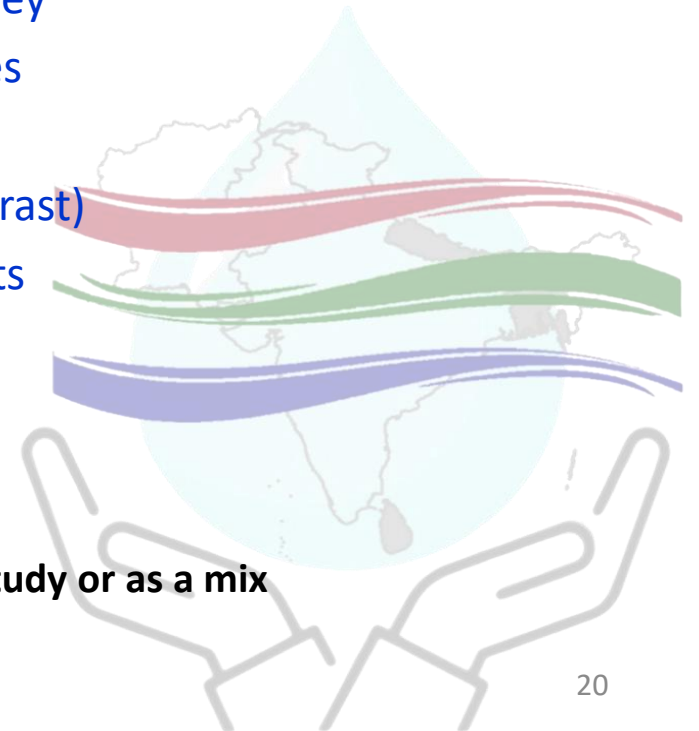


Table 2.2 Types of research design

			EXAMPLE
Quantitative	Cross-sectional	Case	Studies of particular organisations or settings (see Chapter 6)
Quantitative	Cross-sectional	Representative	Large social surveys (see Chapter 19)
Quantitative	Longitudinal	Case	Historical studies of nations or groups (see Chapter 15)
Quantitative	Longitudinal	Representative	Panel and cohort studies (see Chapter 19)
Qualitative	Cross-sectional	Case	Focus group studies (see Chapter 12)
Qualitative	Cross-sectional	Representative	Cross-national comparative case studies
Qualitative	Longitudinal	Case	Ethnography (observation) of small groups and settings (see Chapter 14)
Qualitative	Longitudinal	Representative	Studies of small societies and groups, by interviewing informants (see Chapter 13)

Gilbert, 2008, p. 37

Function research questions

Research questions

*...should be clearly formulated (whether or not you intend to modify them or add to them later), intellectually worthwhile, and researchable (both in terms of your epistemological position, and in practical terms), because it is through them that you will be connecting what it is that you wish to research with how you are going to go about researching it. They are the vehicles which you will rely upon to move you from your broad research interest to your specific research focus and project, and therefore their importance cannot be overstated. **Research questions, then, are those questions to which you as a researcher really want to know the answers, and in that sense they are the formal expression of your intellectual puzzle.***

Source: Mason, 2002:19-20 cited in Blaikie, chapter 3



Explanation: 'case' and 'case of'

- 1) Case-driven research: instrumental use of theory and method to explain a situation
- 2) Theory (or method) driven research: instrumental use of a case to develop theory (or method)

See: Burawoy, M. 1998. The Extended Case Method. *Sociological Theory*

