Causal mapping – overview.

Chapter Contents.

What is causal mapping? What are its strengths and weaknesses? How does a causal map differ from a systems diagram? This chapter has some answers.

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Causal mapping for outsiders

Causal mapping is a technique to **visualise what people believe causes what** within a complex system. It creates a "mental map" of the cause-and-effect relationships perceived by an individual or a group.

A causal map consists of multiple links where a link from X to Y means someone believes X influences Y

Causal mapping helps make sense of many causal claims from many sources

Causal mapping helps make sense of the causal claims (about "what causes what") that people make in interviews, conversations, and documents. This data is coded, combined, and displayed in the form of maps. These maps show individuals' and groups' mental models and can support further investigation of causal connections.

Causal mapping starts from what people actually say and what they do not say

Causal mapping aims to directly understand and collate the causal claims which people make in narrative (and other) data rather than trying deduce causal connections using statistics or other methods. It starts with what people actually say in real-world contexts and does not rely on heavily pre-structured question formats. Urgent, unexpected, and unwelcome information is treated at face value.

Causal mapping has been used for over 50 years in many disciplines

> Causal mapping – diagramming beliefs about what causes what – has been used since the 1970s across a range of disciplines from management science to ecology.

Do use causal mapping when you have large numbers of claims from multiple sources, and more open research questions

Do not use causal mapping if you have limited data or want precise models or specific causal links

Causal mapping approaches differ in application, construction, analysis and how they deal with multiple sources

Causal mappers believe that humans are good at thinking in terms of causal nuggets

Causal mappers believe that humans are the best detectors of causation

> See also [[0.130 Causal mapping has been used for over 50 years in many disciplines]]

Causal mapping is part of the qualitative branch of the new causal revolution

> See also [[0.130 Causal mapping has been used for over 50 years in many disciplines]]

Causal mapping differs from related approaches - epistemic, less predictive, unsophisticated, many links, many sources, unclear boundaries

Causal mapping has three tasks – gathering, coding and analysing data

> Different approaches to these three tasks are discussed in turn in the following sections.

Task 1 – Gathering narrative data

> How to collect causal claims from which to draw causal maps?

Task 2 – Coding causal claims as causal qualitative data analysis

Some approaches such as that suggested by Markiczy and Goldberg (1995) directly elicit causal links from their sources, perhaps by asking respondents to suggest causal links between a predetermined list of causal factors, and thus, after finishing Task 1, are already in a position to create causal maps.

Task 3 – Analysing data, Answering questions

The extensive causal mapping literature provides many examples of its use to answer evaluation questions (see Powell, Copestake, et al., 2023, p. 110), for example:

Strong evidence for a link is not evidence of a strong link

Never confuse the two.

Causal mapping is easier if we are realist about causation

Causal mapping is easier if we are realist about causation. We can say that narrative accounts are full of claims about causal powers, that X had the power to affect Y, and X did exercise that power and Y was affected (perhaps in this particular case in spite of or with the assistance of other things).

Causal mapping is good at coping with messiness and complexity

… recognising head-on the ambiguity of much narrative causal data, particularly when confronted with large bodies of data collected in disparate ways. Evaluators must contend with messiness: imprecise system boundaries, differing specification of claimed causal influences and lack of clear or consistent information about what case or group of cases claims refer to. Causal mapping can contend with all this ambiguity rather than shying away from it. It can make use of messy operational data, treating urgent, unexpected and unstructured information at face value. This is made possible by distinguishing clearly between two analytical steps in evaluation: The first is to gather, understand and assemble causal evidence from different sources (those in a position to have useful evidence about relevant causal links and chains) to construct, compare and contrast the evidence for and against different possible causal pathways. By focusing on this task, causal mapping lays a more reliable foundation for the second, often critical, task of using the assembled data to make judgements about what is in fact really happening. This avoids the confusion and ambiguity that often arises when evaluators seek to address both steps simultaneously by constraining what data are collected to fit a prior view of reality which other stakeholders may or may not share.

Granularity, generalisability and chunking are coding problems for causal mapping too