🌻 Task 3 – Analysing data, Answering questions

> From (Powell et al., 2024)

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:

- Getting an overview of respondents' "causal landscape". This can be useful for orientation or for particular tasks like triaging masses of information to identify key outcomes and possible causal pathways when planning an Outcome Harvesting (Wilson-Grau & Britt, 2012) or Process Tracing (Befani & Stedman-Bryce, 2017) project.
- Weighing up evidence about contribution: in particular, tracing back and comparing the possibly multiple contributory causes of an important outcome or consequence (Goertz & Mahoney, 2006), or examining effects of causes.
- Reporting key metrics of the causal network, for example, to reveal which factors are most central in the whole network or to identify feedback loops.
- Asking whether the empirical ToC matches the plan (Powell, Larquemin, et al., 2023, p. 7).
- Making comparisons between groups or across timepoints.

One way to simplify is to derive from the global map several smaller maps that focus on different features of the data. For example, maps may selectively forward-chain the multiple consequences of a single cause – including those activities being evaluated: effects of causes (Goertz and Mahoney, 2006) – or trace back to the multiple contributory causes of an anticipated or highly valued outcome or consequence: causes of effects. A series of simpler causal maps, each selected transparently to address a specific question, generally adds more value to an evaluation than a complicated, if comprehensive, single map that is hard to interpret. The downside of this is that selectivity in what is mapped and is not mapped from a single database opens up the possibility of deliberate bias in selection, including omitting to show negative stories.

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Sets of individual links with the same influence and consequence factor (co-terminal links) are usually represented bundled together as a single line, often with thickness of the line indicating the

number of citations, and/or with a label showing the number of links in the bundle. The map has not fundamentally changed, but the visualisation is much simpler.

Relevant page: Simplification - factor and link frequency ▸

Another way to simplify a global causal map is to produce an overview map showing only the most frequently mentioned factors and/or links. Care should be taken if this leads to omitting potentially important but infrequently mentioned evidence about, for example, an unintended consequence of an intervention.

Relevant page: Simplification - hierarchical zooming ▸

Another common way to simplify is to combine sets of very similar factors into one. For example, if hierarchical coding has been used, it is possible (with caveats) to 'roll up' lower-level factors (such as health behaviour; hand washing and health behaviour; boiling water) into their higher-level parents (health behaviour), rerouting links to and from the lower-level factors to the parent (Bana e Costa et al., 1999).

Relevant page: Reporting global and local network statistics ▸

Large causal maps can also be analysed quantitatively, including by tabulating which factors are mentioned most often, identifying which are most centrally connected or calculating indicators of overall map density, such as the ratio of links to factors (Klintwall et al., 2023; Nadkarni and Narayanan, 2005). We are wary of the value of summarising maps in this way, not least because results are highly sensitive to the granularity of coding. For example, although a specific factor such as 'improved health' might have been mentioned most often, if two subsidiary factors had been used instead (such as 'improved child health' and 'improved adult health'), these two separate factors would not have scored so highly.

References

Befani, & Stedman-Bryce (2017). *Process Tracing and Bayesian Updating for Impact Evaluation*. http://dx.doi.org/10.1177/1356389016654584.

Goertz, & Mahoney (2006). *A Tale of Two Cultures: Qualitative and Quantitative Research in the Social Sciences*. Princeton University Press. 12345.

Powell, Copestake, & Remnant (2024). *Causal Mapping for Evaluators*. https://doi.org/10.1177/13563890231196601.

Wilson-Grau, & Britt (2012). *Outcome Harvesting*.

