

Learning about How Things Work - Evaluation Using Process Tracing

Talk for EvalVoices

Session 2 on Process Tracing

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1. What is process tracing?

In-depth case study method used to:

1. empirically trace process that **produced** contribution (**how things worked**)
2. study how **context** shapes how things work (**enabling/supporting factors**)
3. understand why intervention did *NOT* work (**deviant** cases)
4. theorization can be used for policy design and strategic planning of interventions

1. What is process tracing?

Figure 1.1. A classification of causal mechanisms.

		Methodological approach	
		Case-based	Variance-based
T Y P E	behavioral mechanisms	Realist Evaluation	Experiments, Causal Mediation Analysis
	process mechanism	Process tracing, Contribution analysis, related Theory of Change approaches	Experiments, Causal Mediation Analysis

Source: Author's conceptualization. Note: In this Special Issue, the behavioral mechanism approach of realist evaluation is part of Chapter 5, 6, 7, and 8. Chapters 2, 3, and 4 analyze process using process tracing and participatory case study approaches. Variance-based approaches such as experiments and causal mediation analysis of behavioral mechanisms are part of Chapters 9 and 10.

1. What is process tracing?

- › Theory-based evaluation methods - how process is theorized differs
 - › realist evaluation : theory of change (ToC) with CMO configurations
 - › contribution analysis : theory of change (ToC) with linkages treated as ‘assumptions’
 - › ToC does **not unpack theoretically the *interactions*** between implementing actors and other actors (beneficiaries, other stakeholders)
 - › PT translates linkages into **activities** and **interactions**, evidences linkages empirically

1. What is process tracing?

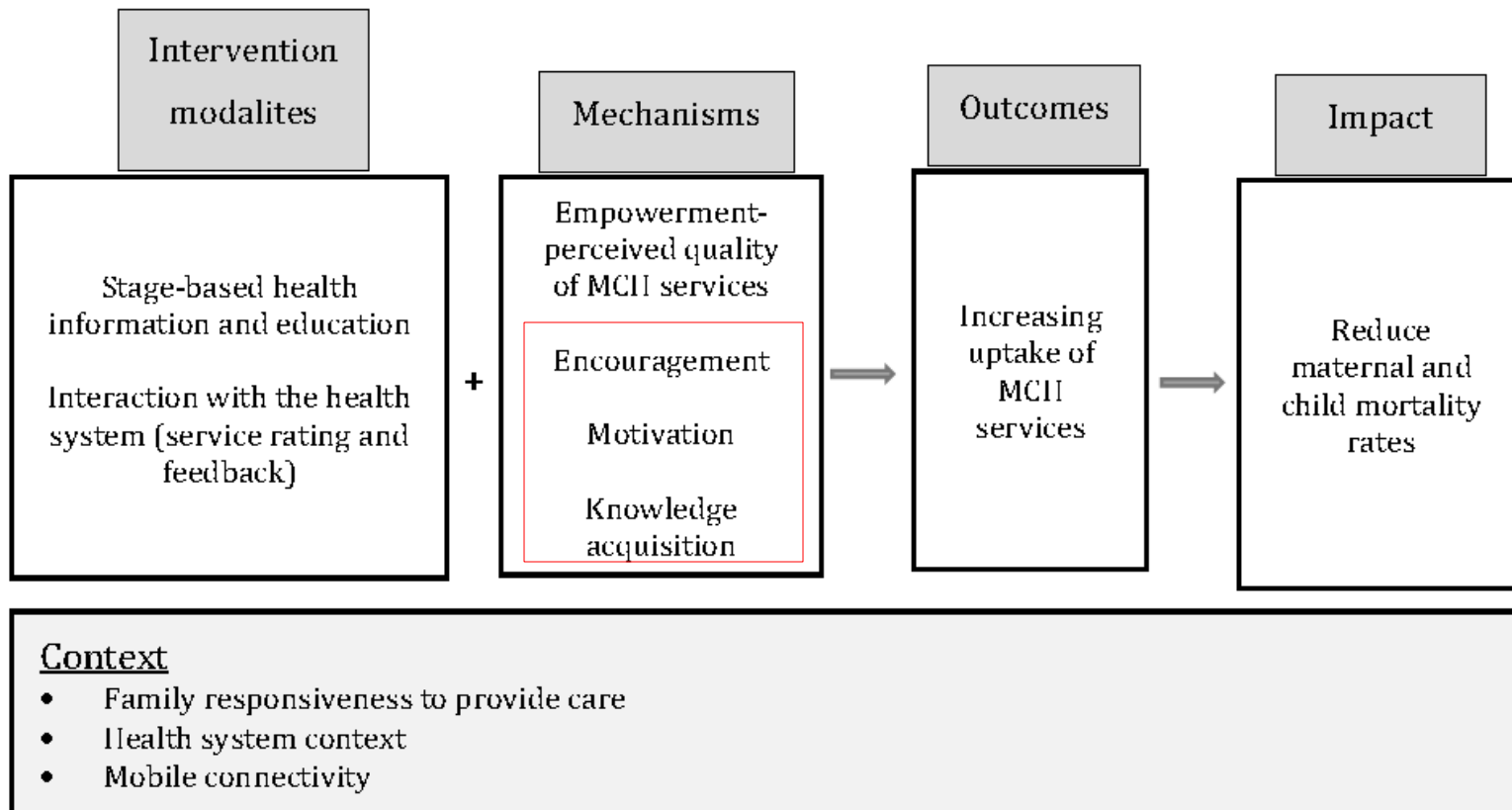


Figure 2.1. A realist evaluation model for MomConnect program.

Source: Adapted from Kabongo et al (2020).

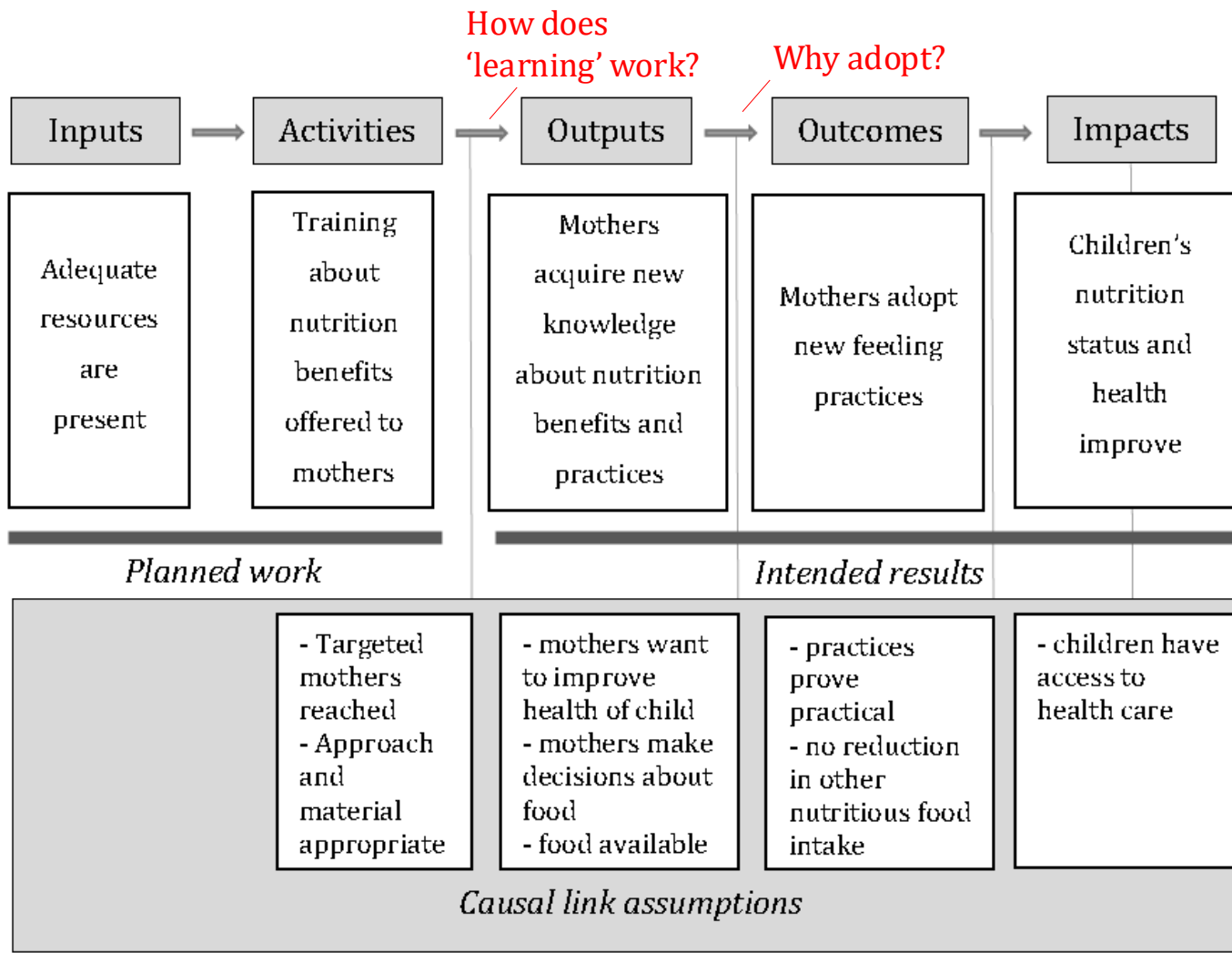


Figure 2.2. A nutrition intervention theory of change (ToC).

Source: Adapted from Mayne (2015).

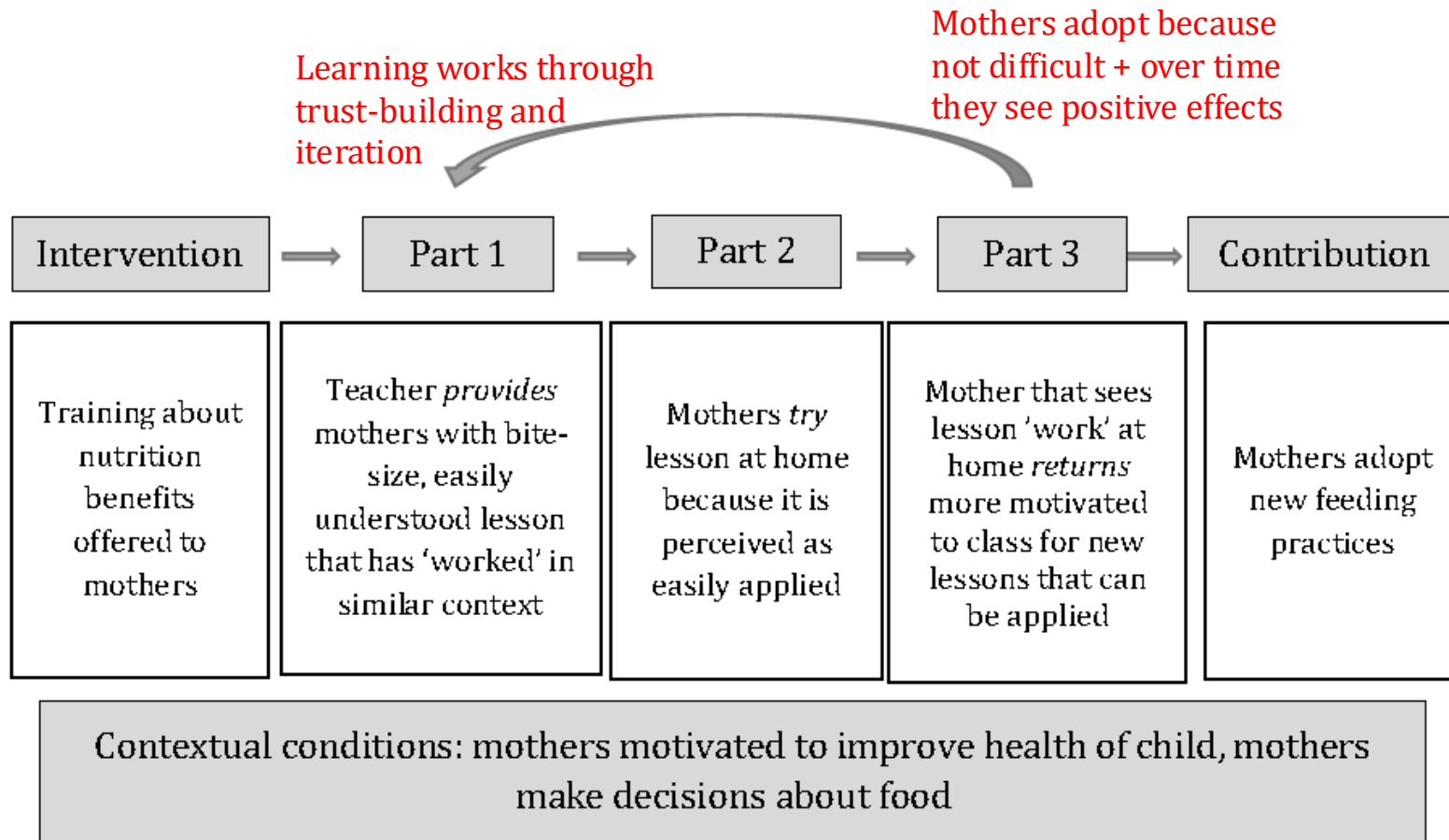


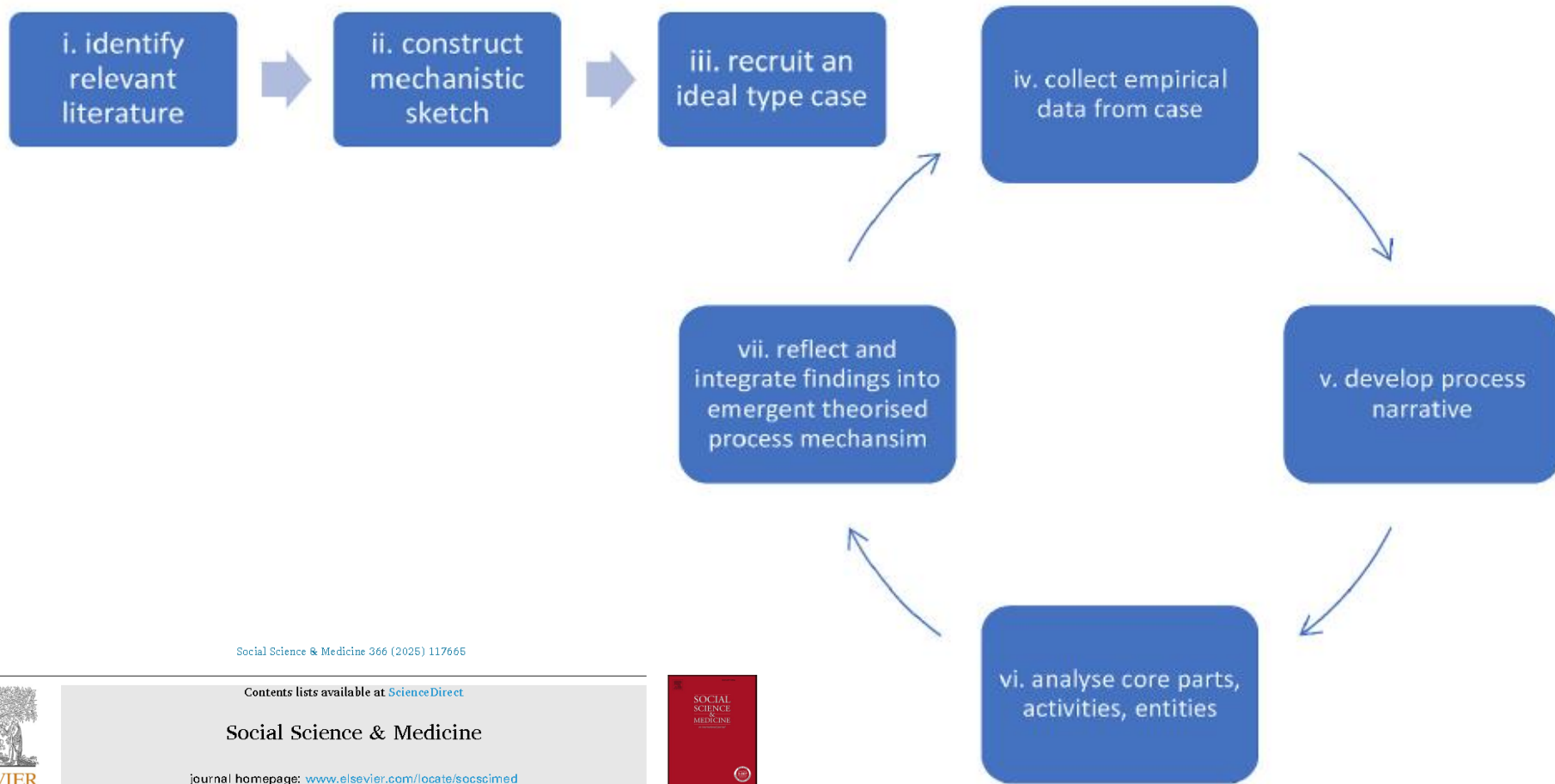
Figure 2.4. – A pToC linking nutrition training and mothers adopting new feeding practices. Based on Mayne (2015).

1. What is process tracing?

Process tracing : three elements

1. What we are tracing (**process theory-of-change** (pTOC))
2. Empirical analysis using **process evidence** of activities and linkages
3. Processual comparisons to assess **context** and avoid **overgeneralizations**

1. What is process tracing?



2. Process theories of change (pToC)

Theorizing process theory-of-change (pTOC):

1. **Theorize challenge/barrier** between intervention and contribution (that is overcome)
 - › f.ex. childhood vaccination program has to overcome parental skepticism
 2. **Theorize causal dynamics** = simplified account of how intervention overcomes barrier
 - › f.ex. enlisting cooperation from trusted local leader(s)
- › Focus on **actions/activities** = producers of change (what transmits '**causal forces**')
› Make explicit **why** activities lead another actor to respond with activity

3. Evidencing a pToC

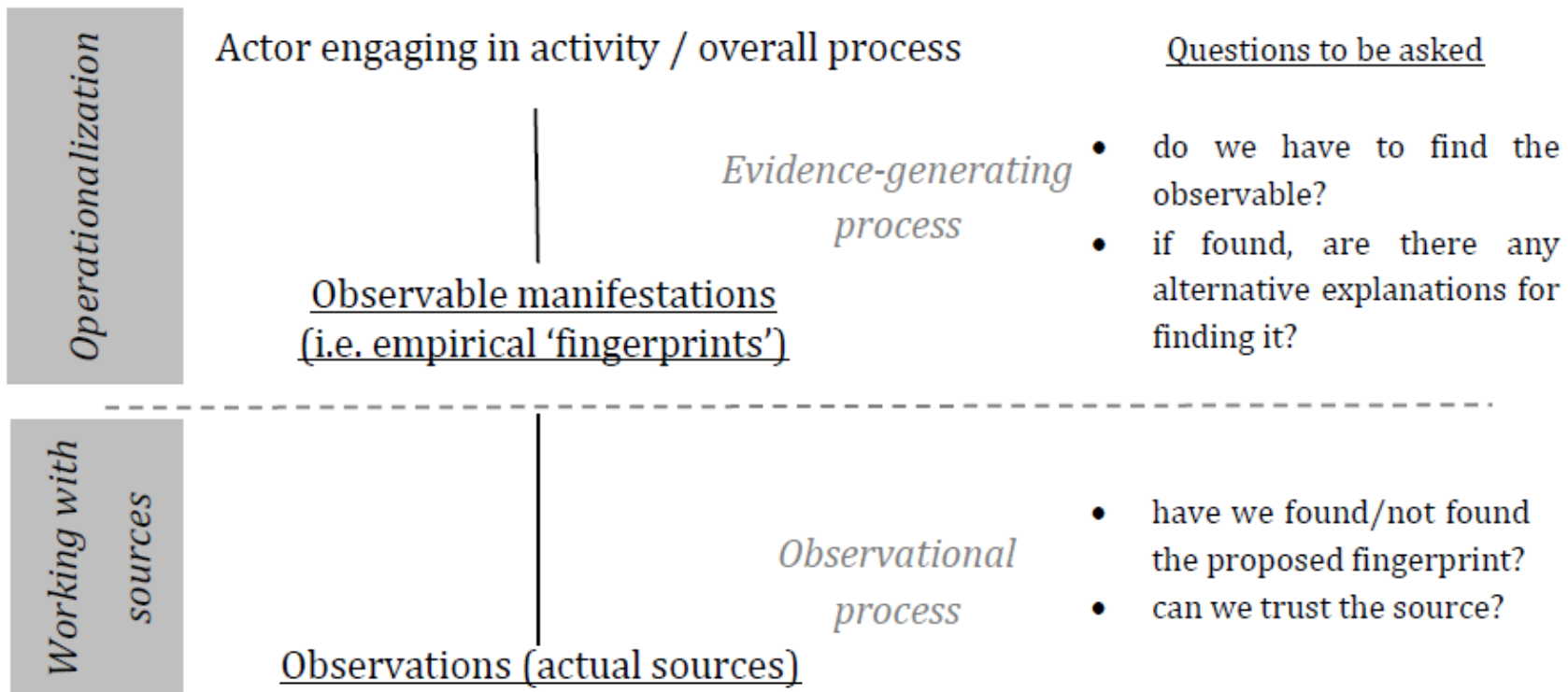


Figure 3 - Moving from process theory to actual empirical sources.

3. Evidencing a pToC

Operationalizing a process theory

- Expected observables of activities
- Often do **not** find expected evidence -> **revise** process theory...
- **Evidential 'bricolage'** – often **clusters** of evidence for each episode

3. Evidencing a pToC

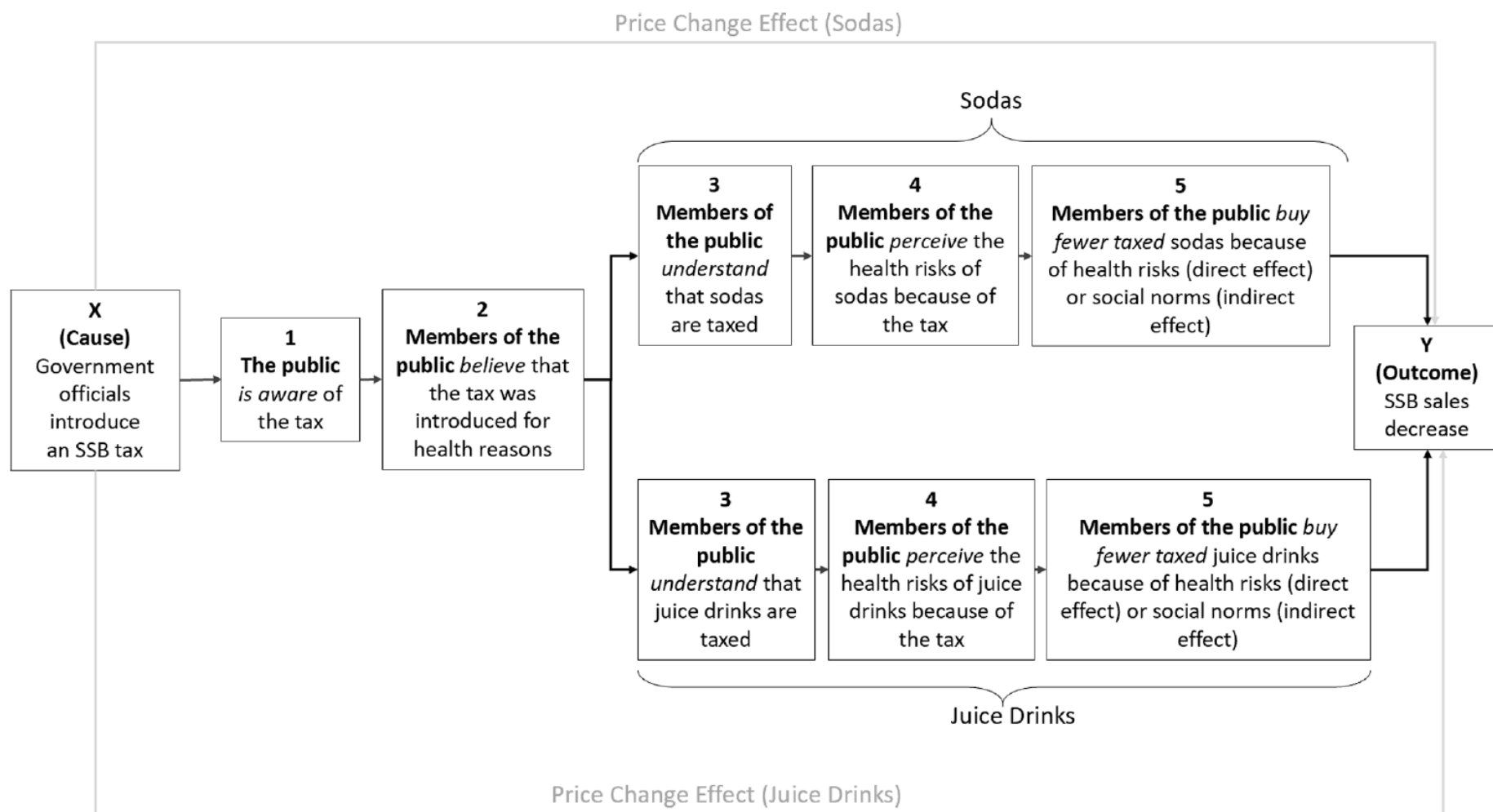
How much we learn based on finding evidence?

- **probative value** = power of specific items of evidence to increase or decrease our confidence in a specific claim (Befani and Stedman-Bryce, 2017)
- 'expect to see' (need to find) = theoretically **certain** (aka sensitivity) (**disconfirmatory**)
- 'love to find' = theoretically **unique** (aka specificity) ~ 'signature' (**confirmatory**)
- Avoid **confirmation bias** by assessing alternative explanations of evidence

4. An example

Evidence of a health risk ‘signalling effect’ following the introduction of a sugar-sweetened beverage tax

Miriam Alvarado^{a,*}, Tarra L. Penney^{a,b}, Nigel Unwin^{c,d,e}, Madhuvanti M. Murphy^e,
Jean Adams^a



4. An example

Evidence of a health risk ‘signalling effect’ following the introduction of a sugar-sweetened beverage tax

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Table 1
Predicted empirical evidence and test types.

Hypotheses (<i>h</i>)	Prior p(<i>h</i>)	Part	Means of Verification	Predicted Empirical Evidence (<i>e</i>)	Test Type
(1) The public is <i>aware</i> of the SSB tax	Likely, given evidence of SSB tax awareness in other settings, e.g. 65% awareness in Mexico, (Álvarez-Sánchez et al., 2018) 68% in Berkeley, US (Falbe et al., 2016).	1a	Interviews with members of the public	Participants report being aware of the tax, and can describe details (e.g. when/how they heard about the tax, how it was introduced, etc.)	Hoop Finding <i>e</i> does not necessarily confirm <i>h</i> given potential bias of participants to report awareness Not finding <i>e</i> disconfirms <i>h</i>
		1b	Archived media data	Major news sources cover the tax, providing a plausible mechanism for the public to have learned about the policy	Hoop Finding <i>e</i> does not necessarily confirm <i>h</i> given potential bias of participants to report awareness/news consumption Not finding <i>e</i> disconfirms <i>h</i> given the news is likely to be the main channel through which people learn about government actions
(2) Members of the public <i>believe</i> that the tax was introduced for health reasons	Agnostic	2a	Interviews with members of the public	Participants report that the tax was introduced because of the health risks of SSBs	Doubly Decisive Finding <i>e</i> confirms <i>h</i> , Not finding <i>e</i> disconfirms <i>h</i>
(3) Members of the public <i>understand</i> which products are taxed	Agnostic	3a	Interviews with members of the public	Participants report that the tax is applied on sodas and/or juice drinks	Doubly Decisive Finding <i>e</i> confirms <i>h</i> , Not finding <i>e</i> disconfirms <i>h</i>
(4) Members of the public <i>increase</i> their perception of the health risks of SSBs because of the tax	Likely, given evidence of increased newspaper coverage of SSBs as unhealthy in Barbados (Singh-Lalli, 2015).	4a	Interviews with members of the public	Participants mention health risks of sodas and/or juice drinks	Hoop Finding <i>e</i> does not necessarily confirm <i>h</i> given that participants may be aware of health risks of sodas and/or juices for reasons unrelated to the tax Not finding <i>e</i> disconfirms <i>h</i>

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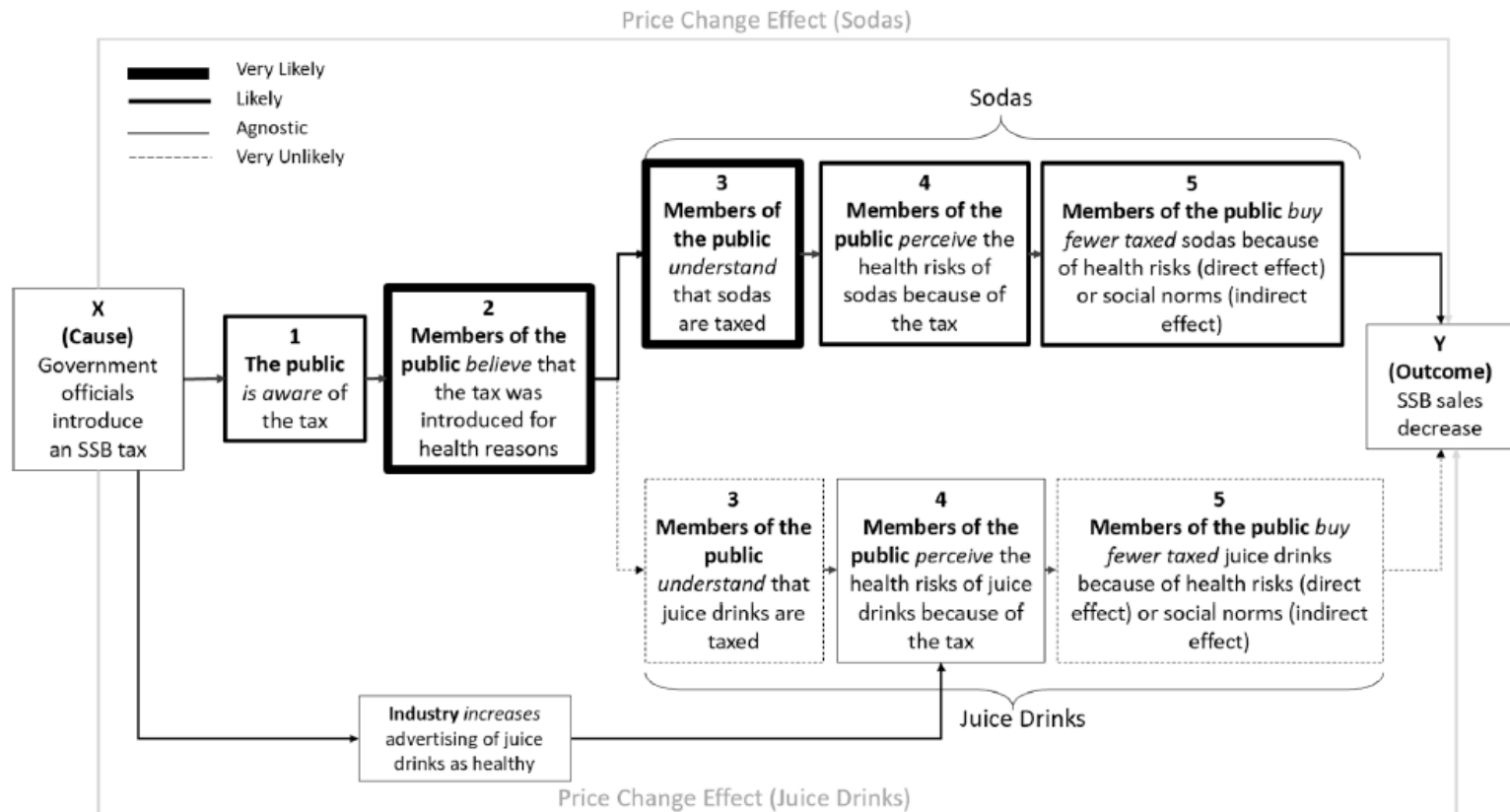


Fig. 6. Updated risk signalling theory based on process tracing. Note that our reported levels of confidence do not correspond to the strength of the effect, but rather to the level of confidence we have in each component of the theory after considering the evidence presented above.

5. Conclusions

Process tracing can be used when:

- › Want to learn more about *how* intervention produced a contribution (often *success*)
- › Ideally comparative processual analysis to *avoid overlearning* from one case
- › PT can (relatively) easily be *embedded* in broader *program evaluation* (see IEG study)
- › Or to understand how/why causal effects found using RCT (*sequential usage*)

References – further reading

- › Beach, Derek, and Estelle Raimondo. 2025. *Process-Tracing Methods in Program Evaluation*. IEG Methods and Evaluation Capacity Development Working Paper Series. Independent Evaluation Group. World Bank. ([link](#))
- › Camacho, Gabriela and Derek Beach (2023) ‘Theorizing how interventions work in evaluation: Process-tracing methods and theorizing process theories of change’. *Evaluation*, 29(4): 390-409. ([link](#))
- › Camacho Garland, Gabriela, Derek Beach, and Johannes Schmitt (2025) ‘Working with interviews in Process Tracing evaluation methods.’ *Evaluation*, 0(0). ([link](#))