

Can we use quality improvement methods to attribute causality: lessons from epidemiology

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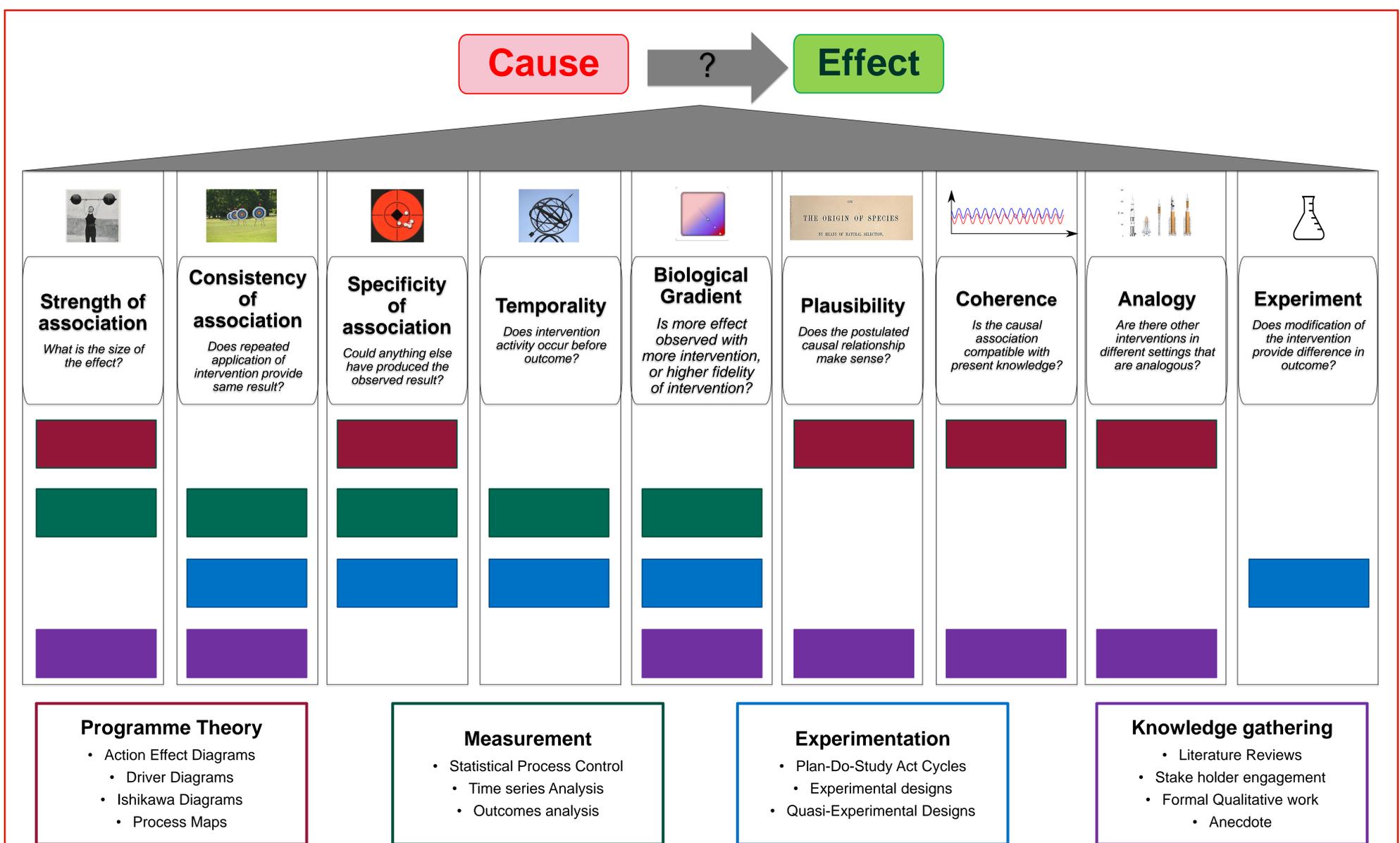
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Background

- One of the challenges to the uptake of quality improvement (QI) initiatives is the credibility of the evidence for the changes
- This credibility depends on the degree of confidence that changes in the measured outcomes are attributable to the initiative's specific interventions
- Establishing a high degree of assurance that there is a causal link between interventions and outcomes is an essential first step in determining whether an innovative improvement concept is ready for spread and scale up
- Establishing causation when QI interventions are complex and must be applied in complex systems such as health care settings is challenging
- We present a framework for causation [1] that, when coupled with the QI methods used to drive change, may overcome this challenge of attribution of causality in QI



Discussion

- Causality is a problematic area in complex systems, and especially when complex interventions are undertaken
- QI operates in such a field, and thus faces difficulties in establishing cause and attributing changes observed to interventions made. This in turn makes decision making about which QI initiative to adopt hard
- The Bradford Hill Criteria with their roots in aetiology of disease have a natural alignment to healthcare
- Which criteria matter the most?
- QI methods used to promote change can be utilised to attribute cause
- We ask researchers in QI: *were Bradford Hill to read papers applying QI methods, and hold them to the light of his criteria, would he determine causation?*
- Researchers can ask themselves this question and detail how the criteria are met, thereby providing more confidence in findings, and help to identify the necessary components of their interventions

References
1. Bradford Hill A. 1965. The Environment and Disease: Association or Causation? Proceedings of the Royal Society of Medicine 295-300
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