



Conceptual Overview: Natural and Systematic Variation in Treatment

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What Works ...?

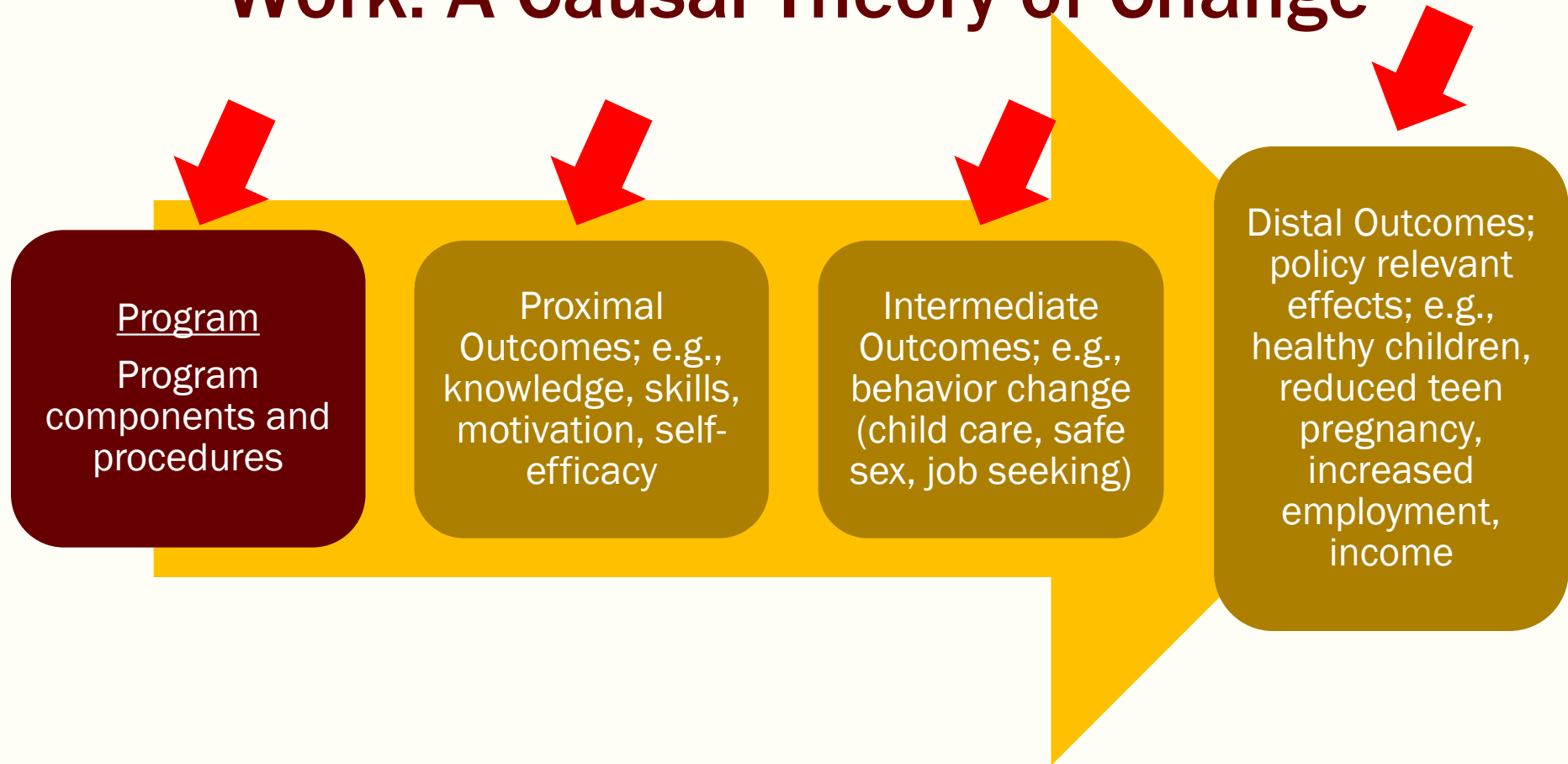
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The Framework for Considering What's in the Program Black Box and What Makes it Work: A Causal Theory of Change



Two Distinct Parts to the Theory of Change

Instigating Intervention

Program
Program
components and
procedures

Change Pathway

Proximal
Outcomes; e.g.,
knowledge, skills,
motivation, self-
efficacy

Intermediate
Outcomes; e.g.,
behavior change
(child care, safe
sex, job seeking)

Distal Outcomes;
policy relevant
effects; e.g.,
healthy children,
reduced teen
pregnancy,
increased
employment,
income

Within the Theory of Change, an Action Theory and a Conceptual Theory can be Distinguished

Action Theory

Conceptual Theory

Program
Program components and procedures

Proximal Outcomes; e.g., knowledge, skills, motivation, self-efficacy

Intermediate Outcomes; e.g., behavior change (child care, safe sex, job seeking)

Distal Outcomes; policy relevant effects; e.g., healthy children, reduced teen pregnancy, increased employment, income



Inside the Black Box: Constructs for Program Description

- Core components: Essential principles or functions, and associated elements and activities, judged necessary to produce the desired outcomes (Blase & Fixen, 2013)
 - E.g., Principles: “providing the youth with a consistent reinforcing environment where he or she is mentored and encouraged” (Multidimensional Treatment Foster Care).
 - E.g., Functions: teaching problem-solving skills, reinforcing appropriate behavior
- Program components (Kaminski et al., 2008):
 - Content; e.g., positive interactions with child, emotional communication
 - Delivery; e.g., instruction, rehearsal/role playing



Inside the Black Box: More Constructs for Program Description

- Modules: Freestanding procedures that address specific clinical issues and are sequenced into the full treatment regimen; e.g., for self-calming, modifying negative cognitions, increasing compliance with parents' instructions (Weisz et al., 2012).
- Kernels: Fundamental indivisible behavior influence-procedures shown to affect one or more specific behaviors; e.g., time out, written praise notes, nasal breathing/"doing turtle" (Embrey & Biglan, 2008)
- Practice elements: Discrete treatment techniques or strategies used as part of a larger intervention plan; e.g., goal-setting, modeling, therapist praise/rewards (Chorpita & Daleiden, 2009).

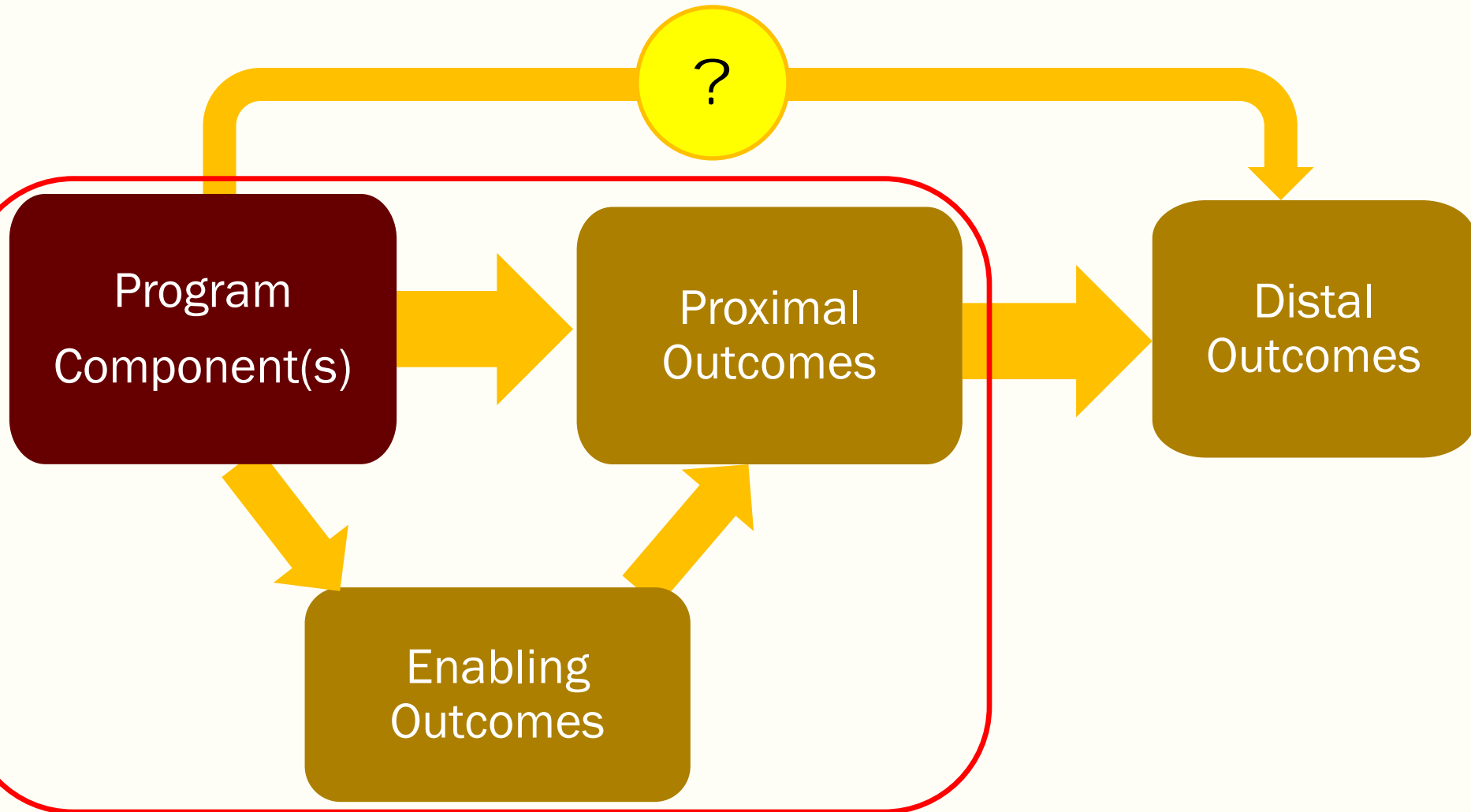


No Consensus on How to Describe the Contents of the Program Package

Some criteria for any useful descriptive constructs:

- **Generality:** Should be applicable across the variants of a generic program type
- **Discriminability:** Should differentiate program variants
- **Meaningfulness:** Should be practical, recognizable, and operationalizable in routine practice
- **Combinatorial:** Should allow both mix & match and ensemble/integrative combinations
- **Influential: Variation should matter to some outcome**
 - That outcome might be essential or enabling/supportive

Empirical validation: Does variation matter?





Methods for investigating component-outcome relationships: Natural variation in fidelity

Analysis of the relationship between fidelity measures that represent intended program components and procedures and outcomes within a study.

- E.g., differential gain across treatment sites, treatment subgroups, or treated individuals in relation to exposure to implementation of different components
- Usually lacks counterfactual comparison and associated effect estimates
- Correlational and limited to natural variation

Methods for investigating component-outcome relationships: Natural variation across sites/studies

Investigating the relationship between the presence or absence of certain program components and the effects of the program on the outcome variable(s)

- Meta-analysis across studies with natural variation in the mix of components (Jennifer Kaminsky; Kimberly Becker)
- Comparison of effects across sites/blocks in multi-site studies with natural or planned variation in the mix of components (Eleanor Harvill)
- Correlational and usually limited to natural variation



Methods for investigating component-outcome relationships: Systematic variation

Systematic variation of components in controlled studies.

- Studies of single freestanding components (e.g., kernels, modules)
- Studies of programs in which one or more components are systematically varied– added or subtracted
 - Prior variation & optimization: MOST (Linda Collins)
 - Adaptive variation within a trial: SMART (Kelly Kidwell)
 - Variation on successive implementations: Rapid Cycle Evaluation (Scott Cody)
- Few studies of this sort; difficult to investigate very many program components and combinations in a single study



A Few Conclusions

- Unpacking the program black box and “what works” questions should be conceptualized within the framework of causal program theory.
- There are many different ways of representing what’s in program packages and no consensus on which are most informative and useful.
- The least definitive, but most accessible forms of research investigate natural rather than systematic variation in program components and are essentially correlational.
- Research about the program features that are instrumental in producing positive effects is limited even in the most well-developed intervention areas