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An evolutionary and developmental systems perspective on "evidence-based programs"

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Overview

1. Theoretical foundations
2. Operationalization of the evolutionary developmental perspective
3. Implications

Overview

1. Theoretical foundations
   a) Evolutionary Epistemology
   b) Ontogeny, Development Theory, and the Program Lifecycle
   c) Phylogeny and Program Portfolios
2. Operationalization of the evolutionary developmental perspective
3. Redefining the EBP mandate

Evolutionary Epistemology

"…evolution – even in its biological aspects – is a knowledge process, and … the natural-selection paradigm for such knowledge increments can be generalized to other epistemic activities, such as learning, thought and science"

(Campbell, 1988, p. 393)

- Ideas and knowledge follow the exact same process as do biological species
- Program variations are tried and survive or not according to socially negotiated selection mechanisms

Ontogeny, Development Theory, and the Program Lifecycle

Similar to organisms, programs are rarely static entities, but rather they develop and grow at varying rates over the course of time

- Non-linear and not anchored in chronological time
- Heterogeneity in the timing and development of program elements
- Bi-directional program←→ environment interaction

Phylogeny and Program Portfolios

The evolutionary developmental perspective allows us to think in terms of portfolios of programs that evolve as do species of organisms (phylogeny)

- Evaluation is a vital part of the selection process
- Developmental diversity is crucial for a species' survival
- It is important to have multiple variants of an organism
- There needs to be a high rate of new program generation (variation) in order to account for the inevitable failure of early lifecycle programs
- Failures are or can be beneficial

Overview

1. Theoretical foundations
2. Operationalization of the evolutionary developmental perspective
   a) Characterizing the Evolution of Programs and Evaluations
   b) Interaction of Lifecycles and Validity
   c) Alignment and Misalignment
3. Implications

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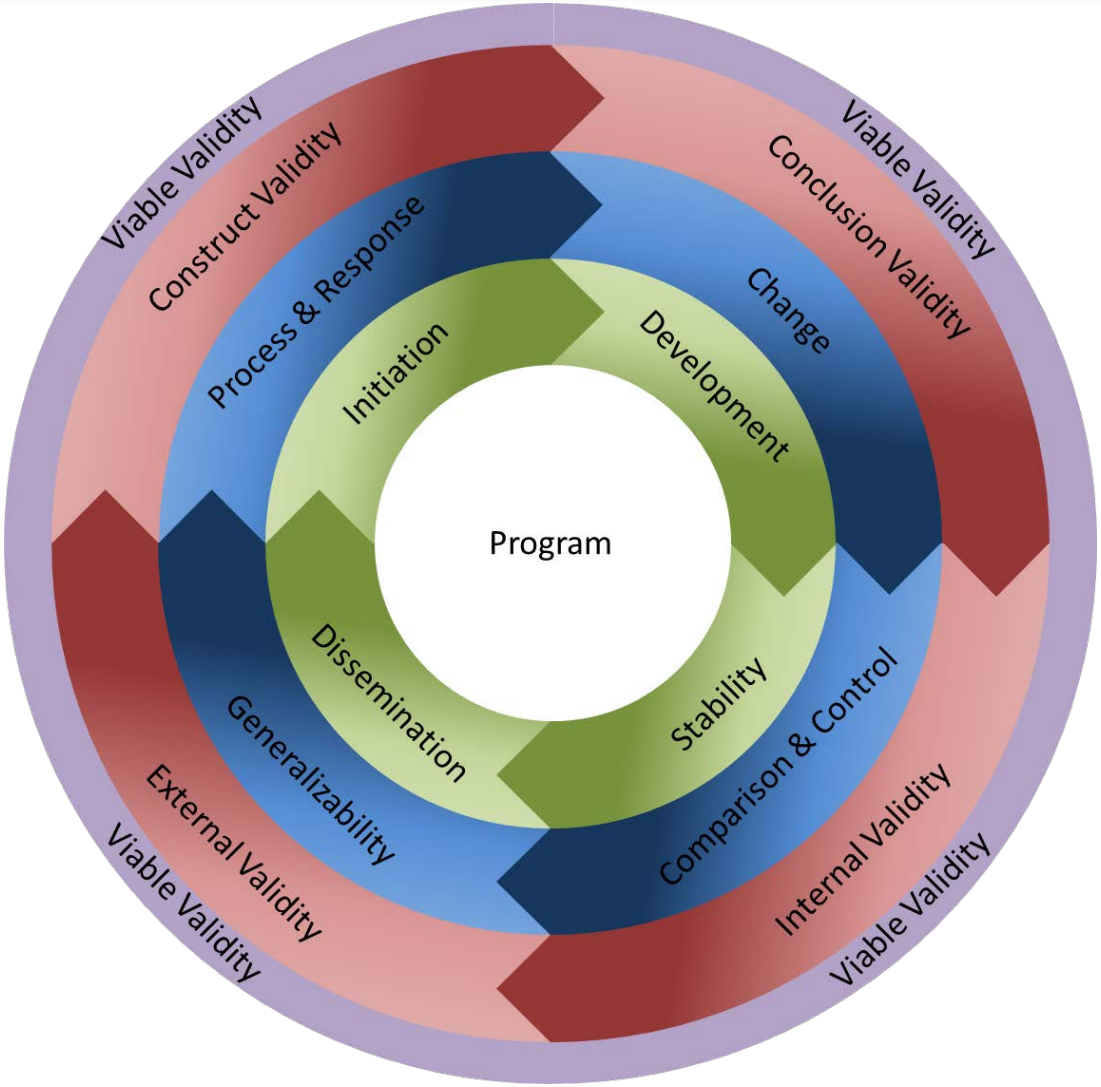
	Program Lifecycle		Evaluation Lifecycle	
Phase I **Initiation**	Program is in *initial implementation(s)*,either as a brand new program or as an adaptation of an existing program.	Phase IA	Examines *implementation, participant and facilitator satisfaction*. Uses process and participant *documentation* and assessment and *post-only evaluation of reactions and satisfaction*.	**Process & Response**
	Program still undergoing *rapid or substantial change* or revision, after initial trials.	Phase IB	Focuses on *implementation*, and increasingly on *presence or absence of selected outcomes*. Evaluation is *post-only*; outcome measures are under development with attention to internal consistency (reliability).	
Phase II **Development**	*Scale and scope of revisions are smaller*; most program elements are still developing while a few may be implemented consistently	Phase IIA	Examines *program's association with change in group outcomes,* for these participants in this context. Uses *unmatched pre- and post-test of outcomes*, quantitative/qualitative assessment of change, assessment of measure reliability and validity.	**Change**
	Most program *elements* are *implemented consistently*; minor changes may still take place as some elements may still be developing	Phase IIB	Examines *program's association with change in group (and/or individual) outcomes,* for these participants in this context. Uses *matched pre- and post-test of outcomes*, quantitative/qualitative assessment of change, verifying measure reliability and validity.	
Phase III **Stability**	*Program is implemented consistently;* participant experience from one implementation to the next is relatively stable (formal lessons or curricula exist)	Phase IIIA	Assesses *effectiveness* using design and statistical controls and comparisons (*control groups, control variables or statistical controls*).	**Comparison & Control**
	Program has *formal written procedures or protocol* and can be implemented consistently by new facilitators	Phase IIIB	Assesses *effectiveness* using *controlled experiments or quasi-experiments (randomized experiment; regression-discontinuity.)*	
Phase IV **Dissemination**	Program is being *implemented in multiple sites*; adaptations to new contexts have been made	Phase IVA	Examines *outcome effectiveness across wider range of contexts*. Multi-site analysis of integrated large data sets over multiple waves of program implementation.	**Generalizability**
	Program is *fully protocolized and is being widely distributed*	Phase IVB	Formal assessment across multiple program implementations that enable general assertions about this program in a wide variety of contexts (e.g., meta-analysis).	

Interaction of Lifecycles and Validity



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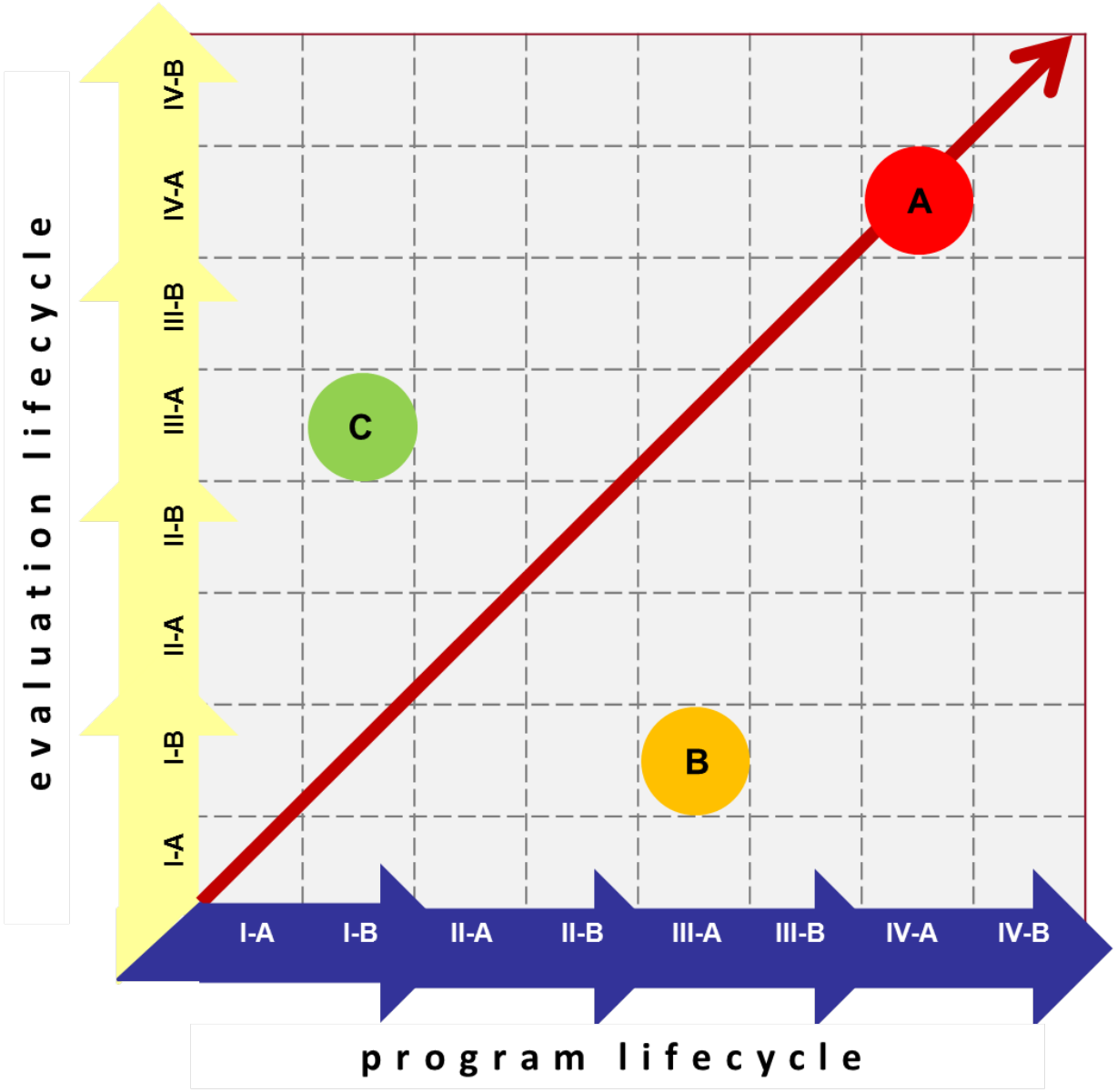

Overview

1. Theoretical foundations
2. Operationalization of the evolutionary developmental perspective
3. Implications
   a) Evolutionary Developmental Perspective and Standards of Rigor
   b) Redefining the EBP mandate
   c) Management of Individual Programs
   d) Management of Portfolios of Programs

Implications of an Evolutionary Developmental Perspective for Standards of Rigor

- Rigor has traditionally been equated with the establishment of internal and external validity
- Approaches to Program Development (Chen 2010)
  - Top-down approach
    - Based in formal academic theory
    - Linked with a basic research evidence-base
  - Bottom-up approach
    - Based on informal theory or knowledge of local context
    - Responsive to local needs

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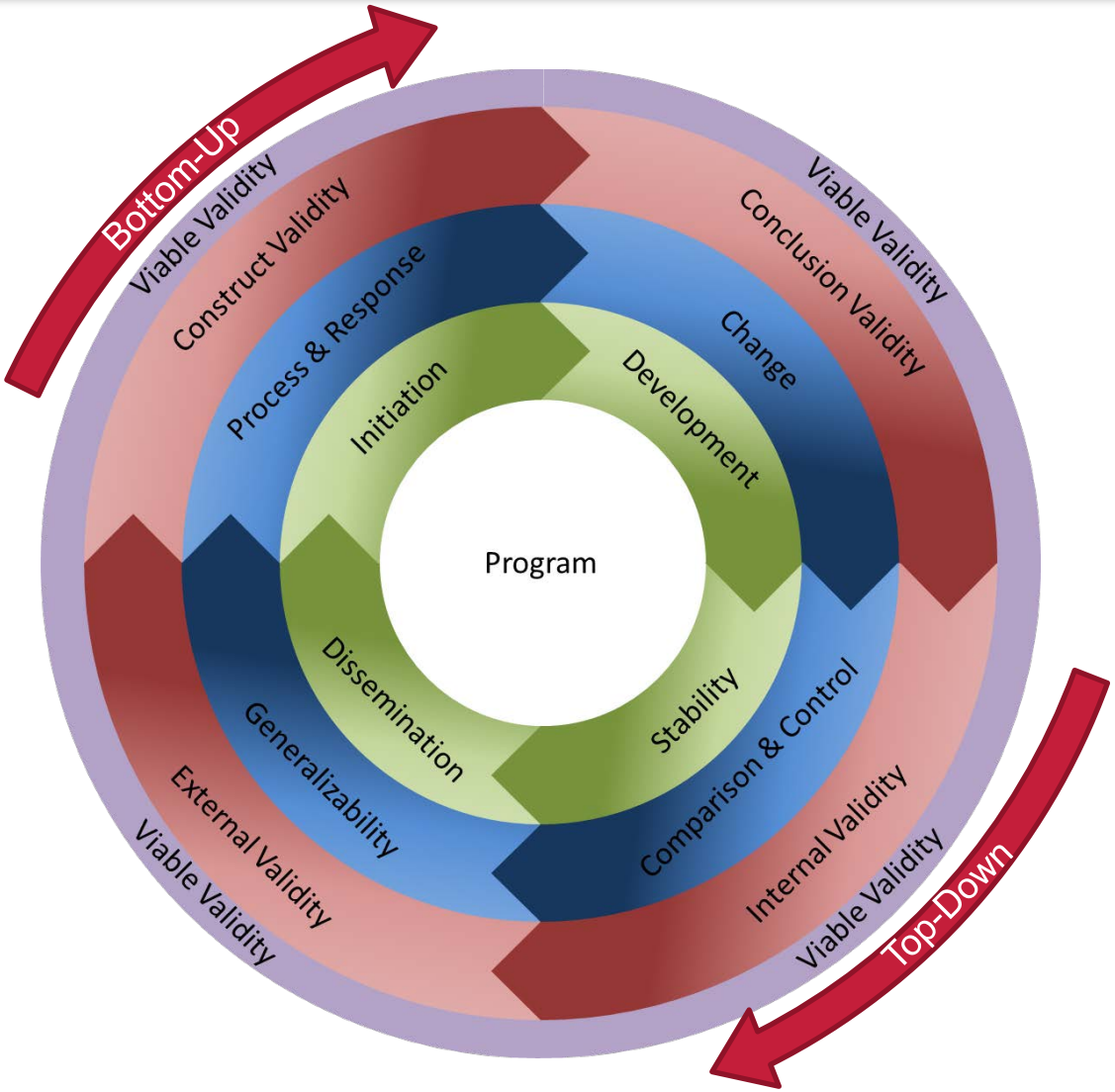
Redefining the EBP Mandate



Implications for Management of Individual Programs

The evolutionary developmental perspective:

- Clarifies the tradeoffs between the need for evidence of effectiveness and the potential risks of premature experimentation
- Identifies strategic and efficiency benefits to be gained from entering the circle at any of several points
- Recognizes the value of partnerships between researchers and practitioners for both researcher-initiated and practitioner-initiated programs

Implications for Management of Portfolios of Programs

The evolutionary developmental perspective:

- Encourages strategic decision making across the portfolio
- Moves programs toward improved alignment
- Augments developmental diversity by promoting researcher-initiated and practitioner-initiated programs

Conclusions

- Evaluation is most effective when appropriately aligned with the program's stage of development
- The evolutionary developmental perspective has significant consequences for how we think about and operationalize the concept of evidence-based programs
- Extreme interpretations of EBP encourage program monocultures and reduce important sources of program variation

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