Center on the Developing Child
HARVARD UNIVERSITY

Leveraging Science to Advance the Frontiers of Innovation in Early Childhood Policy and Practice

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Accelerating Innovation: Telling the Brain Story to Inspire Action
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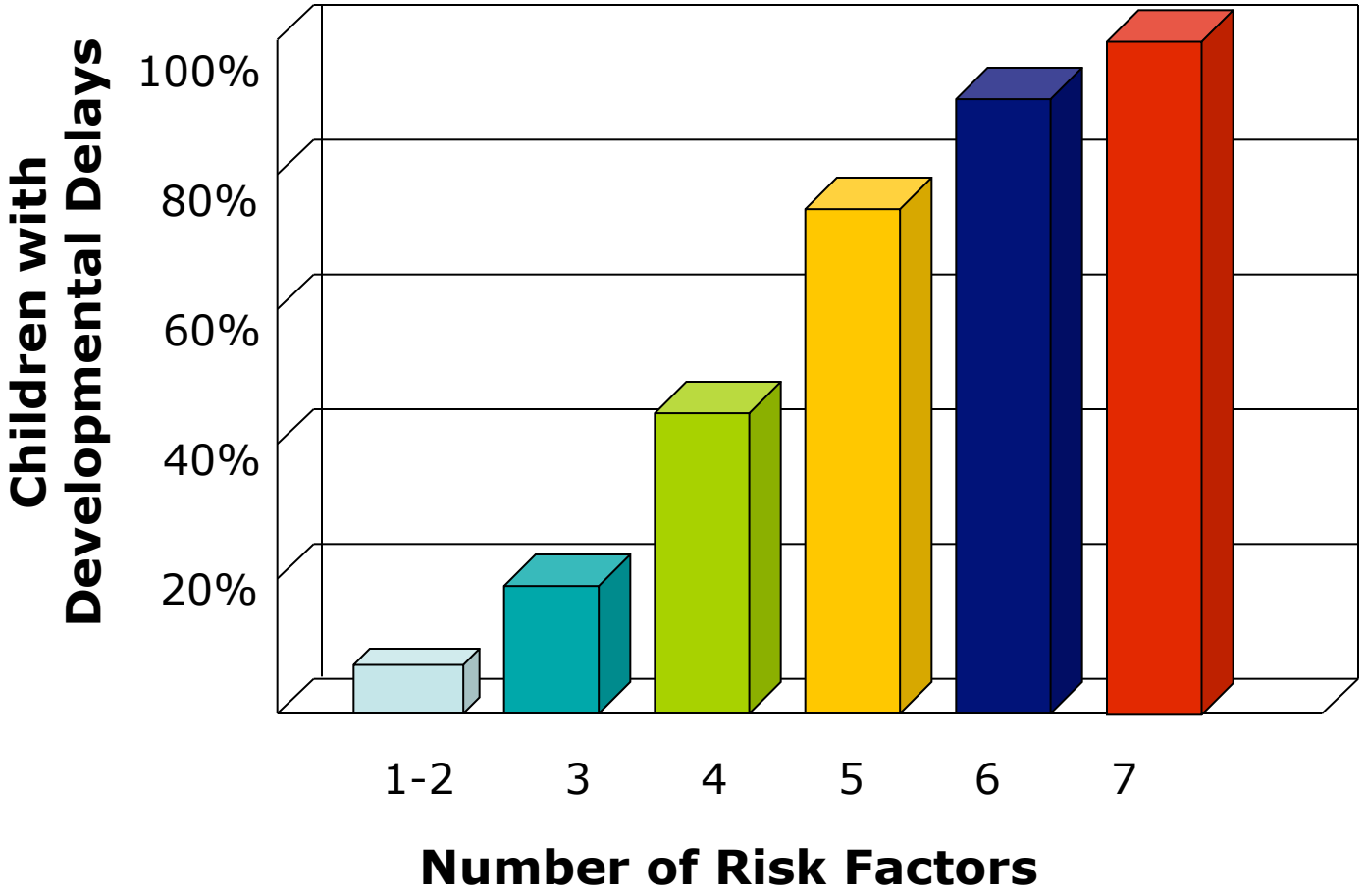
Building a Thriving and Sustainable Society Begins By Protecting the Developing Brain in Early Childhood

Advances in neuroscience, molecular biology, genomics, and the behavioral and social sciences could be mobilized to catalyze more effective policies and practices across multiple sectors to strengthen the foundations of effective learning, lifelong health, economic productivity, responsible citizenship, and successful parenting of the next generation.

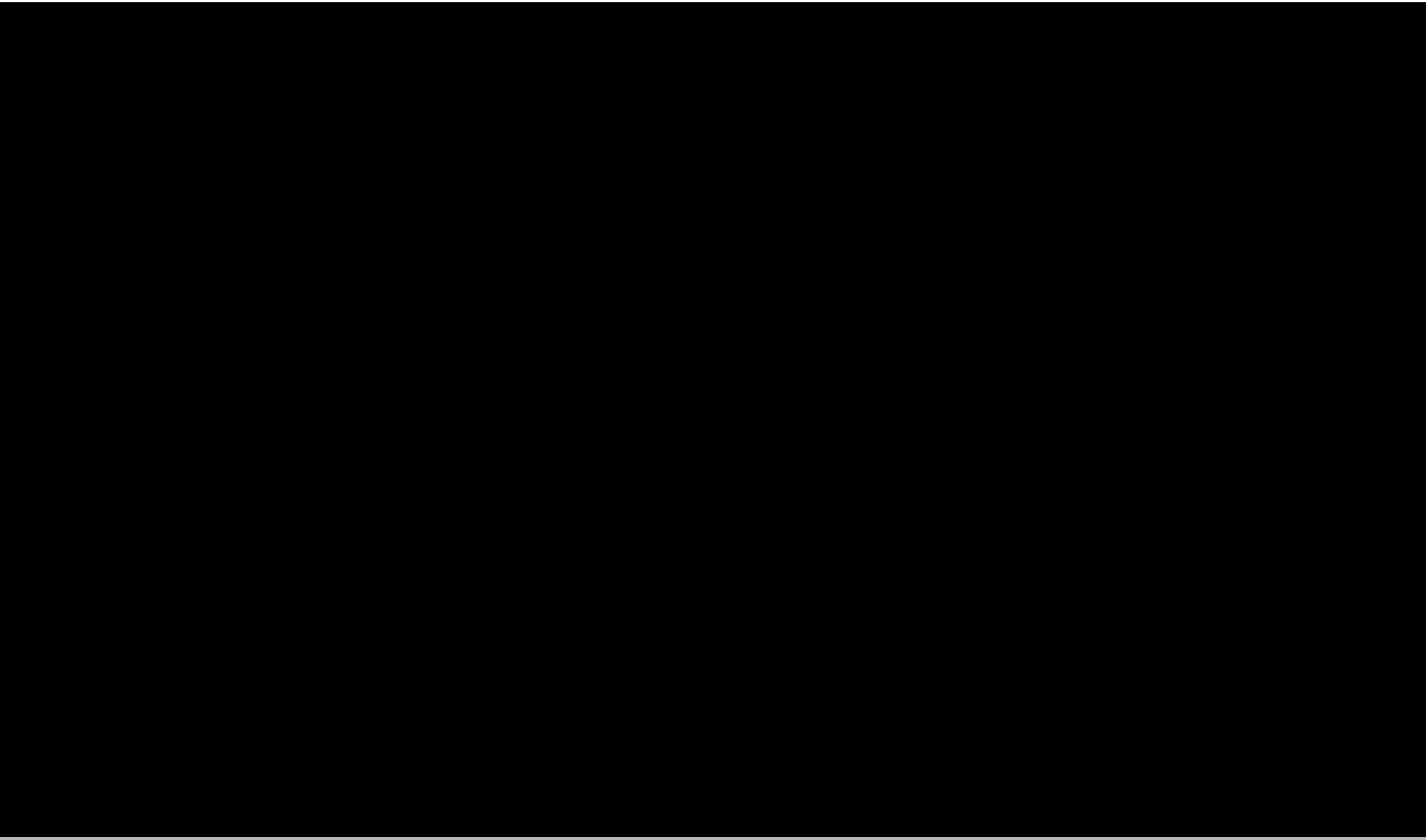
Experiences Build Brain Architecture

The Cumulative Pile Up of Adversity Impairs Development in the First Three Years



Source: Barth, et al. (2008)

Toxic Stress Derails Healthy Development



Early Life Experiences Are Built Into Our Bodies (For Better or For Worse)

Research on the biology of adversity illustrates how increases in heart rate, blood pressure, serum glucose, stress hormones, and inflammatory cytokines, among others fuel the “fight or flight response” to deal with acute threat...

…but excessive or prolonged activation of stress response systems can lead to long-term disruptions in brain architecture, immune status, metabolic systems, cardiovascular function, and gene expression.

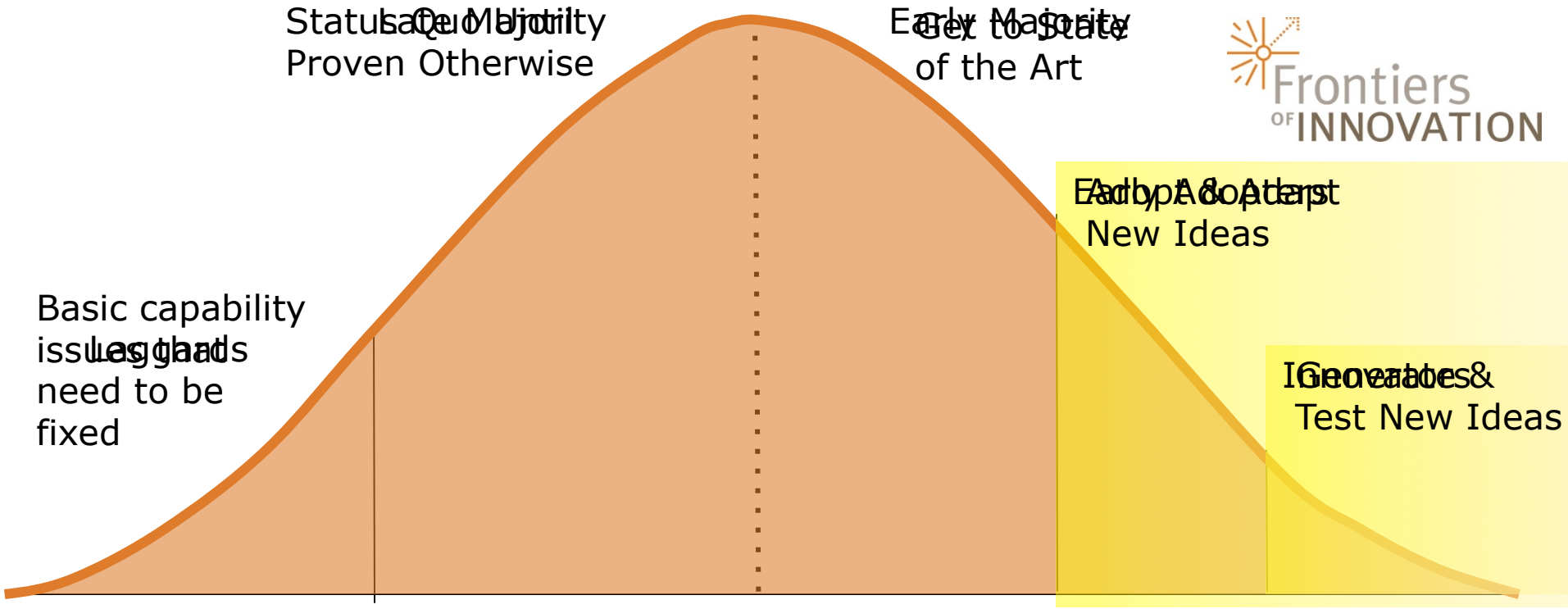
A New Frontier for Innovation at the Interface of Science, Practice, and Policy

Elucidating causal links between significant adversity in childhood and lifelong impairments in learning, behavior, and health.

Designing and testing new intervention strategies to reduce or mitigate the biological disruptions associated with toxic stress in the early years.

Formulating new, population-based approaches to promoting healthy development and preventing disease early in the life course.

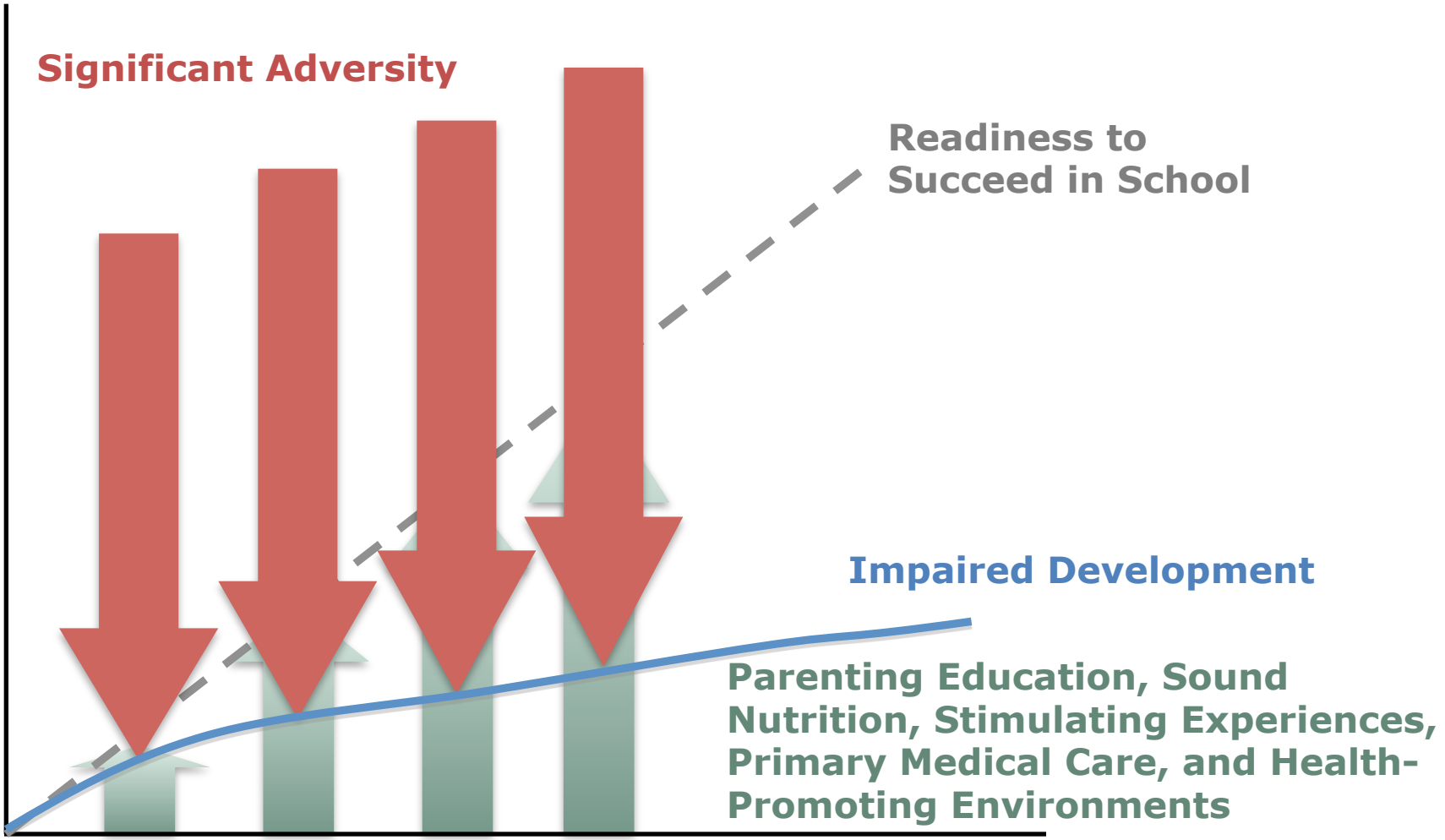
Focusing on Appropriate Sites for Innovation



What does this tell us about what organizations FOI should collaborate with and how?

Adapted from Everett Rogers, *Diffusion of Innovations* (2003)

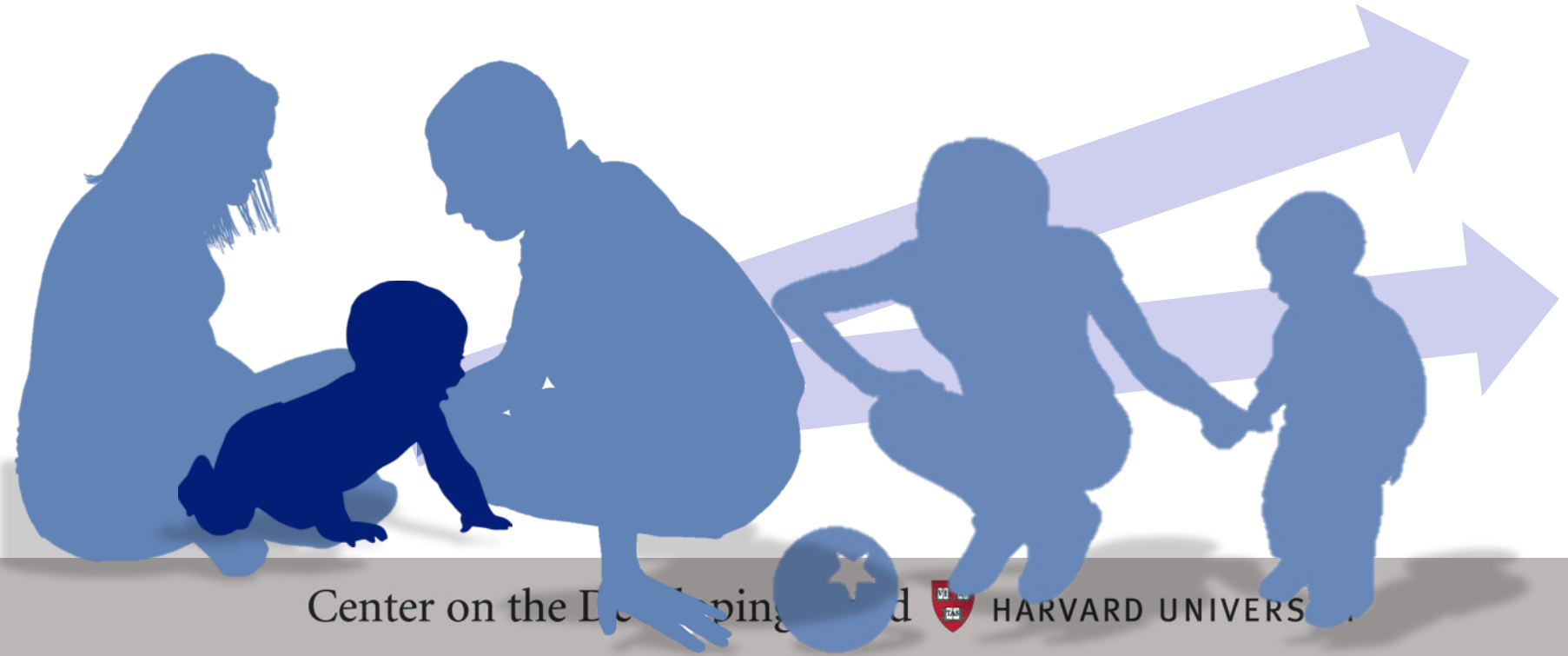
Current Conceptual Framework Guiding Early Childhood Policy and Practice



Creating a New Paradigm for Early Childhood Policy and Practice

Early experiences affect lifelong health ***and*** learning

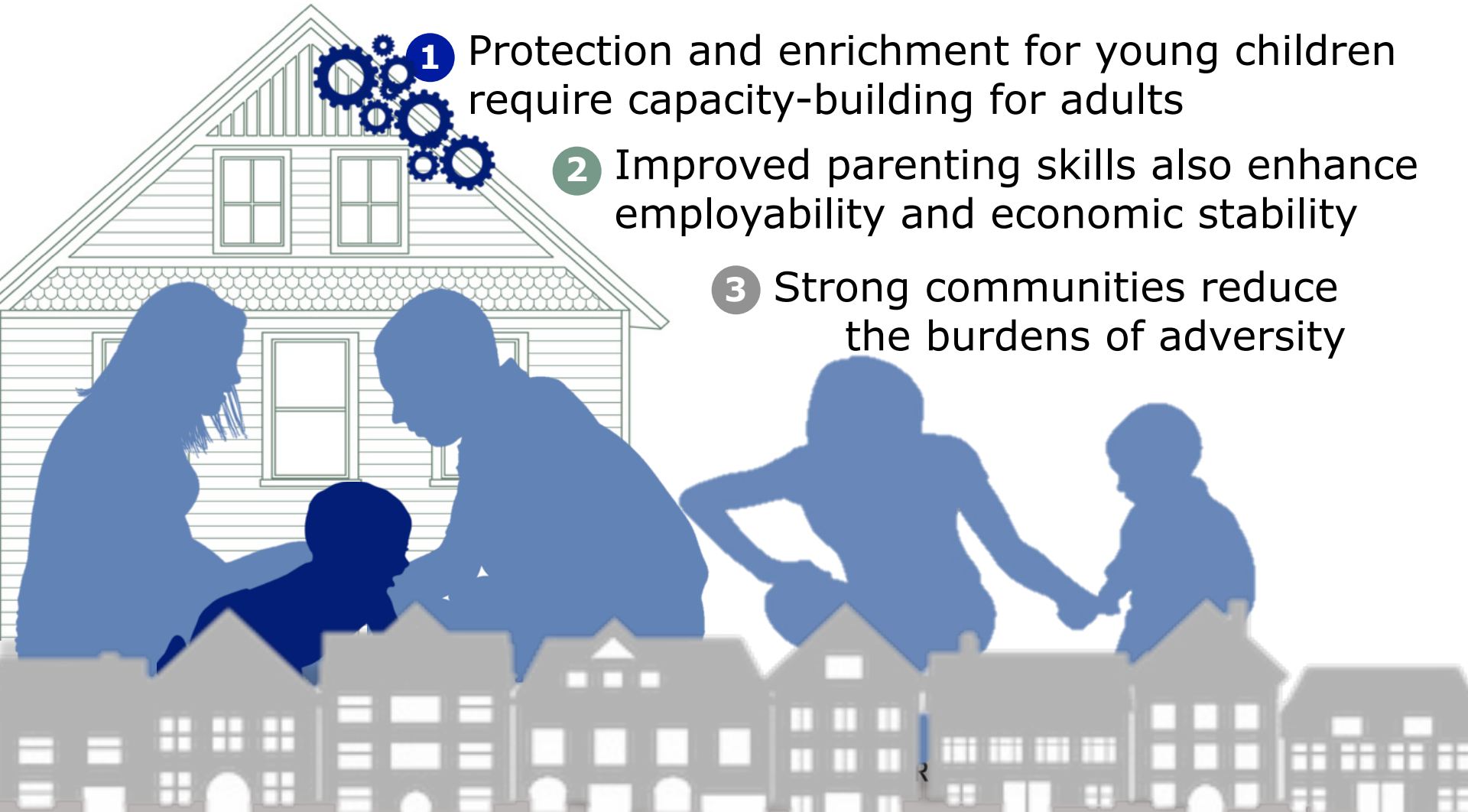
Healthy development requires protection ***and*** enrichment



Generating Hypotheses to Guide New Intervention Strategies

Early experiences affect lifelong health ***and*** learning

Healthy development requires protection ***and*** enrichment

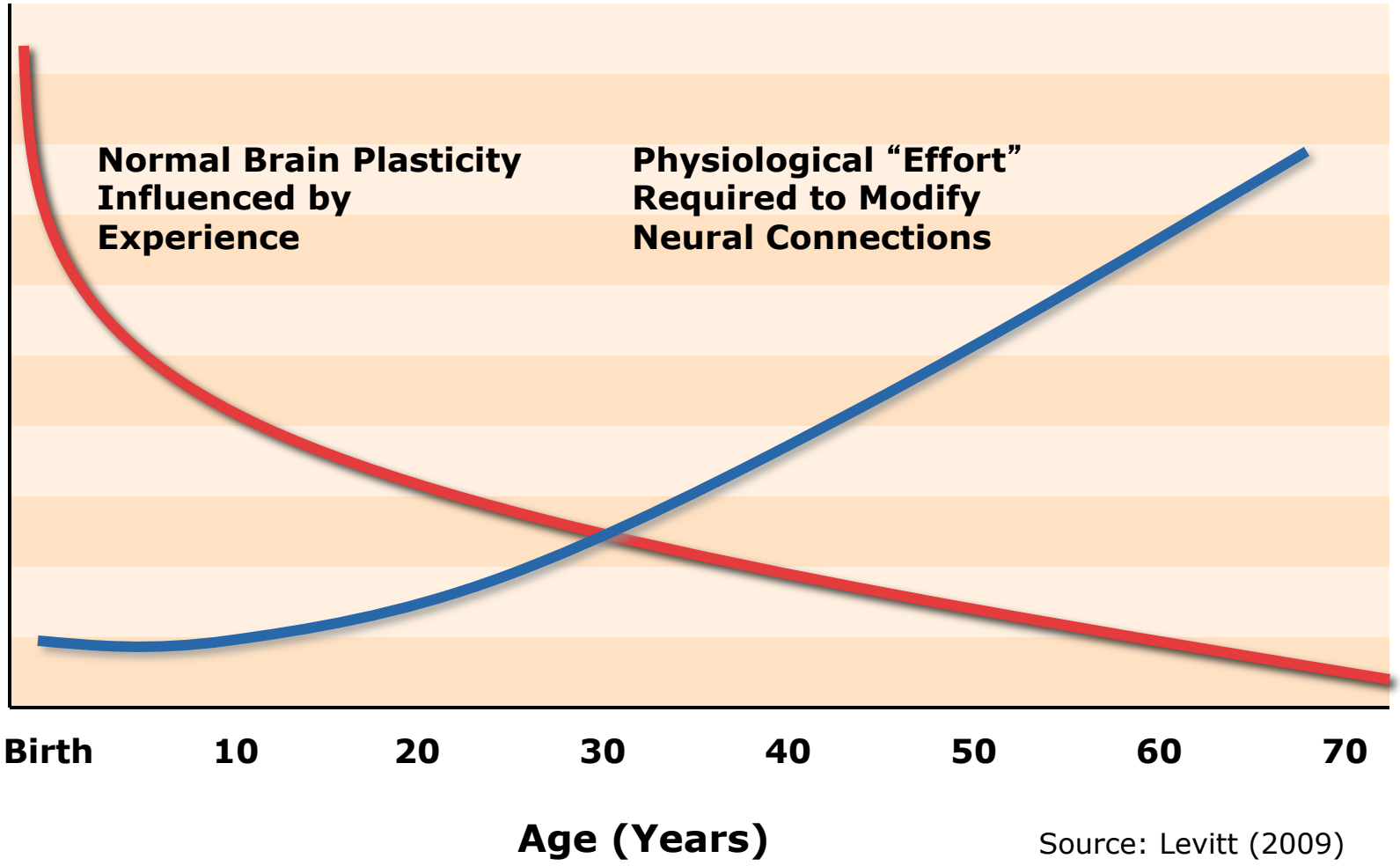


1. Protection and enrichment for young children require capacity-building for adults
2. Improved parenting skills also enhance employability and economic stability
3. Strong communities reduce the burdens of adversity

Skill Building for Parenting and Economic Self-Sufficiency Points to the Foundational Role of Executive Function and Self-Regulation Skills

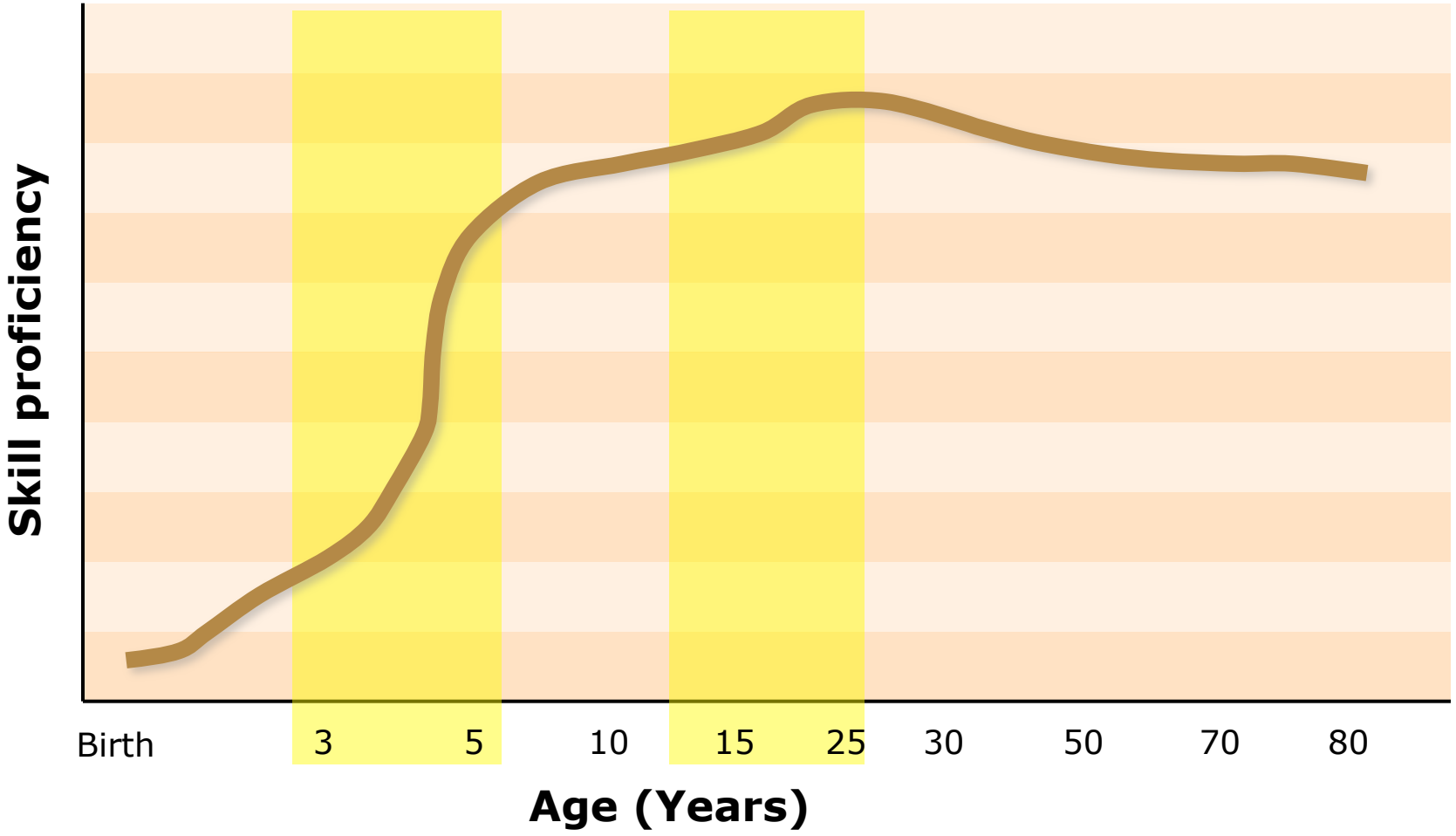
These core dimensions of adult competence include the ability to focus and sustain attention, set goals and make plans, follow rules, solve problems, monitor actions, defer gratification, and control impulses.

The Challenge: The Ability to Change Brains and Behavior Decreases Over Time



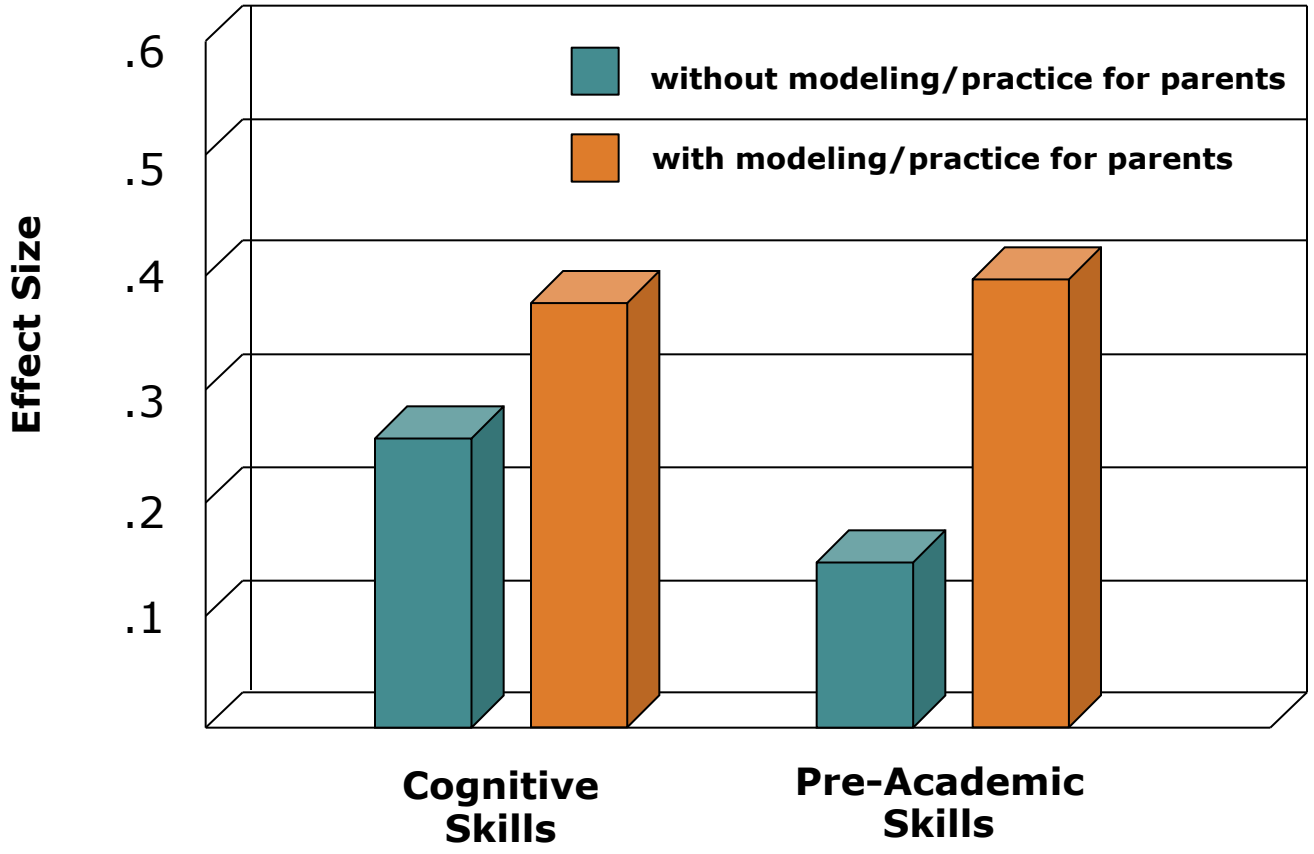
Source: Levitt (2009)

The Opportunity: Circuits for Executive Function Skills Are Located in Brain Regions that Exhibit an Extended Period of Plasticity



Weintraub, et al. (2011)

The Foundations of School Success are Strengthened by Building Caregiver Capabilities, Not Simply by Giving Parents Information

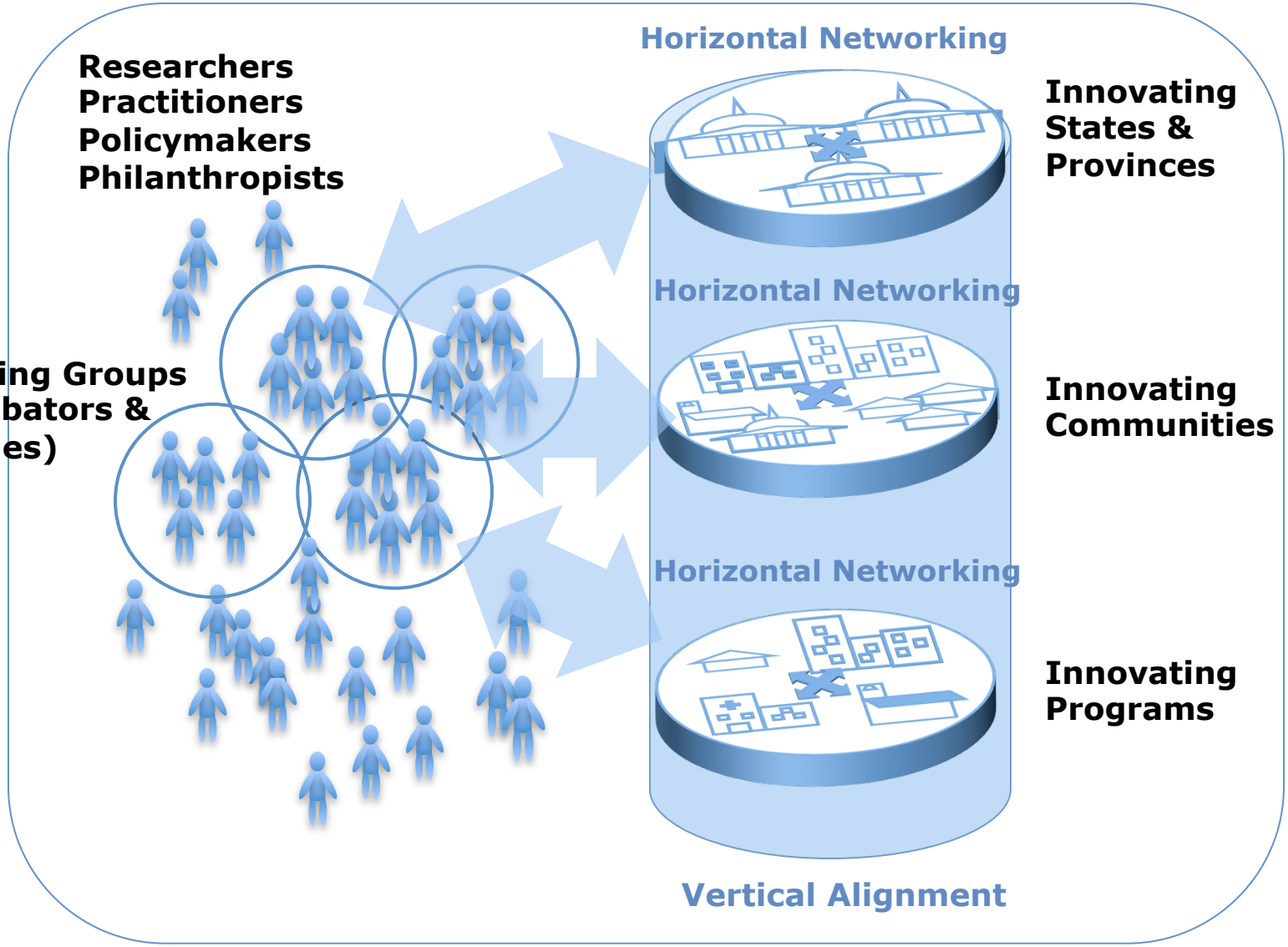


Average Impacts of 88 Early Childhood Education Programs (1960-2007)

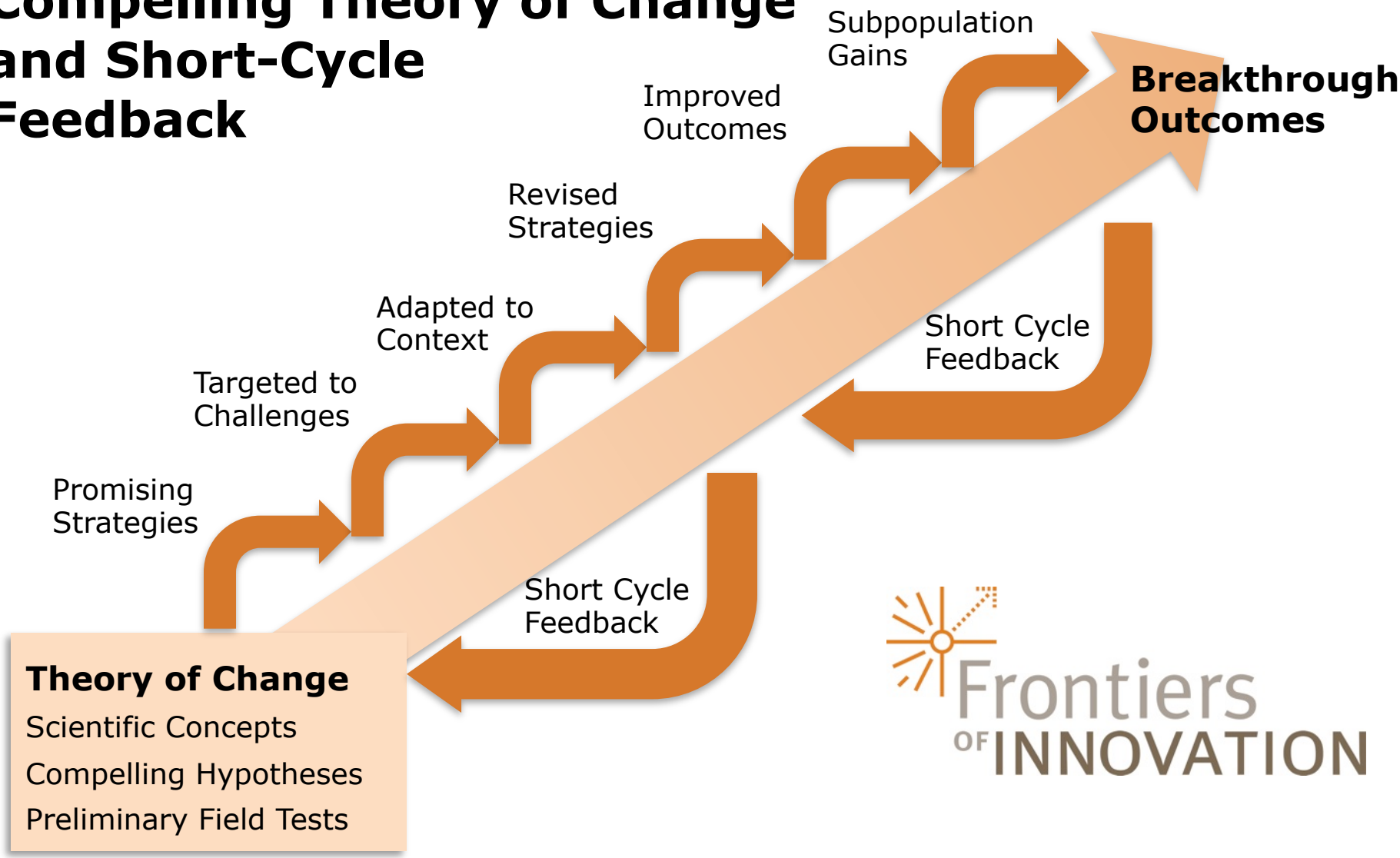
Source: Grindal, et al. (under review)

Applying an Evolving Theory of Change in Different Domains

Building a Learning Community to Design, Test, Refine, and Scale New Ideas



Driving Science-Based Innovation with a Compelling Theory of Change and Short-Cycle Feedback



Frontiers OF INNOVATION

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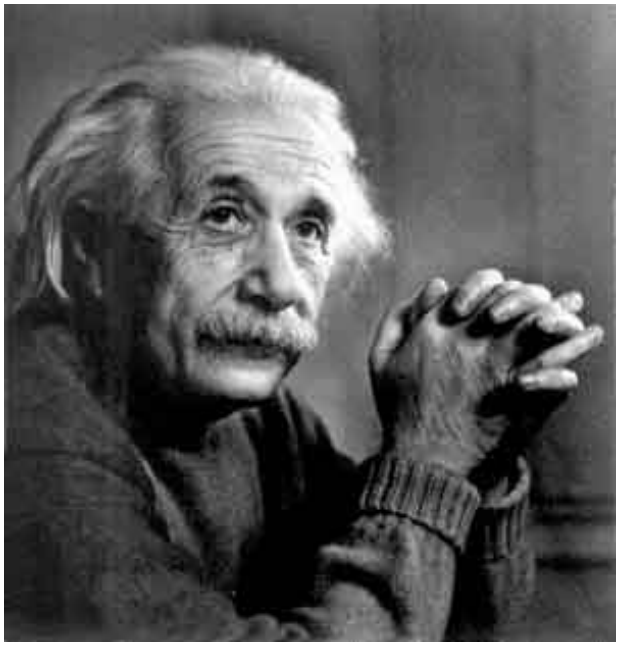
Signature Characteristics

Science: a different way of thinking

Innovation: a different way of working

Distributed Leadership: a new breed of change agents who understand, own, drive, and deliver on the quest to achieve breakthrough impacts and take more effective intervention strategies to scale

Albert Einstein Nailed the Problem



"If you always do what you always did, you will always get what you always got."

Thomas Edison Had a Winning Strategy

"I have not failed. I've just found ten thousand ways that won't work."

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