



Center on the Developing Child
HARVARD UNIVERSITY

The Science of Early Childhood Development and the Foundation of a Sustainable Society

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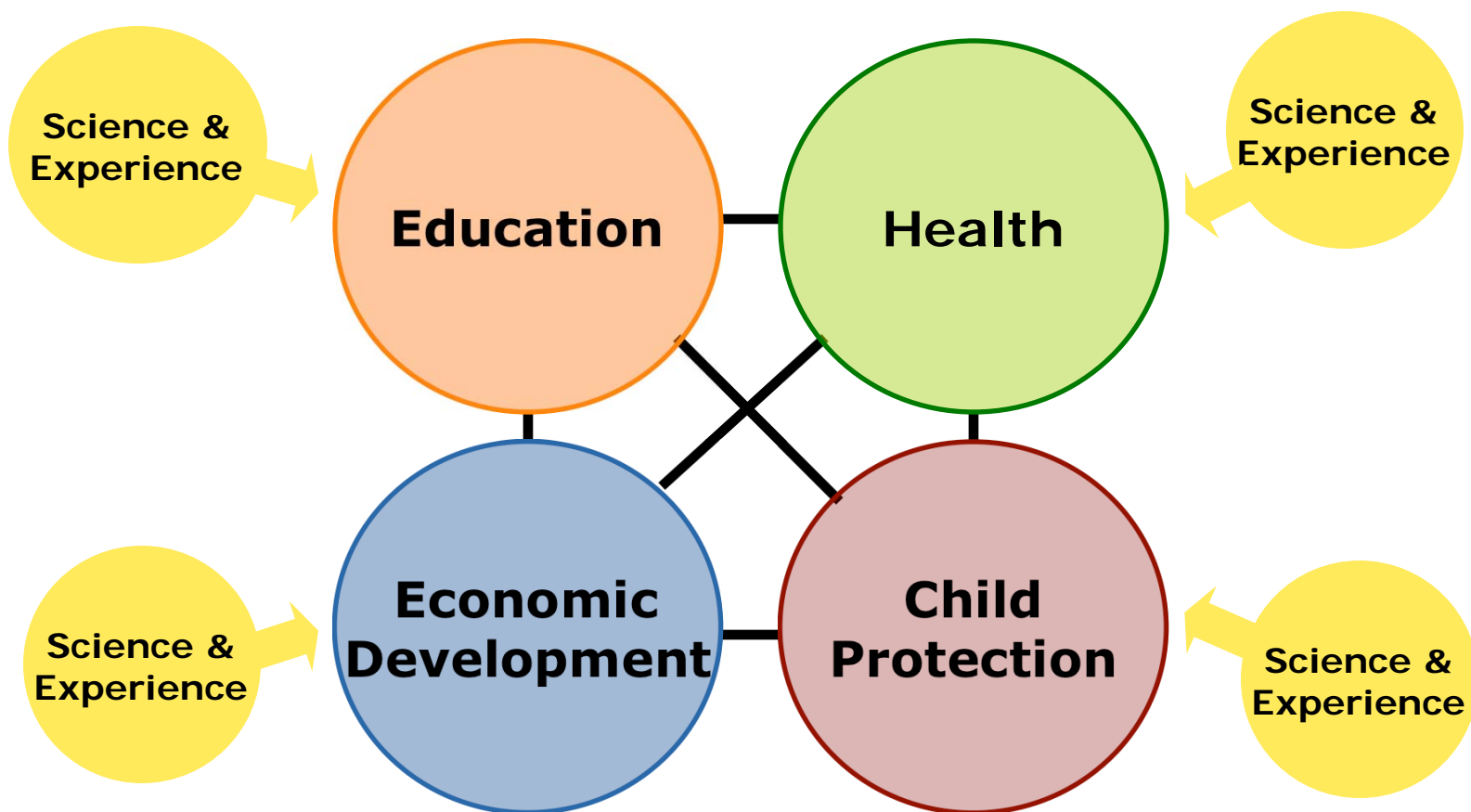
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Moscow, Russian Federation | September 27, 2010

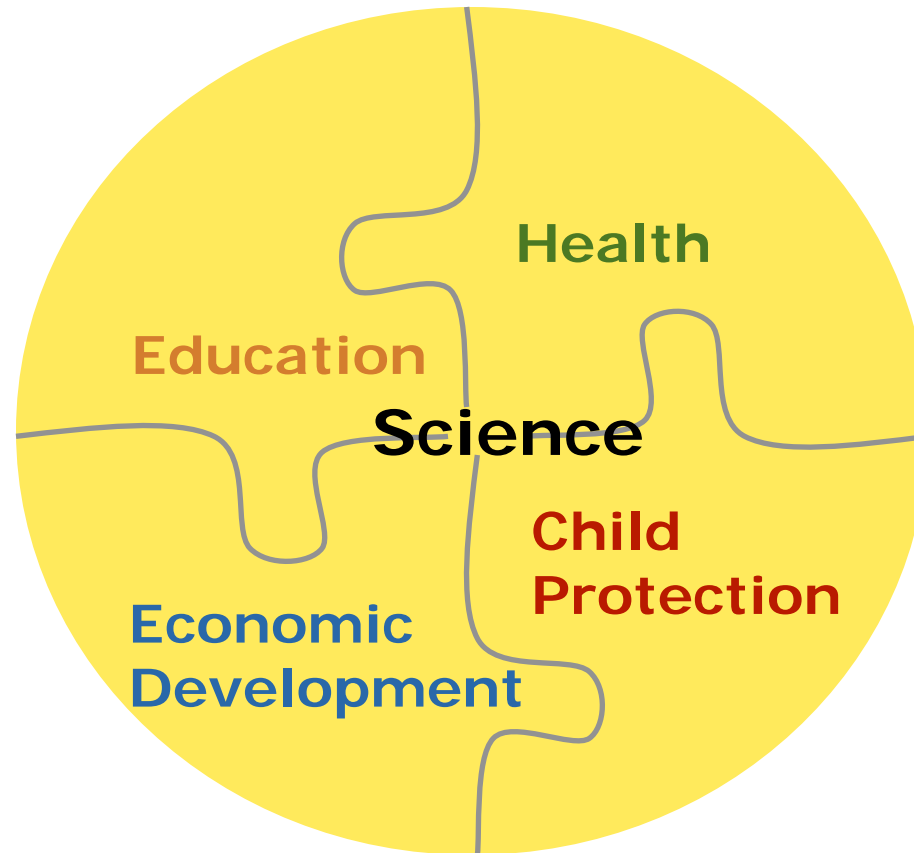
Science Tells Us That the Foundation of a Successful Society is Built in Early Childhood

The healthy development of young children provides the building blocks for healthy and competent adulthood, responsible citizenship, economic productivity, strong communities, and a just and sustainable society.

Multiple Sources of Knowledge Currently Inform Policies in Poorly Connected Sectors

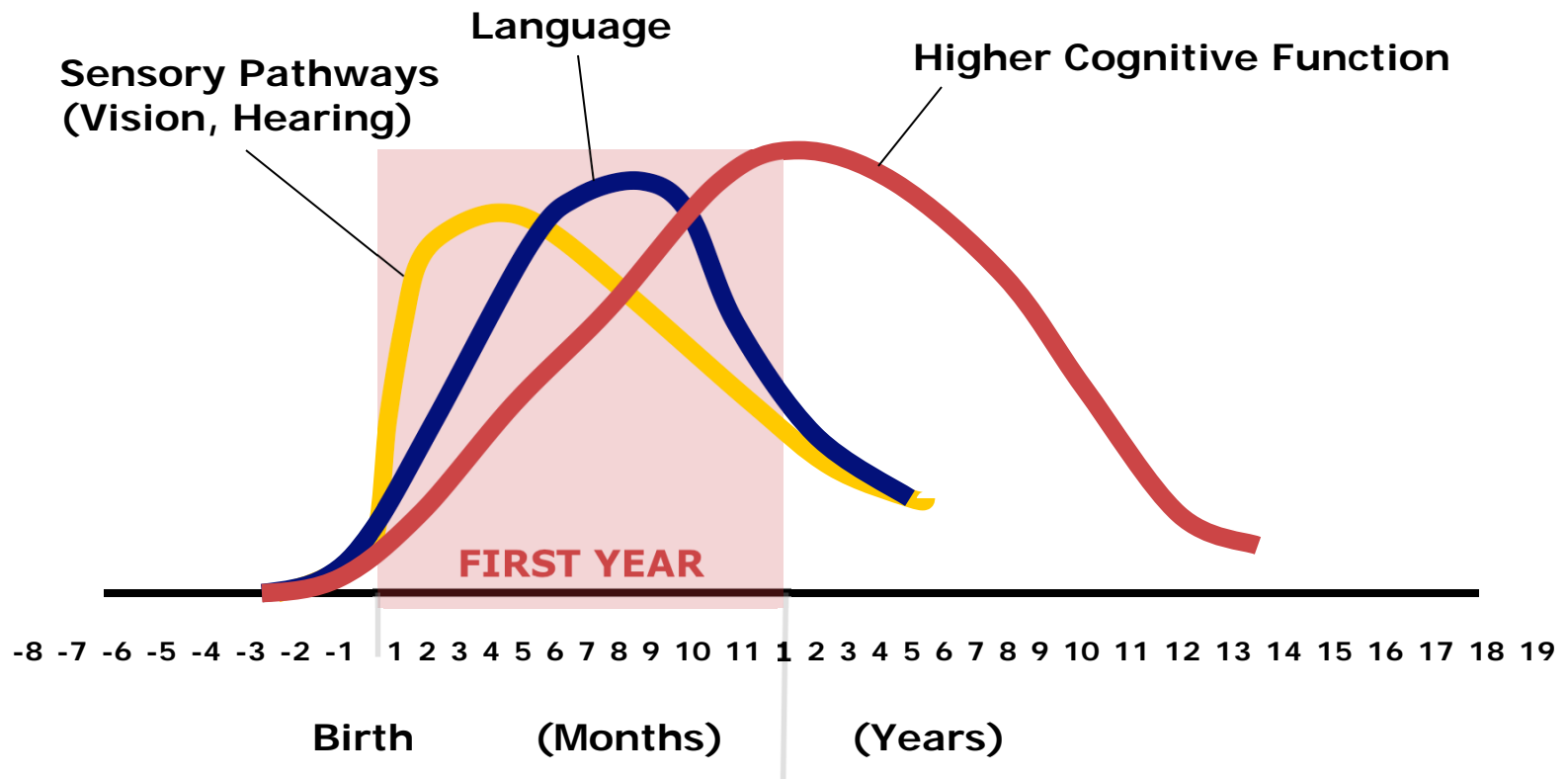


An Integrated Scientific Framework Could Drive More Effective Investment and Innovation Across Sectors



Four Core Concepts of Brain Development

Neural Circuits are Wired in a Bottom-Up Sequence

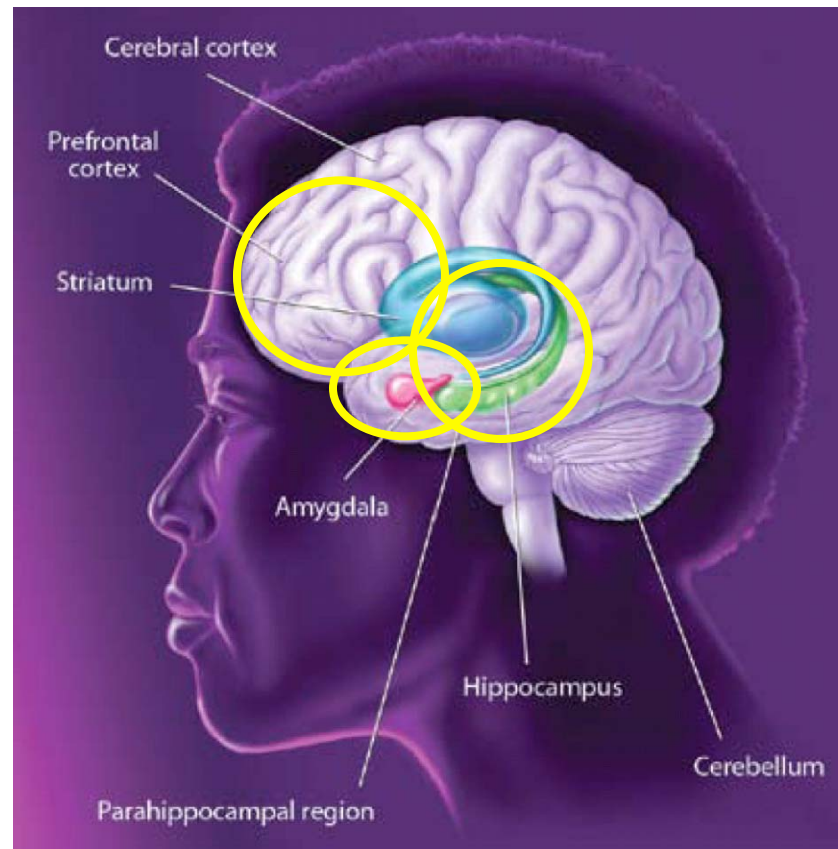


Source: Nelson (2000)

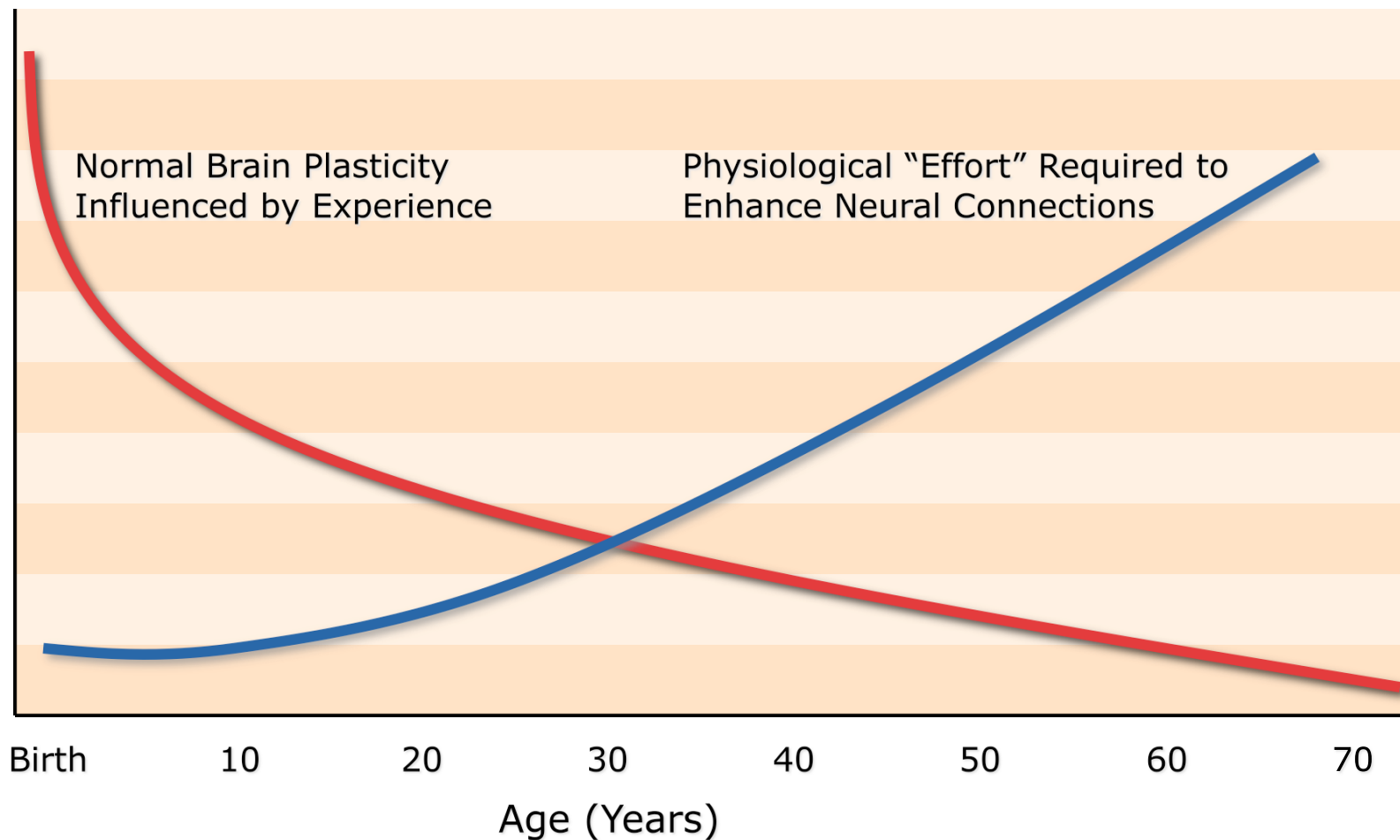
Brains and Skills are Shaped by “Serve and Return” Human Interaction



Cognitive, Emotional, and Social Capacities Are Inextricably Intertwined Within the Architecture of the Brain



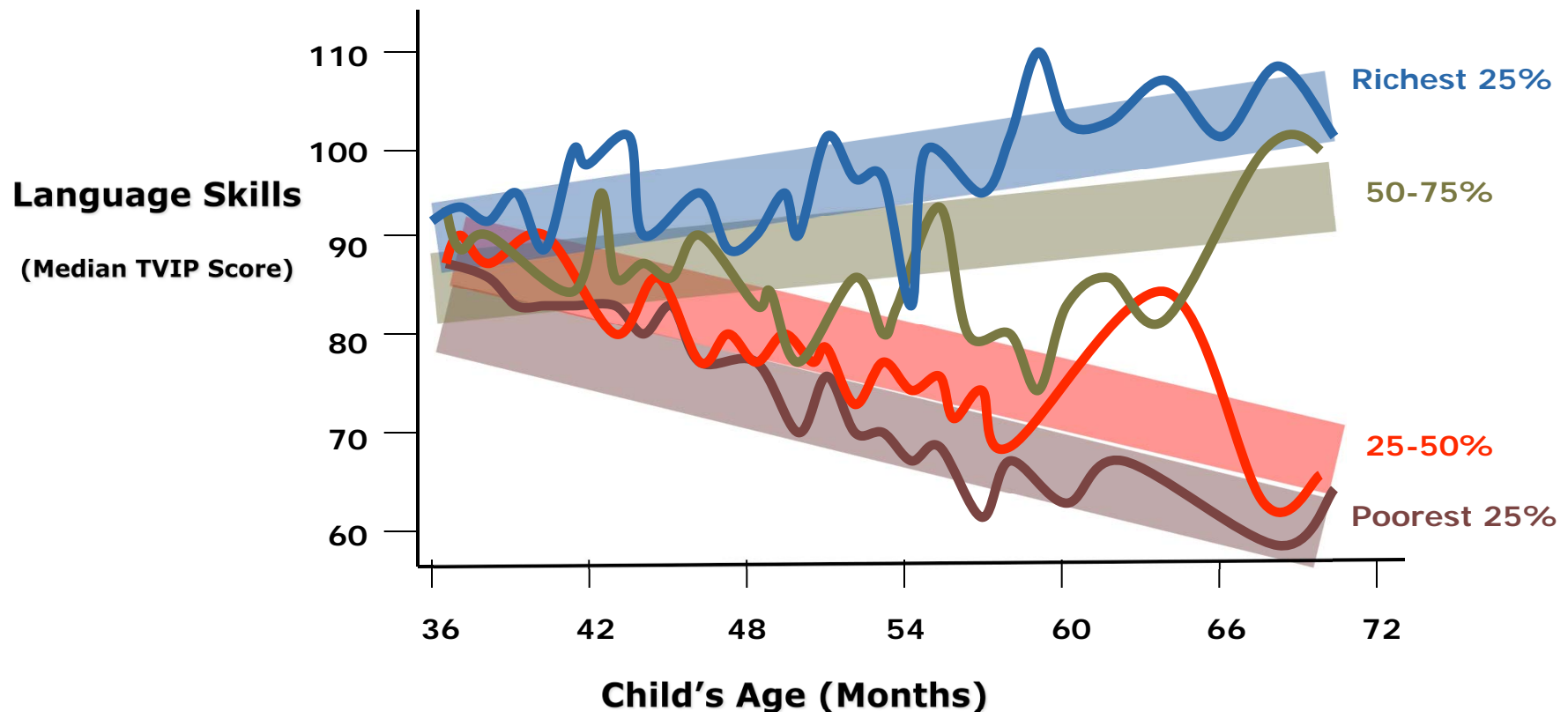
The Ability to Change Brains Decreases Over Time



Source: Levitt (2009)

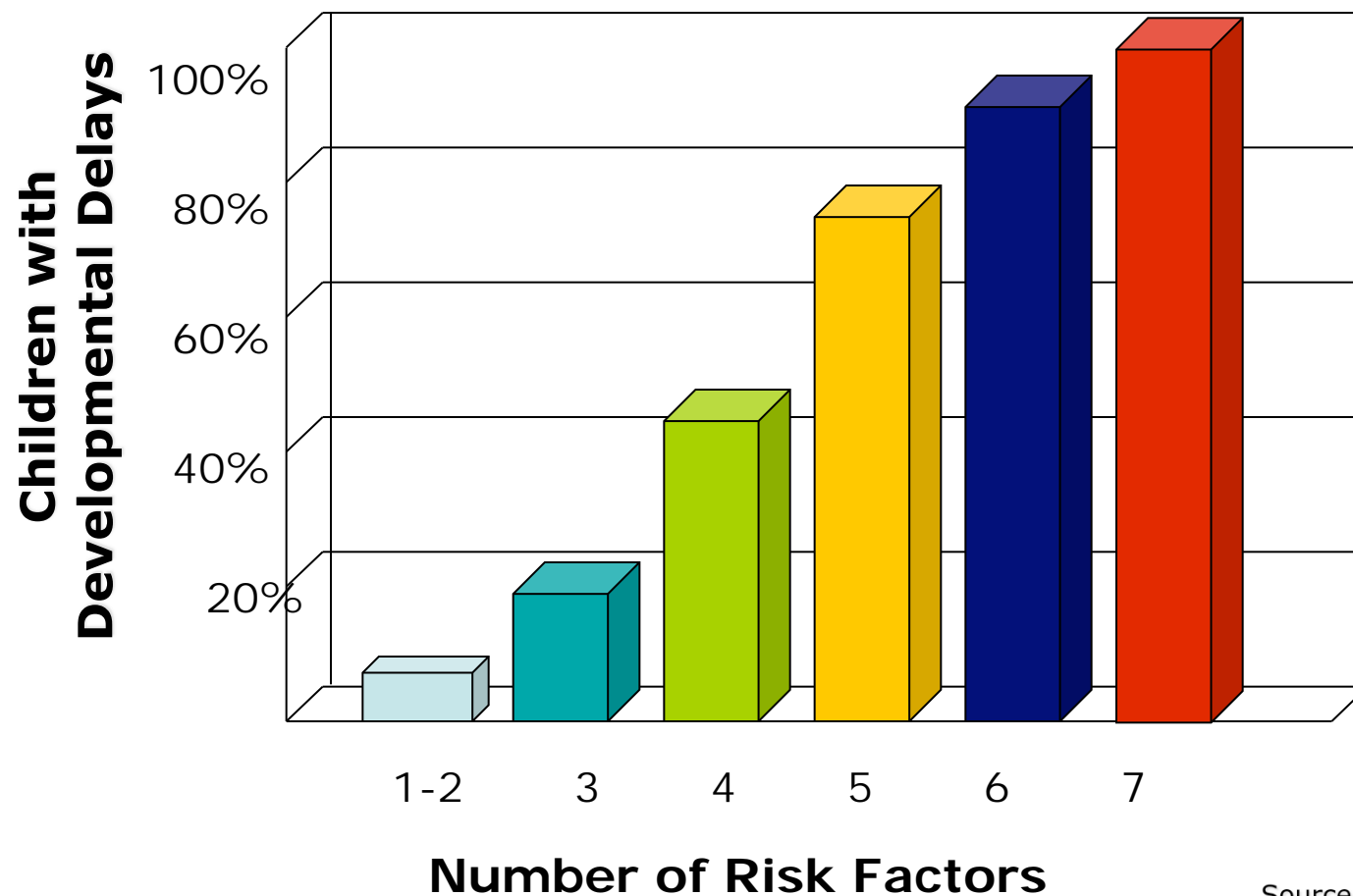
Three Consequences of Early Adversity

Barriers to Educational Achievement Emerge Before School Begins



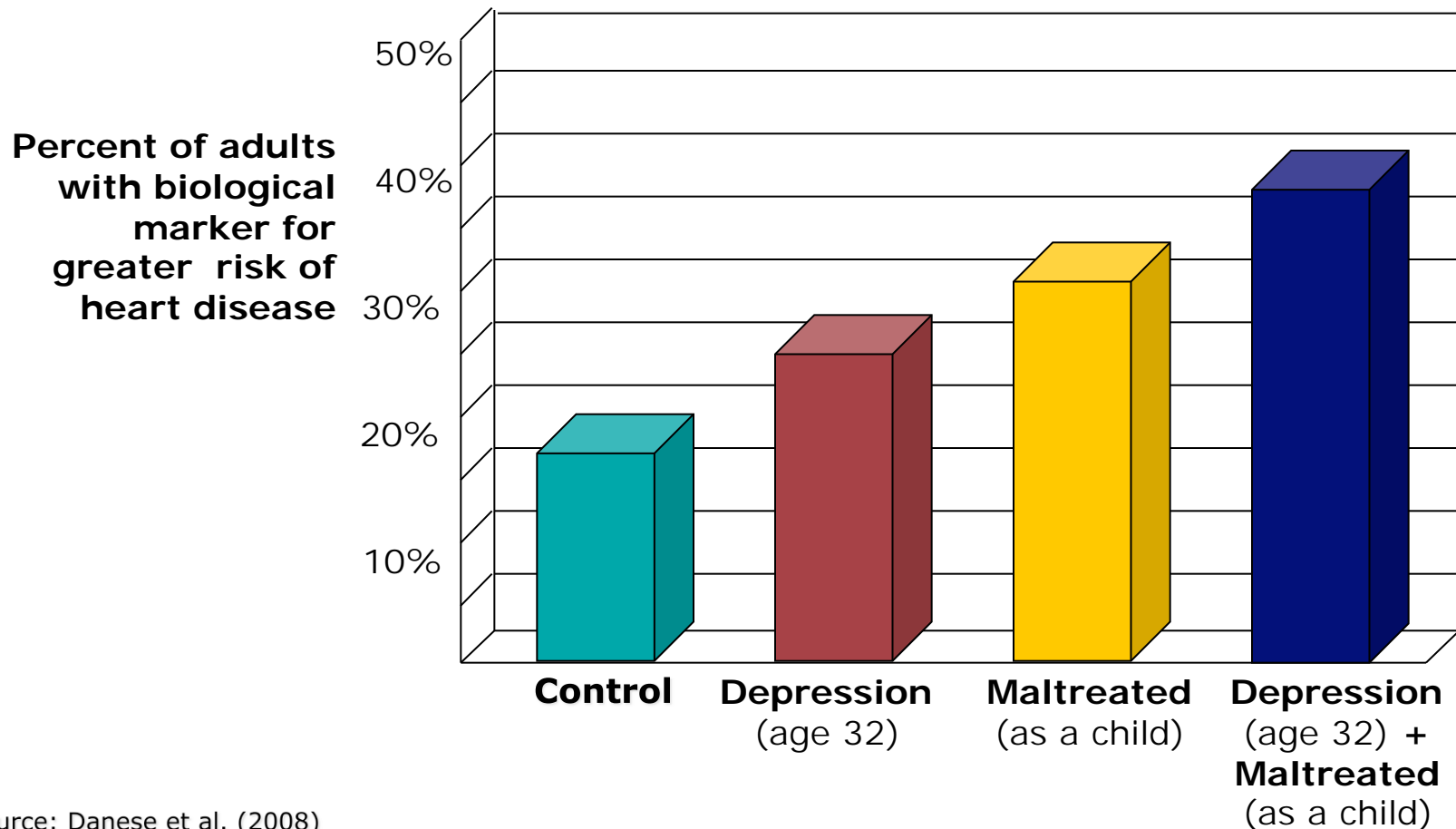
Source: Paxton (2005)

Significant Adversity Impairs Development in the First Three Years



Source: Barth et al. (2008)

New Biological Evidence Links Maltreatment in Childhood to Greater Risk of Adult Heart Disease



Source: Danese et al. (2008)

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

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

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

Three Levels of Stress Response

Positive

Brief increases in heart rate,
mild elevations in stress hormone levels.

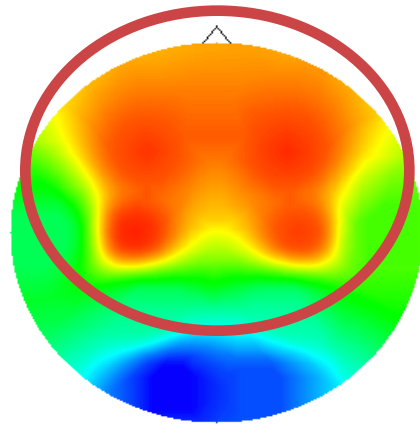
Tolerable

Serious, temporary stress responses,
buffered by supportive relationships.

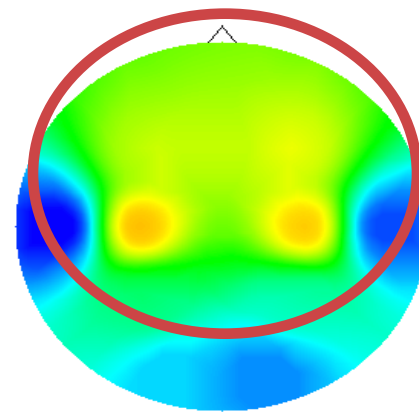
Toxic

Prolonged activation of stress response systems
in the absence of protective relationships.

Significant Neglect Affects Brain Power



Reared at home



Institutionalized

Source: C.A. Nelson (2008); Marshall, Fox & BEIP (2004)

Profound Deprivation Impairs Physical Growth

11-Year-Old Girl
(height-for-age = 48 month old)



Source: Johnson et al. (2000)

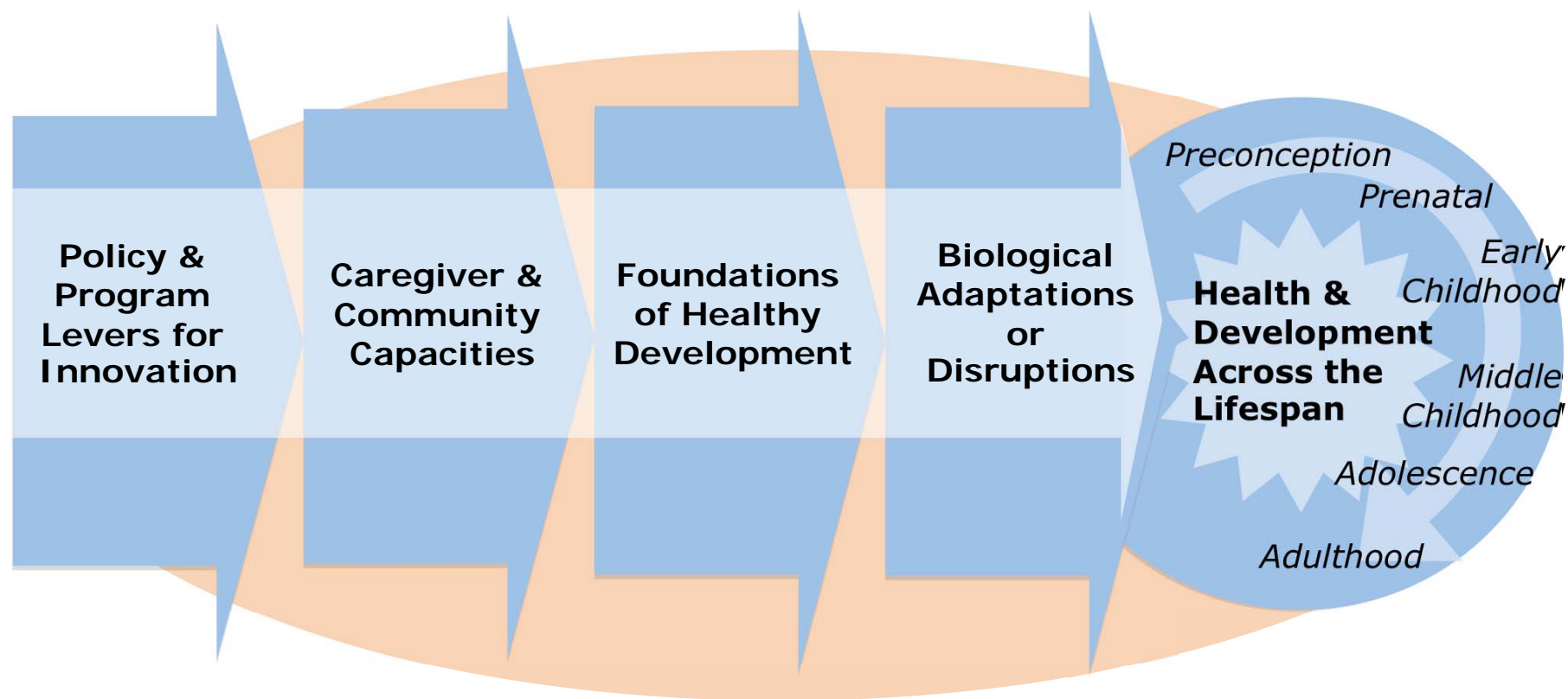
Health, Education, Economic Development, and Civil Society Begin in Early Childhood

A healthier and more productive society begins with reducing toxic stress in childhood, beyond focusing only on child survival.

Effective early childhood interventions could decrease lifelong burdens on health care and social services, as well as prepare children to succeed in school.

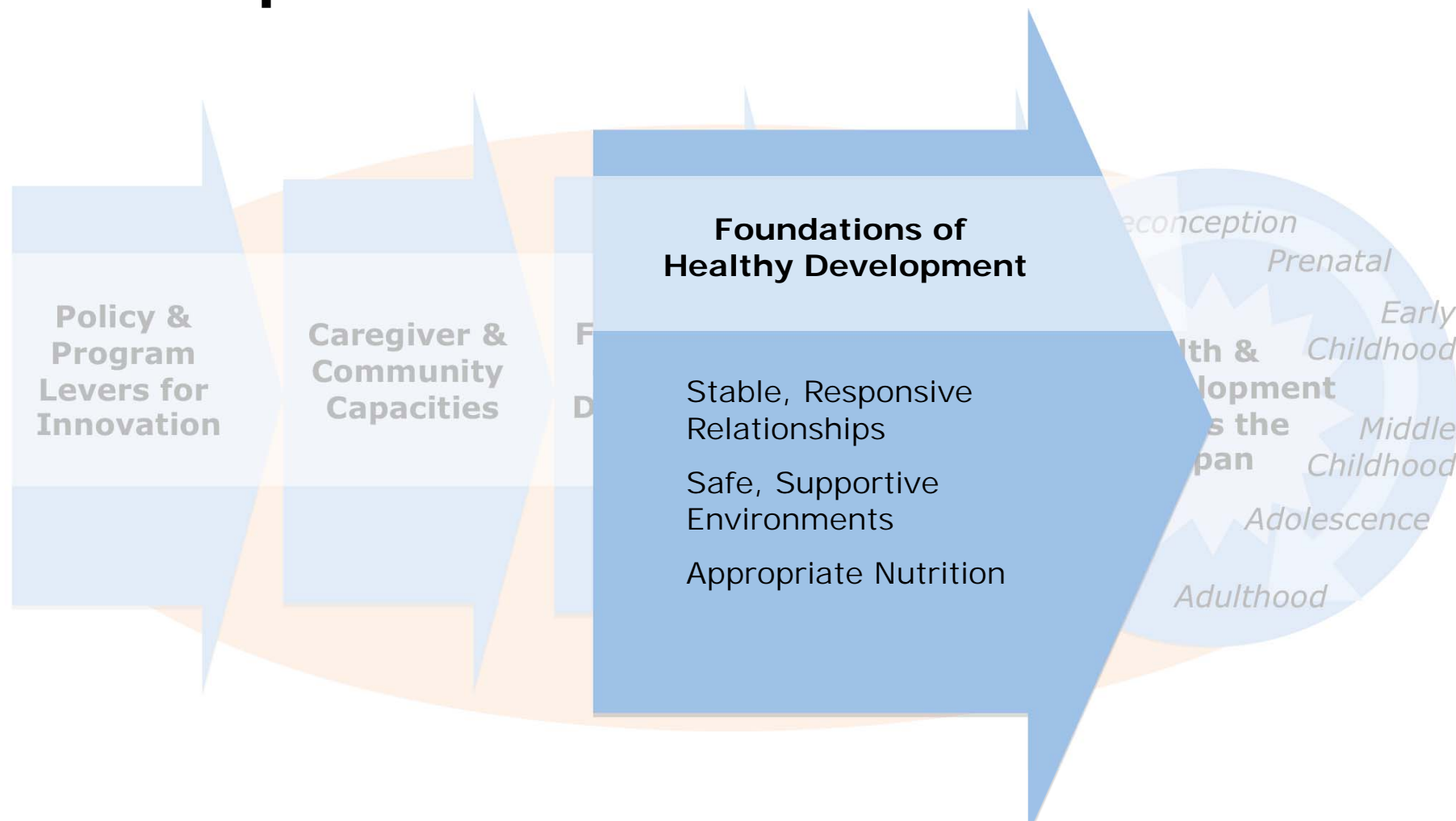
A science-based approach to child maltreatment could reduce later mental illness, violence, and criminal behavior by promoting healing relationships, not just focusing on physical protection.

An Integrated Framework for Investing in the Promotion of Healthy Development



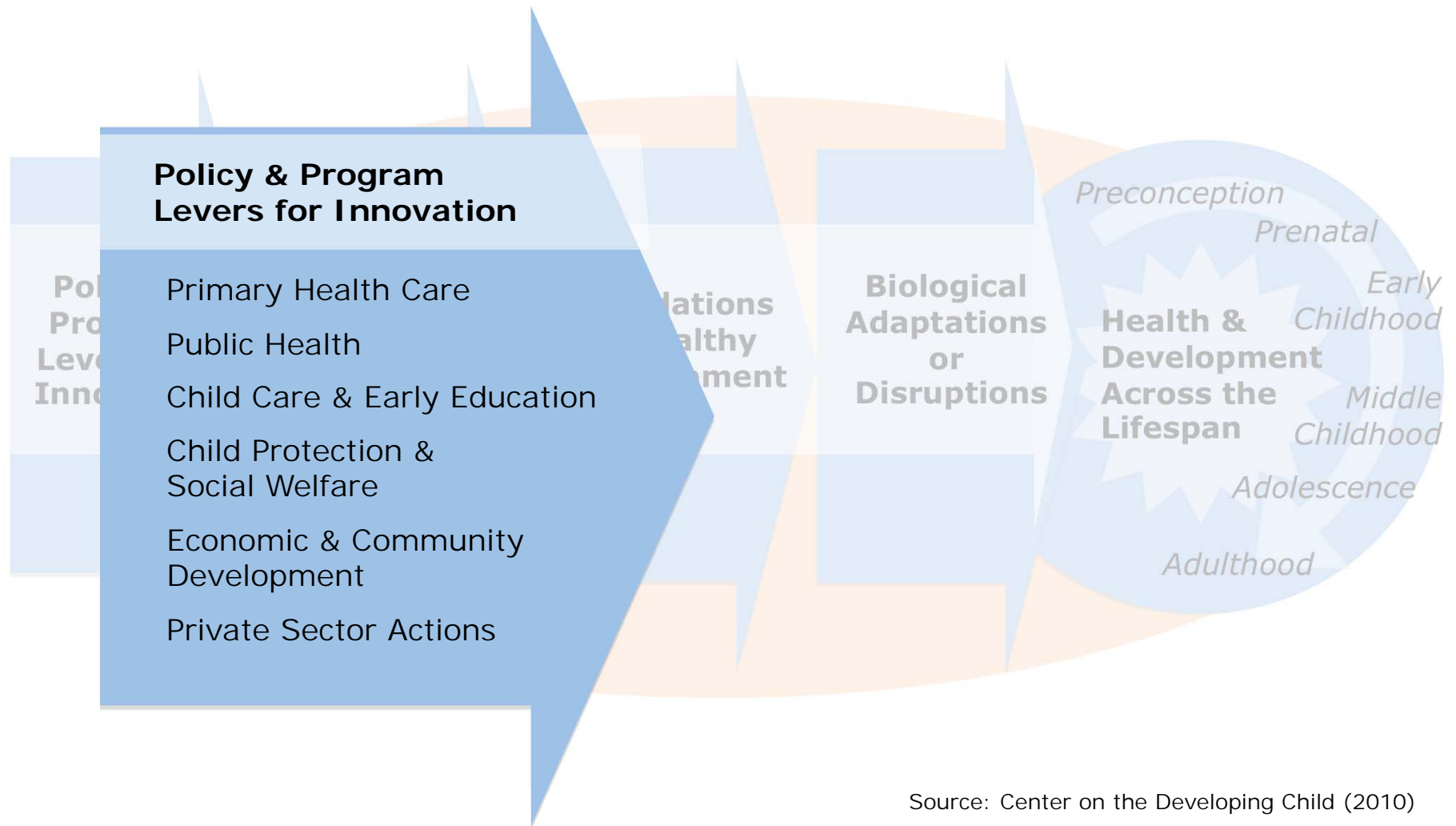
Source: Center on the Developing Child (2010)

Building the Foundations of Healthy Development in Homes and Communities



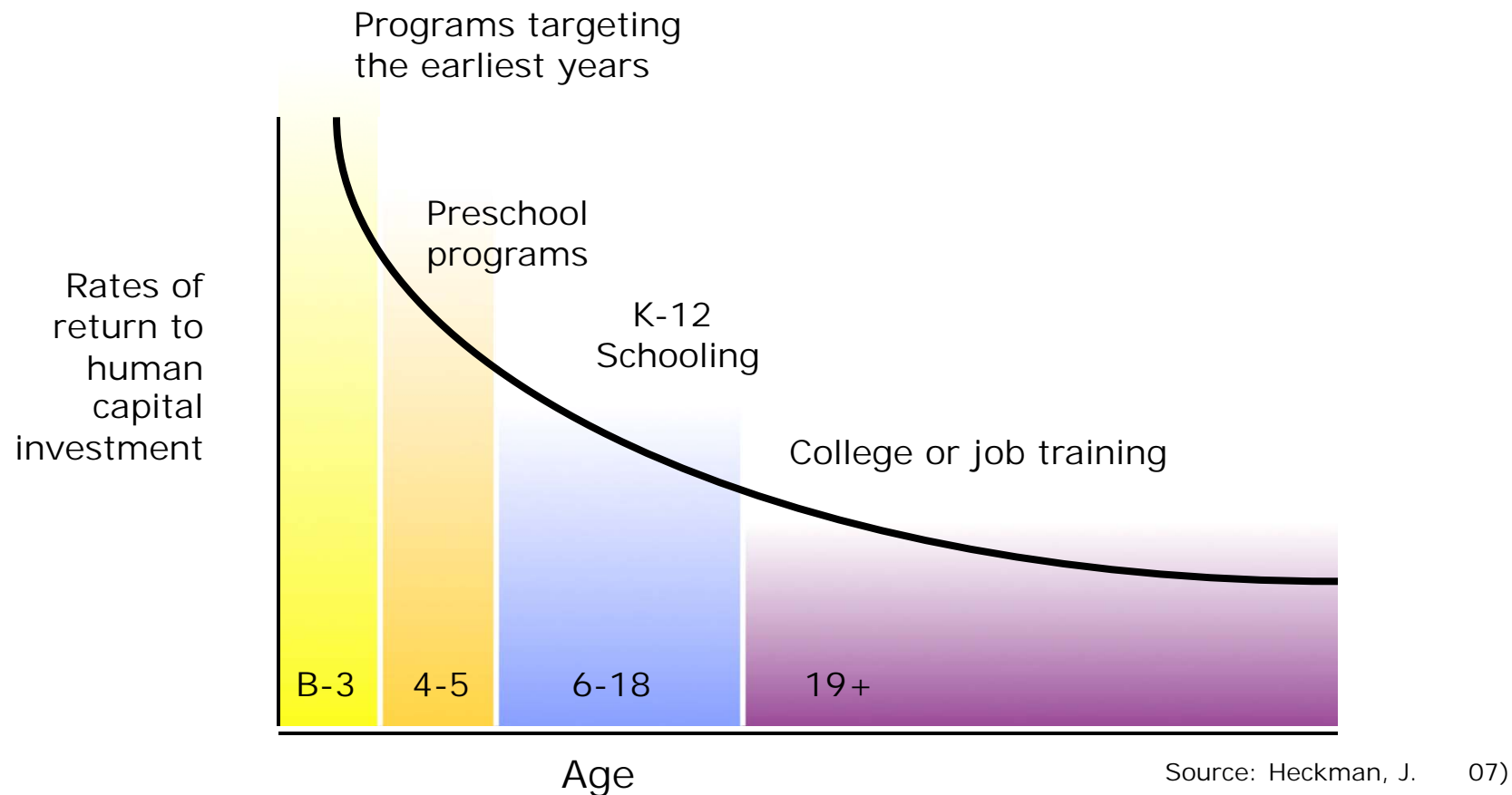
Source: Center on the Developing Child (2010)

Addressing the Needs of Young Children Across Multiple Sectors



Source: Center on the Developing Child (2010)

Preventive Intervention is More Efficient and Produces More Favorable Outcomes Than Later Remediation



The Power of Science for Informing Innovative Policy and Practice

Provides a rigorous knowledge base for decision makers to guide more effective policies.

Explains causal mechanisms that build the political will required for action.

Offers a unified framework to drive cohesive goals and strategies across policy sectors and service delivery systems.



Center on the Developing Child HARVARD UNIVERSITY

The image displays three overlapping screenshots of the Center on the Developing Child website, showcasing its layout and content:

- Top Screenshot:** Features an article titled "FEAR AND ANXIETY AFFECT THE BRAIN" with a brain diagram. The page includes a "BROWSE BY TOPIC" sidebar with categories like "Science of Early Childhood" and "Understanding Intervention".
- Middle Screenshot:** Shows the "GLOBAL CHILDREN'S INITIATIVE" page, which includes a photo of a child and a "BROWSE BY TOPIC" sidebar with categories like "ABOUT FACULTY & PARTNERS INITIATIVES" and "LIBRARY CONTACT US".
- Bottom Screenshot:** Displays the "REPORTS & WORKING PAPERS" section, featuring the report "The Foundations of Lifelong Health Are Built in Early Childhood" with a summary and download options.

www.developingchild.harvard.edu