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# THE SCIENCE OF YOUNG CHILDHOOD

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# MYTHS OF INFANCY AND YOUNG CHILDHOOD

- “I have no memories from that time so...”  
(Kyle Pruett, former president of Zero to Three)
- Caring for an young child comes naturally

# IMAGINE... WHAT IF WE EACH GOT ONLY ONE COMPUTER TO LAST OUR WHOLE LIFE?

- How would we want that computer to be built?
- Even if we can update it throughout its life, how important is it that it starts with great capacity and skill from the beginning?

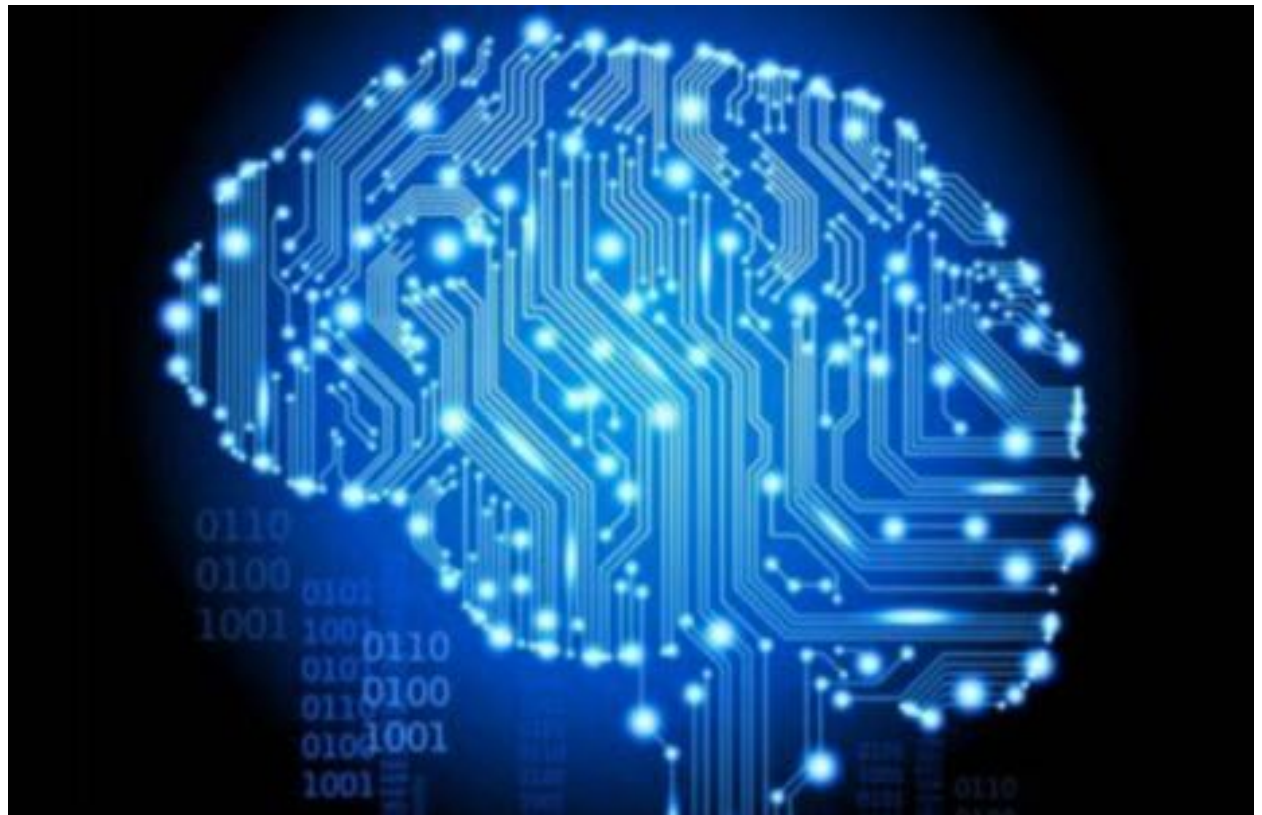


# OUR BRAINS: OUR LIVING COMPUTERS

## Functioning:

- Educational
- Social
- Health
- Mental health
- Occupational

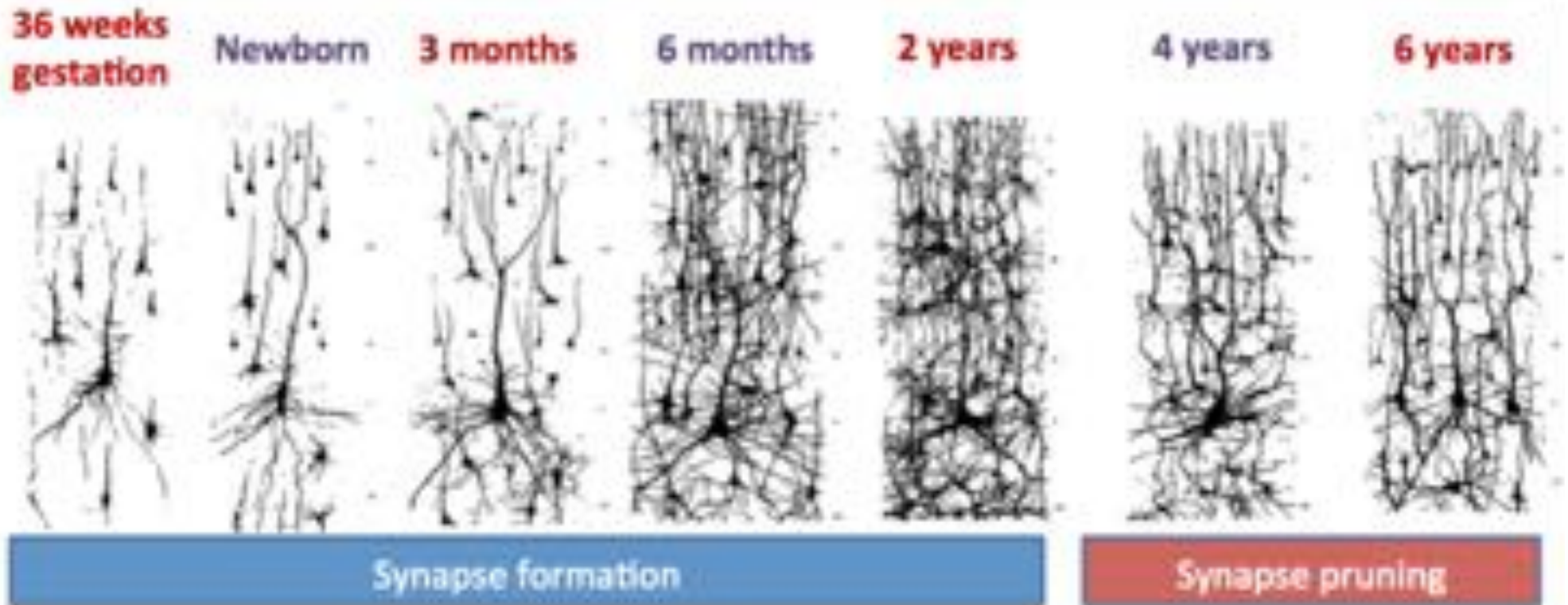
= HUMAN CAPITAL



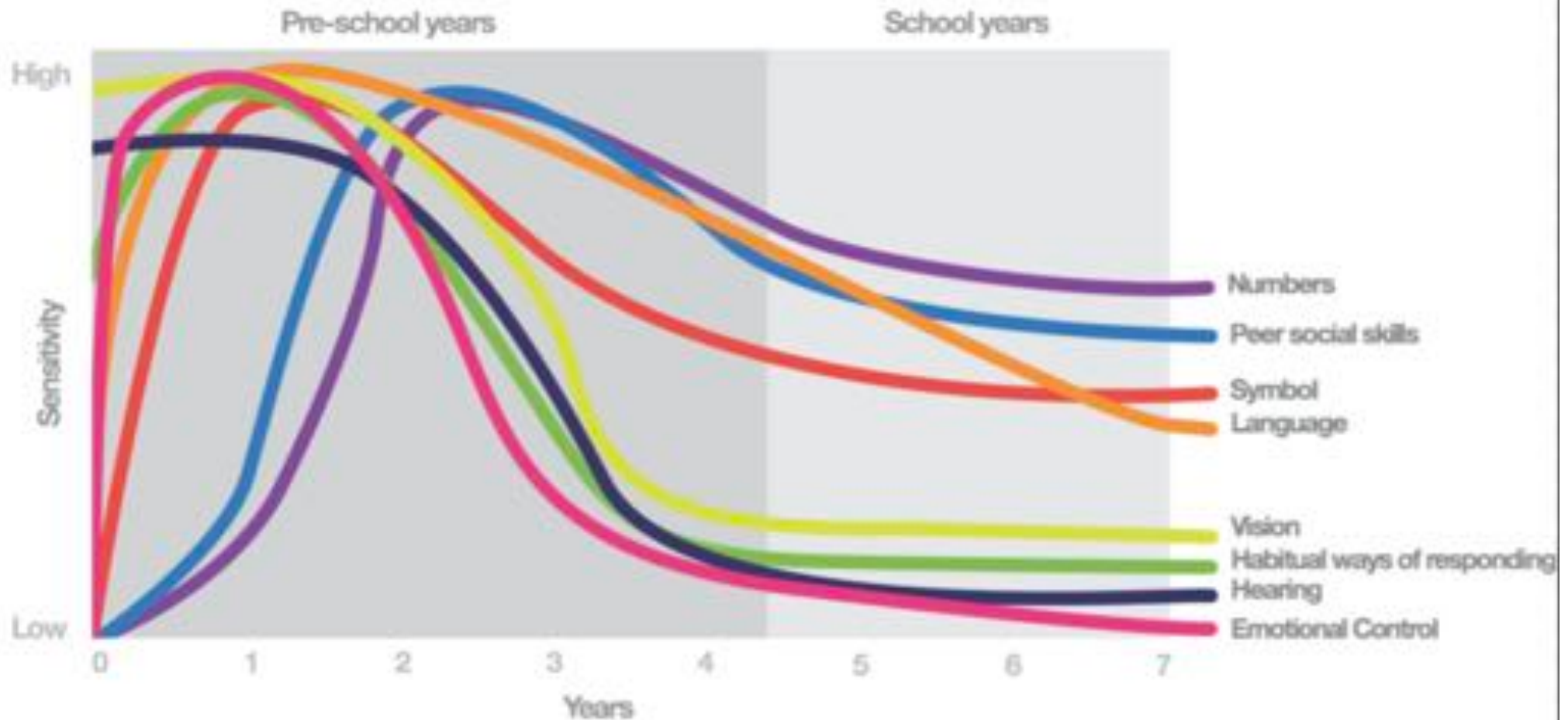
# IS IT NATURE OR NURTURE?

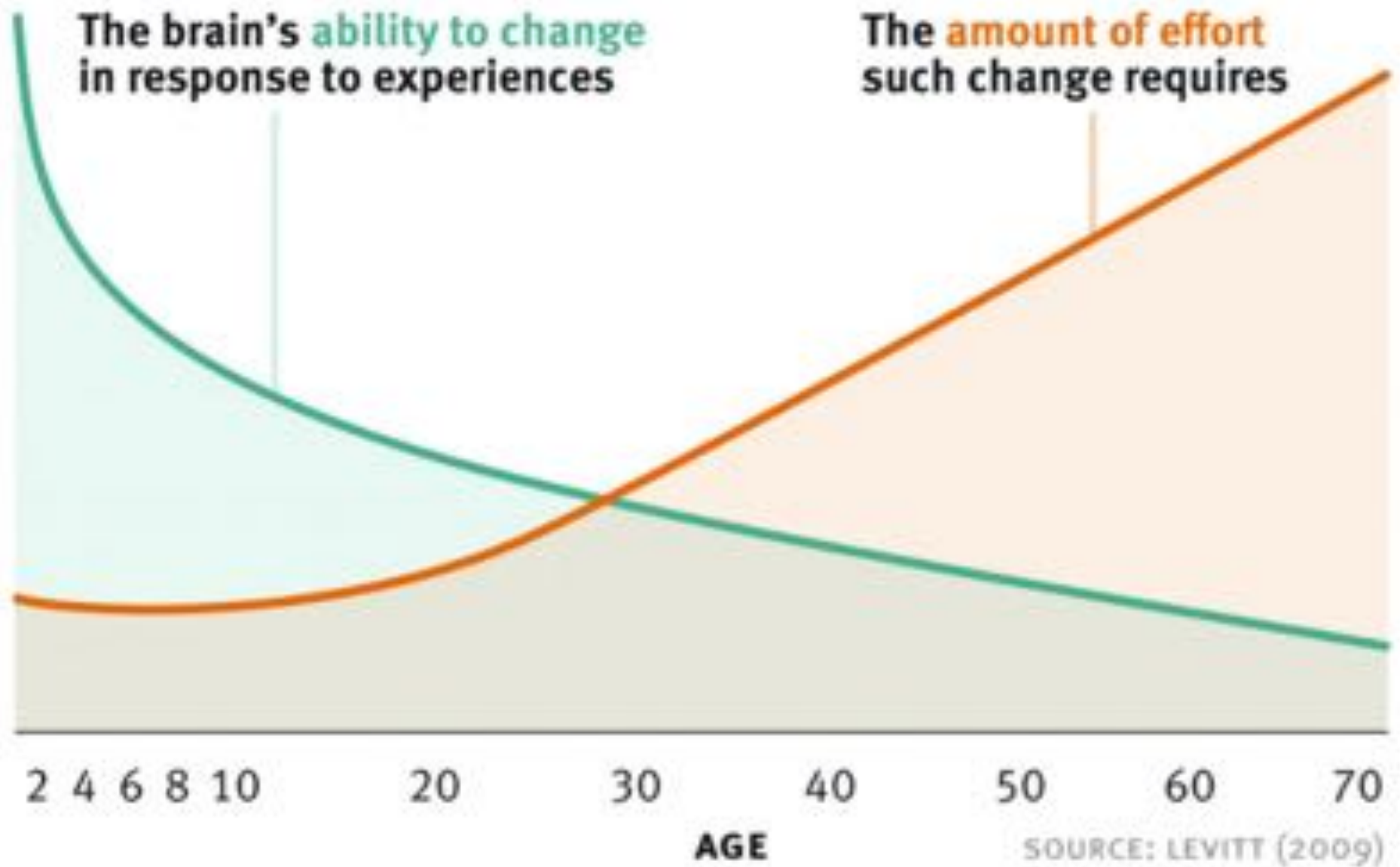


# BUILDING THE BRAIN THROUGH EXPERIENCES



# “SENSITIVE PERIODS” IN EARLY BRAIN DEVELOPMENT

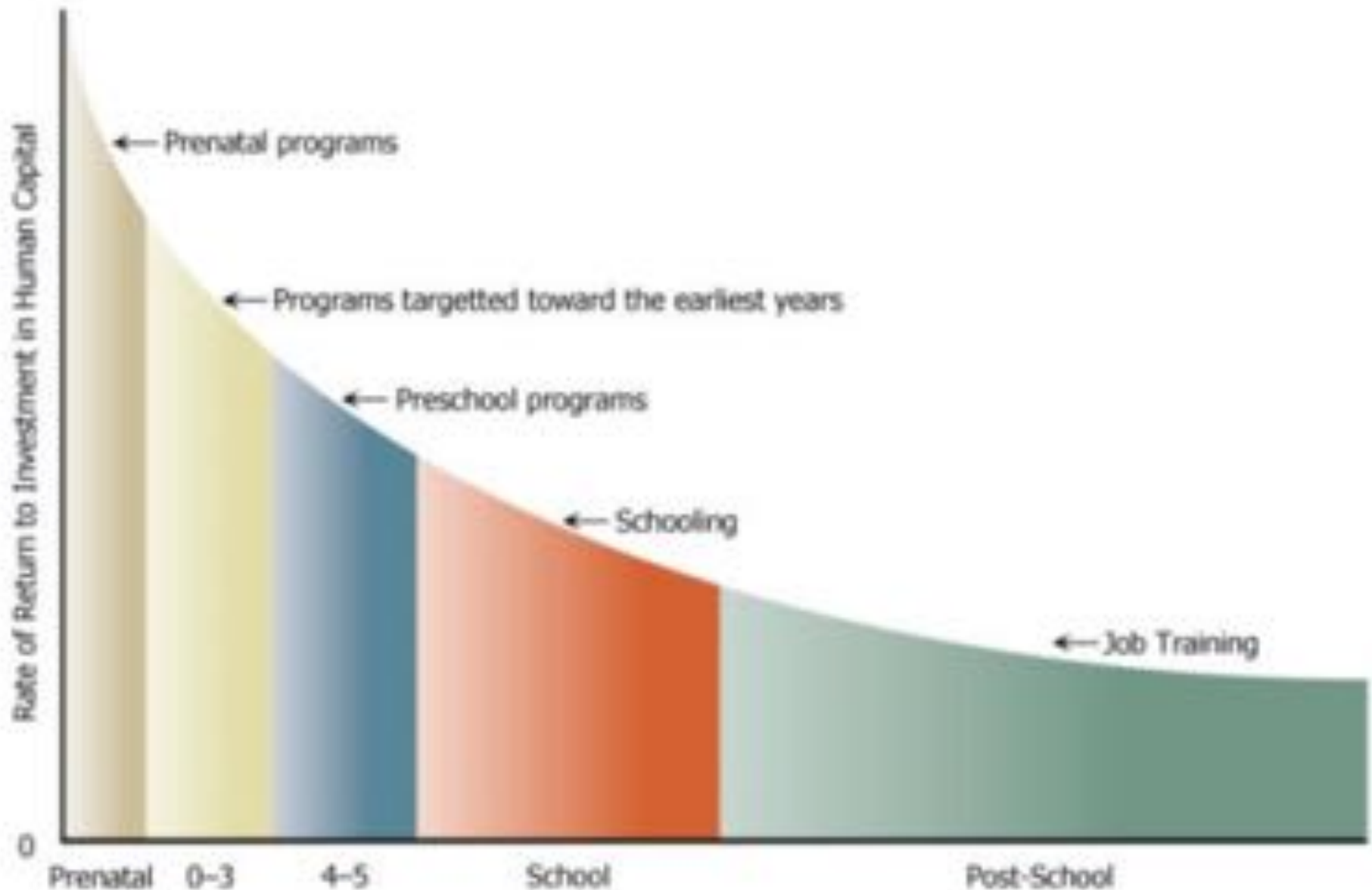




SOURCE: LEVITT (2009)



# Rate of Return to Human Capital Investment at Different Ages



Heckman, J. J., (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312(5782)1900-2.

# Trauma and the Brain



Staying alive  
is most  
important  
function

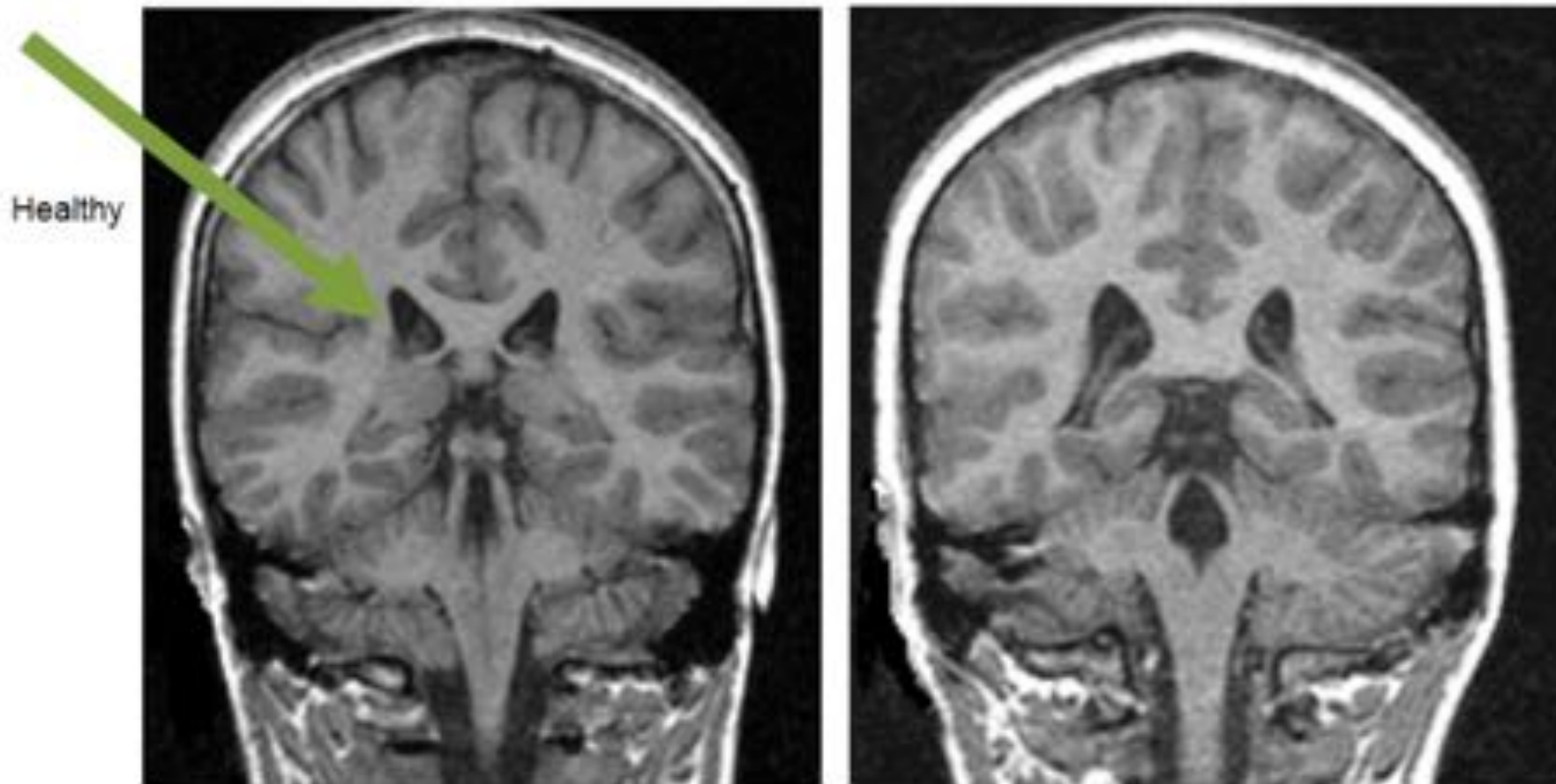


Exquisitely  
sensitive to  
environment



Scary events  
(alternatively,  
safety and  
security)  
influence brain  
development in  
powerful ways

## Lateral Ventricles



Lateral Ventricles of 11 year old boy with PTSD vs. Healthy. De Bellis et al., Biological Psychiatry, 1999.

# EXPOSURE TO TRAUMA DERAILS DEVELOPMENT

- Between 20% and 50% of American children are victims of violence within their families, at school, and in their communities (Finkelhor & Dziuba-Leatherman, 1994)
- An even greater number are witnessing violence and may be traumatized

# TRAUMA AND EDUCATIONAL OUTCOMES

- Decreased intellectual functioning
- Decreased reading ability
- Lower grade-point average (GPA)
- More days of school absence
- Decreased rates of high school graduation

**TRAUMA  
IMPEDES  
LEARNING**

Hurt et al., 2001; Delaney-Black et al., 2002; Grogger, 1997.

# WE ARE SOCIAL CREATURES

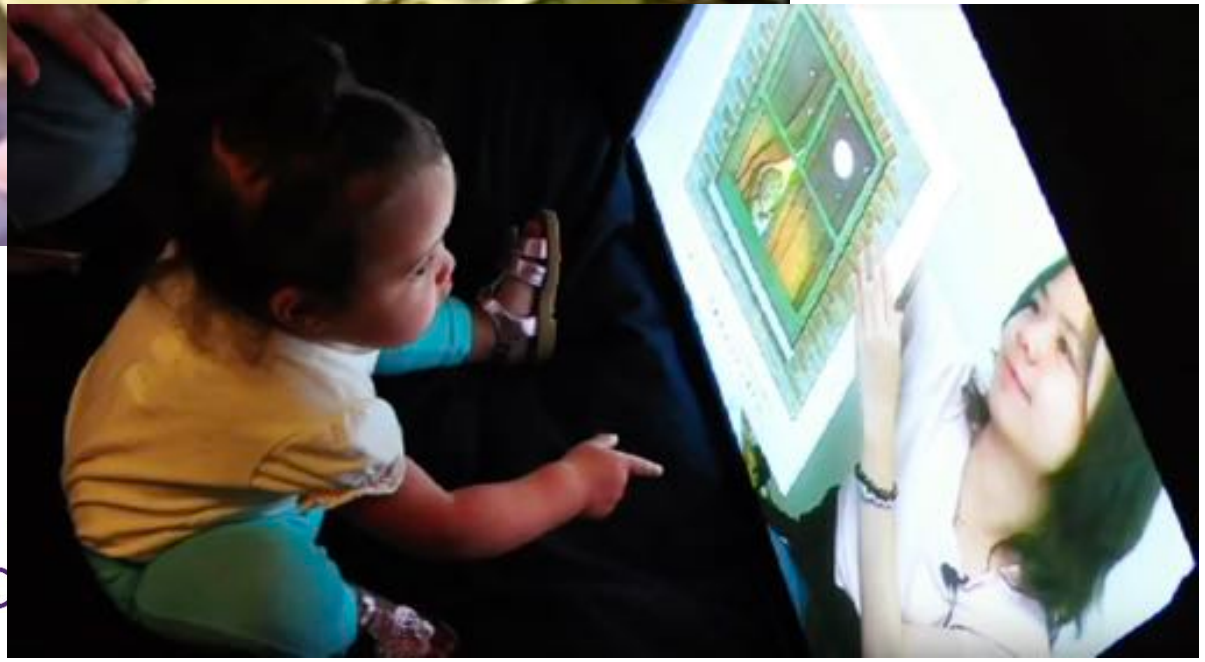




WHO IS IN THE FACTORY WITH THEM?

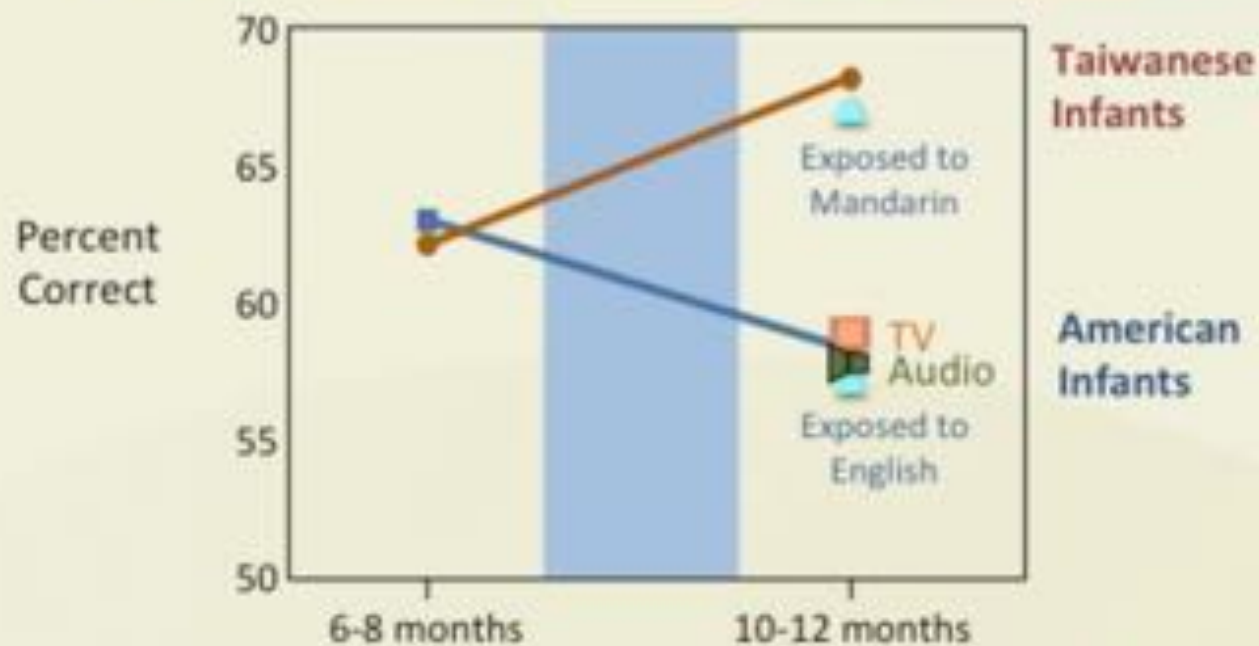




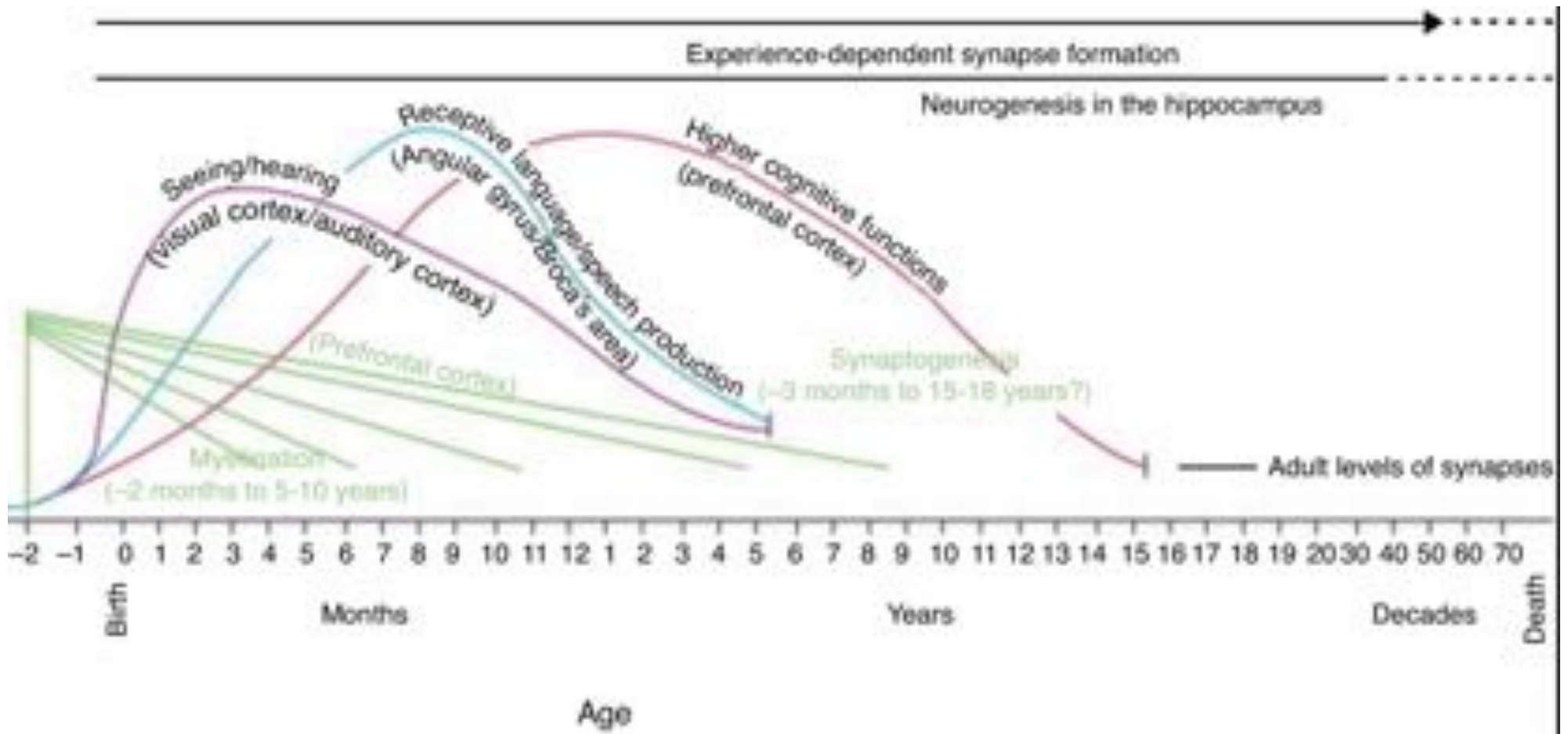


# THE YOUNGER WE ARE THE MORE WE LEARN THROUGH SOCIAL INTERACTION

Performance on Mandarin  $t\text{c}^h\text{-}\zeta$  Sounds







# BUILDING STRONG BRAINS

Our goals for children  
will not be met  
if those in the factory with the child  
*are not interacting with the child*

AND

*if they do not know the science about how you build  
the brain*

THANK YOU!!!

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