



The Power of Early Experience in Development

MFFN/Birth to Three

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Brain Works & Relationships

- Brain becomes what it does as it grows; experiences [+/-] shape developing brain
- Requires genes, experience and energy to grow
- Brain does NOT segregate intelligence, emotion and social skills
- socially isolated primate infants of highly stressed mothers have smaller brains, poorer coping abilities, reasoning skills

* *Human relationships are the active ingredients of environmental influence on child development – Neurons to Neighborhoods (Shonkoff & Phillips)*



Parental Knowledge gaps

Confusion about important concepts;

- 87% parents thought the more stimulation a baby receives the better
- 25% thought /unsure whether every baby is born with a certain level of intelligence which can't be increased or decreased by how parents interact with him or her
- 50% thought the more caregivers a child has before three, the better that child will be at adapting and coping with change
- But things are changing, and fast [Zero to Three/MetLife]

Areas in which parents feel need to improve



Don't know how to handle difficult situations
20%

Lack confidence in parenting skills
11%

Worry someone other than parent has more influence
11%

Hard to understand child's feelings/needs
20%

Don't spend enough time
38%






Categorize by 0-6 mos, 6-12 mos, 2nd yr, 3rd yr the emergence of the following emotions...

- anxiety, envy
- possessiveness, anger
- empathy, fear, affection
- sadness, pride, happiness
- embarrassment, interest
- shame, disgust



Emotional development in the first three years I


- Emotions Developing in the first Year:
 - 0-6 Months
 - Distress / Crying
 - Happiness / Smiling
 - Interest
 - Distaste ('Disgust')
 - 6-12 Months
 - Anger
 - Fear
 - Sadness



Emotional development in the first three years II*

- Emotions Developing in the Second Year:
 - Pride
 - Possessiveness
 - Affection
 - Empathy
 - Anxiety
- Emotions Developing in the Third Year:
 - Shame
 - Envy
 - Embarrassment

* R. Emde, *New Dimensions in Emotional Develop.* Pediatric Roundtable Johnson & Johnson 1999.



Parents/teachers/kids: quality of relationships (NICHD/Pianta)

- Quality means sensitivity, not licensure
- Because children hang around a lot; 5:1 pre-K, 9:1 by third grade
- Teachers don't see daily routines (meals, toileting, naps) as opportunities for sensitive care, or instruction as imbedded in social/emotional environment – either/or
- Children *in* groups vs. *as* a group
- 15%-60% teachers depressed?!
- Is resilience a given?



Predictors of “Resilience”

- Child Traits – I.Q., ‘easy’ temperament, low reactivity, good coping, ‘attractive’
- Family- warmth, cohesion, small size, maternal education, grandparent support
- Community –a secure connection
- Genetic - modifiers of environmental risks
 - “good” polymorphisms that strengthen coping and stress reductions through neuro-transporter ‘health maintenance’

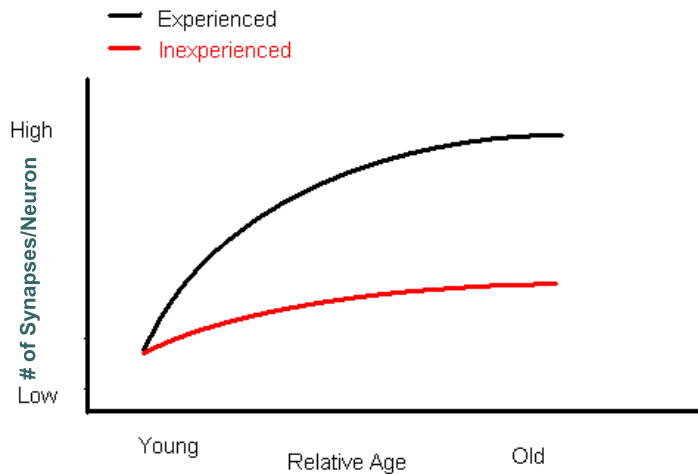


The New Math of Child Development: G x E

- Knowing how experience *shapes* brain tissue, genes now seem less deterministic the more we learn about them
- Now know that with adequate social supports, we can ameliorate some genetic vulnerabilities to anxiety and depression
- No longer nature vs. nurture; now how nature is nurtured



Experience – Dependent Synapse Addition



Stress/Trauma neurobiology in young children

- Neuro-endocrine effects of stress:
 - elevated salivary cortisol in preschoolers in poor care; reverts to normal when improved (Gunnar)
- Neuro-anatomical effects of stress:
 - amygdala/hippocampus/pre-frontal tract changes (De Bellis)
- Neuro-regulatory effects of stress:
 - heart rate elevations in children of war (Garbarino)



Brave New World of Genomics and Temperament: GxE

- Flexible babies (strongly controlled) are least likely to emulate, learn from, be shaped by their parents
- Fearful and Feisty babies (strongly sensitive) are most likely to absorb parental lessons
 - J. Belsky, Univ. Birkbeck/London
- Abused girls are at high risk of becoming alcoholics, unless they have the less active MAOA gene
 - D. Goldman, Nat. Inst. On Alcohol Abuse
- 5-HTT gene for serotonin regulation; 2 short alleles tip scales toward vulnerability when triggered by stress, while 2 long alleles increase 'resilience' in face of stress.
 - A. Caspi and T. Moffit, Univ. of Wisconsin



Research Models of Resilience 'Strengthened'

- **Darlene Francis's** New Rats of NIMH
 - Fostering to change genetic nurturing expressions in subsequent generations
- **Maestripereri's** Macaques
 - 'deprogramming' maternal abuse by cross-fostering to 'active' mothers in first 2 mos.
- **Joan Kauffman's** Maltreated Children
 - **vulnerable 5HTT genes and maltx = big trouble**
 - vulnerable genes and no maltx = no increase in morbidity
 - vulnerable genes and good social support = 'resilience'



Cont'

- “Social support”: a person with whom one can talk about important things
- *There are limits*: If children have baseline emotional vulnerabilities that go untreated, multiple placements drive them ‘crazy’ with -or without- genetic vulnerability



Social Supports and School Readiness

- Confidence
- Curiosity
- Intentionality
- Self-Control
- Relatedness
- Capacity to Communicate
- Cooperativeness

Heart Start: Zero to Three



Literacy's Best Chance

-Marcon, U. of N. Florida

- 6 yr follow-up of 183 children in 3 different preschool models
- Urban, 73% single parent, school lunch-qualified children in pre-Ks:
 - 1)academic/curriculum driven,
 - 2)mixed,
 - 3)child-initiated,play-enriched learning



Outcomes...

- After 3rd grade, no difference
- After 4th grade, #1 had lower grades than #3



Bottom lines; parents need to know...

- How *absolutely* essential they are to kids
- Parenting skills are *supposed* to be learned
- The early years matter a *lot*, but so does time
- How children are treated is as critical to outcome as what they are taught
- Fix troubles early; it gets more complex, expensive, and harder to implement later



Strong Foundations for BTT and MFFN partnership...

- “Hello, Dad”
 - *Infant communication for fathers*



Pearls

- The *way you are* matters more than *what you do*
 - Be with *the parent the way you want them to parent*
- Experience is the architect of the brain, for better and for worse
- Curriculum is a map, not a destination
- Play is the theater of learning, not entertainment
- The brain makes no distinction between learning and emotion
- The Heckman Curve will change the world