

# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

An Introduction to the Neurorelational Framework (NRF)



Connie Lillas, PhD, MFT, RN  
[www.the-nrf.com](http://www.the-nrf.com)  
February 14, 2013

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The Importance of Early Years  
Critical Years for Setting Up a Fragile or Sturdy Foundation



“What happens during the first months and years of life matters a lot, not because this period of development provides an indelible blueprint for adult well-being, but because it sets either a sturdy or fragile stage for what follows.”

Shanket, Jack P. & Deborah A. Phillips, eds. From Nurture to Neighborhood: The Science of Early Childhood Development. National Research Council and Institute of Medicine Committee on Integrating the Science of Early Childhood Development. Washington, D. C.: National Academy Press, 2002, 5.

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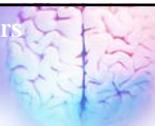
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The Importance of the Early Years (0-3)



- Experiences lay down
  - Neural connections and pathways (brain development)
  - Positive or negative lifelong expectations (procedural memories)
  - Adaptive or toxic stress response patterns
- Emotional care vs. custodial care is the most important factor in health development

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**The Importance of The First 3 Years**  
Experiences Lay Down Circuits

**Brain Growth**

- Newborn's brain is 25% of adult's size
- By 3 years of age, the brain has grown to 80% to 85% of adult size
- By 5 years of age, the brain has grown to 90% of adult size



Image: www.brainconnection.com  
© 1999 Scientific Learning Corporation  
Sheri Hill, PhD, Faculty on Policy, University of Washington

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**The Importance of The First 3 Years**  
Experiences Lay Down Circuits

**“Neurons that fire together wire together”**



**Newborn**      **Early Childhood**      **Later Childhood**

Sheri Hill, PhD, Faculty on Policy, University of Washington

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

## Experiences lay down circuits

- Brains are "use-dependent"
- "Use it or lose it"



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## The Importance of The First 3 Years

### Experiences Lay Down Life-Long Expectations

- What is most familiar and automatic to us, is called procedural memory
- Procedural memories = built in expectations
  - To be loved
  - To be comforted
  - To be confident
  - To be neglected
  - To be treated with hostility
  - To be treated with anxiety

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## The Importance of The First 3 Years

### Experiences Lay Down Life-Long Expectations

Procedural Memories:

- Begin at birth
- Dominate the early years
- Not easy to change; can last a lifetime
- Lay down expectations for relationships, habits, routines

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

## Procedural Memories are Bottom-Up Processes



Bottom-up = Any behavior that is...

- Automatic & Habitual
- Things we do without thinking
- Often does not involve the use of words

"We learn by example and by direct experience because there are real limits to the adequacy of verbal instruction."  
Malcolm Gladwell

"Habit is Stronger Than Reason."  
George Santayana

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## Declarative Memories are Top-Down Processes



Top-down = Any behavior that is...

- Conscious & Effortful
- Things we do with thinking
- Often does involve the use of words

"The mind is everything, what we think, we become..."  
Gautama Buddha

"There are two primary choices in life: to accept conditions as they exist, or accept the responsibility for changing them."  
Dennis Waitley

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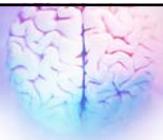
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## We Need Both!



"Truly successful decision making relies on a balance between deliberate and instinctive thinking."  
Malcolm Gladwell

We need to make distinctions between bottom-up and top-down processes and match the neurodevelopment of the child/family with the proper treatment.  
Connie Lillas

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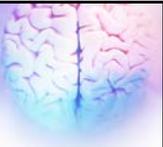
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**The Importance of The First 3 Years**  
Experiences Lay Down Reactions to Stress



**Effects of stress on the brain**

- Long-term stress from abuse, neglect, and multiple caregivers impact medical and mental health conditions
- Upper limits for stress tolerance are getting set up along with brain circuits and memories
- Brains bathed in long-term stress which activates stress hormones that poison the brain circuits

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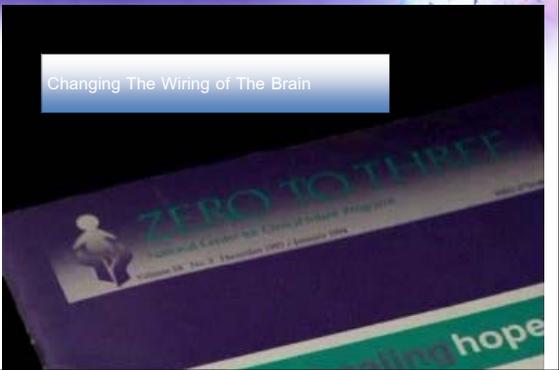
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**The Importance of The First 3 Years**  
Experiences Lay Down Reactions to Stress



Changing The Wiring of The Brain

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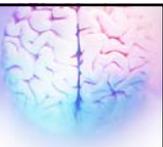
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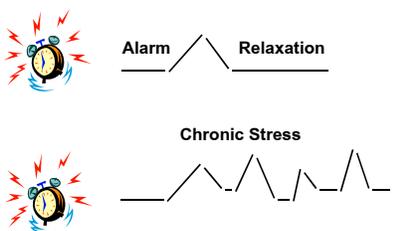
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**The Importance of The First 3 Years**  
Experiences Lay Down Reactions to Stress



**Normal and Long-term Stress:**



The diagram illustrates the difference between normal stress and chronic stress. Normal stress is shown as a bell icon with a single peak, labeled 'Alarm' and 'Relaxation'. Chronic stress is shown as a bell icon with a jagged, continuous line graph, labeled 'Chronic Stress'.

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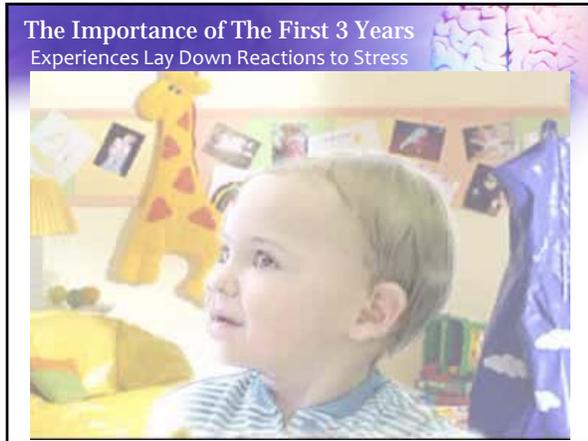
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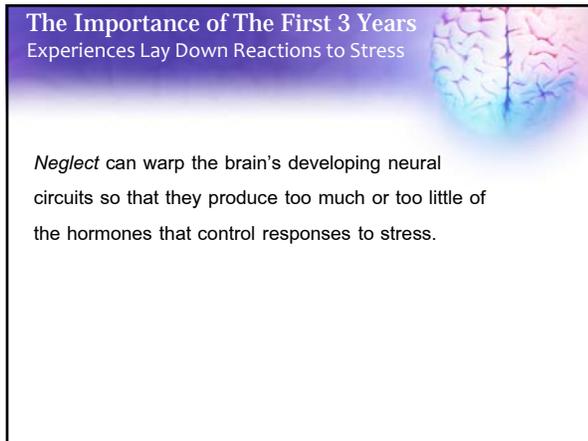
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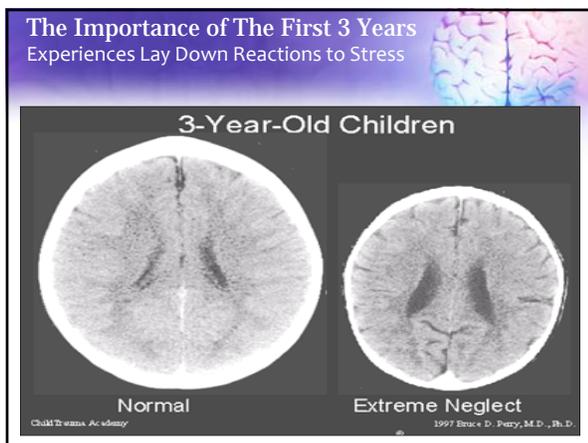
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**The Importance of The First 3 Years**  
Experiences Lay Down Reactions to Stress



“Parents play an important role in setting up the neural circuitry that helps children regulate in response to stress.”

Bruce Perry

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**The Importance of Emotional Care**



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**What practical information will guide us to offer comprehensive assessment of infants and parents?**

| What Matters:   | What assessment information to obtain (3 steps to NRF):   |
|---|---|
| <ul style="list-style-type: none"><li>• Stress thresholds, with stress and stress recovery patterns</li></ul> | <ul style="list-style-type: none"><li>• <i>Step 1:</i> Have child and parents assessed for toxic stress conditions</li></ul>  |
| <ul style="list-style-type: none"><li>• Procedural memories and the quality of engagement</li></ul>           | <ul style="list-style-type: none"><li>• <i>Step 2:</i> Have parent-child socio-emotional milestones assessed</li></ul>  |
| <ul style="list-style-type: none"><li>• Development of brain networks and circuits</li></ul>                  | <ul style="list-style-type: none"><li>• <i>Step 3:</i> Have child &amp; parents assessed for individual sources of vulnerability &amp; resilience in brain networks</li></ul> |

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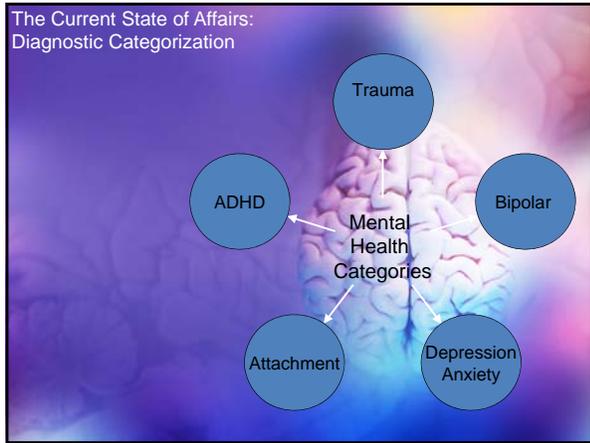
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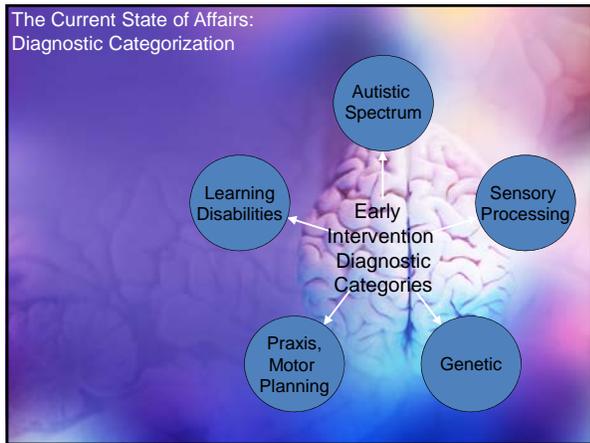
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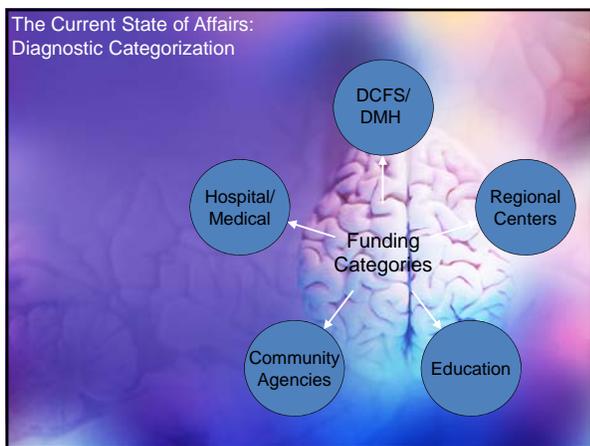
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

## Need for a Cross-Sector Framework

"The expertise about early childhood development, brain development and trauma exists in different sectors and disciplines. Yet, we lack an integrated science of early childhood development...All this new knowledge on child development, trauma, the brain and protective factors is not being translated into public policy nor is it being introduced in our practice."

*Jack Shonkoff M.D., Director, Center for the Developing Child at Harvard University*



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## Framework vs. Model

### The Neurorelational Framework (NRF)

- Framework holds multiple clinical models that one has been trained in
- Framework uses neurodevelopmental principles that can help you organize and more efficiently use the knowledge you already have (e.g., working bottom-up to top-down)
- Allows you to shift from foreground to background across multiple variables and dimensions versus only from a diagnostic "category"
- Enhances your understanding as to where your knowledge is weighted and where you need to expand across disciplinary boundaries



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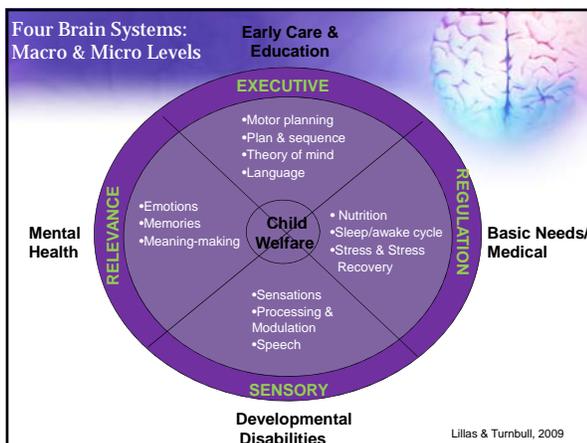
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**Parallel Processes of the NRF** 

“Macro”

- Large-scale Community, Systems of Care Connections
  - Who are your community partners?
  - Do you know them well enough to facilitate a “warm handoff”?

“Micro”

- From Individuals & Personal Mapping, to
- Dyadic, Family Units, to
- Agency Patterns and Teams

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**Step #1:**  
How do we identify stress & stress recovery ? 

A. Recognize what stress recovery looks like

B. Recognize three primary stress responses

C. Recognize four toxic stress patterns

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**How do we identify healthy stress responses?** 

- Allostasis =
  - **Healthy rubber band, that stretches out nicely and bounces back**
  - **Coordination between flexibility & stability**
    - Flexible stress responses
    - Stable deep sleep and green zone

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Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**Everyone Can Learn to Read**  
Non-Verbal Cues

- 93% of communication is nonverbal
- Eye contact
- Facial expression
- Tone of voice
- Body posture, movement, & gestures
- Rhythm, rate, & intensity



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Alert processing is 'just right'...  
for learning and relationships



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**Step #1B:**  
How do we identify three primary stress responses?

Recognize the three primary stress responses:

- Red zone
- Blue zone
- Combo zone



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**Step 1C:**  
How do we identify toxic stress?



- Allostatic load =
  - **Pattern where the rubber band is either too tight or too loose**
  - **Loss of coordination with too much rigidity or too much chaos**

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Possible Regulation and Stress Response Correlates of Interpersonal Modes Across the Lifecycle

| Aspect of Regulation Mode | Low Rigidity / Low Chaos (Healthy)   | No Fixed/Fluid   | No Fixed/Fluid   | No Fixed/Fluid   | No Fixed/Fluid   |
|---------------------------|--|--|--|--|--|
| <b>Eye Contact</b>        | • Healthy eye contact<br>• Eye contact is fluid<br>• Eye contact is fluid<br>• Eye contact is fluid<br>• Eye contact is fluid  | • No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact                               | • No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact                               | • No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact                               | • No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact<br>• No eye contact                               |
| <b>Facial Expression</b>  | • No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression | • No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression | • No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression | • No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression | • No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression<br>• No facial expression |
| <b>Body Posture</b>       | • No body posture<br>• No body posture<br>• No body posture<br>• No body posture<br>• No body posture                          | • No body posture<br>• No body posture<br>• No body posture<br>• No body posture<br>• No body posture                          | • No body posture<br>• No body posture<br>• No body posture<br>• No body posture<br>• No body posture                          | • No body posture<br>• No body posture<br>• No body posture<br>• No body posture<br>• No body posture                          | • No body posture<br>• No body posture<br>• No body posture<br>• No body posture<br>• No body posture                          |
| <b>Speech</b>             | • No speech<br>• No speech<br>• No speech<br>• No speech<br>• No speech  | • No speech<br>• No speech<br>• No speech<br>• No speech<br>• No speech  | • No speech<br>• No speech<br>• No speech<br>• No speech<br>• No speech  | • No speech<br>• No speech<br>• No speech<br>• No speech<br>• No speech  | • No speech<br>• No speech<br>• No speech<br>• No speech<br>• No speech  |

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**Reading Non-Verbal Cues:**  
**Red Zone**



**A Baby's Flooded State:**




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Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**Reading Non-Verbal Cues:**  
**Blue Zone**



**A Baby's Shut-Down State**




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**Reading Non-Verbal Cues:**  
**Combo Zone**



**A Baby's Vigilant State:**




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**Head-On Reflection**  
Individual Differences



**Who We Are At Our Worst!**

| <i>Heart Under Stress</i>         | <i>Hand Under Stress</i>                    | <i>Head Under Stress</i>                      |
|-----------------------------------|---|---|
| Give too much<br>Over accommodate | Demand too much<br>Dominate and control     | Detach too much<br>Dismiss and ignore         |
| <i>Body Under Stress</i>          | <i>Body Under Stress</i>                    | <i>Body Under Stress</i>                      |
| Hypervigilance<br>Fear, Anxiety   | Crying, Anger, Rage<br>Hyperactivity, Mania | Shut Down, Glazed<br>Depression, Dissociation |

Adapted from Lillas & Turnbull, © 2009

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**Step #1C:**  
*How do we identify toxic stress patterns?*

Recognize stress responses that are *too frequent, too quick / intense, too long*

**4 Toxic Stress Patterns**

1. Stress responses that occur too frequently and too quickly
2. Inability to adapt to "normal" challenges and transitions
3. Prolonged stress responses that take too long to recover (more than 10 to 20 mins)
4. Inability to recover from stress response back to baseline health (healthy sleep cycle, healthy awake state)

McEwen




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**Stress Patterns & Associated Health Issues**

Disease does not begin at the onset of symptoms. In fact, maladaptive stress related conditions are implicated in all of the following:

- Increase in heart attack & hypertension
- Melancholic depression
- Obsessive compulsive disorder
- Panic disorder
- Alcoholism
- Lowered immune system
- Decrease in memory functions
- Diabetes
- Malnutrition
- Hyperthyroidism
- Functional gastrointestinal disease
- Allergies
- Asthma
- Autoimmune diseases
- Chronic fatigue syndrome
- Rashes
- Rheumatoid arthritis
- Post Traumatic Stress Disorder




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**Adverse Childhood Experiences Scale**

**CA's ACE List**

1. Recurrent physical abuse
2. Recurrent emotional abuse
3. Contact sexual abuse
4. An alcohol and/or drug abuser in the household
5. An incarcerated household member
6. Someone who is chronically depressed, mentally ill, institutionalized, or suicidal
7. Violence between adults in the home
8. Parental separation or divorce
9. Emotional or physical neglect

**Resources**

- <http://acestudy.org/home>
- <http://www.cavalcadeproducts.com/ace-study.html>
- <http://wichildrenstrustfund.org/files/WisconsinACEs.pdf>




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### ACE Score Higher Than 4



**Score 4 or more**

- Twice as likely to smoke
- Twice as likely to have heart disease
- Twice as likely to be diagnosed with cancer
- Four times as likely to have emphysema or chronic bronchitis
- Six times as likely to have sex before age 15
- Seven times as likely to be alcoholics

**Score 4 or more compared to 0**

- Twelve times as likely to have attempted suicide

Men with a score of 6 or more compared to 0

- Forty-six times as likely to have injected drugs

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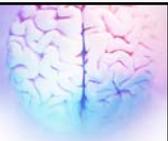
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### National Movement of ACE Studies Across the States



%s of Population with 4+ ACEs:

|            |       |
|------------|-------|
| Louisiana  | • 12% |
| California | • 13% |
| Arkansas   | • 14% |
| Wisconsin  | • 14% |
| Tennessee  | • 15% |
| New Mexico | • 17% |
| Washington | • 18% |

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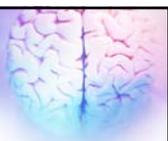
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### Step #2: How do we identify high-quality engagement and positive procedural memories?



A. Recognize what “bottom-up” socio-emotional (SE) milestones look like

B. Recognize what “top-down” socio-emotional (SE) milestones look like

C. Recognize the links of SE milestones with positive procedural memories

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**Step #2 Assess the Quality of Engagement**  
Greenspan, 1985, 1992, Greenspan & Lurie, 1981, ZERO TO THREE, 1994, 2005



**Bottom-Up (non-verbal capacities)**

- Getting calm together
- When *calm* able to make eye contact
- When making *eye contact*, able to share joy
- When sharing *joy*, able to create a continuous back-and-forth flow of communication
- When in a flow, able to expand *non-verbal communication* through an increasingly nuanced ability to read emotional cues, intentions, gestures, and to solve problems

SE Milestone Language Adapted by Connie Lillas

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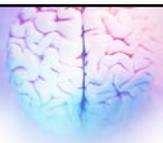
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**Step #2 Assess the Quality of Engagement**



**Top-Down (verbal capacities)**

- When sharing *emotions*, able to create stories via symbolic play & pretend play, with developing language skills
- When using emotional *stories*, able to make-sense and solve problems together

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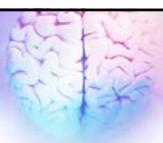
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**It is rarely the case that there is a single cause to the symptoms we see.**



- The meaning of behavior is based upon multiple causality, rather than singular causality, as multiple causes usually underlie the "behavioral problems" that are identified as the presenting problem

Lillas & Turnbull, © 2009

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

## What can we do about it?



- Looking at the big picture...
  - Assess for multiple causes that can be mutually influencing each other
  - Build resilience through any one of multiple ports of entry

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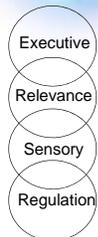
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## Step #3: Assess for Sources of Vulnerability and Resilience Across Four Brain Systems



### Guiding Principles

- There is no one-size fits all
- Assess on a "Macro" level the links with systems of care
- Assess on a "Micro" level functional needs that help guide the triage
- Distinguish between developmental age and chronological age



Bottom-Up Progression

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## Four Brain Systems: Macro & Micro Levels

### Early Care & Education




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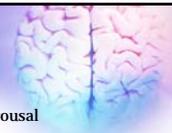
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

## Functional behaviors representing brain systems

Lillas & Turnbull, © 2009



- Regulation
- States of Arousal
- Sensory
- Reactions to all sources of sensory information (including vestibular, proprioception, pain, temperature)
- Relevance
- Emotions, memories, & meanings
- Executive
- Ability to *initiate* and *shift* as well as *inhibit* and *sustain* motor (includes attention) activity and behavior according to the context

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## Double Jeopardy Risk Factors



|                                   |                       |
|-----------------------------------|-----------------------|
| Anthony                           | Erika                 |
| Drug exposure in utero            | Substance Abuse       |
| VLBW & pre-maturity               | Pre-term labor        |
| NICU - forced separation from mom | Pre-teen mom          |
| Invasive medical procedures       | Victim of violence    |
| Exposure to violence              | Acculturation/Poverty |
| Chase and Dodge Pattern           | Relationship Disorder |




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## History Worksheet for the Four Brain Systems



| Parental Risk Factors<br>That Can Compromise Parental Ability to Offer Their Child Support  | Global Questions   | Child Risk Factors<br>That Increase Children's Threat for Adult Support   |
|---|--|---|
| <ul style="list-style-type: none"> <li>Low maternal education</li> <li>Low maternal employment</li> <li>Substance abuse, smoking</li> <li>Partner violence</li> <li>Parental mental health issues</li> <li>Parental history of child abuse</li> <li>Parental history of child neglect</li> <li>Parental history of child maltreatment</li> <li>Parental history of child sexual abuse</li> <li>Parental history of child physical abuse</li> <li>Parental history of child emotional abuse</li> <li>Parental history of child neglect</li> <li>Parental history of child maltreatment</li> <li>Parental history of child sexual abuse</li> <li>Parental history of child physical abuse</li> <li>Parental history of child emotional abuse</li> </ul> | <p><b>REGULATION</b></p> <ul style="list-style-type: none"> <li>• How quickly and effectively does the child self-regulate sensory information?</li> <li>• How sensitive is the child's sensory system to information from relationships?</li> <li>• How does the child's sensory system respond to sensory information that is unrelated to the relationship?</li> </ul> <p><b>SENSORY</b></p> <ul style="list-style-type: none"> <li>• How quickly and effectively does the child self-regulate sensory information?</li> <li>• How sensitive is the child's sensory system to information from relationships?</li> <li>• How does the child's sensory system respond to sensory information that is unrelated to the relationship?</li> </ul> <p><b>RELEVANCE</b></p> <ul style="list-style-type: none"> <li>• How quickly and effectively does the child self-regulate sensory information?</li> <li>• How sensitive is the child's sensory system to information from relationships?</li> <li>• How does the child's sensory system respond to sensory information that is unrelated to the relationship?</li> </ul> <p><b>EXECUTIVE</b></p> <ul style="list-style-type: none"> <li>• How quickly and effectively does the child self-regulate sensory information?</li> <li>• How sensitive is the child's sensory system to information from relationships?</li> <li>• How does the child's sensory system respond to sensory information that is unrelated to the relationship?</li> </ul> | <ul style="list-style-type: none"> <li>Parental mental status</li> <li>Parental education</li> <li>Parental employment</li> <li>Parental substance use</li> <li>Parental mental health issues</li> <li>Parental history of child abuse</li> <li>Parental history of child neglect</li> <li>Parental history of child maltreatment</li> <li>Parental history of child sexual abuse</li> <li>Parental history of child physical abuse</li> <li>Parental history of child emotional abuse</li> <li>Parental history of child neglect</li> <li>Parental history of child maltreatment</li> <li>Parental history of child sexual abuse</li> <li>Parental history of child physical abuse</li> <li>Parental history of child emotional abuse</li> </ul> |

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**Hypoalert at 4 months**

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**Assessment of Load Conditions and Current Brain Capacities for Child and Parents**

**Instructions:**

- Place a check in each box that applies to the parent (P1, and P2) and the child (C), the birth capacities, biggest and concerns and present and absent.
- Place an X in a box that do not apply to the child for developmental reasons.
- The items highlighted in red are the most salient intervention points.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

|   | WOMEN & CONCERNS |   | PARENTS & STRAINS |    |
|---|------------------|---|-------------------|----|
|   | P1               | C | P1                | P2 |
| <b>These Load Conditions</b>                      |                  |   |                   |    |
| 1. Too demands, too many stress responses         |                  |   |                   |    |
| 2. Disrupted stress response without intervention |                  |   |                   |    |
| 3. Lack of stress recovery                        |                  |   |                   |    |
| <b>Regulation</b>                                 |                  |   |                   |    |
| • Deep sleep cycling                              |                  |   |                   |    |
| • Stable and ongoing alert processing state       |                  |   |                   |    |
| • Expression of all stress responses              |                  |   |                   |    |
| • Distinct states or smooth transitions           |                  |   |                   |    |
| • Connection to visceral cues                     |                  |   |                   |    |
| • Efficient stress recovery                       |                  |   |                   |    |
| <b>Sensory</b>                                    |                  |   |                   |    |
| • Emotional (tone)                                |                  |   |                   |    |
| • Post (chemical, biogen, pain, pressure)         |                  |   |                   |    |
| • Balance vestibular responses                    |                  |   |                   |    |
| • Inappropriate tone of joints, muscles           |                  |   |                   |    |
| • Internal (voice)                                |                  |   |                   |    |
| • Tender (skin and deep touch)                    |                  |   |                   |    |
| • Taste   |                  |   |                   |    |
| • Smell   |                  |   |                   |    |
| • Auditory  |                  |   |                   |    |
| • Vision  |                  |   |                   |    |
| • Touching  |                  |   |                   |    |
| • Cuddling  |                  |   |                   |    |
| <b>Reference</b>                                  |                  |   |                   |    |
| • Full range of reactions (positive and negative) |                  |   |                   |    |
| • Appropriate access to full range of resources   |                  |   |                   |    |
| • Accurate awareness of self and other            |                  |   |                   |    |
| <b>Executive</b>                                  |                  |   |                   |    |
| • Proprietary adaptive behavior                   |                  |   |                   |    |
| • Spontaneous behavior                            |                  |   |                   |    |
| • Adaptive behavior                               |                  |   |                   |    |

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**Functional Capacities of the Regulation System**

1. The capacity for deep sleep cycling
2. The capacity for alert processing
3. The capacity for the adaptive expression of all stress responses
4. The capacity for distinct states of arousal and smooth transitions between them
5. The capacity for connection to visceral cues
6. The capacity for efficient stress recovery

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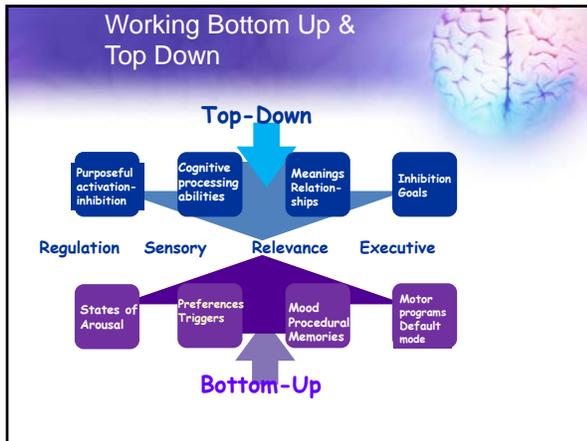
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)



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## Functional Capacities of the Sensory System

1. The capacity to receive, translate, associate, and elaborate sensory signals within and across sensory modalities in a developmentally appropriate way (*sensory processing*)
2. The capacity to balance the flow of sensory signals in a way that is appropriate to context (*sensory modulation*)

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## Processing & Modulation Distinctions

- *"Processing* is weighted toward the modality and location attributes of the sensory information (what is it, where is it?)
- *Modulation* is weighted toward the intensity and timing attributes of the sensory information (how much of it, how fast is it, how long does it last?)"

- Lillas & Turnbull, 2009, p. 197

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- ### Processing Variables
- Is the infant, child, adult registering the sensory information?
  - Is the infant, child, adult accurately identifying the source of the sensory information?
  - Is the infant, child, adult accurately discriminating the sensory information?

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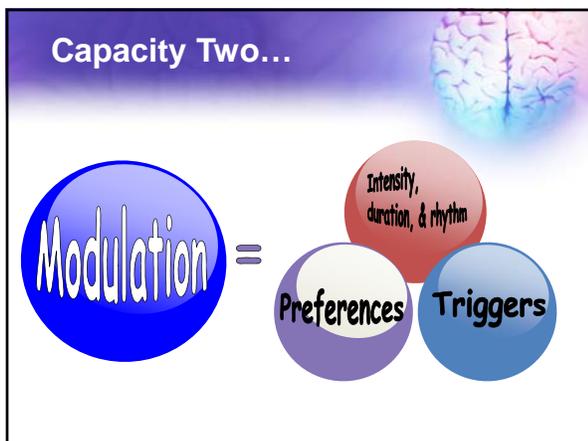
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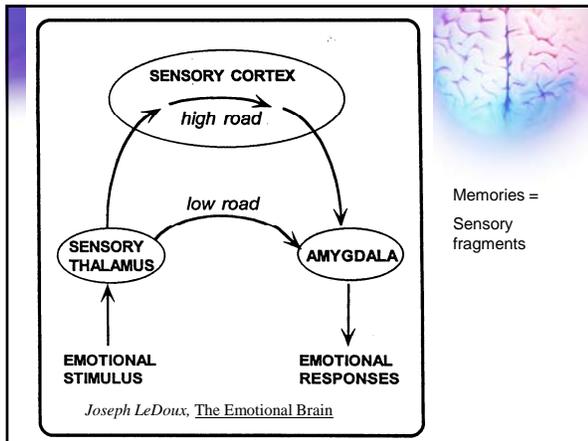
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)




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## Modulation Variables

- Is the infant, child, or adult over or under-reactive to sensory information?
- Do mid-range intensities of sensations support optimal arousal or do extremes need to be used?
- Experiment with sensations: begin with low intensity, slow rhythms, and short durations to be safe
- **Does the infant, child, adult need to be matched or countered?**

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## Sensory Preferences & Triggers

| <b>Preferences</b>                       | <b>Triggers</b>                                      |
|--|--|
| • Support down-regulation to sleep       | • Stimulate a stress or load response...             |
| • Support calm, alertness for engagement | • Because memories are "sensory" fragments           |
| • Support stress recovery                | • Most often, are procedurally based and "automatic" |

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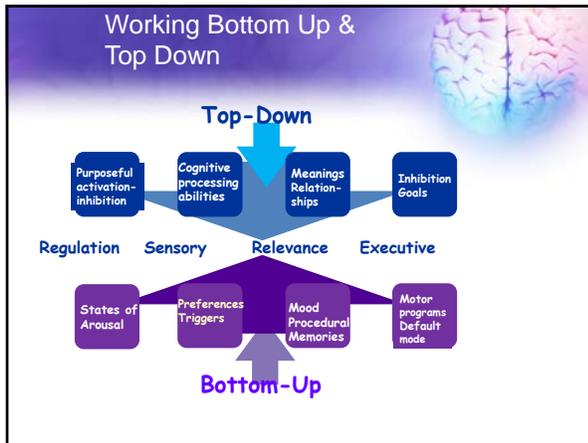
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)



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- ### Functional Capacities of the Relevance System
1. The capacity to flexibly experience, express, and modulate a full range of emotions in ways that are appropriate to context
  2. The capacity to learn from experience by scanning and accessing a full range of memories that are appropriate to the context
  3. The capacity to create meanings that accurately reflect self and others

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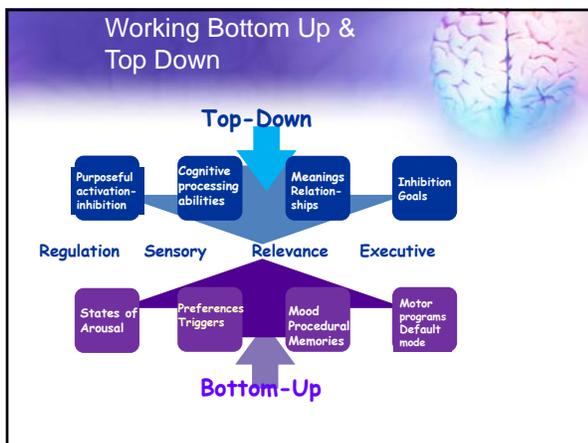
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

### Functional Capacities of the Executive System



1. The capacity to express spontaneous, automatic, and consciously controlled behaviors in a flexible and purposeful manner
2. The capacity to integrate the bottom-up influences of emotions with the top-down control of thoughts
3. The capacity to assess, integrate, and prioritize one's own internal (self) needs in relation to external (context/other) needs

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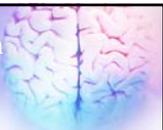
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### The 4 dimensions of the EX system



- Spontaneous (Flexibility)
  - Initiate: **mobility of spontaneous movement**
  - Shift: **mobility imposed on stability**
- Automatic (Stability)
  - Inhibit: **ability to inhibit spontaneous movement**
  - Sustain: **supported by postural control and needs inhibition**
- Motor control: ability to regulate or direct the mechanisms essential to coordinated functional movement (Shumway-Cook & Woollacott, 2007), which uses all of these dimensions!

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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

**What does “load” look like in the context of challenge or threat at 4 months**



- **Regulation:**
  - Hypoalert state
  - Glazed eyes
  - Shut down; No signs of learning and relating occurring
- **Sensory:**
  - Non-responsive to sensory information
  - Chronic avoidance/aversion to sensory input
  - Lack of orienting to sights and sounds
  - No cooing or babbling (speech delay)
- **Relevance:**
  - Lack of engagement
  - Lack of joyful exchanges (facilitates a ‘weak’ commitment)
  - Lack of back and forth rhythm
- **Executive:**
  - Lack of head stability
  - Lack of movement of reaching, rolling, turning eyes or head to sights and sounds

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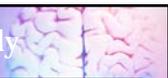
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**Erika and Anthony Case Study**



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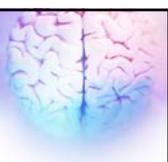
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**DIAGNOSTIC CLASSIFICATION**

**0-3R TRIAGE SYSTEM:**



1. TRAUMA
2. GRIEF & LOSS
3. REGULATORY DISORDERS
4. ADJUSTMENT DISORDER
5. MOOD & AFFECT DISORDERS
6. MULTIPLE DELAYS (MDD) (genetics)
7. RELATIONSHIP DISORDER (AXIS II)
8. REACTIVE ATTACHMENT DISORDER
9. FEEDING & SLEEPING DISORDERS

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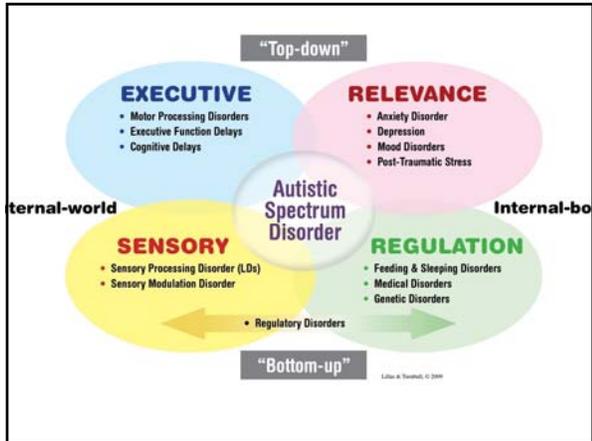
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)




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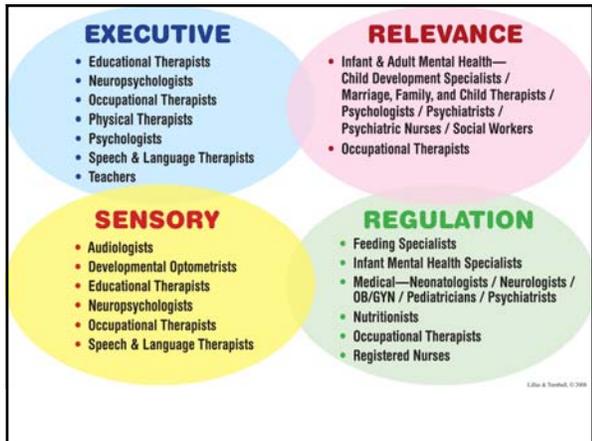
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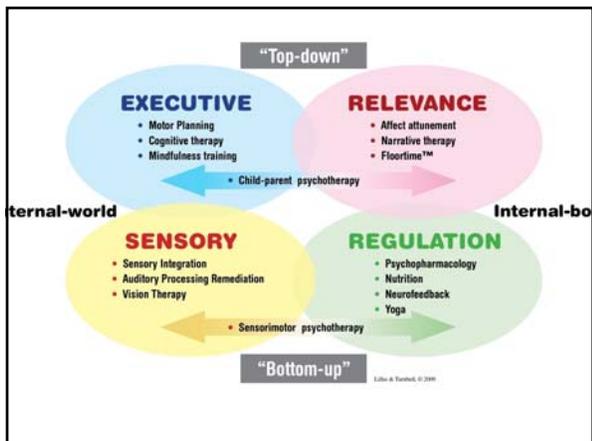
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# Bridging the Gaps. An Introduction to the Neurorelational Framework (NRF)

### Anthony and Erika from Load to Coordination



- **Regulation:**
  - Optimal state of arousal – calm and attentive
  - Bright shiny eyes
  - Signs of learning and relating
- **Sensory:**
  - Tolerating sensations
  - Orienting to sounds, sights, and touch
  - Cooing begun; sign of beginning speech & language
- **Relevance:**
  - Mutual pleasure and joy
  - Back and forth rhythm
  - Falling in love facilitating a strong commitment and increases chances of permanency and a nurturing relationship
- **Executive:**
  - Motor system at midline
  - Motor movement increased with looking, reaching, and kissing

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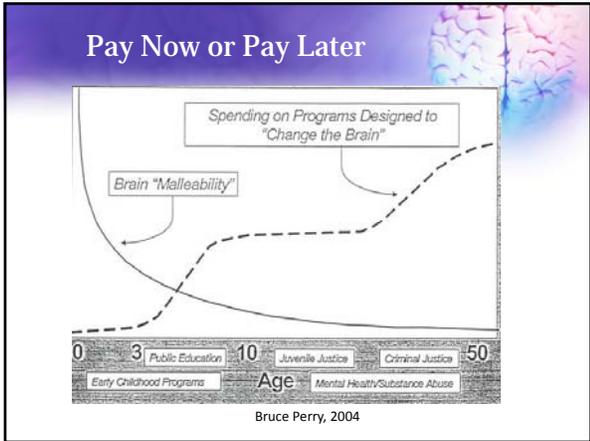
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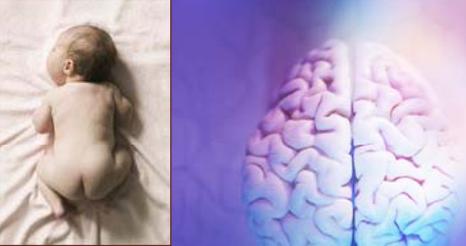
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### Thank You!

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