Attachment Theory:
From Neuroscience to Clinical Practice

Dr. Anita Hickey, FRCPC & Dr. Ya Xue, PhD.
IWK Mental Health and Addictions
Dalhousie Dept. of Psychiatry
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Objectives

* Review of brain architecture development
* Types of stress and their influence on development
* Attachment theory
* Clinical applications
    * Circle of Security

Common Misconceptions

* "Children are like sponges"

* "80% of brain development is complete by age 3"

* "When bad things happen, you need to just toughen up"

Early Development – Core Concepts

* Brains are built from nature and nurture, not nature vs nurture
* Brains are built from the "bottom up"
    * Early skills lay the foundation for later growth
* Cognitive, social and emotional development are intimately linked
* Toxic stress can damage brain architecture

National Scientific Council on the Developing Child
Harvard University

Nature AND Nurture

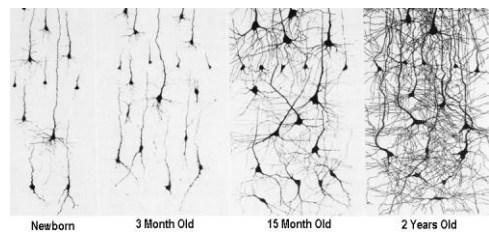Genes provide the hardware and experiences are the software through which the brain develops.

Foundational Skills

* At birth, skills provide the foundation for experiences with environment that shape brain architecture
    * Sensory: appreciate environment around us
    * Motor: interact with the environment
* Learning occurs in an interactional way for infants
    * Example: development of speech from sound recognition → reading and writing
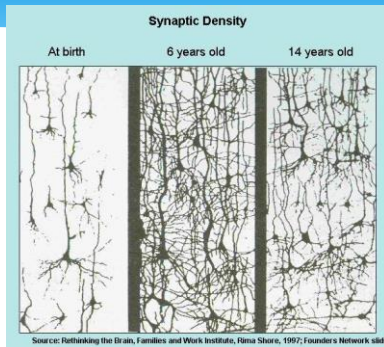
Early Language

* https://www.youtube.com/watch?v=_JmA2ClUvUY
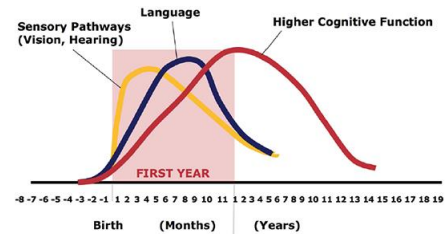
Neural Development

E. Courchesne, K. Pierce Int. J. Dev. Neurosci., 23 (2005)

Synaptic Pruning

Synaptic Density

At birth   6 years old   14 years old

Source: Rethinking the Brain, Families and Work Institute, Rima Shore, 1997; Founders Network slide

Human Brain Development
Neural Connections for Different Functions Develop Sequentially

Sensory Pathways (Vision, Hearing)   Language   Higher Cognitive Function

FIRST YEAR

-8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
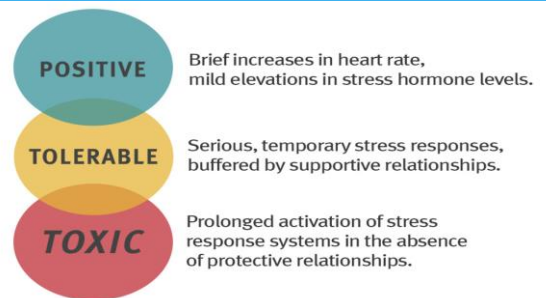
Birth   (Months)   (Years)

Source: C.A. Nelson (2000). Credit: Center on the Developing Child (2007). *The Science of Early Childhood Development* (InBrief). Retrieved from www.developingchild.harvard.edu.

## The most important thing to know…

Good   Bad

Good and Bad experiences matter!

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.

Credit: Center on the Developing Child (2007). *Toxic Stress*. Retrieved from www.developingchild.harvard.edu.

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Impact of Toxic Stress

Persistent Stress Changes Brain Architecture
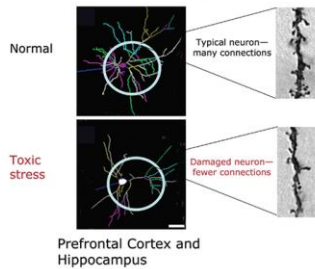
Source: Radley et al (2004); Bock et al (2005).
Center on the Developing Child.

Good News

* Not all children exposed to toxic stress develop bad outcomes (but they are at higher risk!)
* Supportive responsive relationships with caregiving adults can prevent or reverse damaging effects of toxic stress

* We can make a difference!

Summary

* All children are born wired for feelings and ready to learn
* Early environments matter and relationships are essential
* A child's brain is neuroplastic, shaped by each interaction and the environment

Shonkoff et al., 2000

Attachment Theory

* Introduction to Attachment
* Four Patterns of Attachment Relationships
* Clinical Application of Attachment Theory: Circle of Security

Introduction to Attachment Theory

* **John Bowlby (1907 – 1990)**
  * British psychiatrist and psychoanalyst
  * Interested in the effects of separation of young children from their families during World War II
  * Provided the theories behind attachment

* **Mary Ainsworth (1919 – 1999)**
  * American psychologist
  * Supported, extended and evolved the theory
  * Developed a measure to asses the quality of the attachment relationship, which made it possible to study predictors of individual differences in attachment

What Is Attachment?

* "Close emotional relationships between the child and an attachment figure" (Bowlby, 1969)
* The relationship as felt by the child

Core Assumptions of Attachment Theory

* **1. Attachment is adaptive**
  * Children who are able to form attachment relationships are more likely to survive
  * Children are born with a number of behaviours that make the development of attachments more likely
    * E.g. smiling, crying, clinging
 * Caregivers are also predisposed to respond to children's signals
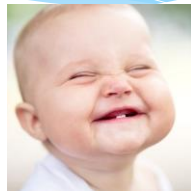
* **All children, under typical circumstances, will form an attachment relationship**

Core Assumptions of Attachment Theory

* **2. There is a sensitive period for attachment development**
  * It is easier for children to form attachment relationships in the first few years of life
  * What is learned during this period has important consequences

  * Ethology and imprinting
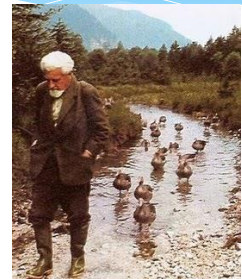
Core Assumptions of Attachment Theory

* **3. Attachment is about more than meeting basic needs**

Figure 14. Typical response to cloth mother surrogate in fear test

* Harlow's monkeys
  * Two surrogate mothers:
    * Mother 1: wire mesh mother, provided food
    * Mother 2: cloth mother, provided contact
  * Monkeys developed an attachment to the cloth mother

Individual Differences in Attachment

Under typical circumstances, all children will form attachment relationships; but children's *qualities* of relationships can differ

* **Longitudinal Studies**
  * Different attachment qualities are related to different long term socio-emotional consequences.

* **Four patterns of attachment**
  * Secure , Insecure-Avoidant, Insecure-Ambivalent/Resistant, Insecure-Disorganized
  * Reliably assessed as early as 12 months of age in the Strange Situation Procedure
  * https://www.youtube.com/watch?v=DRejV6f-Y3c

Sensitive Responsiveness Is The "Key Determinant" Of A Secure Attachment Relationship (Ainsworth et al., 1978)

Parenting behavior	Expectation	Child's behaviour	Attachment Quality
Sensitive responsiveness	Parent will respond to signals of distress	Actively seek proximity/contact, and is calmed by parental behaviour	Secure
Rejecting	Parent will reject signals of distress	Minimize expressions of distress	Insecure-Avoidant
Inconsistently responsive	Parent may/may not respond to signals of distress	Maximize expressions of distress	Insecure-Ambivalent/ Resistant
Frightening/ Frightened/ Disoriented	Parent is supposed to be source of comfort but is paradoxically the source of stress	Odd/Contradictory behaviors; indicative of breakdown in organized attachment strategy	Disorganized

* **Attachment interventions:** Changing children's attachment relationships involves changing caregiver's behaviours

## An Attachment Based Intervention: Circle of Security

▪ Goal:
  ▪ Increase parental sensitive responsiveness to children's attachment signals → Increase secure attachments

▪ Components
  ▪ 20 weeks parent skills development group
  ▪ Teaches attachment principles
    ▪ Presents attachment theory in a user friendly graphic
    ▪ Helps parents decode their child's behaviors as an expression of fundamental attachment needs
  ▪ Video review of parent-child interactions in group

Assumptions of Circle of Security

"Behavior is a way children communicate their innate needs. Chronic problem behaviour emerge when children's fundamental attachment needs are persistently unmet"

(Powell et al., 2013)

* For some families, intervening at the attachment relationship level needs to be a central part of therapy
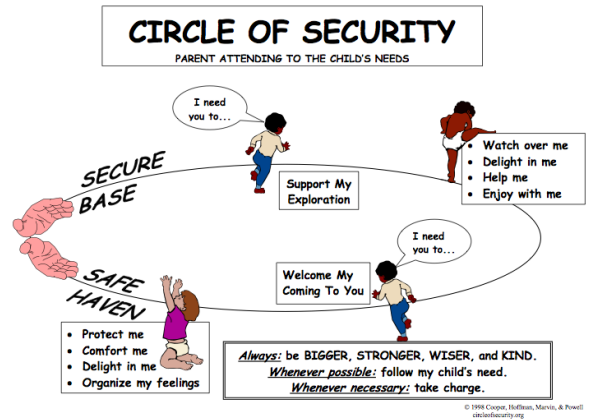
Children Alternate Between Exploration and Connection
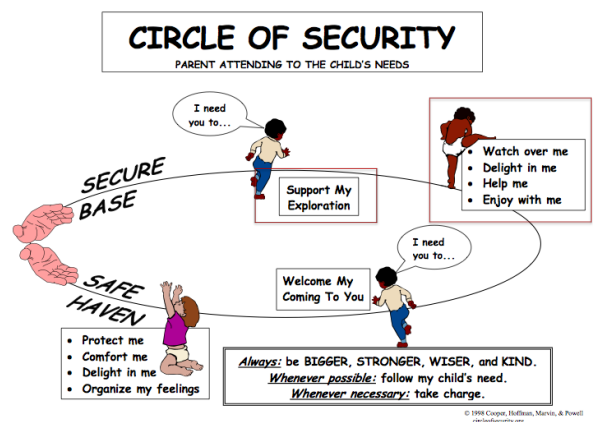
1. **Exploration:**
   * The instinct to follow one's innate curiosity and desire for mastery
   * Role of the parent: **Secure Base**

Parents as the Secure Base

■ "one of being available, ready to respond when called upon to encourage and perhaps assist, but to intervene only when clearly necessary"

■ The secure base creates the conditions that enable children to explore the world in a confident way

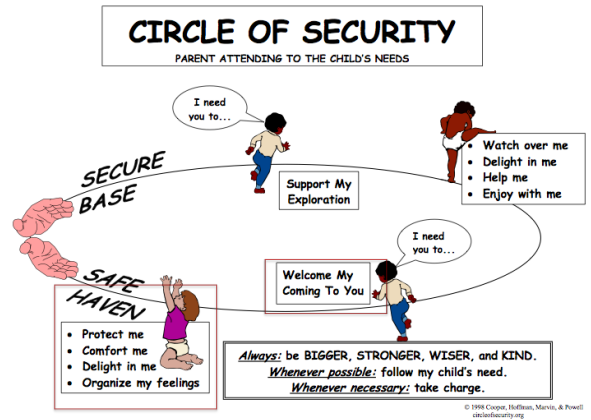## Children Alternate Between Exploration and Connection

2. **Connection:**

- The instinct to seek proximity to a specific person who will comfort, protect and/or organize one's feelings when the environment feels unsafe
- Role of the parent: **Safe Haven**

Parents as the Safe Haven

- Place of safety for children when feeling stressed, frightened or simply tired
- Provide children with a recharge so that they can then go back out into the world to explore

CIRCLE OF SECURITY
PARENT ATTENDING TO THE CHILD'S NEEDS

SECURE BASE

SAFE HAVEN

I need you to...
Support My Exploration

- Watch over me
- Delight in me
- Help me
- Enjoy with me

I need you to...
Welcome My Coming To You

- Protect me
- Comfort me
- Delight in me
- Organize my feelings

Always: be BIGGER, STRONGER, WISER, and KIND.
Whenever possible: follow my child's need.
Whenever necessary: take charge.

© 1998 Cooper, Hoffman, Marvin, & Powell
circleofsecurity.org

Practice: Identifying The Need...

- **Ask these questions:**
  - What do you see the child doing?
    - Focus on the behaviours
    - Seeing vs guessing
  - What do you think the child needs? Is he/she on the top or bottom of the circle?
  - What do you imagine the child is feeling?

- Video:
  https://www.youtube.com/watch?v=YuewtGD_Ng4&t=55s

The Path to Secure Attachment

Circle of Security – map that summarizes the essence of security and is designed to help parents understand their children's attachment needs

- Central Question: "Can I depend on you when I need you?"
  - Children need their parent's support for comfort and protection
  - Children also need their parent's support to explore the world and master new skills

- Parents who are able meet their children's needs by being a safe haven during times of stress and secure base during exploration are more likely to have children with secure attachments

Efficacy of the Circle of Security

* Hoffman et al. (2006)
  * N = 65 caregivers and children
  * Pre to post intervention:
    * Decrease in disorganized attachment from 65% to 25%
    * Increase in secure attachment from 20% to 54%

* Yaholkoski et al., (2016)
  * Meta-analysis of 10 studies
  * Medium sized effect for child attachment security (g = 0.65, p =.003) & quality of care-giving (g = 0.6, p =.012)
  * Large effect size for improved caregiver self-efficacy (g = 0.98, p <.001)
  * Not a significant effect at reducing disorganized attachment (g = -0.67, p = .07)

Developmental Associations of Different Attachment Patterns

* **Early attachment relationships provides:**
  * Lens with which the child comes to see the self and the social world
    * i.e. Internal working models
  * Foundation on which children learn to regulate their emotions and behaviours

Developmental Associations of Different Attachment Patterns

* **Longitudinal studies**
  * Secure attachment is a protective factor against later adversity; non-secure attachments are risk factors for later maladjustment

* **Children with secure attachments**
  * More confident, independent, socially competent, and have better peer relationships in childhood, and longer term and higher quality romantic relationships in adulthood

* **Children with insecure attachment**
  * Higher levels of aggressive behaviours and conduct problems

* References: Handbook of Attachment, 2nd Edition, Section V: Psychopathology and Clinical Application of Attachment Theory and Research

Questions or Comments?