Presentation to:

BOYS AT RISK
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LANGUAGE DEVELOPMENT, BEHAVIOR AND SOCIAL-EMOTIONAL FUNCTIONING IN BOYS

CUMULATIVE RISKS

OUTLINE

- Introduction
- Cumulative Risk
- Proximal Processes
- Dyadic Synchrony
- Mutual Regulation
- Language
- Depression and Violence
- What We Know
- Interventions

LANGUAGE PROCESSES

INTRODUCTION

COMPLEXITY

- A child goes from random babbling to speaking fully articulated words and sentences just a few years later
- This mastery occurs more quickly than any complex skill acquired during the course of a lifetime
- Neuroscientists now have a picture of what is happening in the baby's brain during this learning process (Kuhl, 2015)

EMOTIONAL CONTEXT OF LEARNING

- It is emotional content of early language learning and later language learning that is decisive for the success of language acquisition
- If language is learned in an emotional context additional brain areas like the amygdala will foster and support linguistic representation and processing
- A lot of language is unconscious (e.g., nonverbal components, form and content)
- The property of language most intimately related to the expression of affect is prosody

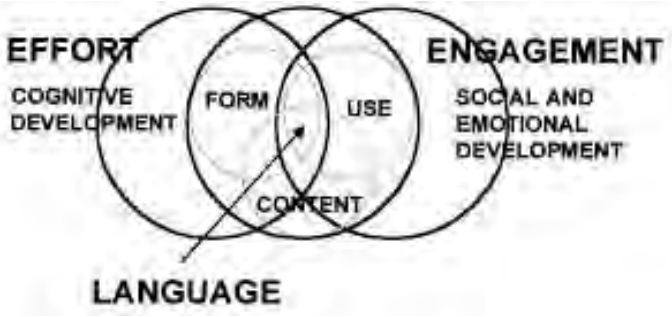
LANGUAGE AND GESTURES

- Girls produce their first words (Maccoby, 1966) and first sentences (Ramer, 1976) earlier than boys, have larger vocabularies (Huttenlocher, Haight, Bryk, Seltzer & Lyons, 1991) and use a greater variety of sentence types (Ramer, 1976) in their early communications than boys of the same age
- Boys combine gestures with words to convey meanings later than girls, and then, combine words with other words to convey the same meanings entirely within speech, again later than girls

LANGUAGE SKILLS

- Language skills at 18 months predict hyperactive behavior at 5 years (Girouard et al., 1998)
- Less educated parents are likely to use fewer words, less complicated syntax and fewer references to events not in the present when communicating with their children (Hart & Risley, 1995)
- Leaper, Anderson, and Sanders (1998) found that mothers talk less to sons than to daughters
- Lovas (2011) fathers engage in more complex conversations with daughters than with sons at 24 months
- Children in stressed homes are more likely to hear disjointed language and receive irrelevant replies (Dale, 2000)
- Expressive language is related to cognitive development, and the use of directive language is related to decreased development of a number of elements of language including total word usage, receptive, semantic and pragmatic language (Murray and Hornbaker, 1997; Taylor, Donovan, Miles, & Leavitt, 2009)

THE INTENTIONALITY MODEL



COMMUNICATION

- The child who successfully accomplishes communication with others, develops normally
- Their understanding of themselves, others and the world expands - meaning-making
- A child who does not engage in the world or relationships in a culturally appropriate manner does not develop normally no matter what causes the failure - poor parenting, toxic exposures, or parental psychopathology

DEVELOPMENTAL IMPACT

CUMULATIVE RISKS

WHAT WE KNOW

- Brain architecture is shaped by the interactive effects of both genetic predisposition and environmental influence, and its developing circuitry affects a lifetime of learning, behavior, and health
- The biology of early childhood adversity reveals the important role of toxic stress in disrupting developing brain architecture and adversely affecting development and regulatory functions
- Toxic stress can lead to permanent changes in learning (language, cognitive, and social-emotional skills), behavior (adaptive versus maladaptive responses to future adversity), and physiology (a hyperresponsive or chronically activated stress response)

CHILDREN WHO EXPERIENCE MULTIPLE SOCIOCULTURAL AND CAREGIVING RISK FACTORS ARE MORE LIKELY TO DEMONSTRATE LESS OPTIMAL COGNITIVE AND LANGUAGE

DEVELOPMENT

13

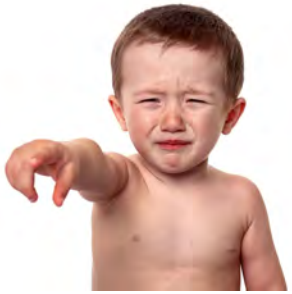
MULTIPLE RATHER THAN SINGLE RISK EXPOSURES HAVE WORSE DEVELOPMENTAL CONSEQUENCES

IF EXPOSURE TO MULTIPLE, CUMULATIVE RISK FACTORS IS MORE HARMFUL THEN DEVELOPMENTAL INTERVENTIONS THAT ISOLATE ONLY ONE RISK FACTOR ARE LESS LIKELY TO WORK THAN THOSE THAT ARE MULTIFACETED

(Brooks-Gunn, 2003; Rutter, 1979, 1981; Sameroff, 2006; Sameroff, Seifer, & McDonough, 2004; Yoshikawa, Aber, & Beardslee, 2012)

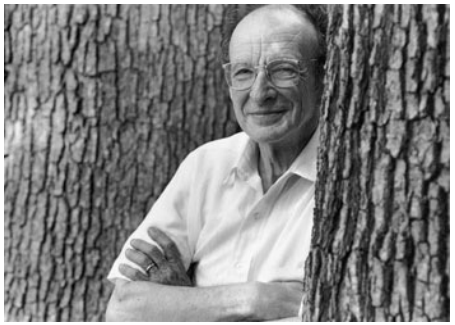
FACT

- Intrauterine Stress and Birth History
- Attachment Concerns
- Developmental Trauma
- Multiple Placements



PROXIMAL PROCESSES

DYNAMICS



PROXIMAL PROCESSES ARE PATTERNS OF RECIPROCAL SOCIAL INTERACTION THAT OCCUR ON A REGULAR BASIS OVER TIME

FOR HUMAN DEVELOPMENT TO BE SUCCESSFUL, THESE PROXIMAL PROCESSES MUST BE RECIPROCAL, CONTINUOUS, AND BECOME INCREASINGLY COMPLEX AS THE CHILD MATURES

PROXIMAL PROCESSES ARE THE KEY TO UNDERSTANDING HOW BOTH PERSONAL AND ENVIRONMENTAL FACTORS INFLUENCE CHILD DEVELOPMENT OVER TIME

Urie Brofenbrenner

DYNAMIC INFLUENCES

- The dynamic nature of proximal processes means that developmental outcomes can become characteristics or resources that prompt, facilitate or constrain subsequent proximal processes (i.e., developmental ends become developmental means) (Taylor, 2010)
- The importance of dynamic nature of parent-child interactions and shared activities, particularly in early development (e.g., Meaney, 2010; Racine & Carpendale, 2007)

DEVELOPMENTAL IMPACT

DYADIC SYNCHRONY

FUNCTION OF SYNCHRONY

The biosocial function of synchrony with caregivers serves the infant in at least four ways by:

- Enhancing multisensory processing,
- Facilitating homeostatic regulation,
- Increasing motivation, and
- Facilitating the formation of a secure attachment to the caregiver

STRUCTURE OF SYNCHRONY IN TODDLER–CAREGIVER INTERACTIONS

- The structure of child–caregiver synchrony during toddlerhood is similar to that in the infant period, in that it still involves prolonged, coordinated, and contingent interactions
- However, synchrony differs in at least two ways: (1) the child becomes a more active interactional partner, with interactions taking on the appearance of a mutually affiliative dialogue (conversations), (2) caregivers use a broader array of information, scaffolding skills, and other accommodative behaviors as they interact responsively with the child (Harrist & Waugh, 2001)

DYADIC SYNCHRONY IN EARLY CHILDHOOD

- Two changes in the structure of child–caregiver synchrony beyond toddlerhood occur: (1) as involvement becomes equal or near-equal, balance in turn-taking and initiations becomes a critical characteristic of synchrony, (2) it becomes important that synchronous exchanges not cooccur with the expression of mutually negative affect (Harrist, 2003)
- Vizziello et al. (2000) observed preschooler–parent (and toddler–parent) dyads as they separated and reunited at day care, and as the children interacted with peers after separation from parents
- They found that children from high synchrony dyads most easily integrated into peer play, and were more likely to act as leaders than children from low- or medium-synchrony dyads

DYADIC SYNCHRONY

- Weinberg, Tronick, Cohn, and Olson's (1999) observations of 6-month-olds and their mothers found mother–son dyads to have higher synchrony scores than mother–daughter dyads, although the reparation of mismatching states was slower for boys than girls
- Of families of 1st graders engaged in play, father–son dyads were found to be more synchronous than father–daughter dyads (Carrillo & Harrist, 1997)

SETTING THE FRAME

MUTUAL REGULATION

ED TRONICK

THE BIDIRECTIONAL PROCESS OF COMMUNICATING AND RESPONDING TO THE RELATIONAL INTENTIONS AND MEANINGS OF THE OTHER DURING SOCIAL INTERACTIONS

MUTUAL REGULATION MODEL

THE PROCESS OF CHANGING MISMATCHING AFFECTS AND INTENTIONS TO MATCHING AFFECTS AND INTENTIONS

REPARATION

RUPTURE AND REPAIR

- The critical effects of successful reparation following loss of connection leads to: sculpting physiologic regulatory systems
- The critical effects of unsuccessful reparation leads to: dysregulation of physiologic regulatory systems

THE INDIVIDUAL'S ABILITY TO RESIST AND REGULATE STRESS

INDIVIDUAL DIFFERENCES IN RESILIENCE IN PART EMERGE FROM DIFFERENCES IN INTERACTIVE REPARATORY EXPERIENCE

RESILIENCE

THRESHOLD FOR RESILIENCE

- While children are resilient, there is a threshold
- When infants experience prolonged and frequent trauma or cumulative risks their ability to "bounce back" to be resilient will reach its limits (Perry, 2014)
- Exposure to frequent and prolonged stress will impact brain development

CHRONIC RESOURCE DEPLETION

- Chronic Internal and External Regulatory Meaning Making Resource Depletion and Distortion Syndrome
- But it is not just regulation in the usual sense of the word. It is:
- Internal and External Specific Resource Depletion Syndrome of Biopsychological Meaning Making

COMPLEXITY AND CONSTRAINT

LANGUAGE

GATING LANGUAGE LEARNING

- From Kuhl's work at University of Washington we see an example of her theory that infants' social skills enable or gate language learning
- A Spanish tutor held up new toys and talked about them
- Infants who looked back and forth between the tutor and the toy, instead of just focusing on one or the other, learn the phonemes as well as the words used during the study lesson
- These studies about the social component of early language learning help to explain some of the difficulties encountered by infants learning language

T. BERRY BRAZELTON

A NORMAL DEVELOPMENTAL PROCESS IN WHICH ONE WELL-ORGANIZED BEHAVIOR, CAPACITY, OR STATE OF CONSCIOUSNESS IS DISASSEMBLED IN ORDER TO REORGANIZE IT IN A MORE COMPLEX AND COHERENT FORM

DEVELOPMENTAL DISORGANIZATION

DEVELOPMENT

- Under normal circumstances the combination of internal and external regulation is adequate and development moves forward
- However, when the internal and external resources are inadequate development may be seriously disrupted
- Disorganization increases and becomes long lasting, and in turn the development of new forms of organization fail or become compromised and coherence and complexity are lost
- Disorganization is 'necessary' for development to move forward - it is only problematic when it exceeds the capacities of the dyad to regulate it

WINDOWS OF OPPORTUNITY

CRITICAL WINDOWS

CRITICAL PERIODS FOR LANGUAGE

- Language exhibits one of the most famous instances of a critical period that affects how you learn later
- Phonetic learning happens early and it is when developmental disabilities take hold
- This early period will mirror the rest of language development
- Cusp of critical window is 7.5 months - predicts language at 3 years and reading and writing skills at age 5

PARENTESE AND EXAGGERATED SPEECH HELPS INFANTS COMMIT SOUNDS TO MEMORY AND HELPS THEM LEARN LANGUAGE

Fernald, Gleitman, Kuhl

EFFICIENCY

MYELINATION

AGE OF GREATEST DEVELOPMENTAL ACTIVITY

Neocortex - *Childhood/Adult*
Reasoning, executive functions, problem solving,abstraction, secondary sensory integration

Limbic - *Early Childhood/Puberty*
Memory, emotional regulation, attachment, affect regulation, primary sensory Integration

Diencephalon - *Infancy/Childhood*
Motor control, secondary sensory processing

Brainstem - *In utero/Infancy*
Core physiological state regulation, primary sensory processing

VIOLENCE

DEPRESSION

DEPRESSION

- We know that mothers who are depressed tend NOT to use this type of speech with their babies, and consequently, their babies don't match voices to faces as well as babies of non-depressed mothers
- Both the amount and type of talk that you use with young children helps them learn language

RISKS WITH ASSERTIVENESS

- Boys showed greater externalizing emotion expressions, particularly anger expressions, in the toddler/preschool and middle childhood periods, in negative situations, and when with peers or alone, which could contribute to boys' greater risk for conduct problems
- Luby et al. (2009) investigated the emergence of gender differences in patterns of emotional reactivity among depressed and at risk preschoolers
- Anger (externalizing NE) rather than sadness (internalizing NE) was found to be a more predominant feature among depressed and at risk preschool boys, while sadness was a more predominant feature of depressed/at risk girls

DOMESTIC VIOLENCE

- Many children exposed to violence against their mothers or female caretakers by family members come to believe that violent behavior is an acceptable way to express anger, frustration, or a will to control
- A child's exposure to the father abusing the mother is the strongest risk factor for transmitting violent behavior from one generation to the next
- Male children who witness the abuse of mothers by fathers are more likely to become men who batter in adulthood than those male children from homes free of violence
- Preschool exposure linked to externalized problems for boys and internalized problems for girls in adolescence and teen years
- Requires careful consideration regarding gender and interventions

LANGUAGE IMPACTS

WHAT WE KNOW

EARLY CHILDHOOD COMMUNICATION

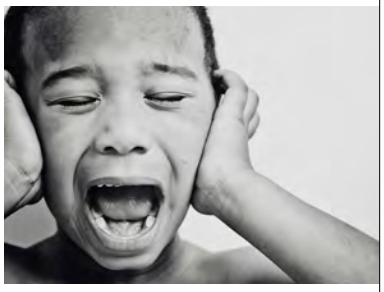
- Children with language impairments are more likely to have difficulty with pragmatic language (e.g., *knowing what to say to whom*) which would interfere with their social development and day-to-day communication
- Children with language impairment have been shown to have a more limited understanding of emotion in social situations

BRAIN DEVELOPMENT

- Social-emotional development is a critical process affecting language and all developmental domains
- It leads to both the sculpting of the brain as well as its experiential content
- Interactions that produce unrelenting mismatches and failure of reparatory processes lead to developmental compromises, withdrawal and a sense of helplessness (Tronick, 2015)

CONCLUSION

- Those areas of the brain and their functions that are developing are the most vulnerable to the deleterious effects of violence exposure and other cumulative risk factors (Andersen, Tomada, Vincow, Valente, Polcari, & Teicher, 2008; Perry, 2013)
- During early childhood, self-regulatory processing and language development can be most impaired in children with mental health problems related to violence exposure and cumulative risks
- At each stage of development, language acquisition and social function can work together to impact mental health either positively or negatively



DEVELOPMENTAL CHANGE AND RESILIENCE

INTERVENTIONS

JACK SHONKOFF

THE CONSEQUENCES OF SIGNIFICANT ADVERSITY EARLY IN LIFE REQUIRE INNOVATIVE STRATEGIES TO REDUCE TOXIC STRESS WITHIN A COORDINATED SYSTEM OF POLICIES AND SERVICES GUIDED BY AN INTEGRATED SCIENCE OF EARLY CHILDHOOD AND EARLY BRAIN DEVELOPMENT

KEEP IN MIND

REMEMBER

- Multi sensory processing, Homeostasis
- Regulate, Relate, Reason
- Coordination of Brain Regions
- Gestures, Joint attention and Social referencing
- Not the What but the How and with Whom
- Proximal Processes and Dyadic Synchrony
- Rupture and Repair
- Meaning-Making

REFLECTIVE FUNCTIONING

- Capacity to understand the infant's behavior in terms of internal states/feelings
- Development of self-organization is dependent on the caregiver's ability to communicate understanding of the child's intentional stance via 'marked mirroring'
- Lack of parental RF plays a key role in pathological functioning (Fonagy, 2008)

INTERVENTIONS

- Even in the context of multiple contextual stressors, interventions that focus on promoting attentive and nurturant parenting are important
- When implementing evidence-based parenting interventions, policy-makers and practitioners are often concerned that multiply-stressed families find it hard to engage

IN THE MOMENT

- Amount of talking
- Pacing
- Amount of time spent
- Eye contact & touch
- Facial Expressions, Movements, Gestures
- Proximity of Caregiver
- Quality of speech: Prosody, Intensity, Pausing, Timing, Repetition, Information
- Vestibular, Proprioceptive and Touch Input

BEHIND THE SCENES

- Caregiver confidence with kids
- Access to resources
- Developmental Expectations
- Caregiver Mental Health
- Values and Culture
- Caregiver Adaptability
- Executive Functioning – Self Regulation
- Others?

CONTINUUM OF SUCCESS

SECURE(R) ATTACHMENT AND EMOTIONAL REPARATION

SELF REGULATION, LANGUAGE FOR LEARNING AND SOCIAL EMOTIONAL GROWTH, AND DEVELOPMENTAL WELLNESS

REMEMBER WINDOWS OF OPPORTUNITY

AND OF VULNERABILITY

THE DEEP CHANGE THAT WE LONG FOR MUST BE GROUNDED IN DEVELOPMENTAL KNOWLEDGE ACCEPTANCE AND COMPASSION

JACK KORNFIELD