

Promoting Resilience in
 Children and Families:
 A Developmental Perspective

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A new way to think
 about human behavior

“Risk becomes possibility; vulnerability
 becomes plasticity and responsiveness.”
 Dobbs, 2009

Harman & Siegel, 2013

- How do kids learn to handle disappointment, frustration, irritation, failure, even physical injury without falling apart or hurting someone else?
- How do they become **resilient** in the face of challenge and adversity?

Harman & Siegel, 2013

Typical Development

- Remember that children develop regulatory skills through effective partnering with the adults in their world
- Effective regulatory partnering sets up neurological systems that help regulate the organism through the lifespan
- As a result of typical parenting, children gradually learn to regulate emotions, behavior, attention, learning, and interpersonal relationships

Harman & Siegel, 2013

Typical Development

- As a result of regulation of emotion, they can manage situations in which they have strong feelings, such as frustration, anger, or disappointment
- Through regulating behavior, they can participate in social settings, follow rules, and refrain from getting in trouble

Harman & Siegel, 2013

Typical Development

- Because they can pay attention, they can learn, build competence, and develop confidence and self-esteem
- Knowing how to interact with others helps them feel liked and included and gives them the capacity to develop friend and mentor relationships

Harman & Siegel, 2013

• These are the foundational elements of resilience, the result of typical development facilitated by effective caretaking relationships that protect from chronic trauma and toxic stress.

Harman & Siegel, 2013

What happens when you add trauma to the picture?

Trauma and Development

- Remember that trauma disrupts development in the growing child, affecting all systems
- The longer lasting the trauma, the more pervasive the damage to neurobehavioral systems
- The more pervasive the damage, the more vulnerable the child is to high stress, inability to manage arousal, disruption of behavior and attention, and difficulties in interpersonal relationships

Harman & Siegel, 2013

“The acquisition of executive function and self-regulatory skills corresponds closely to the extended development of the prefrontal cortex, which begins in early infancy and continues into the early adult years. Because these neural circuits have extensive interconnections with deeper brain structures that control responses to threat and stress, maturing executive functioning both influences, and is affected by, a young child’s management of strong emotions.”

Shonkoff, 2012

Harman & Siegel, 2013

“Thus, repeated exposure to threatening situations can disrupt the development of the prefrontal cortex and lead to emotional problems as well as compromised working memory, attention, and inhibitory control.”

Shonkoff, 2012

Harman & Siegel, 2013

The Stress Continuum

- Stress continuum
 - Normative
 - Stress that is essential to development
 - Tolerable
 - Significant adversity managed through effective coping skills and relationships with adults
 - Toxic
 - Excessive, prolonged activation of stress response in the absence of the buffering presence of protective and supportive adult

Harman & Siegel, 2013

Stress and Disease

- Allostatic Load - the accumulating burden of excessive stress over time
- Creates pathways to disease in adulthood
 - Compromises the functioning of the immune system and increases inflammatory processes
 - Cardiovascular disease
 - Pulmonary disease and asthma
 - Viral infections
 - Cancers

Harman & Siegel, 2013

Stress and Disease

- Excessive activation of stress response system in early childhood can play an important causal role in intergenerational transmission of poor health.
- We can now view many common adult diseases as **developmental disorders** beginning prenatally and in early childhood.

Harman & Siegel, 2013

- Our goal is **not to eliminate all stress** but rather to **strengthen the capacity of parents** and other caregivers to build adaptive capacities and coping skills of children whose life circumstances impose extensive threats to their well-being.
- **Resilience depends** upon the availability of adults who can help young children return **restore physiological homeostasis** by bringing their stress response back to baseline.

Harman & Siegel, 2013

Resilience

- Described as the ability of an organism to withstand challenges to normal function, to “bend without breaking” in the face of environmental or psychological disturbance (Karatoreos & McEwen, 2013)
- Resilience is a **developmental process**, not a trait – it develops and reflects experience

Harman & Siegel, 2013

Resilience as a developmental process

- **Process versus trait**
- Complex system versus inborn capacity
 - Fundamental attribution error
 - Human tendency to overestimate the role of personality or “nature” and underestimate the impact of circumstance or context in explaining other people’s behavior (and the reverse when explaining our own)

Harman & Siegel, 2013

“Resilience is conceived as a dynamic developmental process [of] positive adaptation despite exposure to significant threat, severe adversity, or trauma that typically constitute major assaults on ... underlying biological and psychological development.” Cicchetti, 2013

“The process of resilience involves successful adaptation and coping ... in spite of risks.”
Yousafzai, Rasheed, & Bhutta, 2013

Harman & Siegel, 2013

Resilience as gene x environment interaction

- Resilience is a combination of genetic and environmental factors, same as all developmental processes
- Early experience affects how genes are expressed, shaping how the brain and body become wired

Harman & Siegel, 2013

Resilience as gene x environment interaction

- Environmental factors can include previous generations, as well – evidence that experience in grandparents’ lives can affect resilience in future generations
 - Swedish sample: Starvation in grandparents’ generation **improved** life expectancy in grandchildren

Harman & Siegel, 2013

“Adverse or positive early life experiences lead to ‘biological embedding’ via gene-environment interplay, and shape the brain and body; in the end, they bias the individual to react in certain ways to stressors generated both externally and internally.”

Karatoreos & McEwen, 2013

Harman & Siegel, 2013

Resilience as gene x environment interaction

“Researchers have identified a dozen-odd gene variants that can increase a person’s susceptibility to depression, anxiety, attention-deficit hyperactivity disorder, heightened risk-taking, and antisocial, sociopathic, or violent behaviors, and other problems—if, and only if, the person carrying the variant suffers a traumatic or stressful childhood or faces particularly trying experiences later in life.”

Harman & Siegel, 2013

Dodd, 2009

Gene X Experience

- Two examples:
 - Serotonin transport factor (short allele (5Htt) + challenging environment creates higher risk for depression
 - Dandelion and orchid children: Dopamine D4 receptor (short allele (DRD4) + environment
 - If exposed to trauma in early childhood, worst outcome
 - If protected and nurtured, best outcome
- Considered a “sensitivity” issue – suffers when exposed to stress, but flourishes when given stimulation and support

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What kind of environment/experience contributes to risk?

- Factors related to SES and physical factors:
 - Minority group status
 - Stress, frustration, limited opportunities
 - Economic deprivation/Poverty
 - Limited parent education
 - Malnutrition
 - Low birth weight
 - Gender – higher risk for males
 - Exposure to prenatal and/or postnatal toxins

Harman & Siegel, 2013

Contributors to risk

- Factors related to parent or parent-child relationship
 - High stress in childhood (ACEs)
 - Chronic neglect
 - Exposure to violence, abuse
 - Chronic maltreatment
 - Ineffective attachment relationship
 - Traumatized parent
 - Parental depression
 - Parental substance abuse

Harman & Siegel, 2013

Contributors to resilience

- Safe housing and community
- Access to adequate nutrition and schooling
- Adequate financial resources
- Protection from violence
- Protection from chronic stress and trauma

Harman & Siegel, 2013

Contributors to resilience

- Caring and supportive relationships: Affection, trust, encouragement, reciprocal friendships
- Capacity to manage strong feelings and impulses
- Positive view of self: Confidence in strengths and abilities, school success, school engagement
- Skills in executive functioning: Communication, problem solving, capacity to make realistic plans, take steps to carry them out

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The stakes are high

- Research suggests we change our focus from “protective factors” to “protective processes”
- We need to become more intentional about **helping caregivers provide buffering protection through their own skills** in problem solving, planning, monitoring and self-regulation

Harman & Siegel, 2013

- These skills cannot be developed simply through the provision of information about child development, but rather through strategies focused explicitly in the following domains...

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Protective Processes

- Building neuroplasticity
- Creating organization out of chaotic experience
- Providing experiences of responsive relationships
- Buffering brains from toxic stress
- Providing regulatory and reciprocal experiences to foster self-regulation, reflection, and relational capacity

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Building Neuroplasticity

- Building brain circuitry correctly from the beginning is easier and leads to better outcomes
- However, mature brain circuits **can** make adaptations to new experiences
 - New learning requires greater focus and effort
 - And - it is never too late to invest in remediation!

Harman & Siegel, 2013

Protective Processes

- Building neuroplasticity
 - Strengthening capacities for planning, decision-making, problem-solving, humor, self-advocacy, and flexibility

Harman & Siegel, 2013

Protective Processes

- Creating organization out of chaotic experience
 - Stability, regulation, consistency
 - Organized cognitive stimulation, i.e. play, read, follow a routine
 - Help child make sense of world by providing an available mind
 - Provide language, connect behavior to emotion and experience

Harman & Siegel, 2013

Protective Processes

- Providing experiences of responsive relationships
 - Skill begets skill: Once in a responsive relationship, can bring that skill to new relationships

Harman & Siegel, 2013

Protective Processes

- Buffering brains from toxic stress
 - Regulation of child (and parent) arousal
 - Becoming a regulatory partner for the child as you are a regulatory partner for the parent

Harman & Siegel, 2013

Protective Processes

- Providing regulatory and reciprocal experiences to foster self-regulation, reflection, and relational capacity
 - Helping the parent regulate stress promotes resilience in child

Harman & Siegel, 2013

Protective Processes

“A key mediator appears to be stress self regulation by the mother (Tang et al., 2012). Thus, it is not so much the amount of maternal care, but its consistency that provides a stable platform for emotional regulation and cognitive function later in life...

Karatoreos & McEwen, 2013

Harman & Siegel, 2013

Resilience

- Resilience looks for ways to manage in an imbalanced world.
- Resilience is not about building “higher walls” - its about accommodating the waves.
- Preparing for the mental disruptions
- Repeated experiences with rupture and repair - positive/tolerable stress, buffered by relationships - offers opportunities for new learning and growth.

Harman & Siegel, 2013

Resilience

- Carrying a memory that things can and do go wrong - paradoxically promotes resilience...
- Failures when properly understood (and buffered through supportive relationships) create a context for learning and new growth...
- Ordinary experiences of rupture and repair within the context of relationships promote emotional safety, flexibility of response and the security to move forward.
- Reflection promotes resilience...

Harman & Siegel, 2013

Does adverse experience make us resilient?

- Phrases in our culture:
 “What doesn’t kill you makes you stronger”
 “Gd doesn’t give you more than you can handle”
- Low level of stress can enhance resilience: **Stress inoculation**
- “Adaptive calibration:” As organisms we are built to respond to stimuli – if we have had an extreme environment, we prepare neurophysiologically for the **next** expected extreme environment.

Harman & Siegel, 2013

On a Societal Level

- Significant adversity overwhelms our medical, social service, and educational programs and services
- Requires rethinking of the concept of preventative intervention
 - Going beyond collaboration
 - Promoting great horizontal (across systems) and longitudinal (lifelong) integration.

Harman & Siegel, 2013

On a Societal Level

- Greater investment in protection from biological consequences of toxic stress
- “Brain protection” strategies that respond to evidence of vulnerability of amygdala, hippocampus and prefrontal cortex to the disruptive effects of excessively activated stress response system (Shonkoff, 2012)

Harman & Siegel, 2013

On a Societal Level

- Focus on skill building in parents and communities: problem solving, planning, monitoring, and self-regulating
- Could result in better employment, thereby reducing economic hardship
- Increase safety and socialization in communities

Harman & Siegel, 2013

What counts as steps to building resilience?

- Moving stress from “toxic” to “tolerable” level
- Reduction of chaos in a family
- Incremental steps up the emotional regulatory ladder
- Being a regulatory partner for a child or parent
- Fostering recognition that child has a mind
- Hearing the phrase “...and then I heard your voice in my mind...”!

Harman & Siegel, 2013

There is so much we don't know yet!

“...It is important to keep three things in mind. First, **the adult brain has the capacity for long-term change**... Some of these changes may have both neuroanatomical and epigenetic changes. Second, there are different sensitive periods beyond which it is much more difficult to produce change. Third, **reactivation of plasticity** is possible, as in the examples from the visual system. The key point here is **we do not yet know the possibilities and the limits of biological embedding, and when, or how, such early life impacts can be mitigated.**”

Karatoreos & McEwen, 2013

Harman & Siegel, 2013

“We still know little about both the possibilities, and limitations, of reopening windows of plasticity. **This knowledge could dramatically alter how interventions are considered during adulthood to address early childhood difficulties.**”

Karatoreos & McEwen, 2013

Harman & Siegel, 2013

For more reading

- “The Orchid Hypothesis”, Atlantic Monthly, December, 2009

<http://www.theatlantic.com/magazine/archive/2009/12/the-science-of-success/307761/>
- “Leveraging the Biology”, Shonkoff, 2012
<http://developingchild@harvard.edu>
For those interested in an in-depth neurological review:
- “The Neurobiology and Physiology of Resilience and Adaptation across the Life Course”, 2013, Journal of Child Psychology and Psychiatry, 54:4, pp. 337-347.

Harman & Siegel, 2013
