Applying Dynamic Skill Theory to the Examination of Emotional & Cognitive Development

Catherine Ayoub, Ed.D.
Brazelton Center, CHB
Harvard Medical School,
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Studies using Dynamic Skill Theory


Cognitive and emotional differences in young maltreated children: A translational application of dynamic skill theory

Studies examine the emotional and cognitive development of maltreated children with attention to their developing world view or negativity bias and cognitive skills. Maltreated children demonstrate negativity bias when compared to their non-maltreated counterparts. Cognitive complexity demonstrated by the maltreated children is dependent upon a positive or negative context. Positive problem solving is more difficult for maltreated children when compared to their non-maltreated counterparts. Differences by maltreatment type, severity, timing of the abuse, and identity of the perpetrator are also delineated and variation in the resulting developmental trajectories in each case is explored.
Pathology as development rather than disease

Psychopathology is a succession of adaptations of persons to their environments

(Alan Stroufe, 1997).
Response to Childhood Trauma

• Attempt to regain mastery and control.

• Adaptive & accommodating reaction to loss of control

• Response is conceptualized & incorporated within the child's cognitive & self structures

(Ayoub, Fischer & O’Connor, 2003)
Impact of Trauma

• Does not result in delay or fixation of developmental processes

• Fundamentally alters social-emotional development & leads to alternative developmental pathways

• A different but consistent pattern of developmental integration that becomes increasingly complex as the individual gains cognitive skills over time. (Fischer, et.al, 1997)
Two Fundamental Developmental Changes

• Malignant feelings of inner badness
  – Positive vs. negative

• Basic fractionation/fragmentation of self & others
  – Approach vs. avoidance
We hypothesized that young maltreated children would be more negative & more fragmented in their organization of self in relationship to others.

Age: 18-62 months
Gender: 60% boys; 40% girls
Low to low/middle SES
Urban & in childcare
50% maltreated
Family Trauma Exposure for Maltreated Children

- 38% family violence
- 27% single form of maltreatment
- 73% two or more forms of maltreatment
- 49% neglect
- 32% physical abuse
- 8% sexually abused
- 37% emotional abuse
Maltreatment Classification

• **Frequency**
  – 67% continuous
  – 31% intermittent
  – 2% single episode

• **Severity**
  – 21% severe
  – 38% serious
  – 30% moderate
  – 11% limited/mild
Research Questions relating to Cognition & Emotion

- Do maltreated children differ from non-maltreated children in the percentage of positive and negative valences in their stories?

- Do maltreated children differ from non-maltreated children in the complexity and skill level of their stories?

**Cognitive skill level** – attention/sustained focus, comprehension, reproduction, narrative construction.

**Spontaneous storytelling skill level** – comprehension, narrative construction
Nice & Mean Scale

- Assessment of children’s cognitive skill level within the context of positive & negative peer interactions, expressed emotions & coping strategies the children employ as they engage in each task.

- High and low support conditions.

- The stories become increasingly complex. So, as the tasks progress, the skill level changes.
Difference in mean number of children's stories with positive valence

Maltreatment status

Mean percent

Children with no histories of maltreatment

Children with histories of maltreatment

**
Difference in mean number of children's stories with negative valence

**

**

Children with no histories of maltreatment
Children with histories of maltreatment

**
Maltreatment status & age on highest cognitive skill level passed overall

![Graph showing the relationship between child age in months and predicted highest level passed for non-maltreated and maltreated children.](image-url)
Maltreatment status & age on highest cognitive skill level
nice tasks passed

![Graph showing predicted highest level passed nice tasks
compared to child age in months for non-maltreated and maltreated children.](image)
Average percentage of coping strategies used as predicted by children's age in month & maltreatment status

Children with histories of maltreatment
Children with no histories of maltreatment
Highest spontaneous cognitive skill level exhibited: no effect of maltreatment status controlling for age
Predicted Highest Level Passed Overall by Severity of Maltreatment

- Non-maltreated
- Low Severity
- Moderate Severity
- Moderately High Severity
- High Severity
Dynamic Skill Theory Application to Child Maltreatment

This translation of dynamic skill theory, as applied to maltreated children, enhances our basic understanding of their functioning, clarifies the nature of their developmental differences, and underscores the need for early intervention.
Alternative developmental pathways will present as differences in coping patterns as exemplified by psychological symptoms or diagnoses.
HYPOTHESES:

• Sexually abused girls will represent themselves more negatively in relationships.

• Sexually abused girls will demonstrate splitting rather than integration of emotions in relationship to self & others.

• Sexually abused girls will be diagnosed with disorders that highlight turning anger inward or include destructive aggression.
SAMPLE:

- 92 adolescent girls
- Ages 11 to 18
- Hospitalized for depression
Variations occur in the context of:

- Different types of maltreatment
- Multiple or cumulative types of maltreatment
Maltreatment Classifications

No evidence of abuse (Gr. 1)

Physical abuse/neglect (Gr. 2)

Sexual abuse (Gr. 3)

Sexual abuse & physical abuse/neglect (Gr. 4)
Weighted Composite of Sexual Abuse Impact

- SEVERITY
- FREQUENCY
- NUMBER OF EPISODES
Demographics:

No differences by maltreatment classification in:

<table>
<thead>
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<th></th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Age</td>
<td>15.00</td>
<td>2.05</td>
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<tr>
<td>IQ</td>
<td>102.00</td>
<td>21.49</td>
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Demographics:

Ethnicity:
- 74% European American
- 17% African American
- 6% Hispanic
- 3% Asian American

**SES:**
- 66% lower class
- 34% middle class
Self in Relationship Interview

- Real self
- Mother
- Father
- Romantic friend
- Best friend
KAREN’S SELF IN RELATIONSHIP DIAGRAM
Figure 2. Differences in the average percentage of negative self-perceptions in adolescent girls in four maltreatment classification groups.
Impact of sexual abuse on the frequency of negative self-representations in the core self

$R^2 = .30 \quad F = 5.883 \quad P = .0001$

The only predictor of negative core self was sexual abuse weighted for severity, number of episodes & frequency when controlled for age, IQ, & SES.
Diagnostic Identification: Self Destruction

borderline personality
self-mutilation
PTSD

- Sexual abuse \(0.01^*\)
- Sexual & Physical Abuse \(0.0001^*\)
- Family psychopathology \(0.08\sim\)
Self-mutilation

Group
Non-abused (Group 1)
Physically &/or Neglected (Group 2)
Sexually abused (Group 3)
Sexually abused in conjunction with Physical &/or Neglect (Group 4)

Percentage
0
20
40
60
80
100

Self-mutilation

No self-mutilation
Self-mutilation
Sexually Abused Girls & Diagnostic Criteria

Borderline Personality Disorder –

A pervasive pattern of instability of interpersonal relationships, self-image, and affects…marked by impulsivity.”

Extreme splitting of relationships into best and worst. Fear of loss.
Borderline Personality Disorder

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<thead>
<tr>
<th>Group</th>
<th>Non-abused (Group1)</th>
<th>Physically &amp;/or Neglected (Group 2)</th>
<th>Sexually abused (Group3)</th>
<th>Sexually abused in conjunction with Physical &amp;/or Neglect (Group4)</th>
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<tr>
<td>Percentage No Borderline Personality (%)</td>
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<tr>
<td>Percentage Borderline Personality (%)</td>
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Diagnostic Identification: Other Destruction

Assaultiveness
Oppositional/Conduct Disorder
Attention Deficit Disorder

- Physical abuse .002*
- Sexual & Physical Abuse .015*
- Age & physical abuse .006*
Impact of Trauma

Maltreatment fundamentally alters social-emotional development in the context of self, worldview, & relationships & leads to alternative developmental pathways.

For sexually abused girls aggression is turned inward on the self

For physically abused girls impulsive acting out, attentional deficits, & hyperactivity is prevalent
Roles of Parenting & Early Intervention in Raising Healthy Children

- Dynamic skill theory was utilized to explain the multiple mechanisms and mediating processes influencing development of self-regulatory and language skills in children at 14, 24, and 36 months of age & the impact of Early Head Start.
- Relationships were found between family risks, parenting-related stresses, and parent-child interactions that contribute either independently or through mediation to the child’s acquisition of self-regulatory skills even when accounting for the influence of language development.
- Variation in impacts between control and Early Head Start intervention samples was compared to explore the sequence of developmental mechanisms over time. Findings indicate that Early Head Start protects parenting, child language, and self-regulatory development from the effects of demographic risks and parenting stress, and thus supports parents to raise healthy children.
Early Head Start Evaluation Study

- 3001 families eligible for EHS from 17 sites in the US
- Random assignment to EHS services
- Child and family data collected when children were 14, 24, and 36 months old
- Videotaped observations of parent-child interaction
- Interviewer observations
- Parent interview
- Child assessments
Dynamic Skill Assumptions

• Self regulation as a specific set of skills

• Language as a specific set of skills

• Context as a mediator of developmental change
  – Risks – Welfare, teen, no HS, Parenting stress
  – Protective factors – EHS, sensitive & stimulating parent/child interaction
Conclusions

- Language skill acquisition provides support to self-regulatory skill building. Therefore, designing activities that support one domain can benefit another domain in important ways. For example, curricula that support self-regulation through language, such as Tools of the Mind (Leong, Bodrova, & Hensen, 2007), are currently in use in preschool and kindergarten classrooms. We suggest developing similar programs for toddlers as a way to extend this work within early care settings.

- Parent-child interaction is an important mediator of risks that affect both language and emotional expressiveness/self-regulation regulation. This finding suggests that classroom interventions which support the interface of self-regulation and language would be better supported if partnered with educational skill sessions for parents. Such workshops and skill-building sessions could occur either in the classroom with parents or after hours in parent workshops.

- Through a description of developmental mechanisms we determined the need for targeted versus more general intervention strategies that support positive change in self-regulatory functioning. Our findings reinforce the buffering effects of the Early Head Start program on parenting stress, but point out the need for more intense and targeted interventions to address general stressors like depression, anxiety, and related adversity.
Figure 4. Summary of the direct, partially mediated, and fully mediated relationships for the control and EHS groups.

Panel A. Control Group:

Family Demographic Risks:
A. Teen Parenting, B. Low Education, C. Poverty

-1.6361***

General Stress
i. -0.6294***
ii. -0.8854**

Parenting-Related Stress
i. -0.0599*
ii. -0.1478

Parent Interaction Characteristics:
i. Sensitivity,
ii. Cognitive Stimulation

-2.96*** (-1.99***)

Child Language Skills at 24 months

4.2595***

Child is Female
-0.02993* (-0.00820)

Child Self-Regulation Development from 14 to 36 months:
a. intercept, b. linear change, c. quadratic change

0.17360***

Panel B. EHS Group:

Family Demographic Risks:
A. Teen Parenting, B. Low Education, C. Poverty

1.4511*

General Stress
i. -0.8782***
ii. -0.3689

Parenting-Related Stress
i. -0.0582*
ii. -0.1069

Parent Interaction Characteristics:
i. Sensitivity,
ii. Cognitive Stimulation

-2.30*** (-2.31***)

Child Language Skills at 24 months

7.4266***

Child is Female
-0.03100* (-0.02642*)

Child Self-Regulation Development from 14 to 36 months:
a. intercept, b. linear change, c. quadratic change

0.00639*

Figure 4 Key:
- Direct Effect
- Partially Mediated
- --- Fully Mediated
--- Relationship for Control but not for EHS children

Figure 4 Notes:
- Each effect represented is the effect of one standard deviation of predictor on the non-standardized outcome.
- In cases of mediation, first number is effect of predictor on outcome not controlling mediator; number in parentheses is effect when mediator is controlled.
- Effects of demographic risks are cumulative; their combined significance assessed by change in 2LL.
- When there is more than one indicator of a construct, they are numbered and effects presented separately.
- In all cases, effects of child age and gender are controlled.
Additional Readings


