Resilience in Development
Early Childhood as a Window of Opportunity

Ann S. Masten
University of Minnesota

ECHD Symposium University of New Mexico
24 April 2015

Photo © Kendra Mack 2008
Resilience is all around us

Photos © Kendra Mack 2008
Resilience

• The capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development

Masten 2014
Developing systems

- Development arises from interactions of many systems across levels

Systems in a child’s life are

• Embedded
• Interacting
• Interdependent
Therefore

- Resilience is dynamic
- Capacity for adaptation to adversity is distributed across systems
- Individual resilience depends on resilience of other systems
- Resilience is not a trait
Two key criteria defining resilience

• **Risk (disturbances)**
  - What challenges are threatening the system?
    • Cumulative risk
    • Adversities chronic or acute

• **Adaptation**
  - How well is the system doing?
    • Competence in developmental tasks
    • Symptoms
Developmental tasks

• Expectations and standards of judging progress and prospects in development

- Early childhood examples
  • Attachment bonds with caregivers
  • Walking & talking
  • Beginnings of compliance and self-control

- School age
  • Going to school and learning
  • Getting along with others, making friends
  • Following community and school rules for conduct
Developmental cascades

• **Adaptation spreads over levels, domains, contexts**
  - Neurobiological to behavior to school function
  - Misbehavior to academic and social problems
  - Community to family to child (and vice versa)

• **Competence begets competence**
  - High returns on early investment in development

• **Intervene to initiate or interrupt cascades**
  - Key – targeting the level, process, and/or timing
Variation in cumulative risk

Risk Factors
- Low education
- Single parent
- Parent died
- Parents divorced
- Foster care
- Maltreatment
- Saw violence

Masten & Sesma 1999
Variation in function within risk level

Masten & Sesma 1999
Reading scores 2005 to 2009
26,501 students

- Low risk (25%)
- Reduced price (4%)
- Nat test norm
- Free meals (57%)
- HHM (14%)

Cutuli et al 2013
Child Development
HHM student individual reading scores
N>3000

Reading score

National avg

What makes a difference?
What makes a difference?

• **Administrative data**
  - Attendance
  - ELL status
  - Minority status
  - Earlier achievement

• **Directly assessed**
  - General cognitive function
  - Executive function and self-control skills
  - Parenting quality
First grade reading skills

• Predict later achievement and growth in math, reading

• Show protective effects for high-risk students
  ▪ free lunch and homeless

Herbers et al 2012 Educational Researcher
Executive function skills (EF)

- Neurocognitive processes involved in goal-directed control of attention, thought, actions
  - self-control

- Needed to succeed in school
  - pay attention
  - control emotions
  - wait turn
  - follow instructions
  - listen to teacher
  - switch activities

Photo courtesy of Philip David Zelazo
Why EF?

- Resilience
- Learning
- Stress
- Good parenting
- Develop rapidly in preschool
- Malleable

*graph courtesy of Stephanie Carlson*

[Photo © Kendra Mack 2008]
Executive function skills predict school success entering K and 1st.
The short list

- Capable caregiving and parenting
- Other close relationships
- Problem-solving skills
- Self-regulation skills
- Motivation to succeed
- Self-efficacy
- Faith, hope, belief life has meaning
- Effective schools
- Well-functioning communities
What does the short list mean?

• Basic adaptive systems are important for resilience under many different circumstances

• Adaptive capacity extends beyond the person into other social and cultural systems
Adaptive systems (examples)

- Family
- Attachment relationships
- Neurocognitive learning systems
- Neurocognitive control systems
- Mastery motivation and reward systems
- Spirituality and religion
- Culture
- Education systems
- Community

- Biological and cultural evolution
Importance of early childhood

• Rapid brain development
• Development of adaptive systems
  ▪ Immune function and stress regulation
  ▪ Emotion regulation and self-control
  ▪ Problem-solving
  ▪ Motivation to learn
  ▪ Attachment relationships and expectations
  ▪ Roots of empathy and prosocial behavior
So...

What can we do to promote resilience?

Facilitate resilience by strategic intervention

Promote positive development to prevent problems

Photo © Kendra Mack 2008
## Resilience Framework for Action

<table>
<thead>
<tr>
<th>Mission</th>
<th>Frame positive goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models</td>
<td>Include positive influences</td>
</tr>
<tr>
<td>Measures</td>
<td>Assess assets &amp; positive goals</td>
</tr>
<tr>
<td>Methods</td>
<td>Prevent - promote - protect</td>
</tr>
<tr>
<td>Multiple</td>
<td>Engage multiple levels, disciplines</td>
</tr>
</tbody>
</table>

See Masten 2011, 2014
Strategies for positive change

Risk-focused
- Prevent / reduce risk or adversity exposure

Asset-focused
- Increase resources or access to resources

Process-focused
- Restore or harness the power of human adaptive systems
Windows of opportunity

- When plasticity is surging
- When conditions converge for change
- When systems are in flux or unstable

- Some are developmental
- Some arise from chance
- Some arise in the context of adversity
- Some arise when people seek help

- ECD is a strategic window of convergence
ECD examples of malleable risks and advantages

- Premature birth, hunger
- Homelessness, toxic stress
- Income, food, housing, medical care
- Parenting quality
- Access to quality ECE
- Child executive function (EF) skills
Ready? Set. Go!

- **EF**
- **Risk**
- **School readiness**
Multi-component intervention
New Horizons
The 4th wave of resilience science

Neurobiology of resilience
- Interplay of genes, biological systems, and experience
- Programming and reprogramming of adaptive systems
- Biological embedding of stress, good parenting, culture

Integrating community, family, & child resilience
- Check out special issue of Family Relations 2015
- How can communities support family and child resilience?
- How can policies reduce violence and promote resilience cascades?

Cultural traditions/practices that promote resilience
Globalization emerging in many forms

- **Disaster preparedness**
  - Focusing on the needs of children

- **National Academies**
  - Forum on Investing in Young Children Globally

- **State and national governments**
  - Investing in young children for lifelong benefits
  - Prevention economics

- **International humanitarian action**
  - Raising the bar beyond survival with multi-sector efforts
  - UNICEF, World Bank, Save the Children, and others
Enduring Take-Home Messages

- Resilience is common
- There are many paths of resilience
- Ordinary adaptive systems are powerful
- Resilience can be supported and promoted
- Resilience of children and youth depends on resilience of families, communities, societies
Global resilience depends on the resilience of children everywhere.
Thank you!

- Families & individual research participants
- Mentors in developmental and resilience science
- Faculty and student collaborators
- Community collaborators
- Funders over the years
  - University of Minnesota ~ William T. Grant Foundation ~ NIMH
  - NICHD ~ National Science Foundation ~ Institute of Education Sciences
  - William D. and Catherine T. MacArthur Foundation
  - Center for Urban and Regional Affairs, Humphrey Institute