Resilience in Perilous Times
Pathways to the Future

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University of Minnesota
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Objectives

- Define resilience for scalability and transdisciplinary action
- Highlight what we are learning about multisystem resilience
- Describe implications of a multisystem developmental perspective on resilience for research and practice
- Describe steps toward integrated theory and knowledge on resilience in the context of global threats to human development
Overview

- Why is global interest in resilience rising now?
- Advances in theory
- Striking parallels in resilience factors across levels
- Advances in resilience science
- Implications for research, action, and training
- Some intriguing questions
- The road forward

We live in turbulent times...

- Natural disasters
- Climate and weather changes
- War, political conflict, terror attacks
- Millions of refugees, displaced families

Terror attacks 2000-2014

Hoepppe 2016
And growing alarm about lifelong effects of early adversity

- Adverse childhood experiences (ACEs)
- Poverty
- Maltreatment or neglect
- Inequality or injustice
- Toxic stress
- Biological embedding of adversity
It is not surprising that interest in resilience is surging across many fields

Resilience science
- Emerged around 1970
- Inspired by pioneers in children’s mental health
- Began studying risk for mental health problems

Norman Garmezy  Emmy Werner  Michael Rutter
Many advances in the science since 1970s

- Methods ~ from imaging brain activity to field data collection
- Models of resilience processes and differential sensitivity
- Research at multiple levels of analysis
- Neurobiological as well as cultural studies
- Inclusion of research/researchers from the Global South
- Collaboration of humanitarian agencies with researchers
- Bridging divides to prepare for disaster

- Realization that we need a common language

Capacity of a system to adapt successfully to challenges that threaten system function, survival, or development

Resilience

Masten 2014, 2018
Human development

...emerges from interactions of many systems across levels
Resilience capacity

- Depends on many systems
- Reflects resources and processes that can be engaged to adapt to threats and system disturbances
  - Restore equilibrium
  - Counter challenges
  - Transform the system
- Shaped through biological and cultural evolution

3 defining questions in research on resilience (individual example)

<table>
<thead>
<tr>
<th>Threats</th>
<th>Protections</th>
<th>Adaptive success</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the challenges?</td>
<td>3. What fosters adaptive success?</td>
<td>2. How is the person doing?</td>
</tr>
<tr>
<td>Trauma</td>
<td>Neurobiological</td>
<td>Developmental tasks</td>
</tr>
<tr>
<td>Neglect</td>
<td>Individual</td>
<td>Mental health</td>
</tr>
<tr>
<td>Poverty</td>
<td>Family &amp; relational</td>
<td>Physical health</td>
</tr>
<tr>
<td>War</td>
<td>Community</td>
<td>Wellness</td>
</tr>
<tr>
<td>Natural disaster</td>
<td>Cultural</td>
<td>Happiness</td>
</tr>
<tr>
<td>ACEs</td>
<td>Societal</td>
<td>School or work achievement</td>
</tr>
</tbody>
</table>

See Masten & Barnes 2018
From a systems perspective

- Resilience is dynamic ~ always changing
- Capacity for adaptation is distributed across systems
- Individual (or family or community or …) resilience depends on resilience of other systems
- **Diverse pathways of adaptation are expected and observed**


Pathways

The course of development can be described as a pathway

Patterns of adaptive function vary over time in relation to adversity or challenges
Multiple pathways of resilience

Figures © Ann S. Masten

Resilience after chronic adversity

Examples in recovery of

- Abused children moved to better homes
- Children adopted from orphanages
- Child soldiers who are rescued
- Refugees who find a safe new homeland
Diverse pathways of adaptation

Optimal zone

Okay zone

Maladaptive zone

Acute trauma

Time

Pathways showing symptom patterns

Symptoms

Acute trauma or disaster

High

Moderate

Low

D

B

A

E

D

C

AB

DE

Masten et al 2016
Masten & Narayan 2012
Masten & Obradović 2008
After Hurricane Andrew 1992

La Greca et al. (2013) *Child Youth Care Forum*, 42, 351-369

Clinical level

Post-traumatic Symptoms

Time Since Hurricane Andrew

- Chronic (20%)
- Recovering (43%)
- Resilient (37%)
Sichuan Earthquake 2008

Luo et al 2012 found cortisol in hair related to 2008 earthquake exposure and PTSD

After Katrina & Deepwater Horizon oil spill

Osofsky et al 2015

- Stable high 9%
- Steep decreasing 21%
- Low increasing 18%
- Stable low 52%
Trajectories of PSS for children exposed to violence LONGSCAN* studies of maltreatment Miller-Graff & Howell 2015 JTS

- 70% “Resilient”
- 25% “Clinical-Improving”
- 6% “Borderline-stable”

*Consortium of Longitudinal Studies in Child Abuse and Neglect

Pattern complexities

- Variable adaptation in different domains – same level of analysis
  - Example: Good school adjustment with high internalizing distress
- Variable adaptation at different levels of analysis
- Variable adaptation at different times in the life course
- Roller coaster adaptation
- Late bloomers
Different levels of analysis – different patterns

- Is it possible to show good adaptation at one level of adaptation and problems or breakdown at another?
  
  **YES**
  
  - Classic study example: Stress-related health problems
    - Children of Kauai resilient group grown up – Emmy Werner’s classic study
  
  - Recent example: Allostatic load in high achieving resilient AA youth
    - Brody et al (2013) article "Is resilience only skin deep?"

What matters?

- **Dose (severity of exposure)**
  - Current, prior, ongoing, cumulative; Toxic stress

- **Context**
  - Historical, cultural; Recovery context

- **Developmental timing**
  - Sensitive periods; Risk, meaning, capabilities, expectations all vary with development

- **Individual differences**
  - Biological, cognitive, socio-emotional…and “sensitivity to experience”

- **Family resilience**
  - Protection, security, regulation, rules, routines, meaning, identity…etc

- **Community resilience**
  - Safety, healthcare, childcare, education, services, recreation…etc

- **Societal supports for individuals, families, & communities**
### Two literatures yield parallel protective factors (Masten 2018 JFTR)

<table>
<thead>
<tr>
<th>Individual Resilience</th>
<th>Family Resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurturing, sensitive caregiving</td>
<td>Nurturing care of vulnerable members</td>
</tr>
<tr>
<td>Attachment, security, belonging</td>
<td>Family cohesion, sense of belonging</td>
</tr>
<tr>
<td>Skilled parent management, discipline</td>
<td>Maintaining family boundaries, rules</td>
</tr>
<tr>
<td>Agency, motivation to adapt</td>
<td>Active coping, mastery</td>
</tr>
<tr>
<td>Problem-solving, planning</td>
<td>Collaborative problem solving</td>
</tr>
<tr>
<td>Self-regulation, emotion regulation</td>
<td>Co-regulation, family balance</td>
</tr>
<tr>
<td>Hope, faith, optimism</td>
<td>Hope, faith, optimism</td>
</tr>
<tr>
<td>Meaning, purpose</td>
<td>Coherence, family meaning</td>
</tr>
<tr>
<td>Self-efficacy, positive identity</td>
<td>Positive views of family, family identity</td>
</tr>
<tr>
<td>Routines and rituals</td>
<td>Family routines and rituals</td>
</tr>
</tbody>
</table>

### Comparing the “shortlist” of resilience factors in DRS with resilience factors in theory of ambiguous loss of Pauline Boss

<table>
<thead>
<tr>
<th>Resilience Factors in DRS</th>
<th>Resilience Factors in Ambiguous Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close attachment relationships</td>
<td>Revised attachment in the psychological family</td>
</tr>
<tr>
<td>Mastery motivation, agency</td>
<td>Adjusting mastery</td>
</tr>
<tr>
<td>Optimism, hope, faith, coherence</td>
<td>Optimism, hope, faith, coherence</td>
</tr>
<tr>
<td>Problem-solving skills, executive functions</td>
<td>Flexibility, collaborative problem solving, tolerance for ambiguity</td>
</tr>
<tr>
<td>Meaning making, belief life has meaning</td>
<td>Making meaning, collective meaning, coherence</td>
</tr>
<tr>
<td>Positive view of self</td>
<td>Reconstructed identity</td>
</tr>
<tr>
<td>Family rituals and routines</td>
<td>Reconstructed family rituals and routines</td>
</tr>
<tr>
<td>Cultural or community rituals, routines</td>
<td>Rituals and memorial ceremonies</td>
</tr>
</tbody>
</table>

*Note. Examples of widely reported factors associated with resilience in the developmental resilience science literature (see Masten, 2014b; Wright et al., 2013) with corresponding factors suggested by Boss (2006) as central to resilience in ambiguous loss theory and practice.*

Masten 2016 in JFTR
Community resilience
From the classic paper by Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum 2008

- Community resilience is a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance

- Community resilience emerges from four primary sets of adaptive capacities
  - Economic development
  - Social capital
  - Information and communication
  - Community competence

- Adaptive capacities are robust, redundant, and rapidly accessible

- To build collective resilience...
  - Reduce risk and resource inequities
  - Engage local people in mitigation
  - Create organizational linkages
  - Boost and protect social supports
  - Plan for not having a plan (flexibility, decision-making skills, trusted sources of information)
### Proposed parallels at the community level

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<td>Nurturing, sensitive caregiving</td>
<td>Care of vulnerable members</td>
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<td>Attachment, security, belonging</td>
<td>Community pride, belonging, engagement</td>
</tr>
<tr>
<td>Skilled parent management</td>
<td>Skilled governance, leadership</td>
</tr>
<tr>
<td>Agency, motivated to adapt</td>
<td>Motivated community action</td>
</tr>
<tr>
<td>Problem-solving, planning</td>
<td>Collaborative problem solving, planning</td>
</tr>
<tr>
<td>Self-regulation, emotion regulation</td>
<td>Collective efficacy, orderly community</td>
</tr>
<tr>
<td>Hope, faith, optimism</td>
<td>Hope and optimism about the community</td>
</tr>
<tr>
<td>Meaning, purpose</td>
<td>Community coherence, meaning</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Positive beliefs about community capabilities</td>
</tr>
<tr>
<td>Routines &amp; rituals</td>
<td>Community routines &amp; celebrations</td>
</tr>
</tbody>
</table>

“Sense of community” moderates link of ACEs to adult well-being
Nurius et al 2015

2010 Behavioral Risk Factor Surveillance System BRFSS for Washington State (random dialing) N over 13,000
Community resilience movement

- Los Angeles (with Rand)
  - Community resilience…the capacity of a community to prepare for, respond to and recover from adverse events.
  - ...is about moving from the “me” to the “we”…to the “us”

- 100 Resilient Cities (Rockefeller)
  - Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.

Rockefeller’s 7 qualities of resilient cities

<table>
<thead>
<tr>
<th>Quality</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective</td>
<td>Using past experience to inform future decisions</td>
</tr>
<tr>
<td>Resourceful</td>
<td>Recognizing alternative ways to use resources</td>
</tr>
<tr>
<td>Robust</td>
<td>Well-conceived, constructed, and managed systems</td>
</tr>
<tr>
<td>Redundant</td>
<td>Spare capacity purposively created to accommodate disruption</td>
</tr>
<tr>
<td>Flexible</td>
<td>Willingness and ability to adopt alternative strategies in response to changing circumstances</td>
</tr>
<tr>
<td>Inclusive</td>
<td>Prioritize broad consultation to create a sense of shared ownership in decision making</td>
</tr>
<tr>
<td>Integrated</td>
<td>Bring together a range of distinct systems and institutions</td>
</tr>
</tbody>
</table>
Building Resilience: Social Capital in Post-Disaster Recovery

Daniel Aldrich (2012)

"high levels of social capital...serve as the core engine of recovery”

Tōhoku 2011 triple disaster
earthquake tsunami Fukushima
Rekishi Shiryō Networks – teams of historians who help restore documents and artefacts

Rebuilding community

Resilience science has transformed practice in many fields

- Clinical psychology
- Psychiatry
- School psychology
- Counseling
- Social work
- Family social science
- Pediatrics
- Many others!

Shifting the focus

- Strengths and assets
- Positive pathways
- Promotive & protective processes
- Building capacity at multiple levels
## Resilience framework for action

<table>
<thead>
<tr>
<th><strong>Mission</strong></th>
<th><strong>Frame positive goals</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Models</strong></td>
<td><strong>Include positive influences</strong></td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td><strong>Assess assets &amp; positive goals</strong></td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td><strong>Risk, asset-, &amp; adaptive-system focused</strong></td>
</tr>
<tr>
<td><strong>Multiple</strong></td>
<td><strong>Engage multiple systems &amp; disciplines</strong></td>
</tr>
</tbody>
</table>

*Masten 2011, 2014*

## Mission ~ Frame Positive Objectives

- Positive statements of goals
- Treat illness/problems ➔ Promote or restore health/well-being
- Prevent violence, problems, risky behaviors ➔ Promote conflict resolution, healthy relationships, civic engagement, gun safety, positive youth development, school and work success; recovery
- Promote the positive to prevent problems
- Positive goals hold appeal to stakeholders
**Measures**

Track the positives along with the problems

- **Assess the positive as well as the negative**
  - Strengths in children, families, communities
  - Potential resources and protective factors
  - Strengths and adaptive capacity in systems

- **Evaluate positive as well as negative pathways and outcomes**
  - Gains, achievements
  - Health & competence + problems & symptoms

**Strategies**

**Risk focused**
- Prevent or mitigate damaging adversity exposures

**Asset focused**
- Increase resources or access to resources

**Adaptive system focused**
- Support, restore, or engage dynamic adaptive systems
Risk-focused examples

- Reduce violence in families, schools, neighborhoods
- Address injustice and structural violence
- Prevent premature birth
- Reduce stress of pregnant women
- Screen and treat depression in mothers
- Reduce child maltreatment
- Avoid multiple foster care placements
- Clean up toxins
- Dig up landmines
- Prevent homelessness

Examples of risk-focused community strategies

- Reduce exposure to toxins in the environment
- Plan for vulnerable populations & areas of the community
- Reduce hazards and resource inequities
- Emergency plans and warning systems
- Plan for surprises and uncertainty
- Train media, parents, and teachers about risks to children
- Reduce inequality, injustice, marginalization, discrimination
Asset-focused examples at multiple levels

- Ensure rapid availability of essentials
  - Food, water, shelter, medical care…
- Educate parents, teachers, and traditional “first responders”
  - Invest in a well-trained disaster workforce
- Funding for disaster preparedness, fortifications, shelters, etc.
- Provide books, tutoring, mentoring, childcare
- Build schools, playgrounds, libraries
- Improve or restore community services
- Stabilize housing, schooling, case managers
- Emergency equipment for all ages, conditions
- Shelters suitable to likely community threats
- Portable internet service and web sites for reunification

Adaptive system focused examples

Engage and nurture powerful engines of resilience

- Foster prosocial bonds at every level
- Support families
- Nurture healthy brain development
- Integrate systems of care
- Provide opportunities for everyone to succeed, develop talents…
- Support cultural traditions and ceremonies that foster resilience
- Invest in healthy development and well-being across the lifespan
- Invest in good education from an early age to nurture future resilience
- Support community engagement and collective action
- Build resilient communication networks and strategies
- Plan to normalize opportunities for children and family activities after disaster
- Plan to restore and protect cultural treasures and traditions
Integration is underway for resilience across systems, disciplines, sectors, and applications

<table>
<thead>
<tr>
<th>In theory</th>
<th>In action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular &amp; global</td>
<td>Disaster response</td>
</tr>
<tr>
<td>Individual &amp; family</td>
<td>Humanitarian</td>
</tr>
<tr>
<td>Family &amp; community</td>
<td>Prevention science</td>
</tr>
<tr>
<td>Psychosocial &amp; ecological</td>
<td>Public health</td>
</tr>
<tr>
<td>Human &amp; electronic</td>
<td>Climate change</td>
</tr>
<tr>
<td>Social &amp; economic</td>
<td>Peacebuilding</td>
</tr>
</tbody>
</table>

**Multisystemic resilience**

**Some intriguing questions**

- Are there hidden talents or stress-adapted skills we have overlooked?
- How are typically adaptive systems hijacked to serve maladaptive ends?
- What are the tradeoffs of current resilience for future health/well-being?
- How is resilience (as well as trauma) transmitted across generations?
- When and how does adversity exposure foster resilience?
- Can harm from adversity exposure during sensitive periods be undone?  
  - Is “reprogramming” possible?
Given that key adaptive resilience capacities are observed at multiple levels of human systems...

- Social bonds
- Perceived belonging
- Problem solving intelligence
- Self-regulation
- Agency
- Perceived efficacy
- Optimism, hope
- Purpose, meaning

- Have these co-evolved at multiple levels?
- Which occur in other species?
- Which are uniquely human?
- How will they be affected by AI?

Takeaways

- Resilience is dynamic and inherently always changing
- Many systems contribute to adaptive capacity of individuals, families, and communities
- Resilience of individuals, families, and communities depends on networks of adaptive systems
- To all the young scholars here today: There is a lot to learn!
On the road to the future

- Focus on intersystem processes
  - Across levels and systems
    - Multilevel models of resilience
    - Statistical tools for analyzing complex adaptive systems
      - Example: Kalisch et al 2019 on a dynamic network approach

- Study the dynamics and malleability of resilience
  - Across development, communities, and cultures

- Mobilize and invest in interdisciplinary integration
  - Theory harmonization
  - Problem-solving
  - Training

Thanks to

- Research participants who shared their lives to help us understand resilience

- My mentors, colleagues, & collaborators over the years
  - Especially my students!

- Community partners

- Funders
  - University of Minnesota ~ William T. Grant Foundation ~ National Institutes of Health
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  - Center for Urban and Regional Affairs, Fesler-Lampert Chair, Humphrey Institute
Key Resources


