

*Longitudinal Prediction of
Resilience in Children:*
**Social Constraints on
Developmental Success**

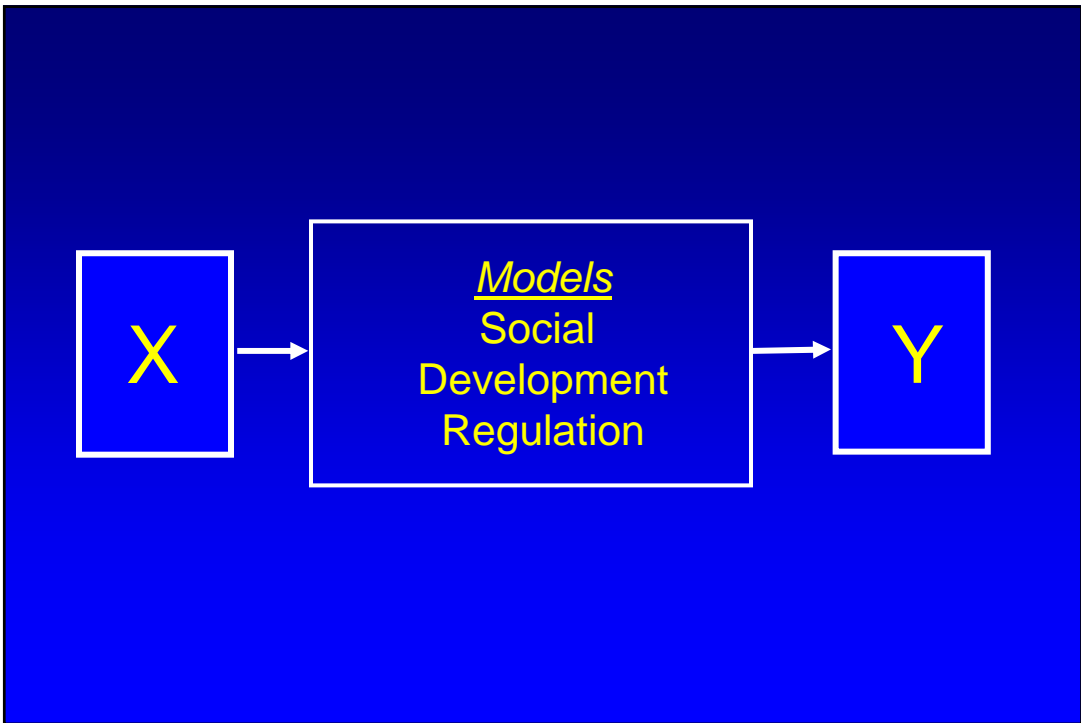
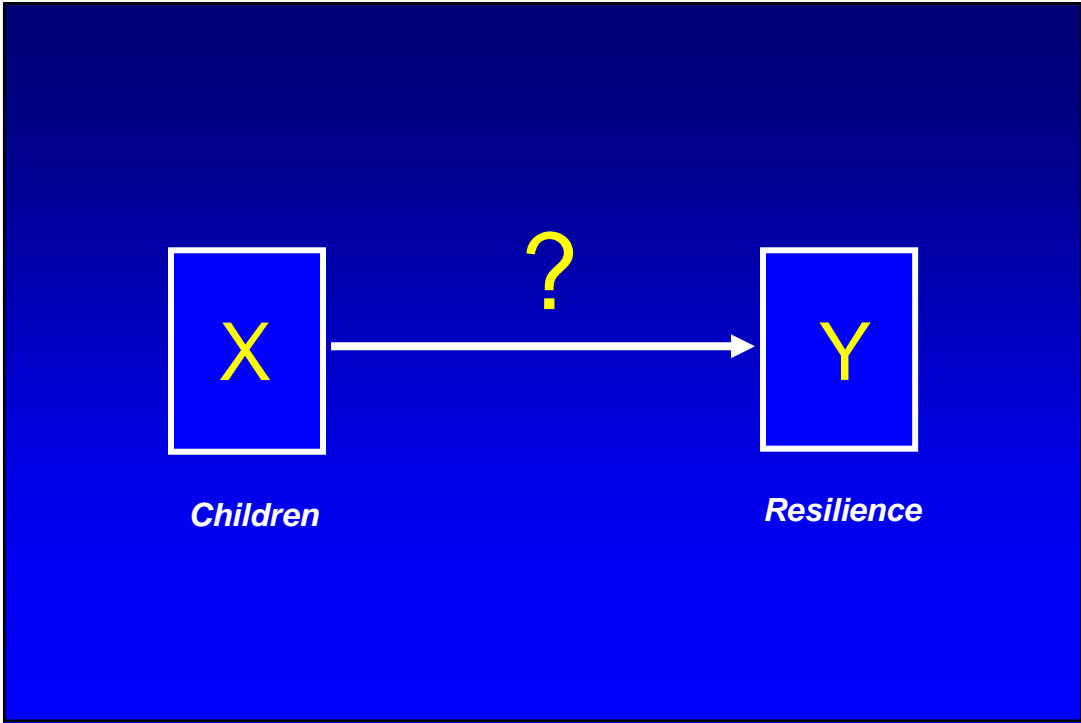
Arnold Sameroff
University of Michigan

Montreal--October, 2006

*Resilience is the process of adapting
well in the face of adversity, trauma,
tragedy, and threats.*

*It means "bouncing back" from
difficult experiences.*

American Psychological Association



Seeking Resilience: Issues

1. Defining Resilience
2. Defining Challenge
3. Can Individual Resilience
Overcome Social Challenge?
4. Promoting Resilience
5. Afterthoughts

Seeking Resilience: Issue 1

Defining Resilience

Definitions of Resilience

- Adaptive response to extraordinary challenge
 - General Catastrophies—war, earthquakes
 - Personal Catastrophies—death, divorce
- Similar to adaptive response to ordinary challenge
 - General Challenges—school/3 R's/
 - Personal Challenges—siblings

Definitions of Resilience

- What is relation of adaptation to *extraordinary* challenge to adaptation to *ordinary* challenge
- Premorbid competence predicts postmorbidity competence
 - Schizophrenia
 - Postpartum Depression
 - Posttraumatic Stress Disorder

Operationalization of Resilience

- *Resourcefulness*
 - Ability to solve problems, bounce back
- *Intelligence (APA Report)*
 - Adapt effectively to the environment
 - Learn from experience
 - Overcome obstacles by taking thought

Operationalization of Resilience

- *Mental health*
 - Everyday adaptations to varying situations
- *Mental illness*
 - Lack of everyday adaptation
 - *Behavior does not change with situation*
 - *Poor Regulation of Affect (Depression, Anxiety)*
 - *Poor Regulation of Behavior (Aggression, Hyperactivity)*
 - *Poor Regulation of Cognition (Attention Problems)*

Sources of Resilience

- *Characteristics of Individual*
 - Resourcefulness
 - Intelligence
 - Mental Health
- *Characteristics of Context*
 - Risk Factors
 - Promotive Factors

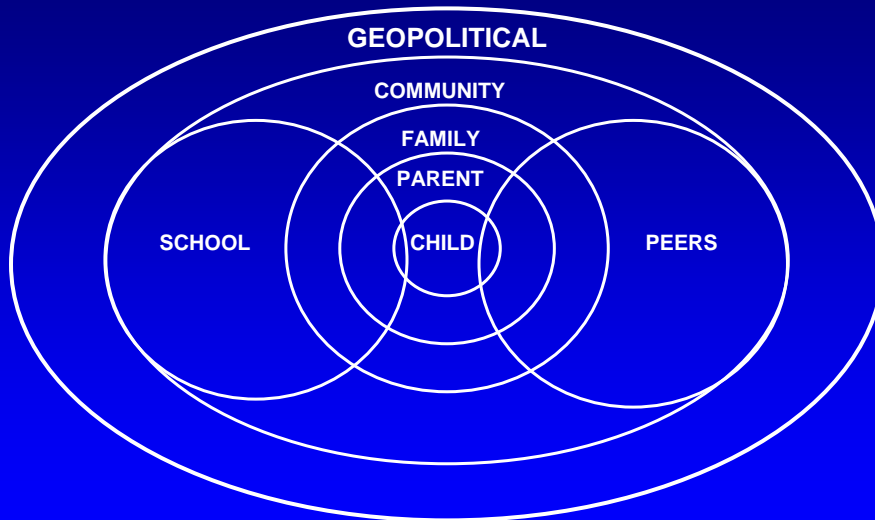
Seeking Resilience: Issue 2

Defining Challenge

Rochester Longitudinal Study

- N~250 Families
- Data Waves
 - Infancy
 - Preschool
 - Adolescence
 - Adulthood

Social Context Model



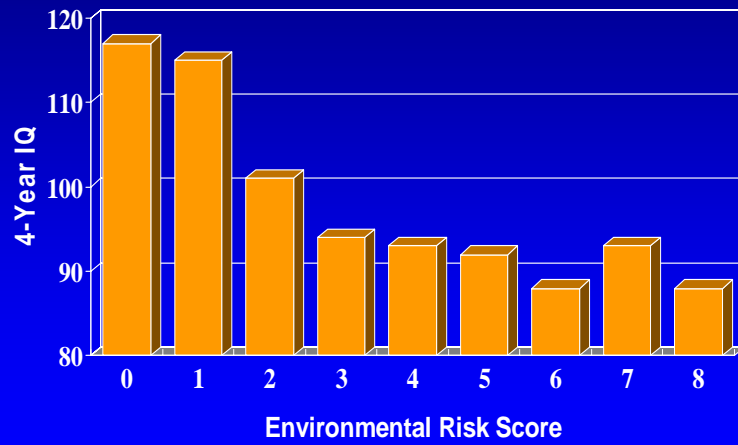
Ecological Influences

- *Child - Parent* **Child-Parent Interaction
Developmental Knowledge**
- *Parent* **Parent Psychiatric History
Parent Anxiety
Education**
- *Family* **HH Occupation
Family Size
Single Parent**
- *Social* **Stressful Life Events
Minority Status**

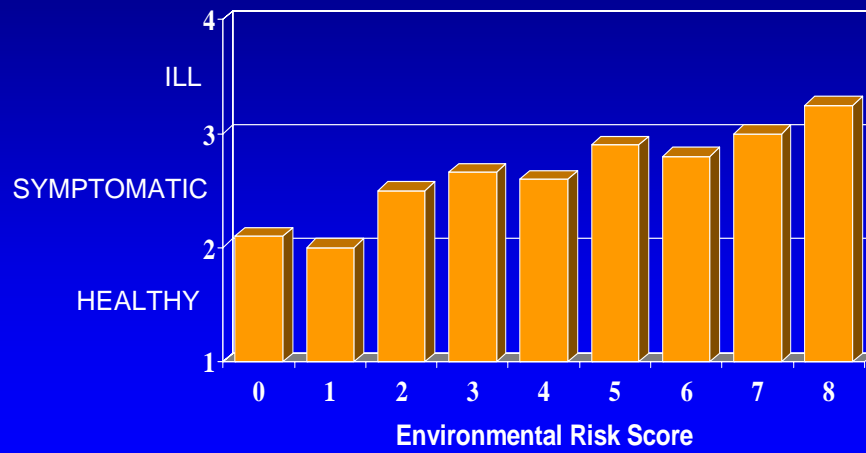
Multiple Risk Scale

<u>Contextual Factor</u>	<u>High Risk Condition</u>
Child-Parent Interaction	25% Worst
Developmental Knowledge	25% Least
Parent Psychiatric Contacts	2 or More
Parent Anxiety	25% Most
HH Education	No HS Degree
HH Occupation	Semi-Skilled
Family Size	4+ Children
Social Support	Father Absent
Stressful Life Events	25% Most
Minority Status	Yes

Effect of Risk Score on 4-year IQ



Effect of Risk Score on 4-year Mental Health



Risk Factor Combinations & IQ

- Cluster 1— 97.7

Mental Health	Anxiety
Education	Social Support

- Cluster 2— 94.6

Mental Health	Interaction
Anxiety	

- Cluster 3— 94.7

Single Parent	Minority
---------------	----------

- Cluster 4— 93.7

Minority	Occupation
Education	

- Cluster 5— 92.8

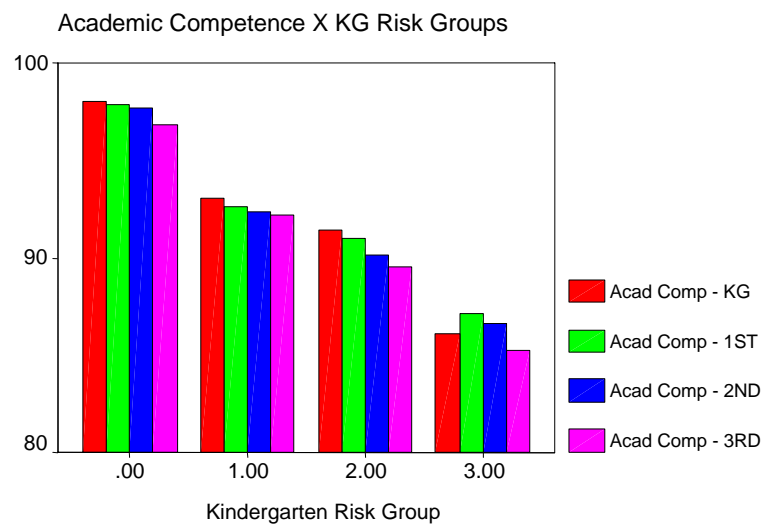
Knowledge	Education
Minority	

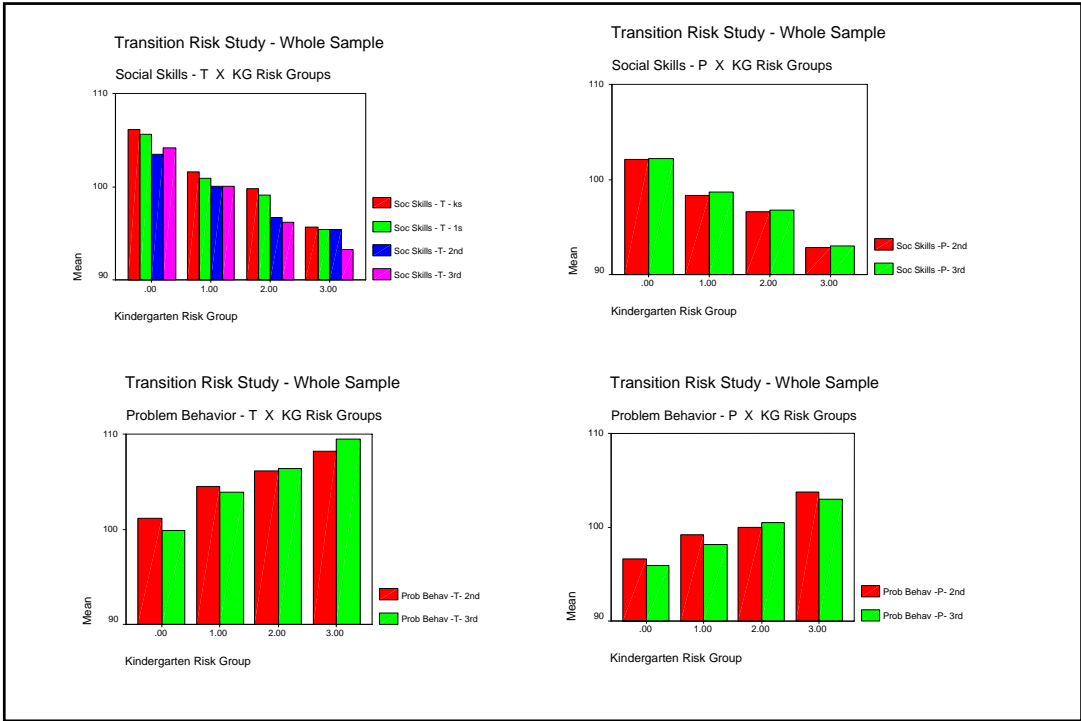
Going to Scale

National Head Start/Public School Early Childhood Transition Demonstration Study

- 7,515 Children
- 31 Programs in 30 States
- Longitudinal Study from Kindergarten to 3rd Grade
- 14 Risk Factors

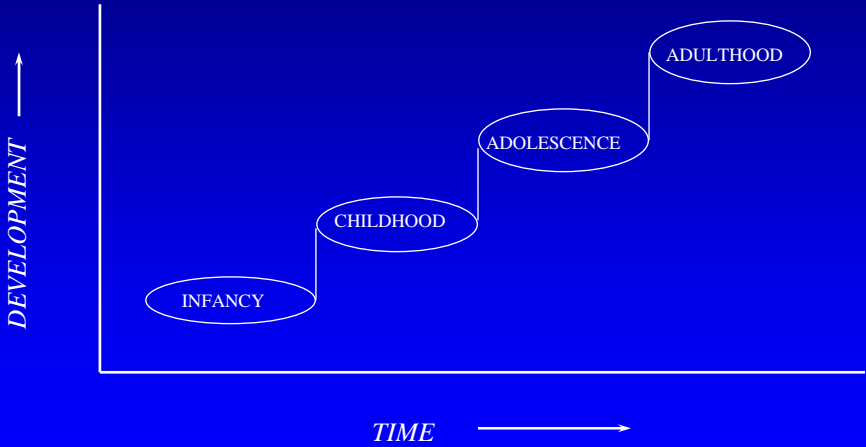
Head Start Transition Study



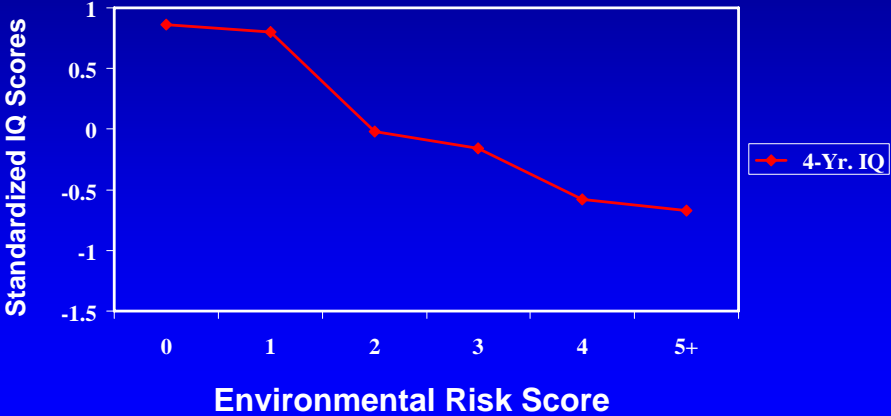


Going to Age

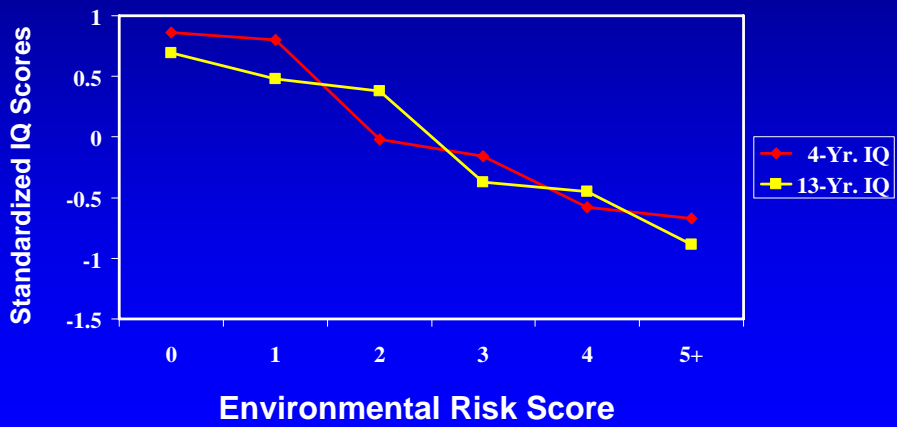
DEVELOPMENTAL MODEL



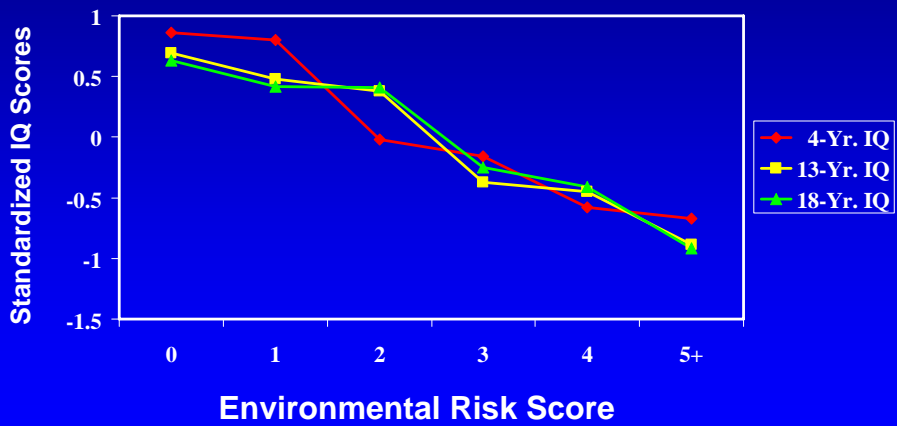
Contemporary Environmental Risk and IQ



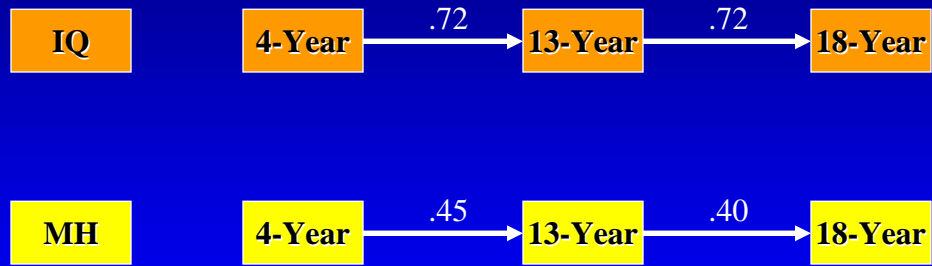
Contemporary Environmental Risk and IQ



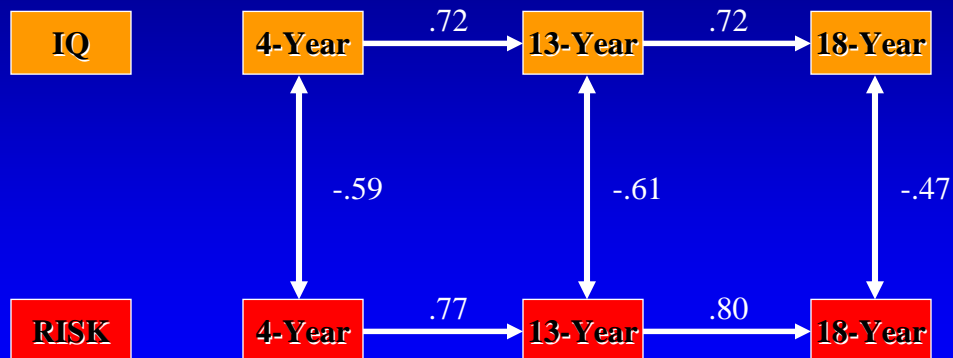
Contemporary Environmental Risk and IQ



Longitudinal Correlations for IQ and Mental Health (MH)



Longitudinal Correlations for IQ and Social Risk



Seeking Resilience: Issue 3

*Can Individual Resilience
Overcome Social Challenge?*

Rochester Longitudinal Study

- Infant Competencies
- Preschool Competencies
- Adolescent Competencies
- Adult Competencies

Infant Competence

- Obstetrical Problems (ROS)
- Newborn Pediatric Problems (ROS)
- Newborn Behavioral Scores (NBAS)
- 4-Month Temperament (Carey)
- 4-Month Development Scores (Bayley)
- 12-Month Development Scores (Bayley)

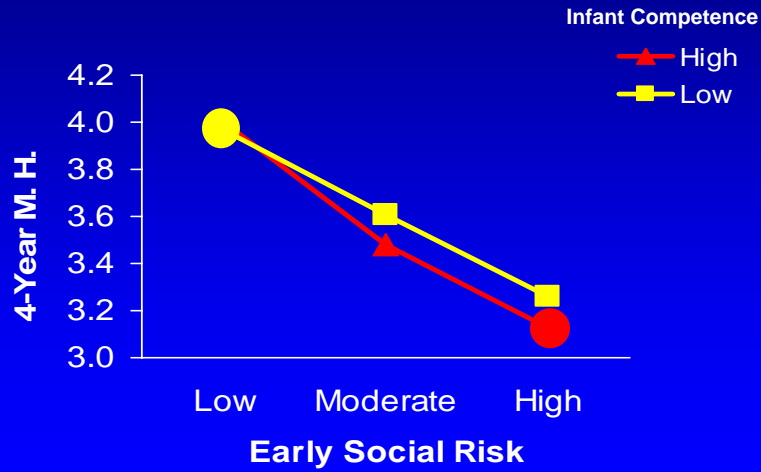
High Resilience



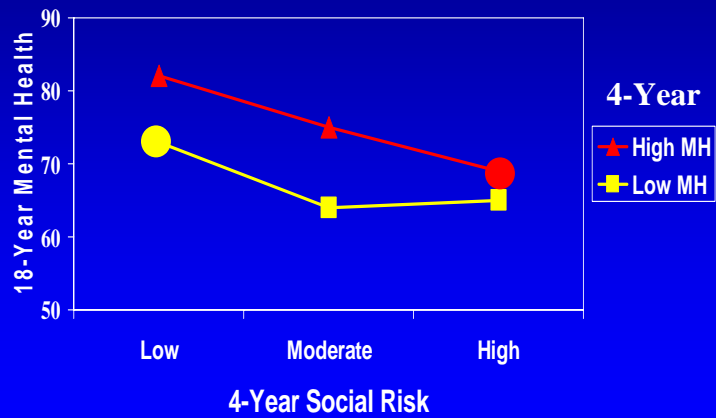
Low Resilience



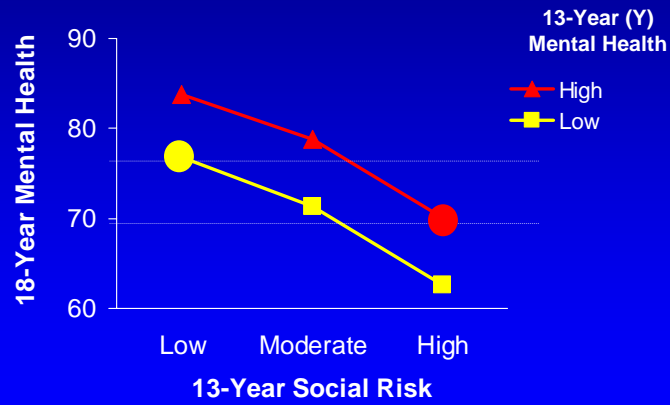
Infant Competence Predicting to 4-Year Mental Health



4-Year Mental Health Predicting to 18-Year Mental Health

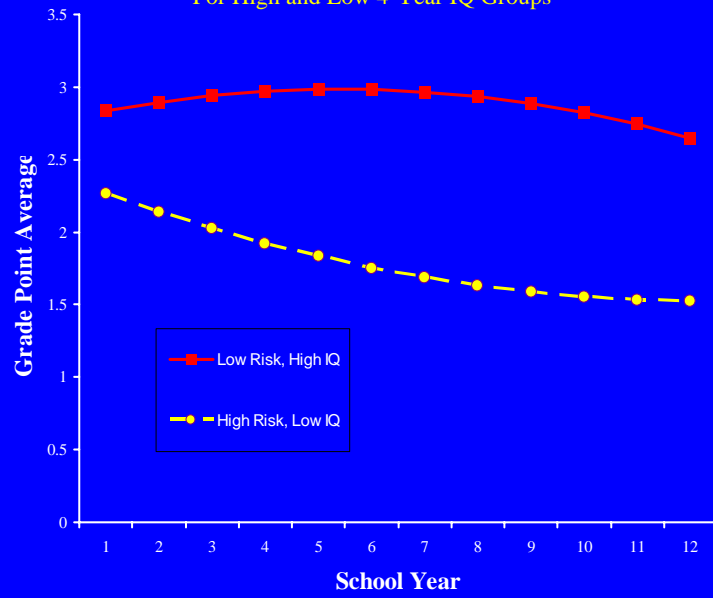


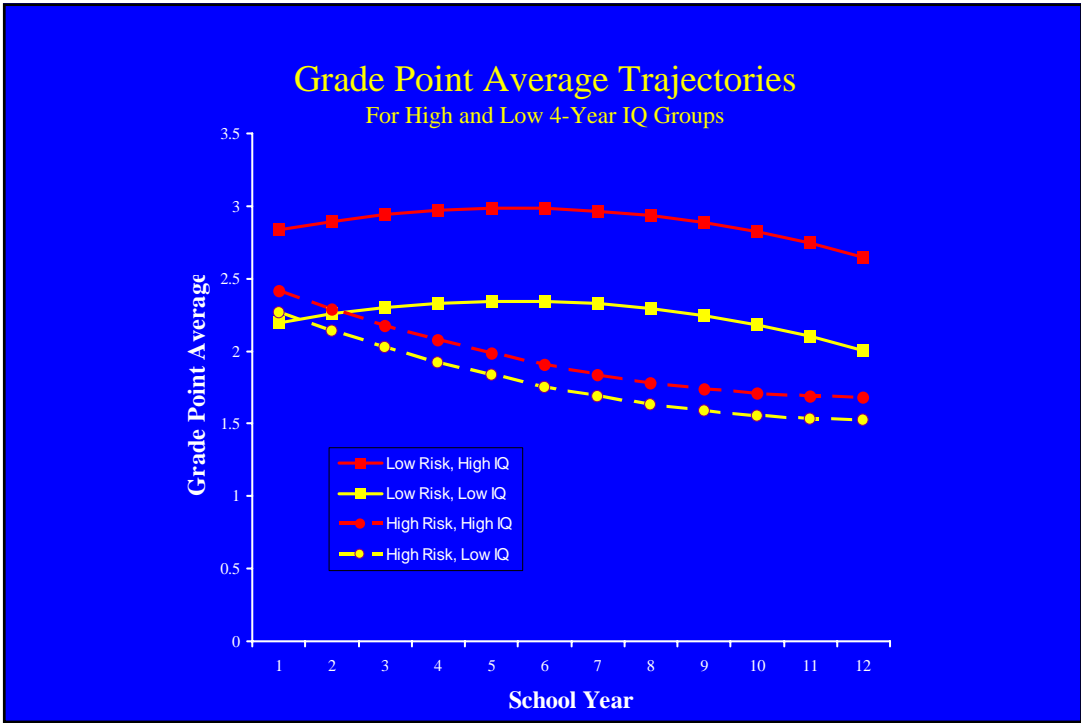
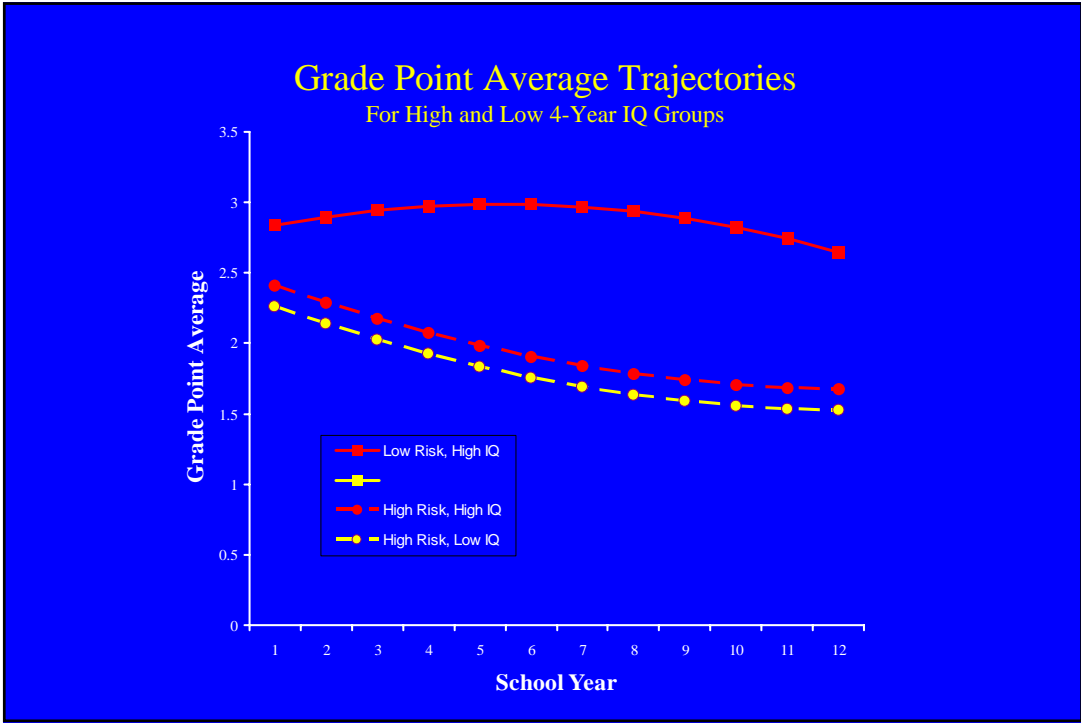
13-Year Mental Health Predicting to 18-Year Mental Health



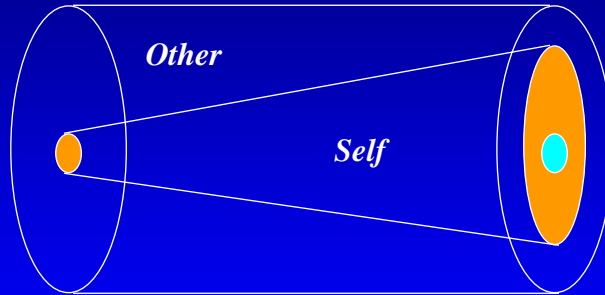
Grade Point Average Trajectories

For High and Low 4-Year IQ Groups



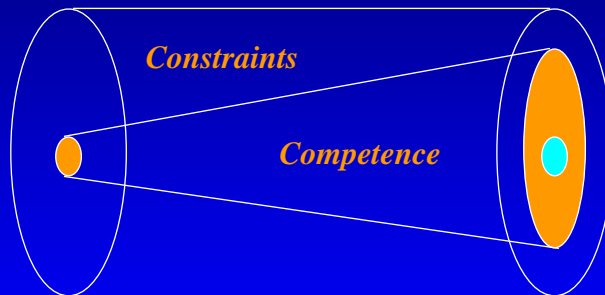


REGULATION MODEL



Development →

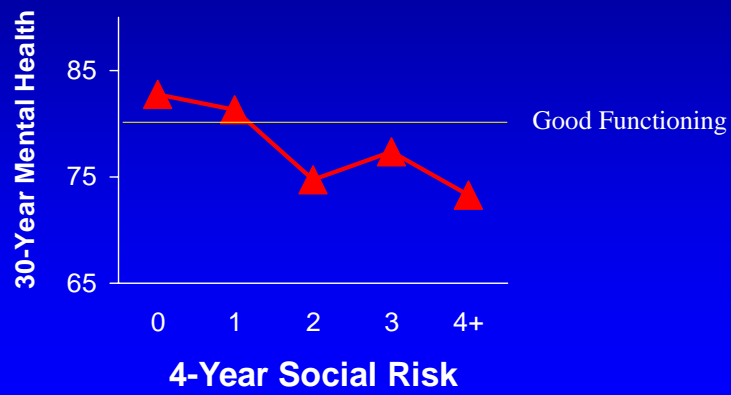
REGULATION MODEL



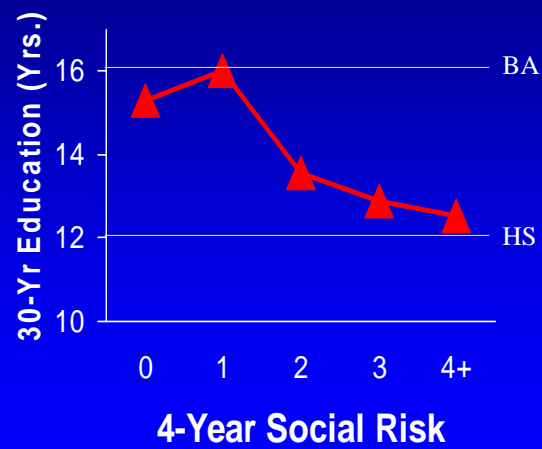
Birth

Adulthood

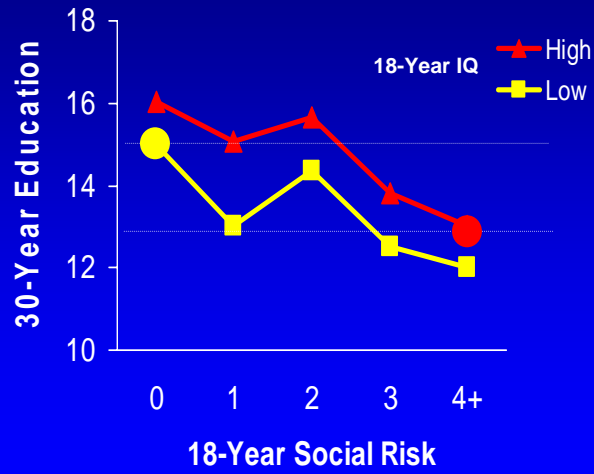
4-Year Social Risk Predicting to 30-Year Mental Health (GAF)



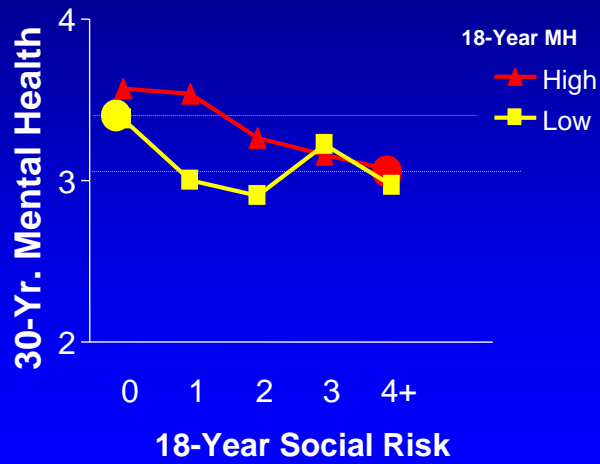
4-Year Social Risk Predicting to 30-Year Educational Attainment



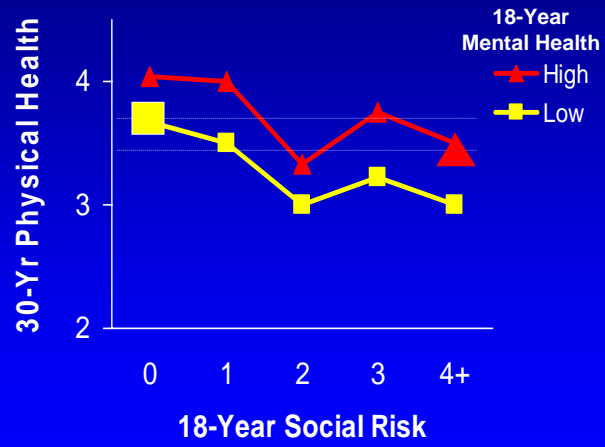
18-Year IQ Predicting to 30-Year Educational Attainment



18-Year Mental Health Predicting to 30-Year Mental Health (PIRS)

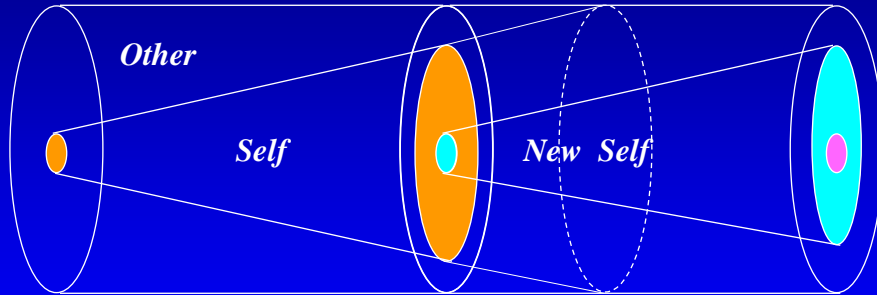


18-Year Mental Health Predicting to 30-Year Physical Health



Unto the Next Generation

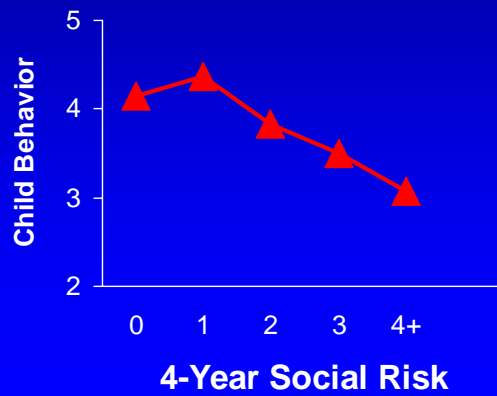
REGULATION MODEL



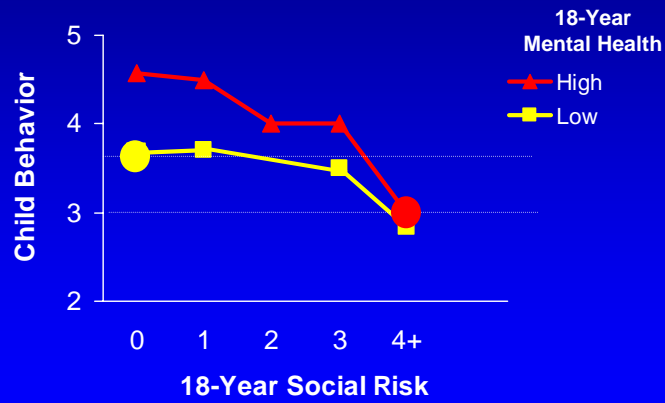
Developmental Generations

RLS 30-Year Follow-Up

Parent 4-Year Social Risk
Predicting to Their Child's Behavior Problems



Parent 18-Year Mental Health Predicting to Their Child's Behavior



Seeking Resilience: Issue 4

Promoting Resilience

Philadelphia Adolescent Development Study

- Study of Adolescents
500 11- to 14-year olds
Urban Setting
- Multiple Competencies
- Multiple Challenges

Indicators of Adolescent Resilience

- Psychological Adjustment
Depression
Anger
Self-Esteem
- Few Problem Behaviors
Substance Use
Early Sexuality
Delinquency
Violence
- Academic Competence
Grades

Environmental Risk Factors

Proximal

- Parent-Child Interaction
- Parent Characteristics
- Family Structure & Economy
- Family Management
- Peers
- Community

Distal

Parent-Child Interaction

Support for Autonomy
Control of Behavior
Family Emotional Climate

Parent Characteristics

Education
Sense of Efficacy
Problem Solving Ability
Mental Health

Family Structure & Economy

Marital Status
Household Crowding
Income Level
Welfare Status

Family Management

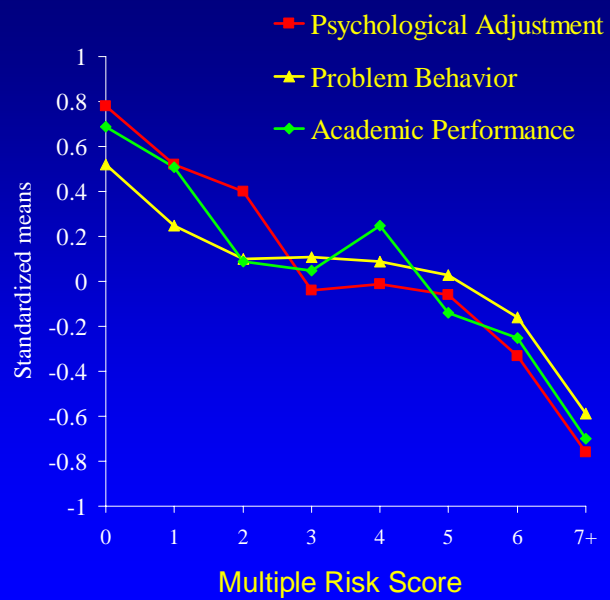
*Investment in Promoting Child
Community Involvement
Availability of Social Support
Stressful Life Events*

Peers

*Contact with Prosocial Peers
Contact with Antisocial Peers*

Community

*Neighborhood Resources
Neighborhood Problems
School Quality*



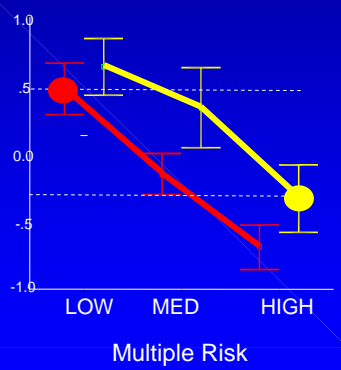
Effects of Adolescent Resourcefulness

— High
— Low

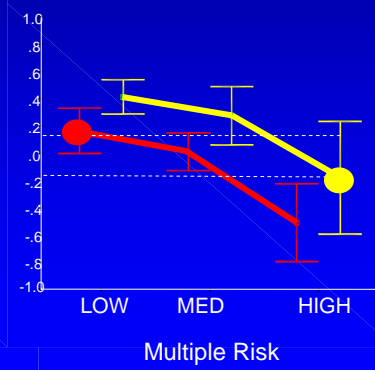
Effects of Adolescent Resourcefulness

— High
— Low

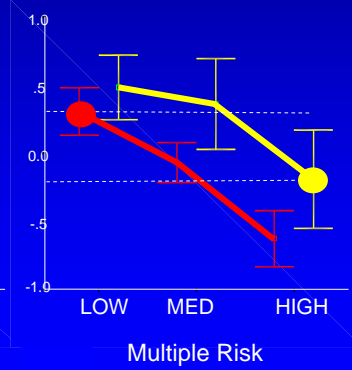
Psychological Adjustment



Problem Behavior



Academic Performance



Lines indicate means and 95% confidence intervals

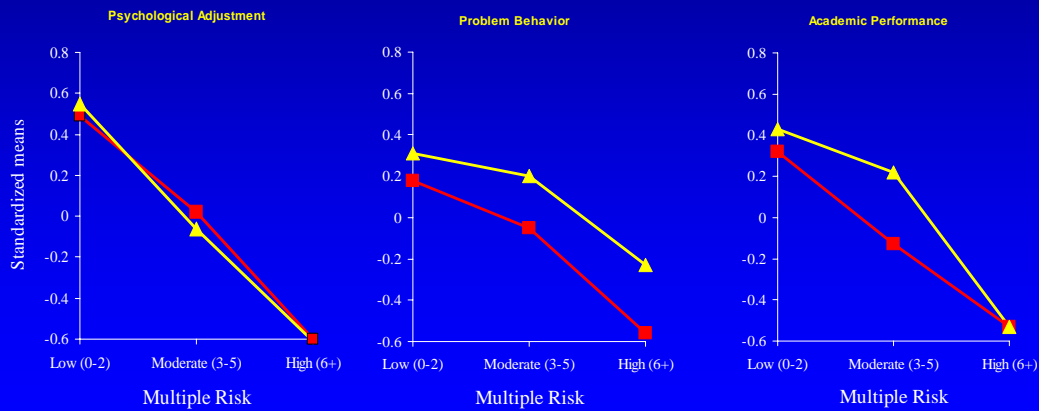
Political Strategies for Social Intervention

Conservatives-----Preserve the Family

Liberals-----Eliminate Poverty

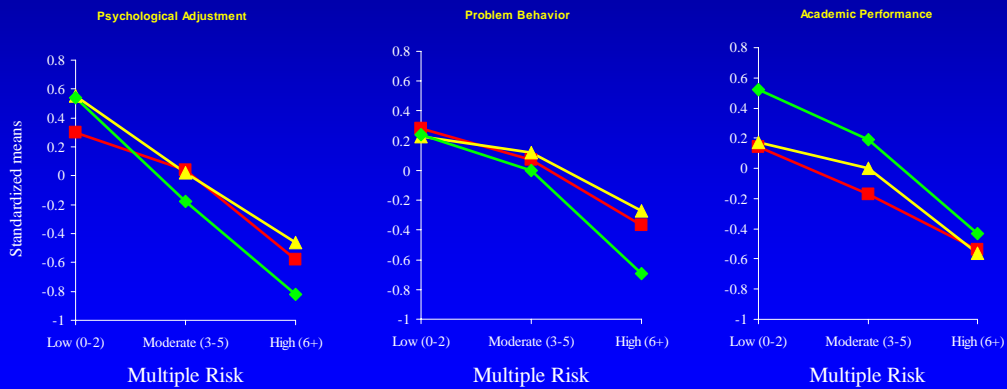
Family Structure

— Single Parent
— Two Parents



Income Level

- Below Poverty Level
- 1 to 2 Times Poverty Level
- > 2 Times Poverty Level



Percent of Families in High and Low Risk Groups

Risk Group	Income			Family Structure	
	<u>>\$10,000</u>	<u>\$10-30,000</u>	<u>>\$30,000</u>	<u>Single Parent</u>	<u>Two Parents</u>
Low (0-3)	13%	35%	60%	34%	54%
High (8+)	44%	15%	6%	22%	7%

If single factors (money, parents)
don't create resilience,

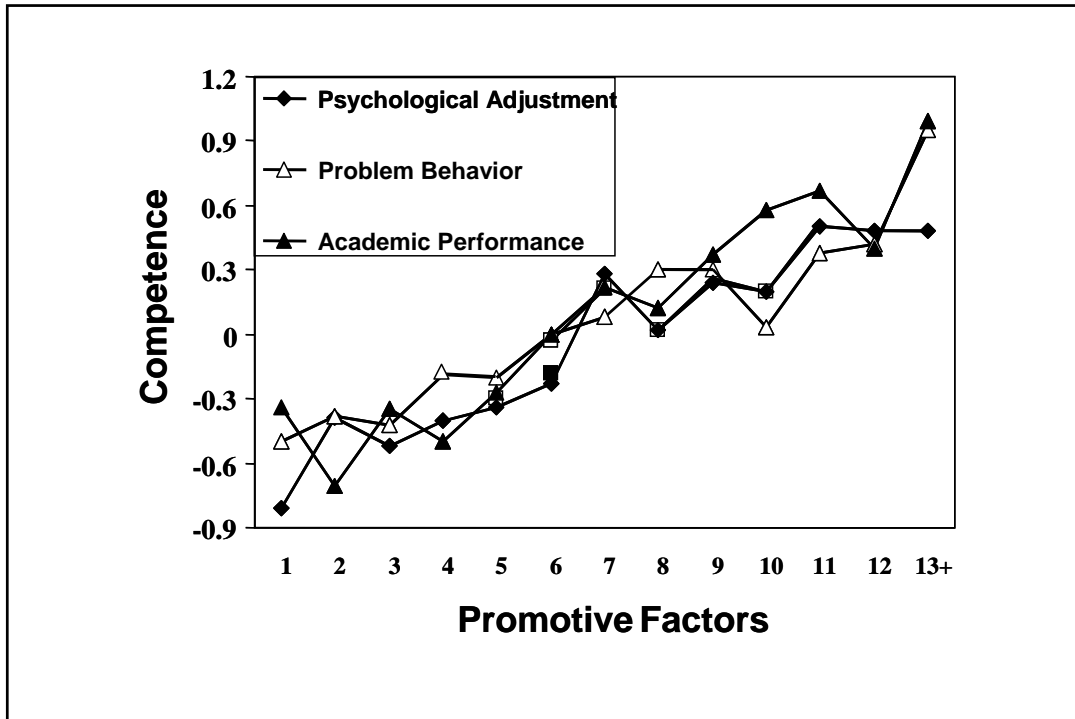
What about multiple factors?

Promotive Factors for Resilience (20 Assets instead of 20 Risks)

Proximal

- Parent-Child Interaction
- Parent Characteristics
- Family Structure & Economy
- Family Management
- Peers
- Community

Distal



Promotive Factors for Resilience (20 Assets instead of 20 Risks)

Proximal

- Parent-Child Interaction
- Parent Characteristics
- Family Structure & Economy
- Family Management
- Peers
- Community

Distal

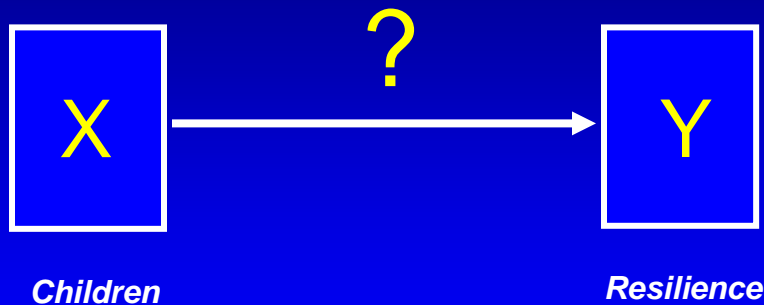
Conclusions about Resilience

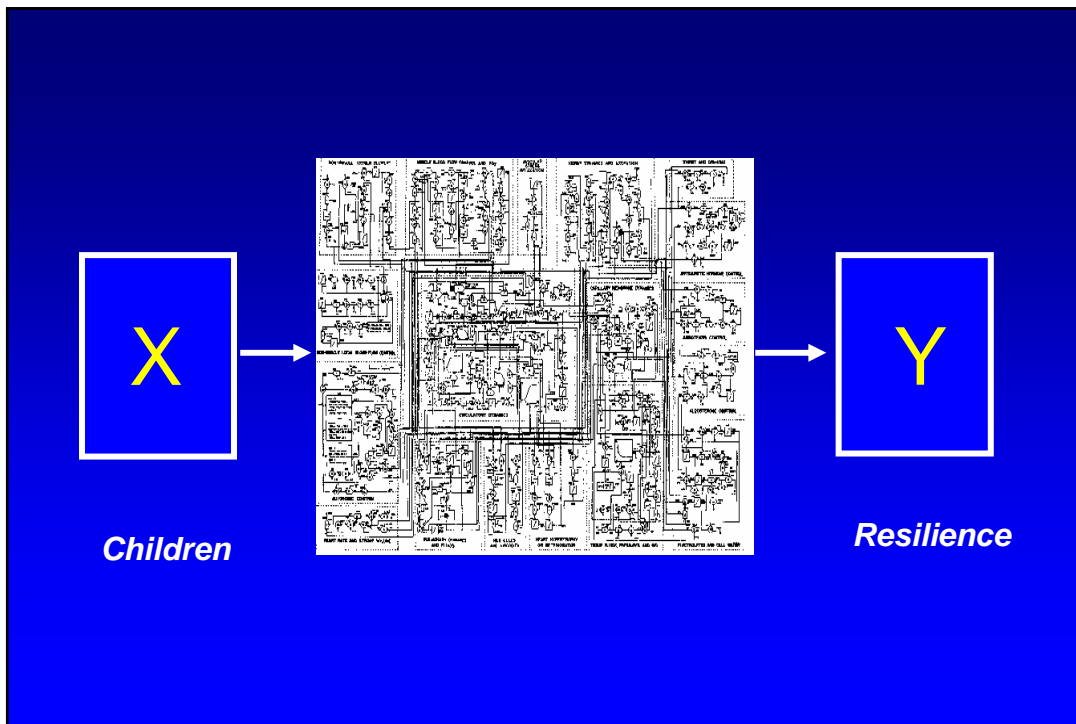
In a population:

no *single* factor is either necessary or sufficient
to reduce *resilience* or
to increase *resilience*

Accumulation of *risk factors* reduces *resilience*

Accumulation of *promotive factors* increases *resilience*





Rochester Longitudinal Study

- *Infancy*
 - Melvin Zax
 - Ronald Seifer
- *Adolescence*
 - Alfred Baldwin
 - Clare Baldwin
 - Tim Kasser
- *Early Childhood*
 - Ronald Seifer
 - Ralph Barocas
- *Adulthood*
 - Tim Kasser
 - Katherine Rosenblum

National Head Start/Public School
Early Childhood Transition
Demonstration Study

Steve Peck
Craig Ramey
Sharon Ramey

Philadelphia
Adolescent Development Study

Todd Bartko
Jacque Eccles
Frank Furstenberg
Tom Cook
Glen Elder