

Promoting Skills to Promote Successful Lives

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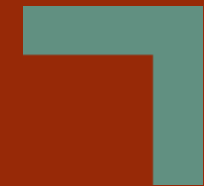


The Traditional Approach to Poverty and Social Immobility:

“Alms to the Poor”
Redistribution Through the
Tax-Transfer System



The U.S. Great Society Programs tried this, as part of a broader strategy, to end poverty and intergenerational poverty through large scale cash transfers.



It Also Had a “Shotgun Skills
Strategy”:
Invest at all Stages of the Life
Cycle

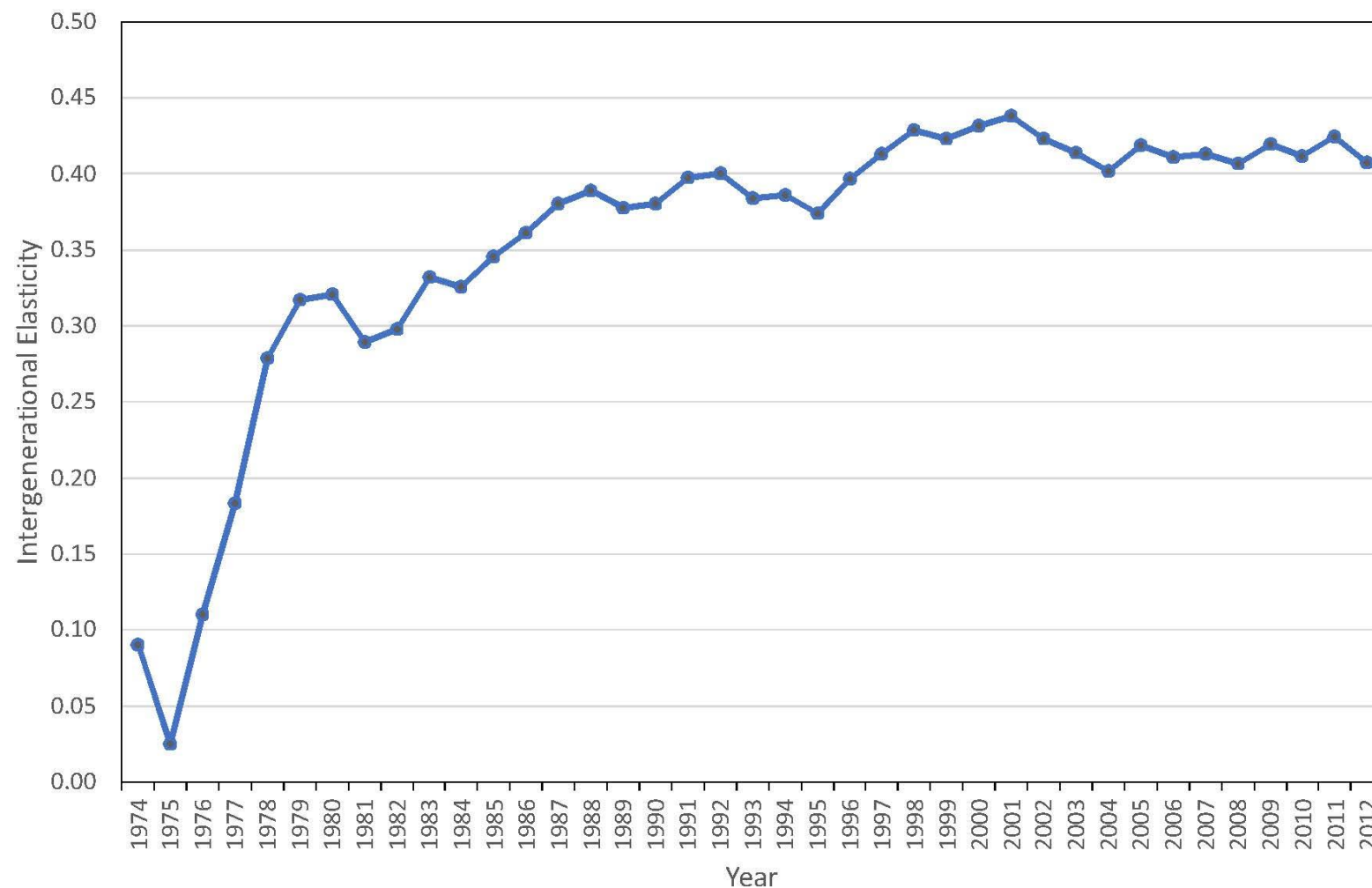


War on Poverty

Welfare Policy Subsidized
Poverty Enclaves – Detached
the Poor from Society


U.S. Experience with Income Transfers: Failed in its Attempt to Use Income Transfers to Promote Social Mobility

Trends in the Intergenerational Correlation of Welfare Participation: Neither Transfers Nor Work Requirements Reduced Intergenerational Poverty



Source: Hartley et al. 2016

Note: Welfare participation includes AFDC/TANF, SSI, Food Stamps and Other Welfare.




Many of the policies had strongly regressive components: heavy implicit taxes on the working poor and penalties for marriage.




New Policies: After The War on Poverty


1. Eliminate tax on earnings for poor
2. Incentivize work
3. This has been rescinded in the recent Biden policy changes
4. America now has progressive tax and transfer policy
5. Retains an unfocused “shotgun” skills policy



An effective way to alleviate poverty and inequality and to enhance social mobility.



Build skills, not rely on tax and transfer policy which is still the main vehicle used by most countries.



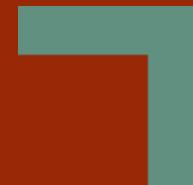
But create a focused skill enhancement policy that draws on recent knowledge about the dynamics of life cycle skill formation.



Skills are major determinants
of flourishing lives.



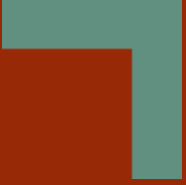
Promoting inclusion and social mobility by fostering skills is an effective policy.



Boosts Aggregate Growth and Builds Successful Lives



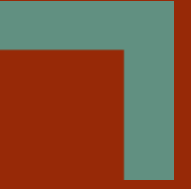
A skilled workforce is a flexible,
adaptable, and productive
workforce.



Building skills creates dignity,
agency, and engagement in
society.



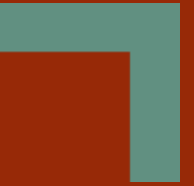
Need a comprehensive life
cycle approach to build skills.



How to address social problems?

Address them as they arise, or
prevent them from occurring in the
first place?


Fragmented Solutions



- Current policy discussions around the world have a fragmented quality.
- They focus on one problem at a time when they arise in the life cycle with policies that are designed to address that one problem, often (but not always) by some remediation strategy.

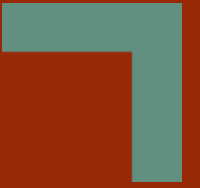
Examples of Fragmented Solutions

- For employment, subsidize job creation, using tax breaks.
- For crime, have more police.
- For health, have more doctors and medical facilities.
- For teenage pregnancy, conduct pregnancy prevention programs.
- To reduce inequality, give cash transfers and promote housing programs for the poor.
- To promote skills, focus on schooling and school quality, especially college-going.
- None of these ideas are necessarily wrong, but there is a better and more effective way.



Fragmented solutions are often not the most effective ones—the problems and their causes are interrelated.

Rethink Public Policy






Should only the squeaky wheel get the grease?

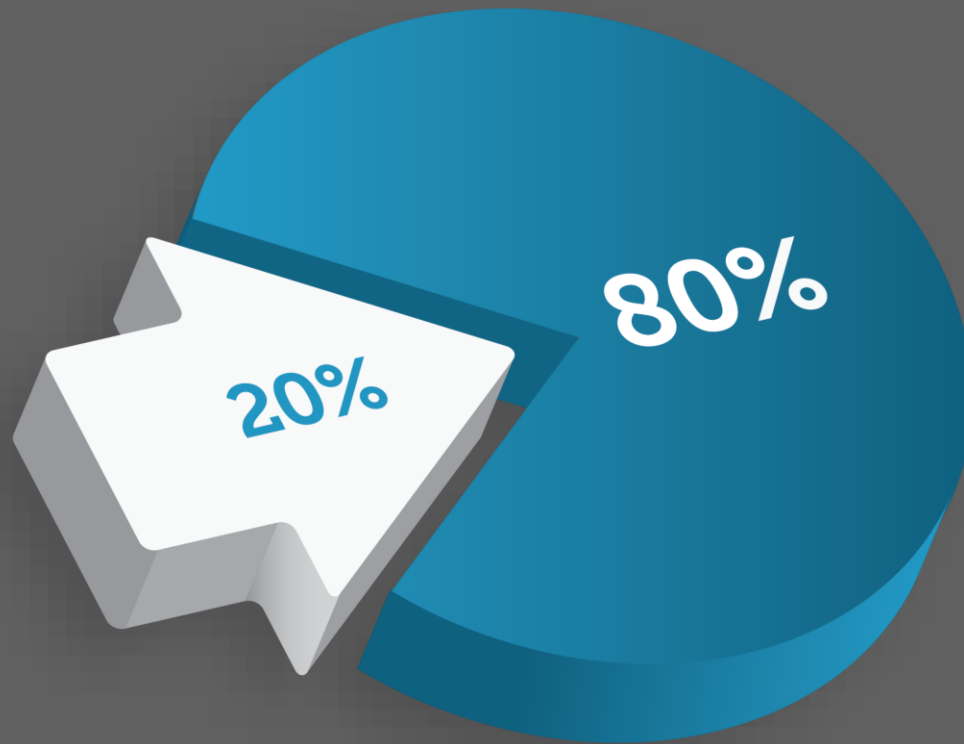


Wait for Problems to Appear?



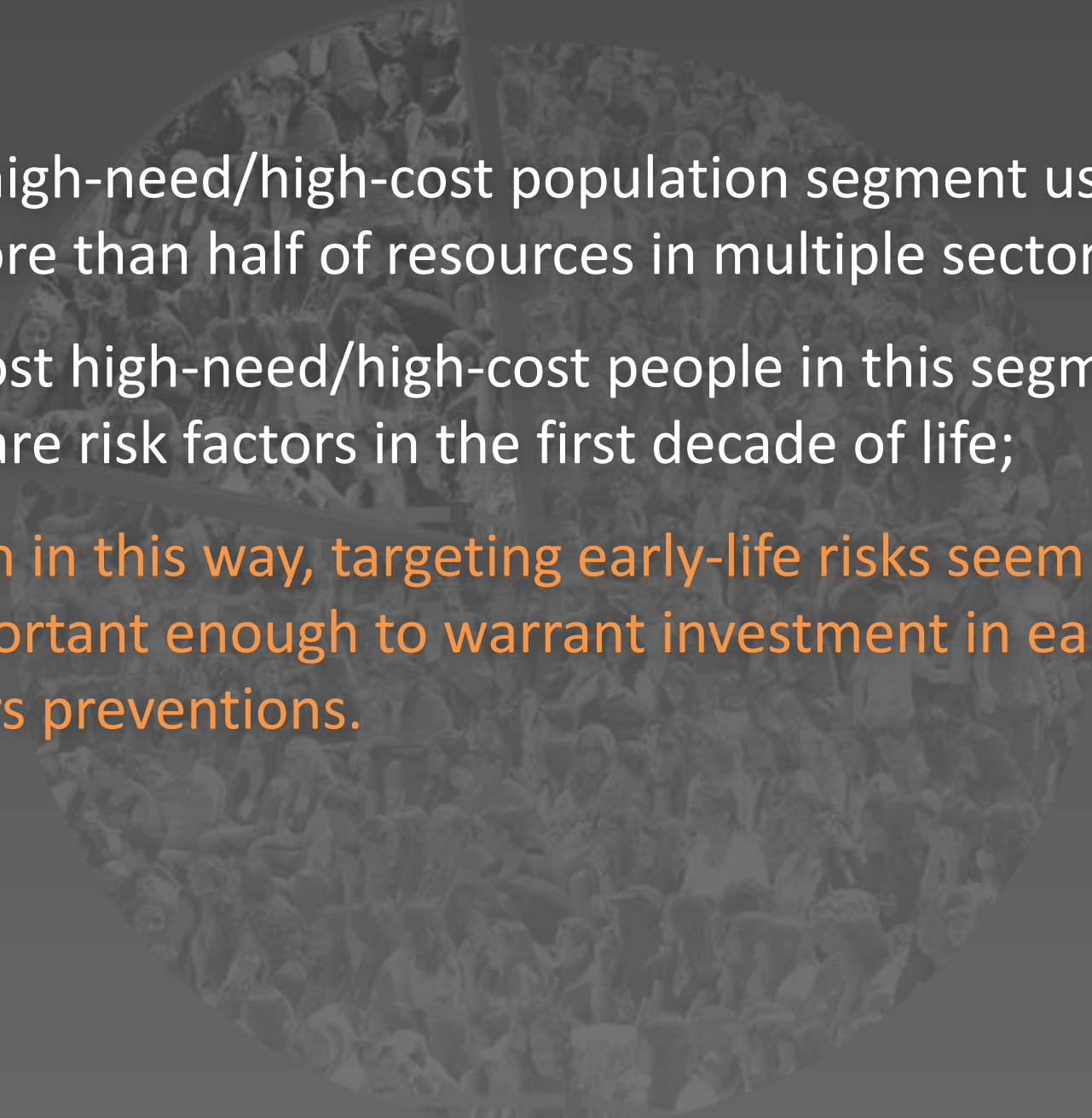
Depends crucially on how well we
can predict later life problems and
target populations at risk.

The Pareto Principle



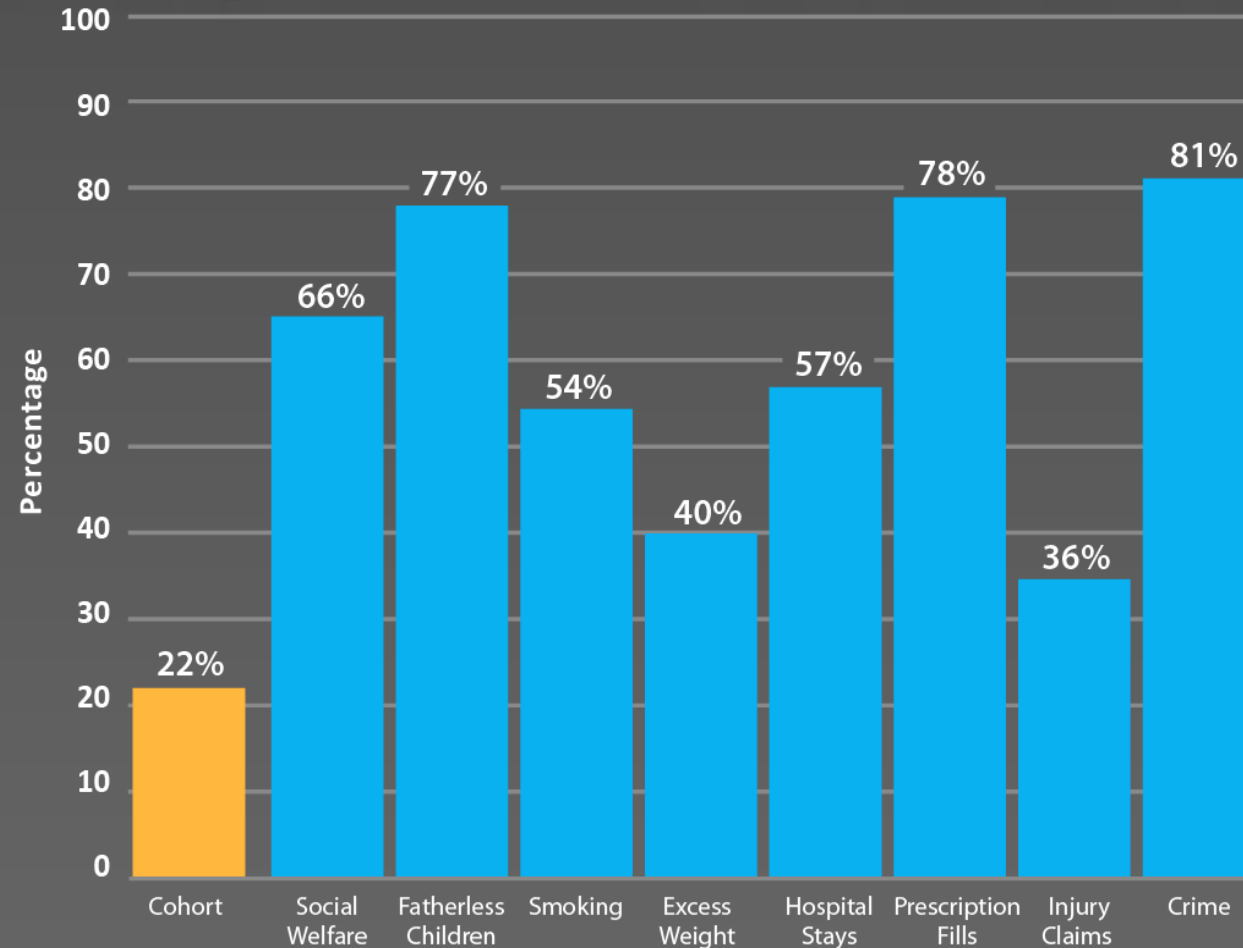
20% of the Actors
Account for **80%**
of the Results.

Vilfredo Pareto, 1848-1923

- 
- A high-need/high-cost population segment uses more than half of resources in multiple sectors.
 - Most high-need/high-cost people in this segment share risk factors in the first decade of life;

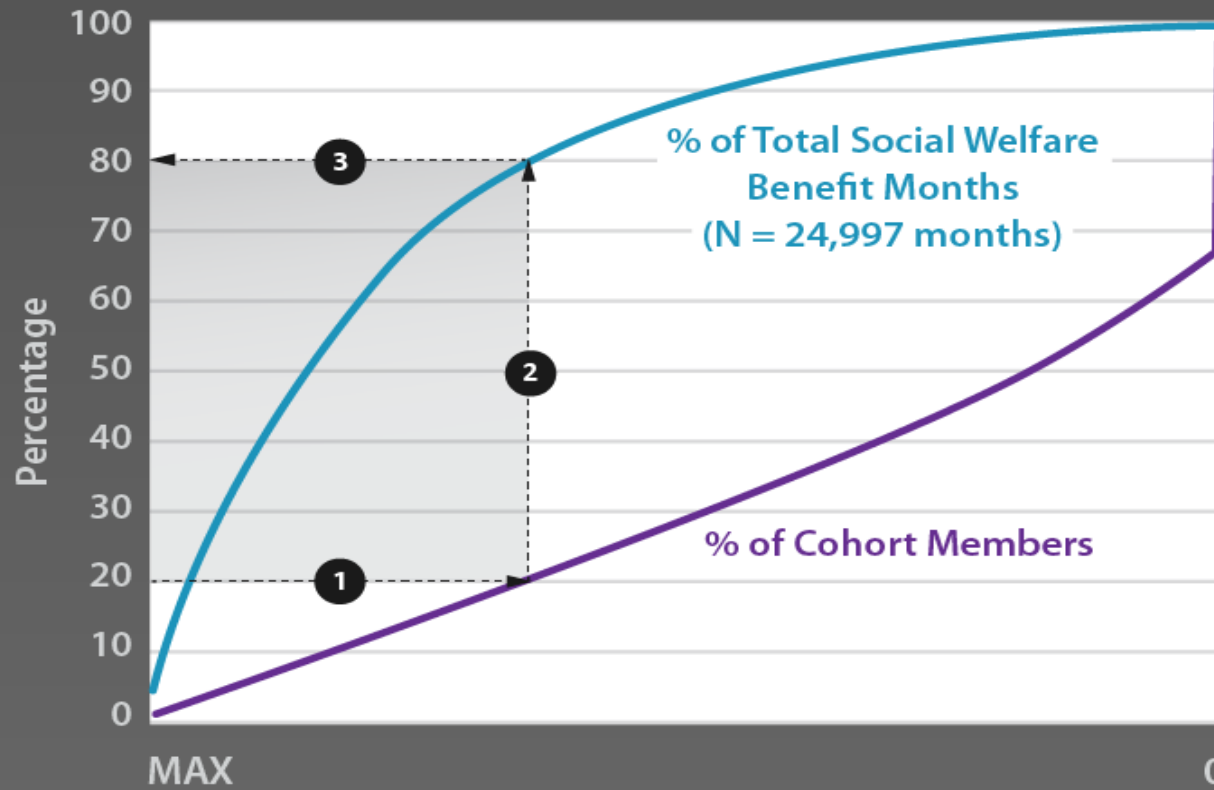
Seen in this way, targeting early-life risks seem important enough to warrant investment in early-years preventions.

The High-need/High-cost Group in 3 or more sectors: How many health/social services do they use?

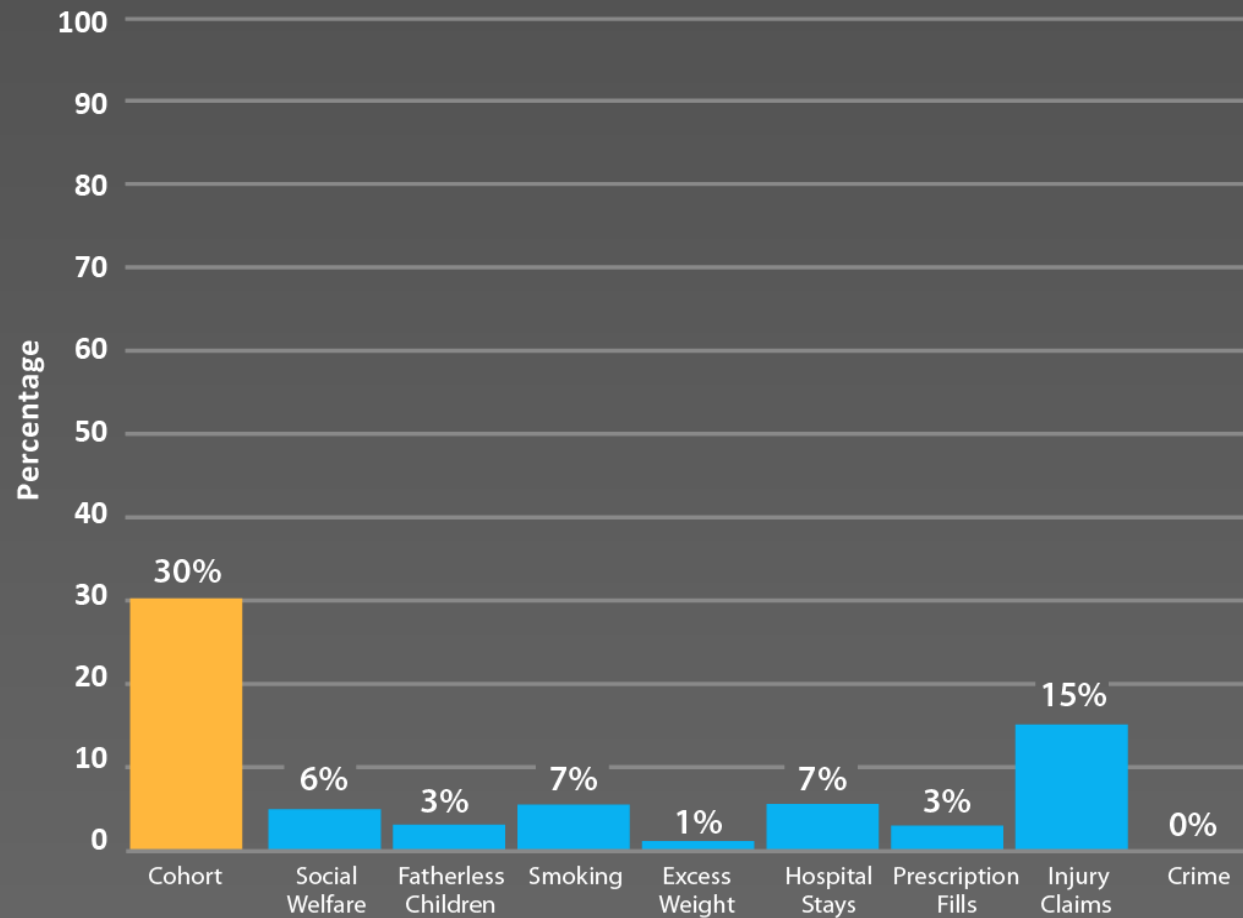


Social Welfare Benefit Months

20% of Cohort Members = 80% of Total Social Welfare Benefit Months



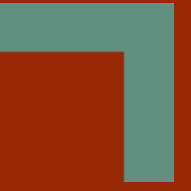
Small footprint of more advantaged cohort members never in any high-cost group:






Childhood Risk Factors Describe High-cost Actor Groups: Composites across ages 3, 5, 7, 9, 11


- IQ
- Self-control
- SES (socio-economic status)
- Maltreatment



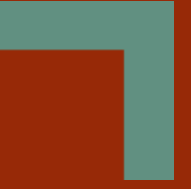
Current discussions of achievement gaps focus almost exclusively on schools as the sources and solutions of these gaps.




They miss the fundamental role of the early years of a child's life, and especially the role of the family in creating gaps.



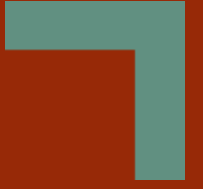
Schools play a role, but not the dominant role, nor can schools alone close the gaps.




Need to Understand **Skills That Are Life- Relevant**




Recent research shows the benefits of cognitive, social and emotional skills in enhancing the capacities of persons to function in many aspects of economic and social life and to foster or retard schooling.



Hard Evidence on the Importance of “Soft” Skills

- 
- a) Major advances have occurred in understanding which human capacities matter for success in life.
- b) Cognitive ability as measured by IQ and achievement tests is important for success in school.
- c) So are **socio-emotional skills** – sometimes called character traits or personality traits:
- Motivation
 - Ability to show up on time
 - Sociability; ability to work with others
 - Attention
 - Self Regulation
 - Self Esteem
 - Ability to defer gratification
 - Health and mental health



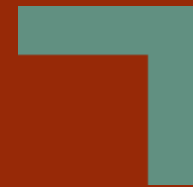
IQ alone explains at most
4-5% of the variability in lifetime
earnings among people.

Higher Levels of Cognitive and Socioemotional Skills are Associated With:

- a) Reduced Crime
- b) Higher Earnings
- c) Better Health and Healthy Behaviors
- d) Higher Civic Participation
- e) Higher Educational Attainment
- f) Less Teenage Pregnancy
- g) Greater Trust
- h) More Human Agency and Self-Esteem



They are the principal outputs of
successful schools and families.



How are skills produced?

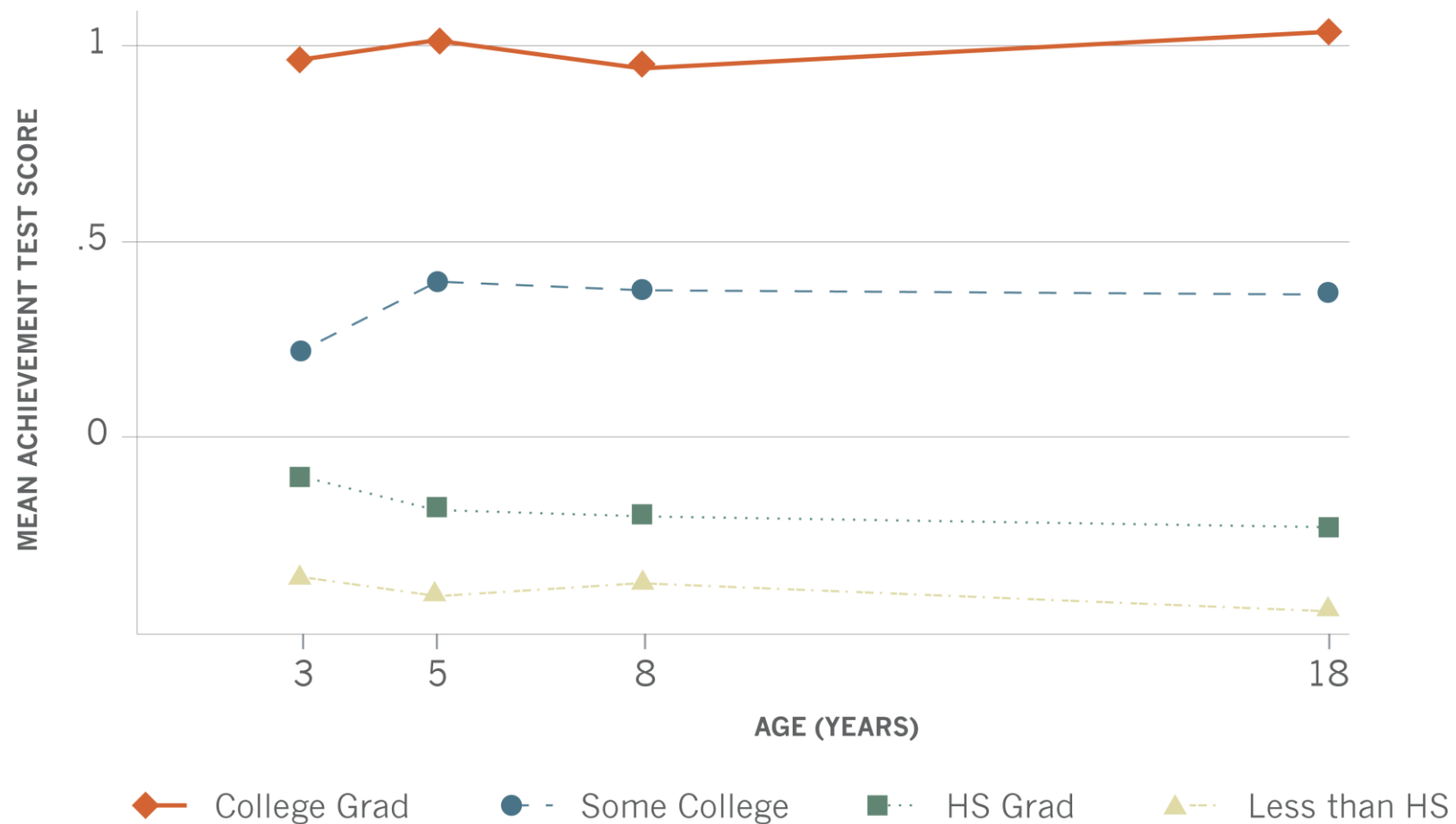


Schools are important, but so are
other institutions in society.





Skill formation starts in the womb,
long before children enter formal
schooling.

Mean Achievement Test Scores by Age by Maternal Education



Each score standardized within observed sample. Using all observations and assuming data missing at random. Source: Brook-Gunn et al. (2006).

- 
- Recent research suggests the wisdom of investing more in prevention and less in remediation in creating skills.
 - Creating a secure foundation to benefit from the opportunities life offers.



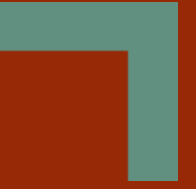
Families and social environments,
not just schools, are the major
producers of the skills of children.



The family is the cornerstone of effective skill development.



We Have Learned the
Importance of the Early Years:
Skills Beget Skills



Supporting families in engaging and nurturing their children is key to success in education and learning at all stages of a child's life.

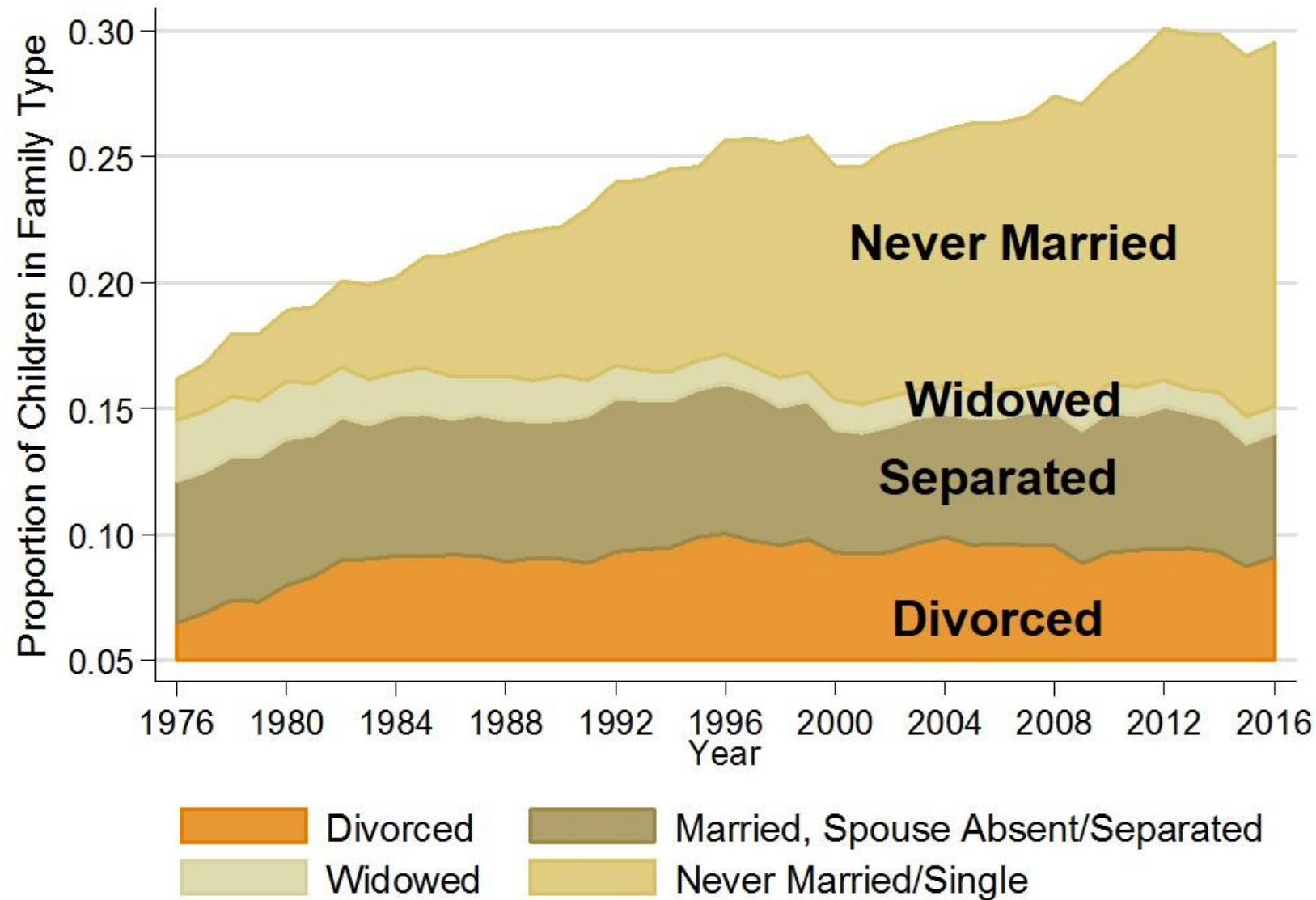


- Cost-effective and fair



Family Life is Under Stress

Children Under 18 Living in Single Parent Households by Marital Status of Parent: U.S.



Home Environments Matter

Hart & Risley, 1995

Children enter school with “meaningful differences” in vocabulary knowledge.

1. Emergence of the Problem

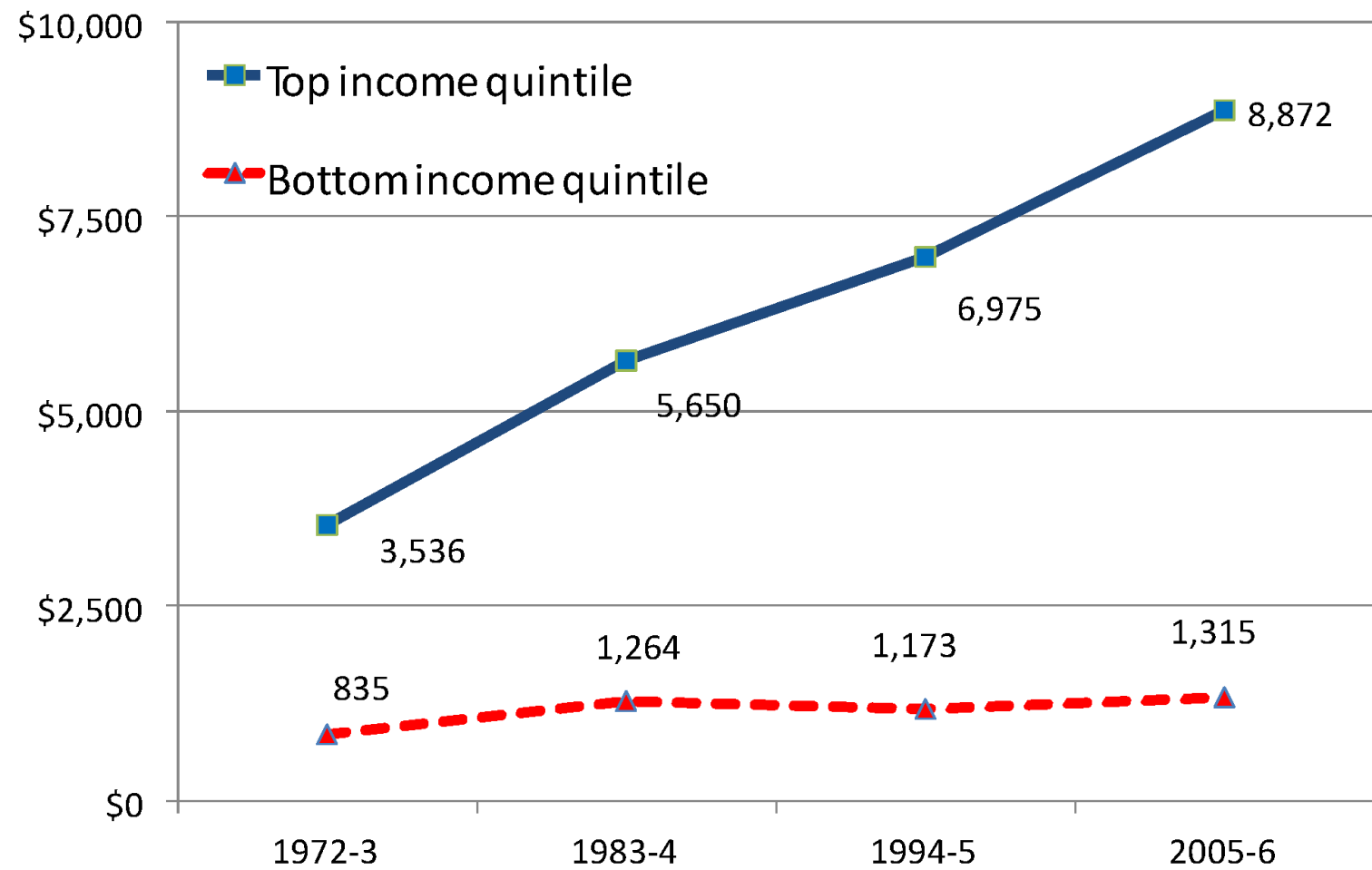
In a typical hour, the average child hears:

Family Status	Actual Differences in Quantity of Words Heard	Actual Differences in Quality of Words Heard
Welfare	616 Words	5 affirmatives, 11 prohibitions
Working Class	1,251 Words	12 affirmatives, 7 prohibitions
Professional	2,153 Words	32 affirmatives, 5 prohibitions

2. Cumulative Vocabulary at Age 3

Cumulative Vocabulary at Age 3	
Children from welfare families:	500 words
Children from working class families:	700 words
Children from professional families:	1,100 words

Per Capita Enrichment Expenditures on Children (\$2008) Top Versus Bottom Quintile of Households




Source: Duncan and Murnane (2011)




Home environments are
associated with child outcomes.

- 
- Genetics?
 - Case for eugenics?



Targeted early childhood programs substantially reduce achievement gaps and produce better child outcomes.



Successful interventions work with and encourage parents. They promote interactions between parents and children, which are fundamental to child development.

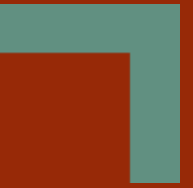
The nature of and level of parent-child interactions vary greatly by social and economic status of the family.

There are Proven Effective Programs



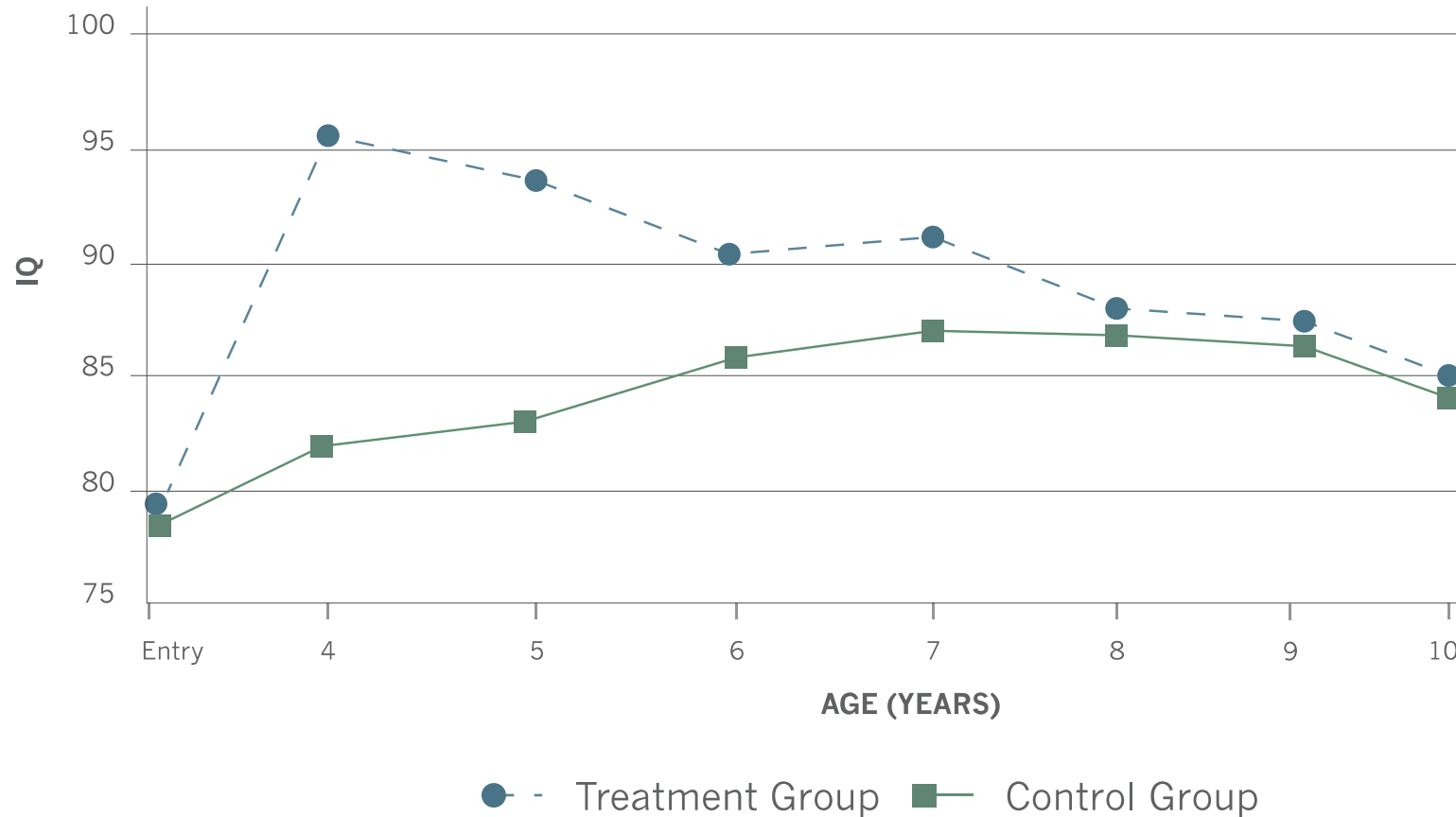
Examples:

- Perry Preschool (ages 3-4),
2 hours per day
- Abecedarian Program (ages 0-5), 8
hours per day

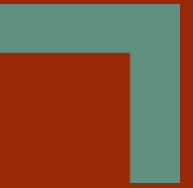


To evaluate them, we need full inventories of the life-relevant skills.

Perry Preschool Program: IQ, by age and treatment group



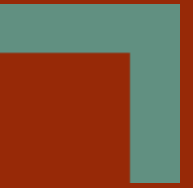
*Source: Perry Preschool Program. IQ measured on the Stanford. Binet Intelligence Scale (Terman & Merrill, 1960).
Test was administered at program entry and each of the ages indicated.*



Figures like this stimulated the
critique of Arthur Jensen (1969).

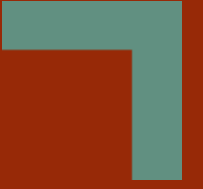


Led to Herrnstein and Murray's Bell Curve and their emphasis on genetics.



Like many still do today, they assumed that IQ was an important determinant of life outcomes and that it was genetically determined.

- Yet, Perry was not a failure by any means. Children in the treatment group had far better life outcomes than those in the control group.
- They did better in school, had higher levels of employment and wages, and lived healthier and more socially productive lives.




Despite “fadeout,” 7-10%
per annum rate of return.



Worked primarily through boosting social and emotional skills.

- 
- Even led to higher achievement test scores.

- 
- Achievement tests (as opposed to IQ tests) measure effort and desire to learn as much as raw smarts.



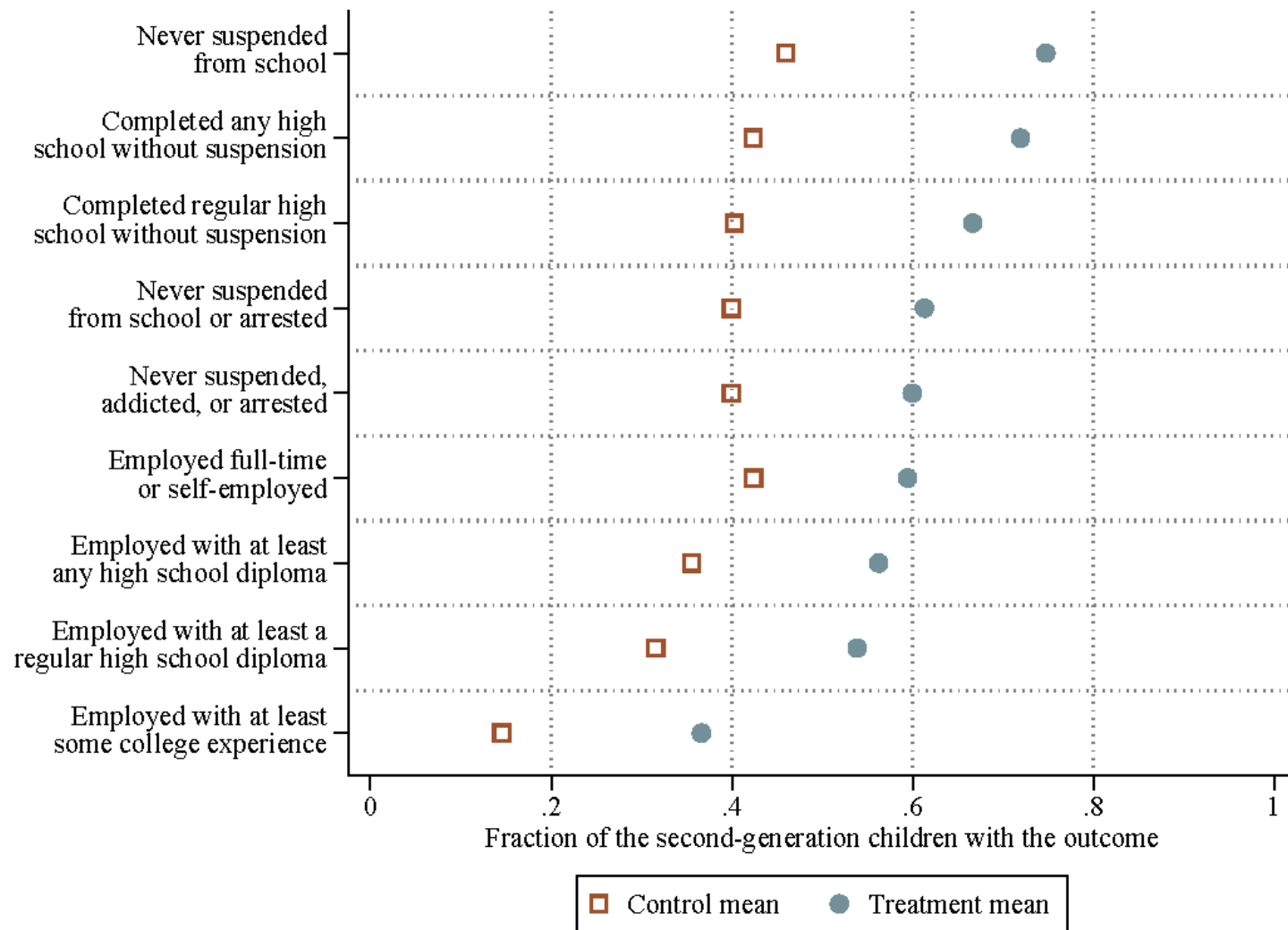
Effects of These Programs Last Over Generations



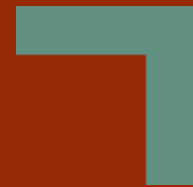
Recent Evidence

The Children of the Original Perry Participants

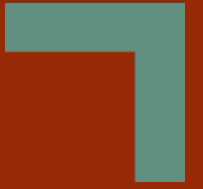
Statistically Significant Intergenerational Effects at the 10% Worst-Case Level



Note: These estimates of the intergenerational treatment effects are statistically significant at the 10% level using the conservative worst-case test procedures developed in Heckman and Karapakula (2019).

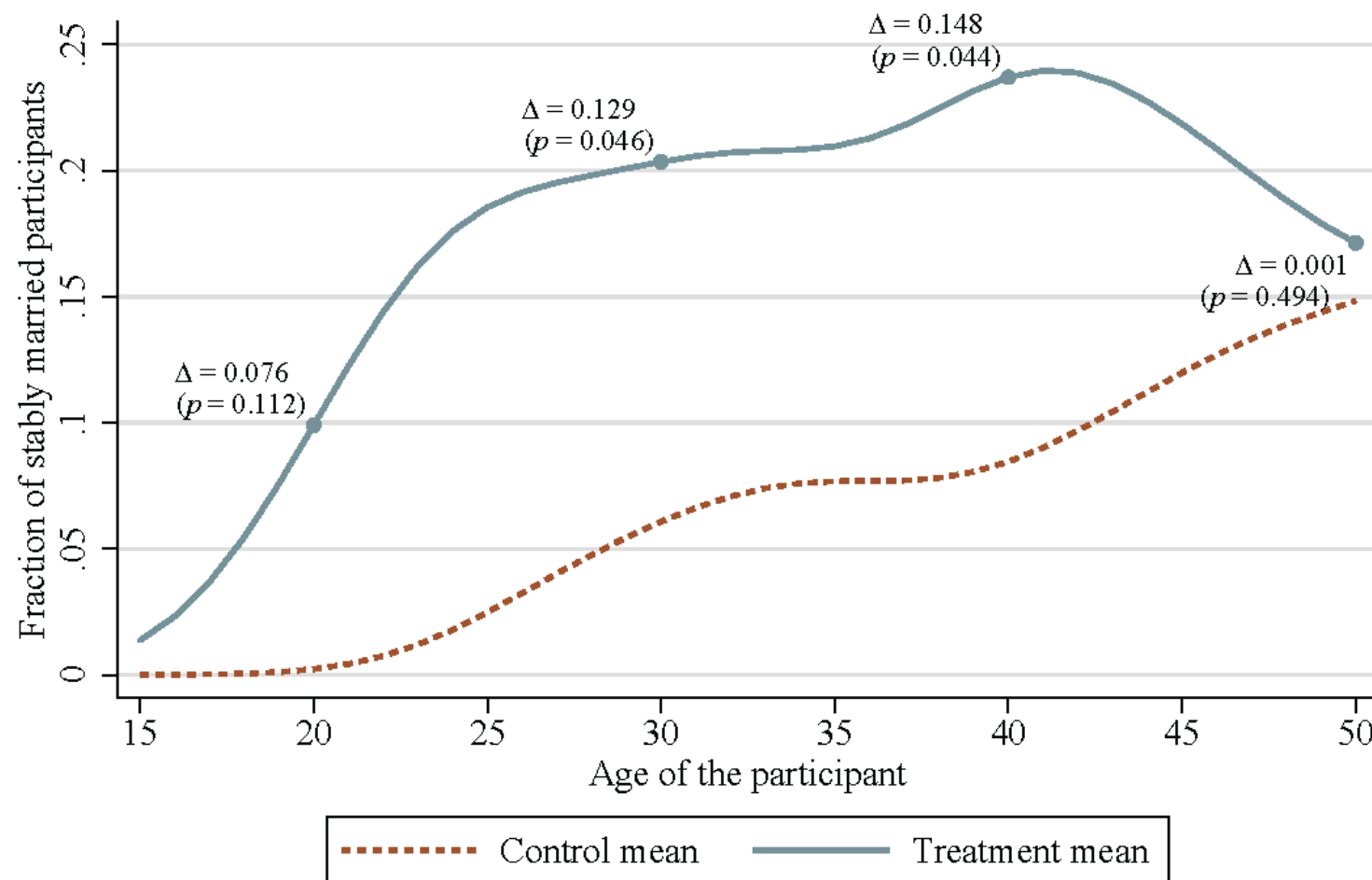


Mechanisms Producing These Effects



Childhood Family Environments of the Second-Generation Children

Stable Marriage Rate over the Life Course for Male Participants



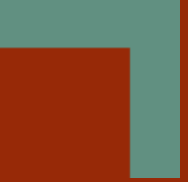
Note: Δ = augmented inverse probability weighting estimate (AIPW) of the treatment effect;
 p = worst-case maximum p -value based on approximate randomization test using studentized AIPW;
the control and treatment means are smoothed estimates using the Gaussian kernel with bandwidth of 3.



Abecedarian shows from a comprehensive approach.



Starting earlier (at birth) boosts
IQ.

- 
- Improved parenting practices and child attachment
 - Positive effect on behavior and mental health
 - Higher educational attainment
 - Higher employment rate
 - Reduced criminal activity
 - Better child and adult health

Abecedarian Project, Health Effects at Age 35 (Males)


	Treatment Mean	Control Mean	Treatment p-value
Systolic Blood Pressure	125.79	143.33	0.018
Diastolic Blood Pressure	78.53	92.00	0.024
Pre-Hypertension	0.68	0.78	0.235
Hypertension	0.10	0.44	0.011
HDL Cholesterol	53.21	42.00	0.067
Cholesterol/HDL-C	3.89	4.69	0.057
Abdominal Obesity	0.65	0.87	0.136
Metabolic Syndrome	0.00	0.25	0.009

Source: Campbell, Conti, Heckman, Moon, Pinto, Pungello and Pan (2014).



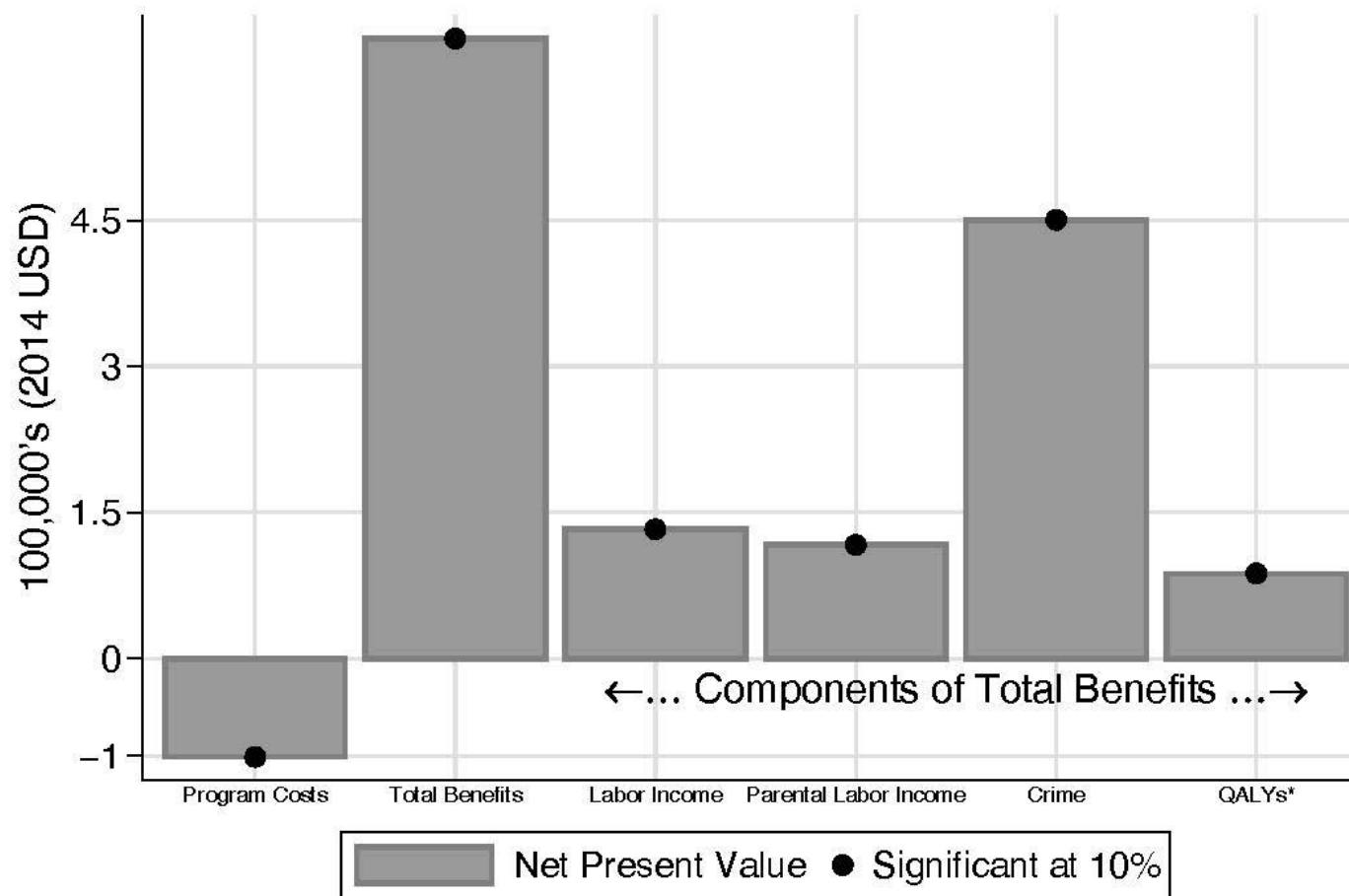
Rate of return:

- Overall: 13.7% per annum
- Males: 14% per annum
- Females: 10% per annum



The enhanced income of mothers from the provision of childcare by itself pays for program costs.

Life-cycle Net Present Value of Main Components of the CBA



Per-annum Rate of Return: Males and Females 13.7% (s.e. 3%).
Benefit-cost Ratio: Males and Females 7.3 (s.e. 1.8).



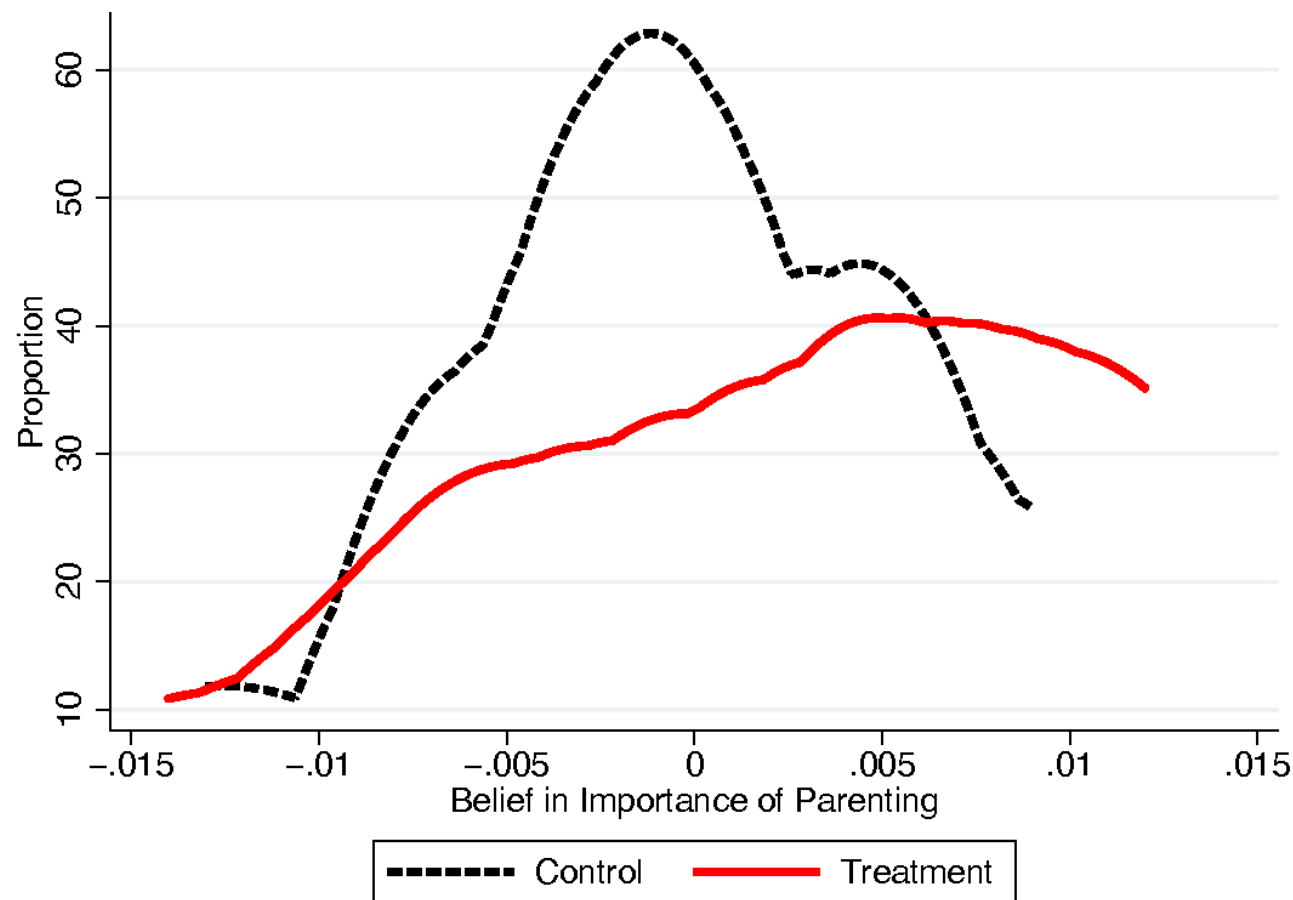
Mechanisms Underlying Effective Early Childhood Interventions



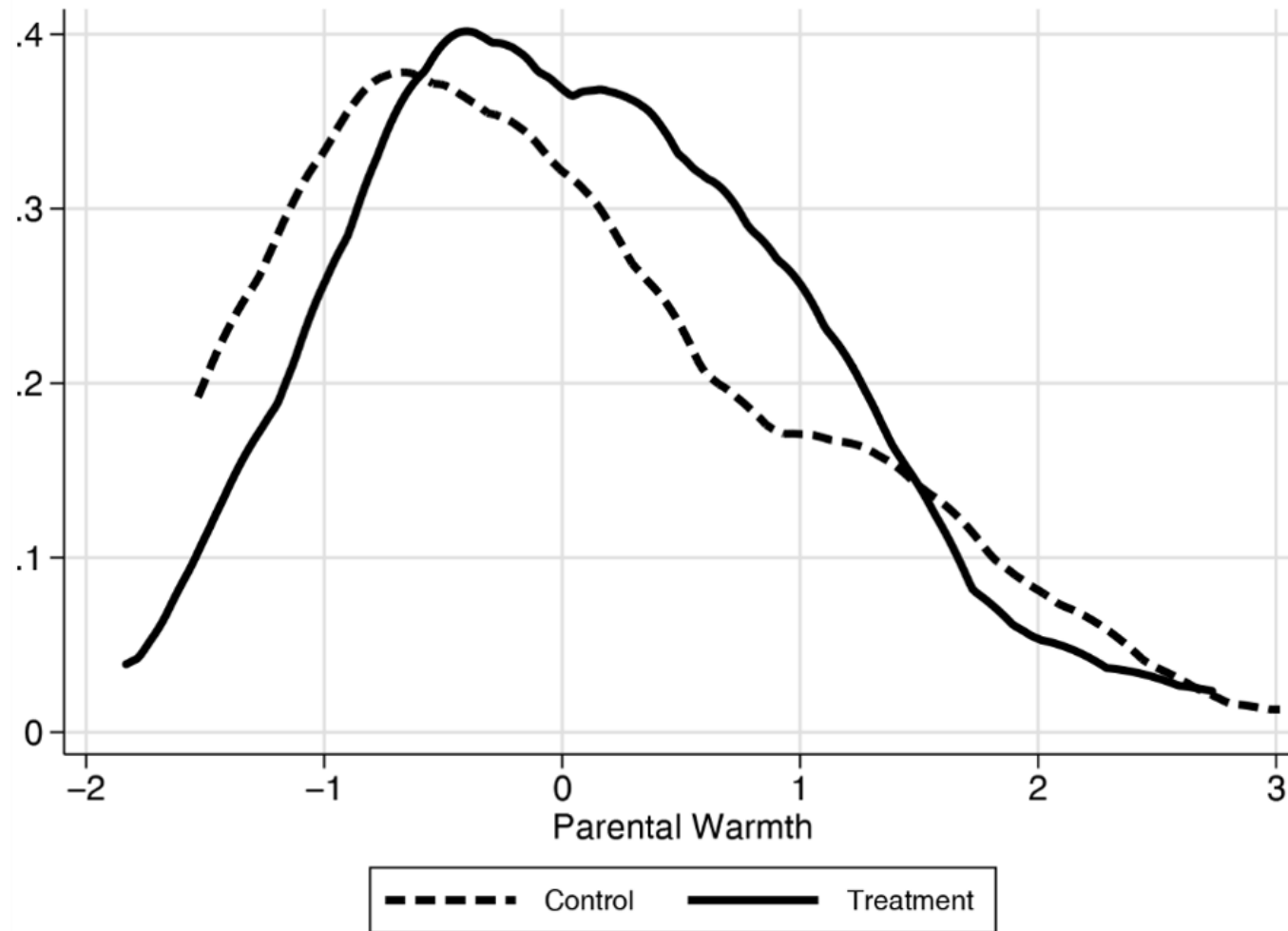
**Enriches Home Lives of Children
Outside of Childcare Center**

**Keeps Parental Engagement Active
Long After the Children Leave
Early Childhood Programs**

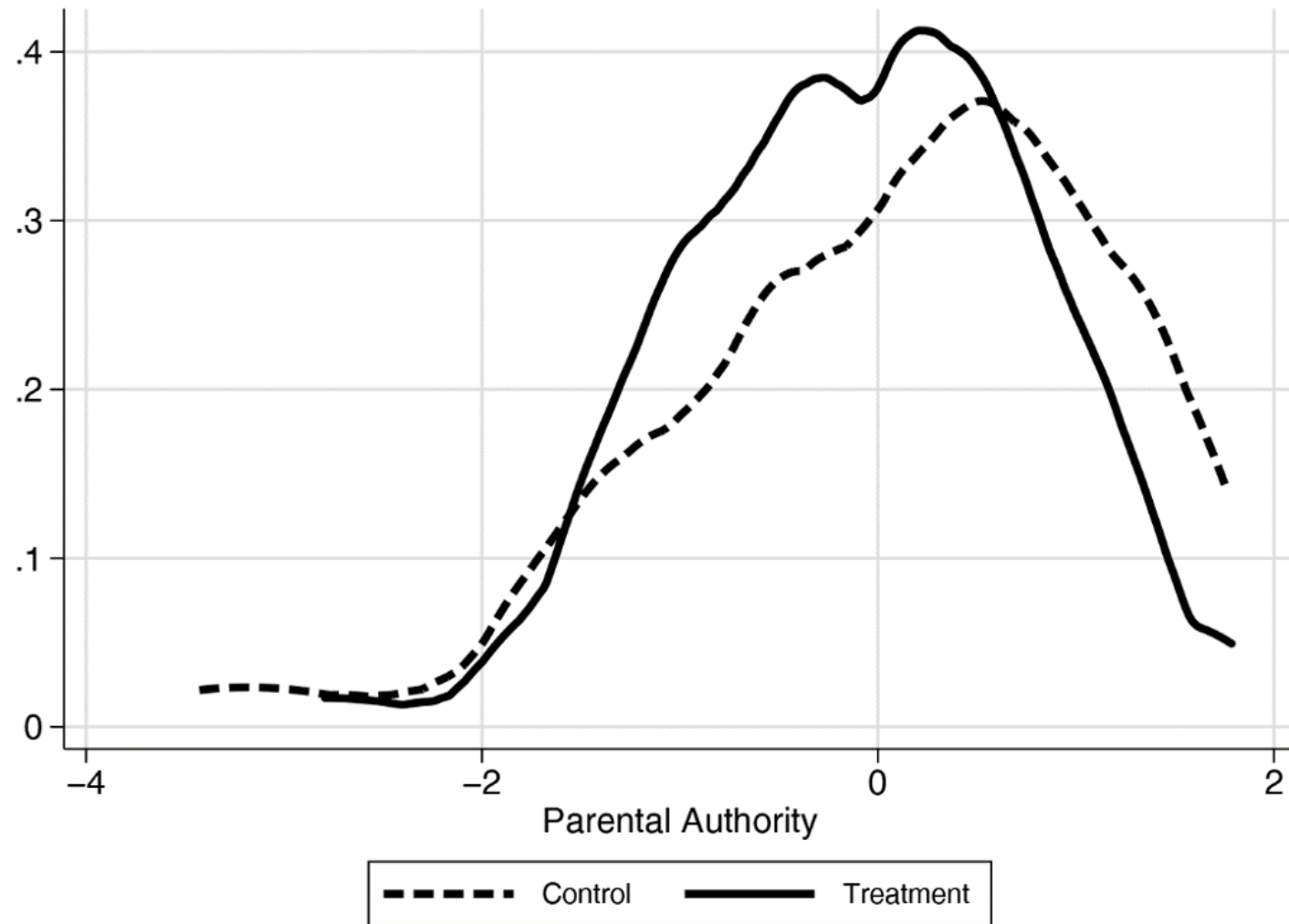
Parental response to Perry Preschool Program after 1 year experience of treatment:



Parental Warmth, Perry Preschool




Parental Authoritarianism, Perry Preschool



- 
- Parent-child interaction patterns were improved in both Perry and ABC.



- They are the essential ingredient in the success of early childhood programs
- Do we need costly childcare centers to shape successful lives?
- Is there a more cost-effective way to promote child development?

- 
- Useful to examine programs that focus attention on this one aspect of child development



Home Visiting Programs



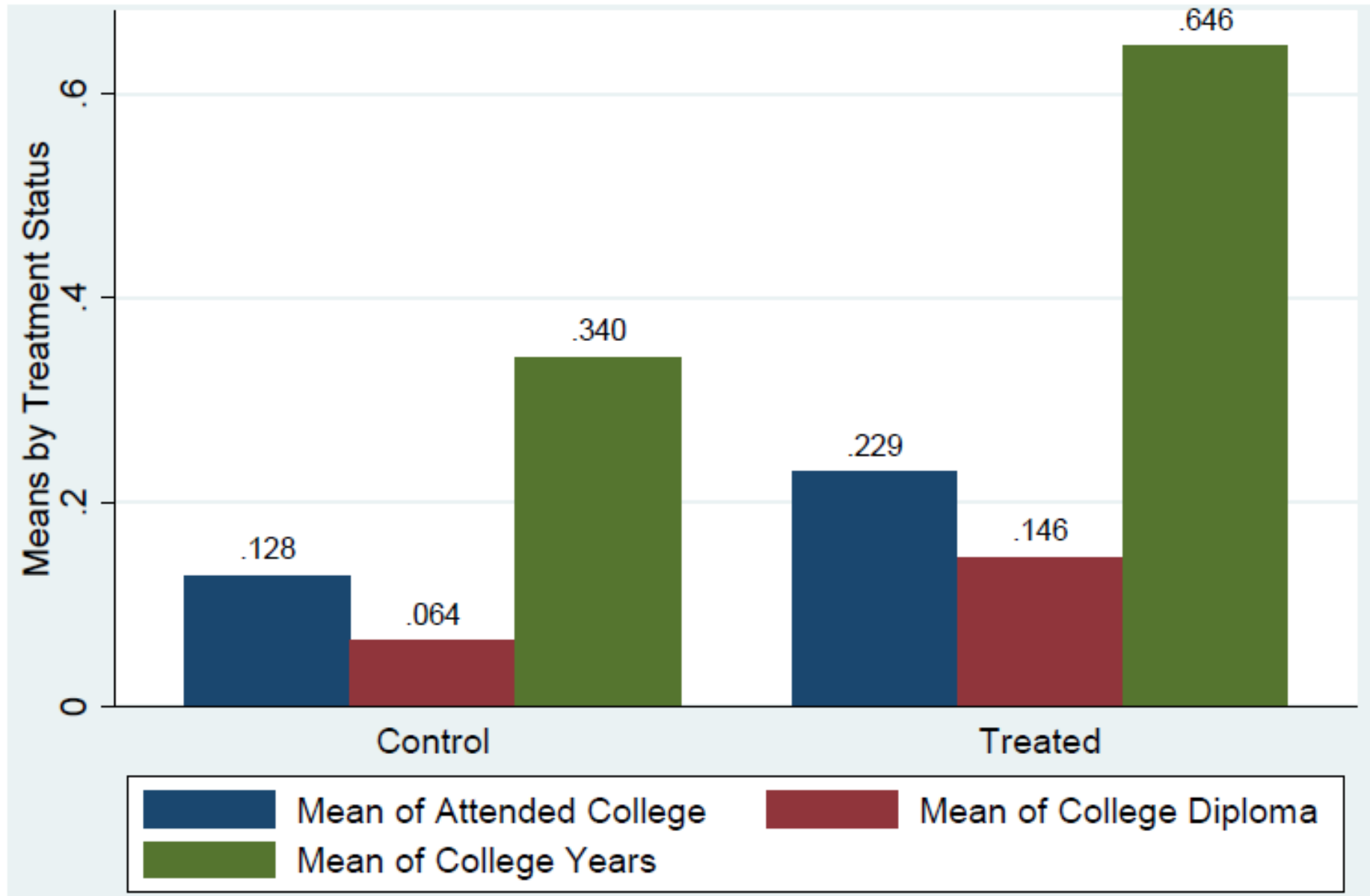
Jamaica Study

The Jamaican Intervention

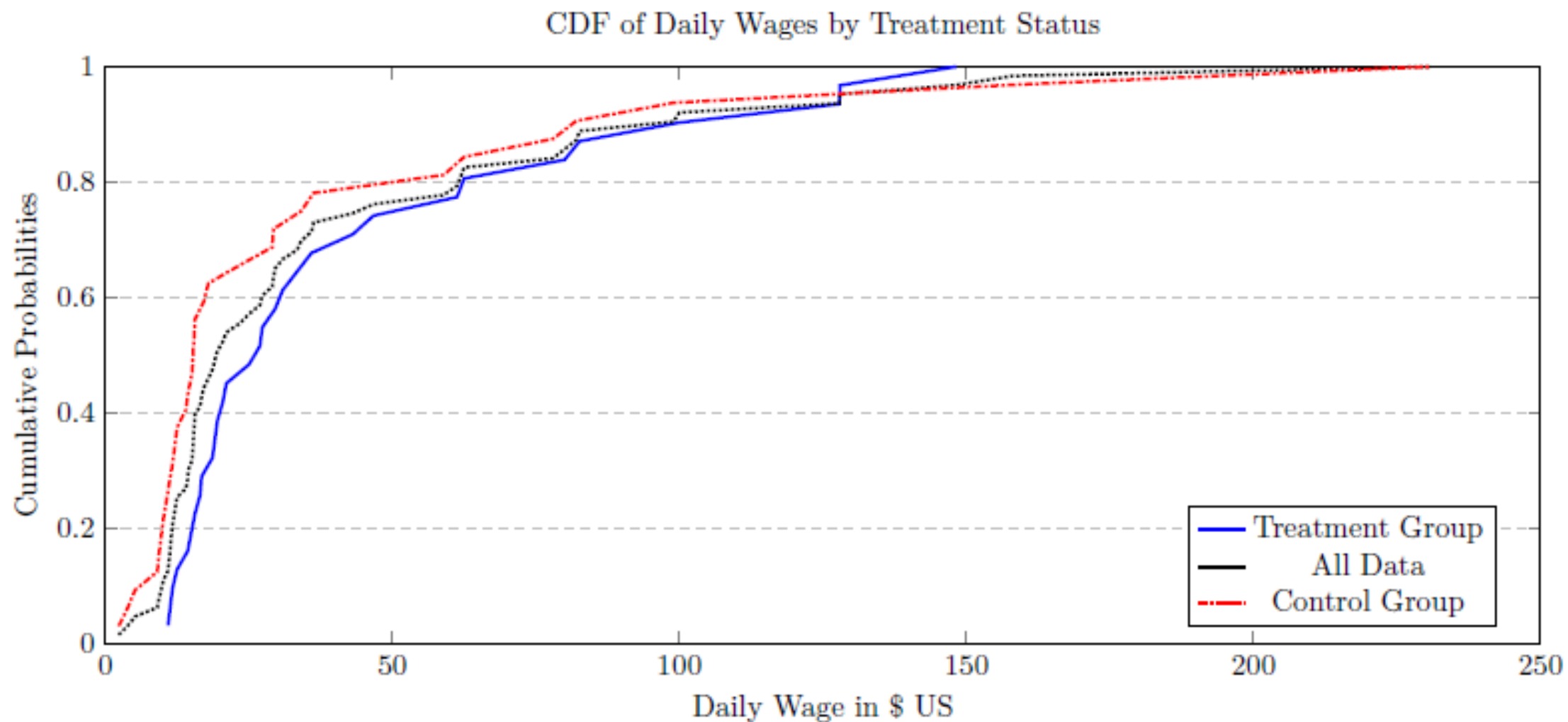


- Randomized intervention, sample of 129 children
- Stunted children between 9 and 24 months
- Designed to individualize the different effects of nutritional and cognitive stimulation
- Follow up to age 22; current study follows through age 30
- Four groups:
 1. No intervention
 2. Nutritional intervention only
 3. Cognitive stimulation intervention only
 4. Both cognitive and non-cognitive interventions
- Plus, a matched non-stunted group as a reference
- **The long-lasting effects were found for the cognitive/ socio-emotional components of interventions**

Schooling Outcomes



CDF of Wages by Treatment Status



Conditional Block Permutation Inference on Log of Economic Outcomes (Males and Females)



Variables	Sample		Control	Treat.	Effect	Asymptotic		Permutation		
	# C	# T	Mean	Effects	Size	t-stat	Single p-val	Single p-val	Stepdown	
<i>Log of Wages & Earnings (Males and Females Employed)</i>										
Daily Wage	32	31	2.92	0.61	0.78	2.76	0.00	0.01	0.02	
Daily Wage (last job)	35	40	2.96	0.45	0.54	2.07	0.02	0.02	0.05	
Total Earnings Last Month - no zeros	42	37	6.02	0.33	0.27	1.17	0.12	0.14	0.16	
Total Earnings Last Job - no zeros	45	46	6.03	0.28	0.23	1.10	0.14	0.14	0.14	
Rank Mean	45	46	0.42	0.12	0.42	1.80	0.04	0.04	0.04	
<i>Log of Wages & Earnings (Non-migrant Males and Females Employed)</i>										
Daily Wage	27	25	2.72	0.46	0.62	2.08	0.02	0.03	0.06	
Daily Wage (last job)	29	33	2.68	0.46	0.63	2.09	0.02	0.02	0.05	
Total Earnings Last Month - no zeros	35	30	5.69	0.32	0.34	1.20	0.12	0.12	0.12	
Total Earnings Last Job - no zeros	37	38	5.67	0.36	0.39	1.47	0.07	0.07	0.09	
Rank Mean	37	38	0.40	0.13	0.49	1.75	0.04	0.05	0.05	



China REACH Home Visiting

- Home visitors at the same level of education as the mother of the child (i.e., 10 years of education on average and most with preliminary school teaching or nursing experience).
- Trained home visitors visit each treatment household weekly and provide one hour of parenting or caregiving guidance and support based on the adapted Jamaican Reach Up and Learn curriculum.
- The curriculum emphasizes teaching and encouraging caregivers to talk with the child through playing games, making toys, singing, reading, and storytelling to stimulate the child's cognitive, language, motor, and social-emotional skill development.



China REACH Home Visiting

- **Supervisors:**
 - Follow a set of guidelines and indicators based on delineated task and work requirements.
 - Provide guidance to home visitors.
 - Address problems that home visitors encounter during home visits.
 - Accompany home visitors each month to each treated household to observe the interventions administered.
- **Home visitors:**
 - Complete forms and show their weekly home visits and submit forms to their supervisors.
 - The county coordinator will review these report forms.
 - Supervisors and the county coordinator conduct “spot checks” by calling households to verify the home visits.

Treatment Effects on Standardized Scores

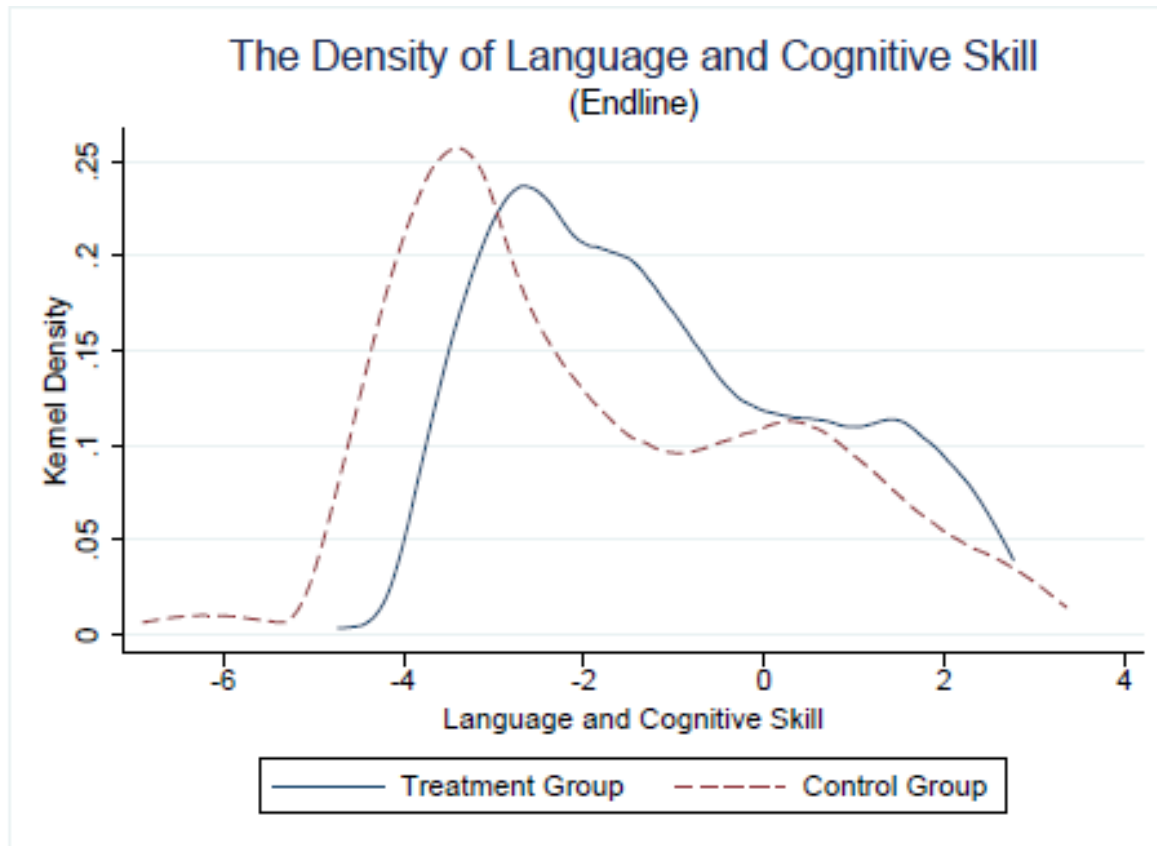
	All	Female	Male
		Midline	
Language and Cognitive	0.741*** [0.350, 1.144]	0.534** [0.080, 0.990]	0.911*** [0.329, 1.501]
Social-Emotional	0.620*** [0.204, 1.067]	0.938*** [0.400, 1.431]	0.280 [-0.272, 0.842]
Fine Motor	0.703* [0.057, 1.375]	0.544 [-0.082, 1.189]	0.771 [-0.070, 1.747]
Gross Motor	0.010 [-0.559, 0.584]	0.019 [-0.605, 0.652]	-0.021 [-0.682, 0.659]
		Endline	
Language and Cognitive	1.113*** [0.723, 1.510]	0.893** [0.177, 1.598]	1.111*** [0.625, 1.626]
Social-Emotional	-0.115 [-0.491, 0.275]	-0.291 [-0.820, 0.206]	-0.169 [-0.701, 0.400]
Fine Motor	0.645** [0.139, 1.158]	0.855** [0.117, 1.579]	0.388 [-0.355, 1.124]
Gross Motor	0.219 [-0.294, 0.775]	0.445 [-0.417, 1.326]	-0.138 [-0.629, 0.359]
Pre-Treatment Covariates	Yes	Yes	Yes
IPW	Yes	Yes	Yes

Effects of Interactions on Child Cognitive Task Performance

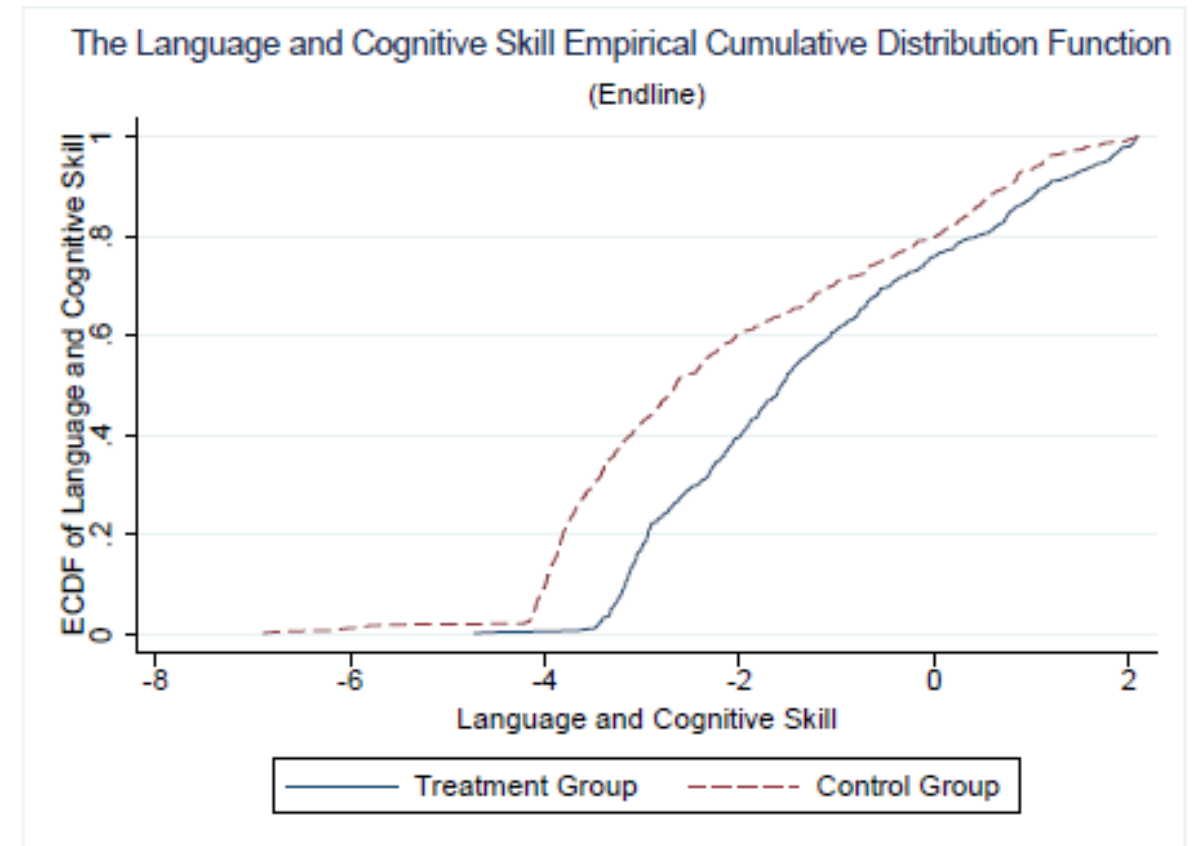
	(1) Total	(2) Male	(3) Female
Interaction Quality between Home Visitor and Caregiver	0.0785*** (0.0303)	0.1151*** (0.0364)	0.1042** (0.0449)
Interaction Quality between Home Visitor and Child	-0.0173 (0.0109)	-0.0111 (0.0111)	-0.0006 (0.0128)
Interaction Quality between Home Visitor and Grandmother Teaching Ability	-0.0024 (0.0142) 0.1705*** (0.06400)	-0.0205 (0.0192) 0.1194*** (0.0635)	0.0231 (0.0206) 0.0685 (0.0887)
Age	Yes	Yes	Yes
Difficulty Level	Yes	Yes	Yes
Repeated Times	Yes	Yes	Yes
Over Identification Test			
Sargan-Hansen Statistic	3.414	5.615	8.219
χ^2 Degree	4	5	5

Language and Cognitive Skill Distribution and Dominance Curves

(a)

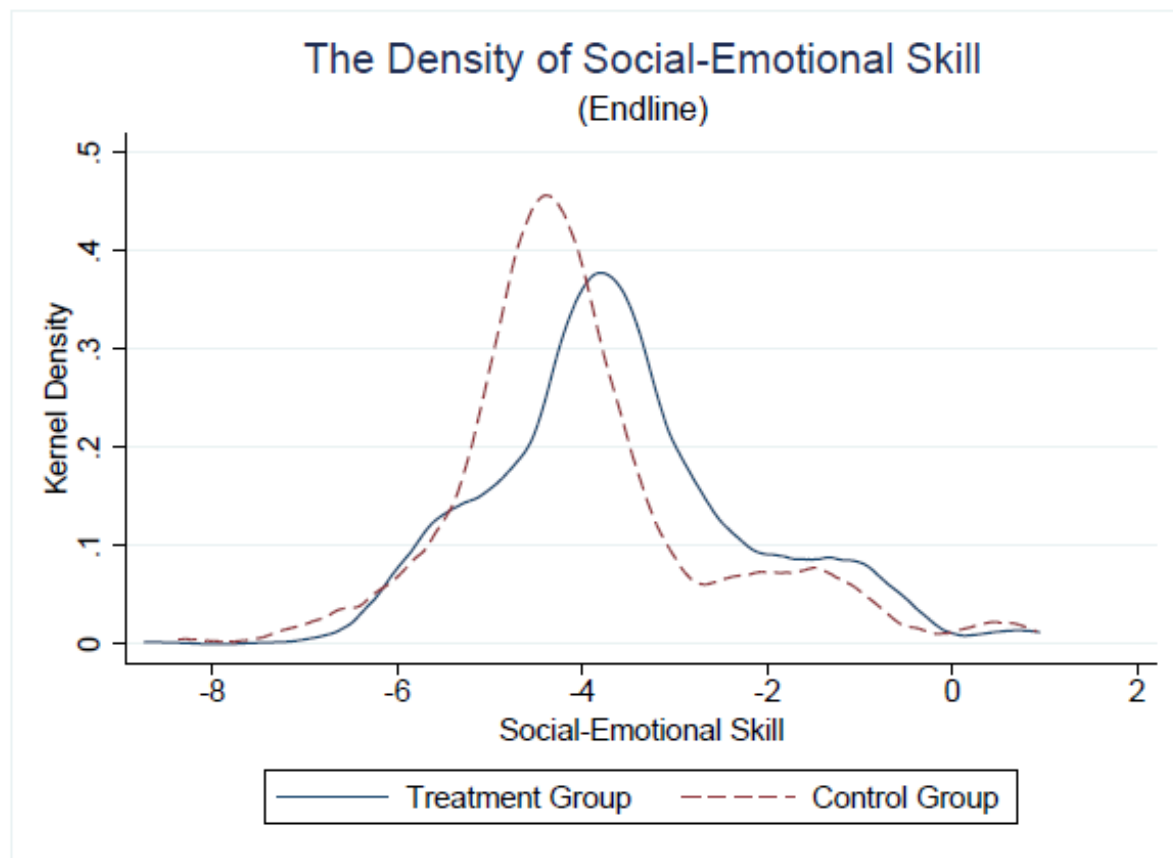


(b)

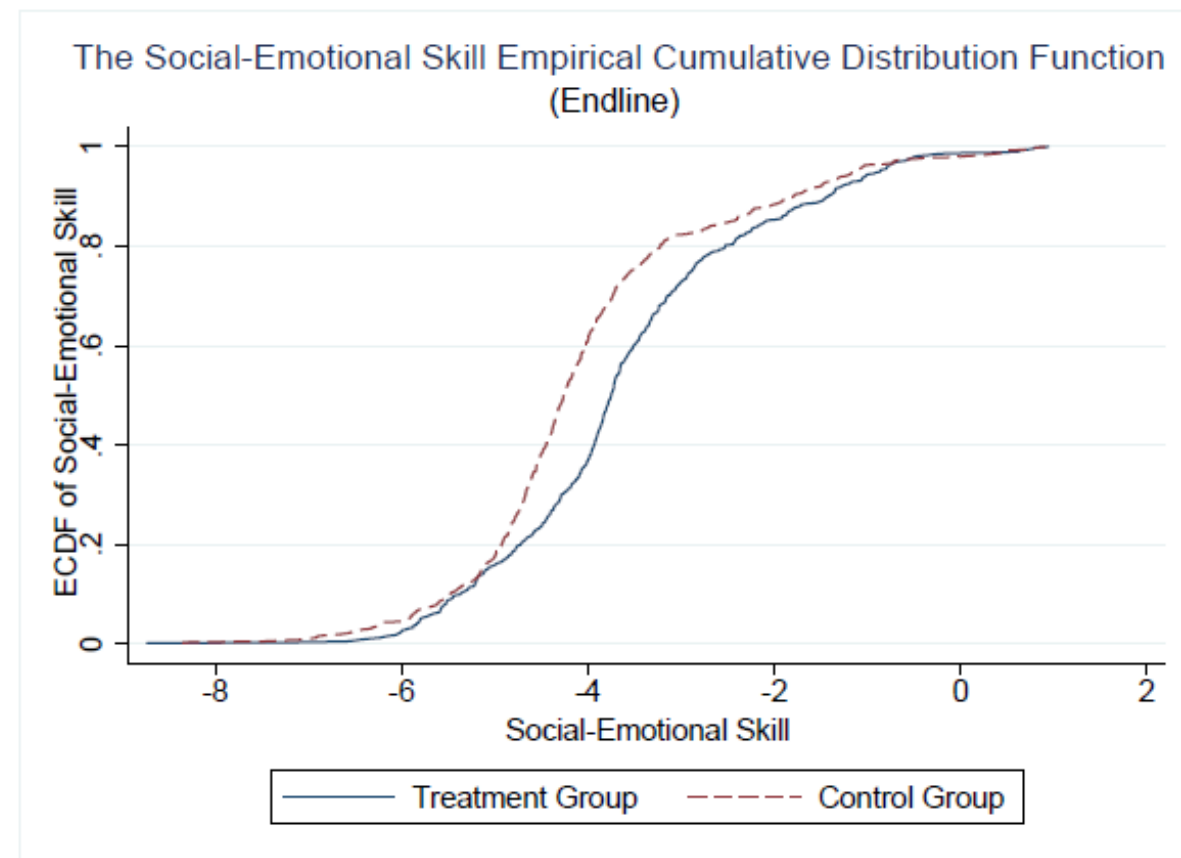


Social-Emotional Skill Distribution and Dominance Curves

(a)

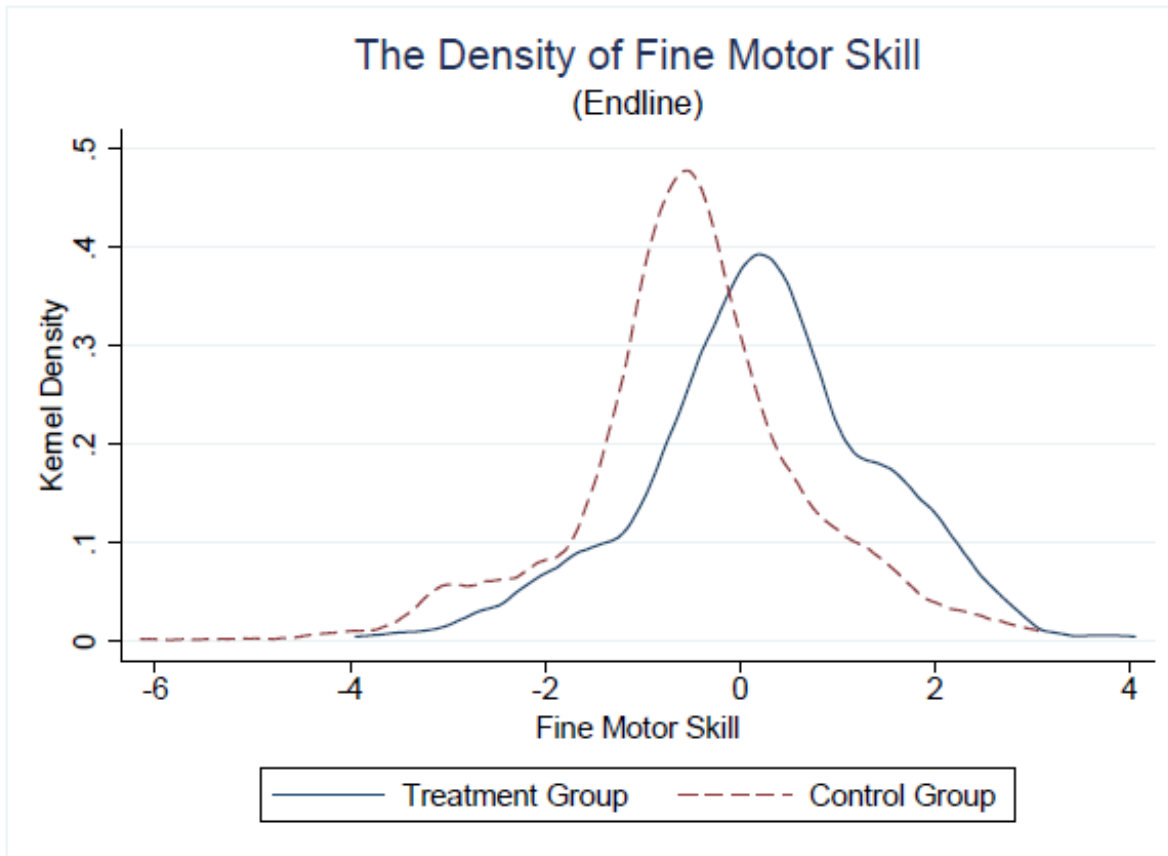


(b)

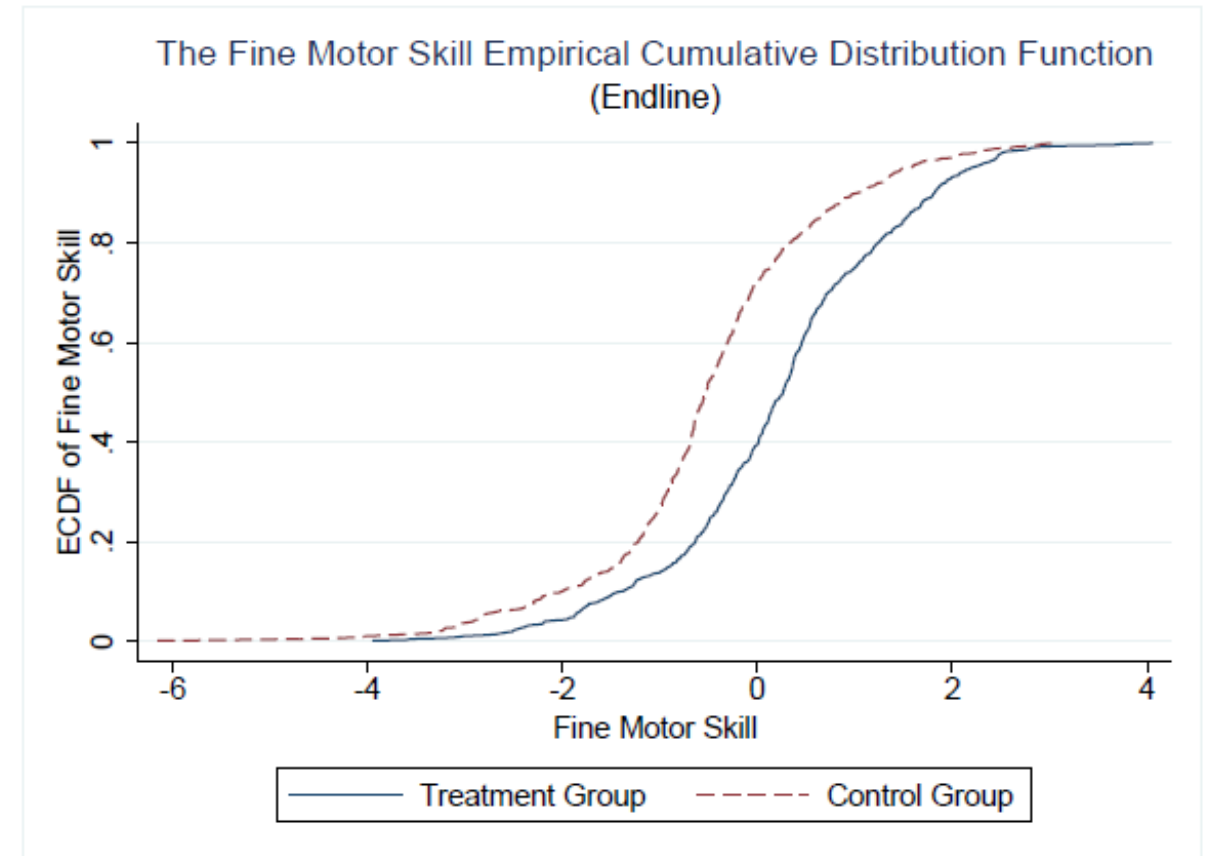


Fine Motor Skill Distribution and Dominance Curves

(a)



(b)



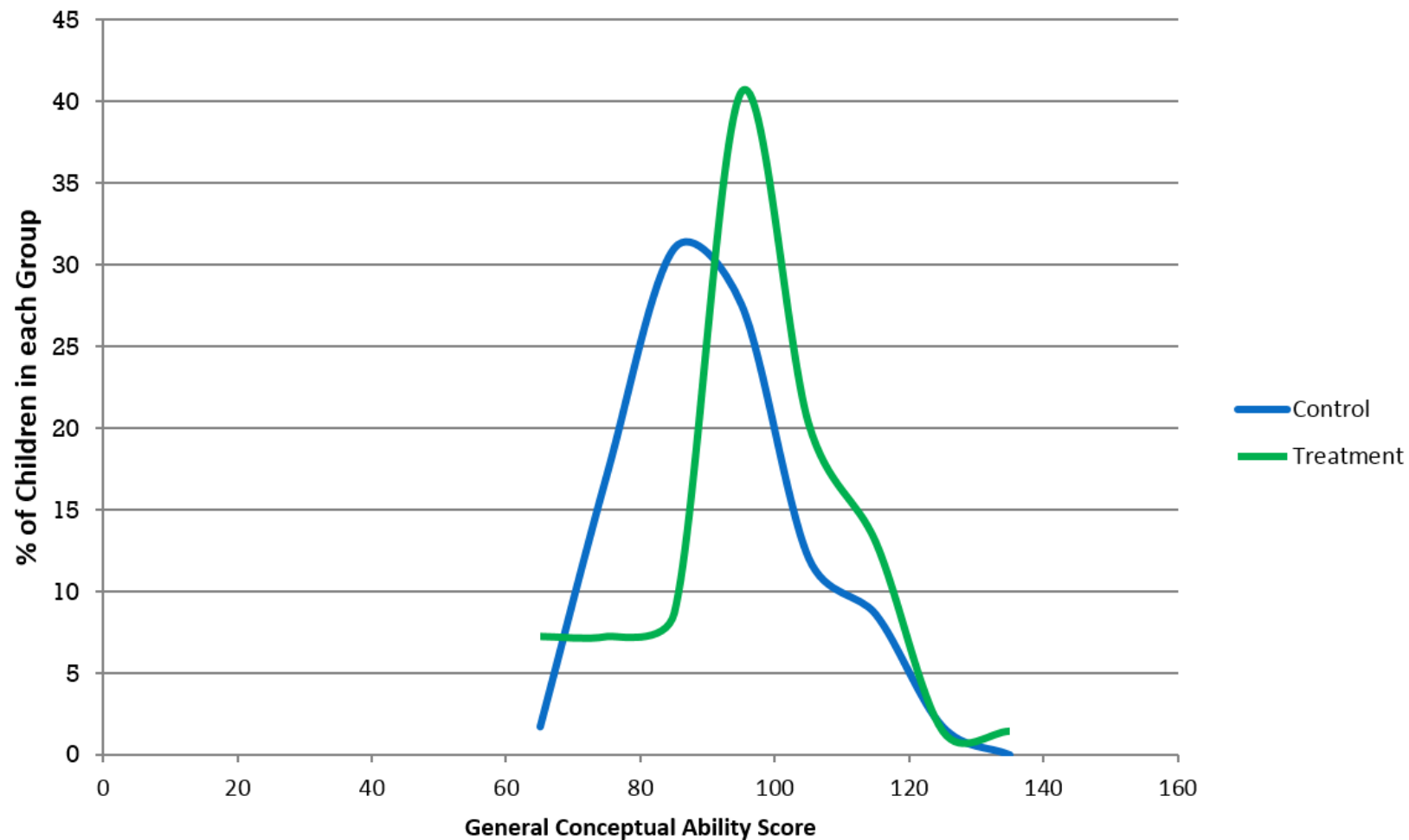


Preparing For Life (PFL, 2016)

Home Visiting in Ireland - Orla Doyle

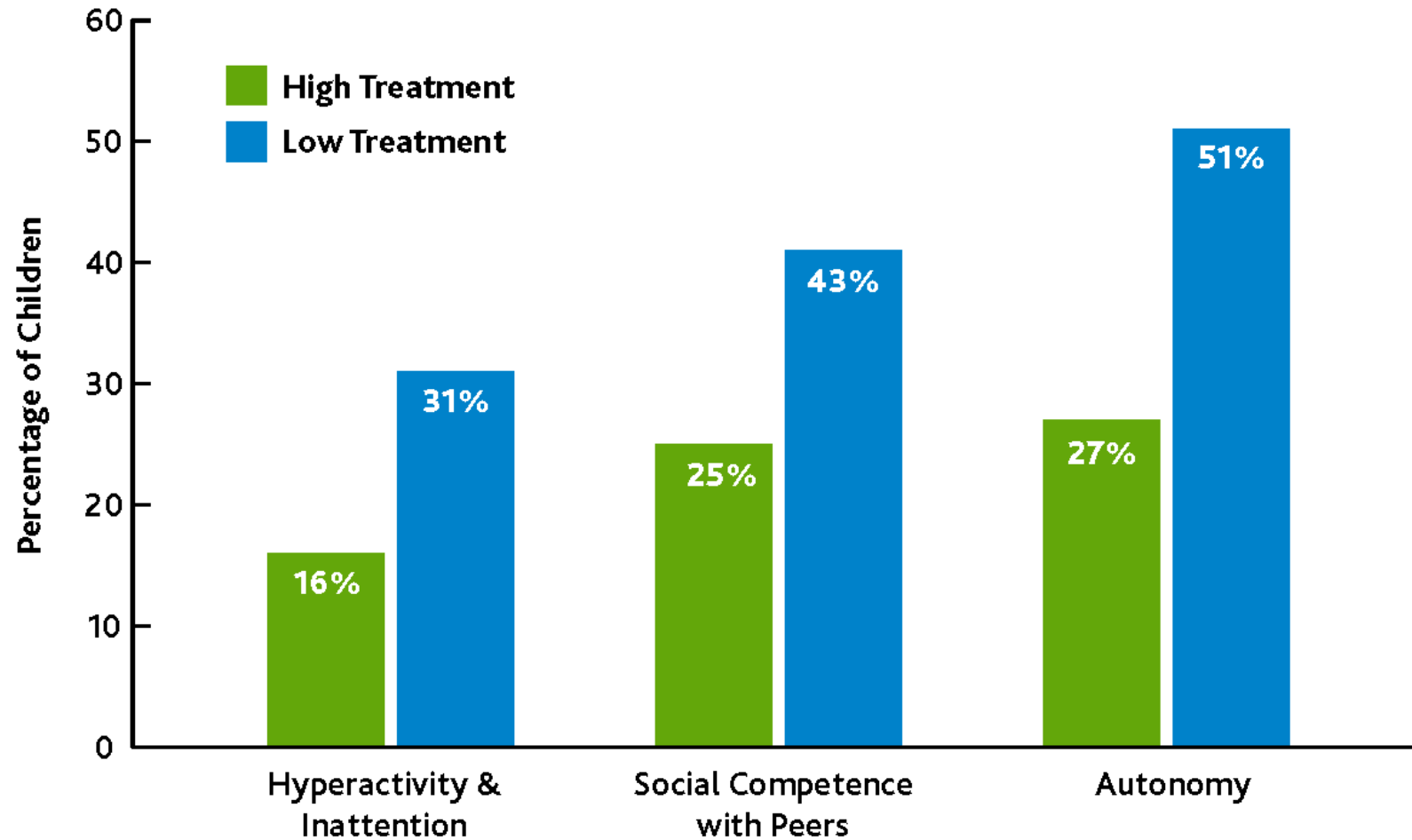
1. PFL: support and education to parents from pregnancy/ birth onwards
2. Based on theories of attachment, social learning, & ecological development
3. PFL: **Fortnightly home-visits** from trained mentor – pregnancy to school entry
4. Mentors came from **different professional backgrounds**
5. **Mentor's role:** support parents about child development & parenting using role play, modelling, demonstration, discussion, encouragement, and feedback
6. Low intensity – on average one hour per month; ~51 hours over 5 years for program

Distribution of BAS GCA Cognitive Scores at School Entry



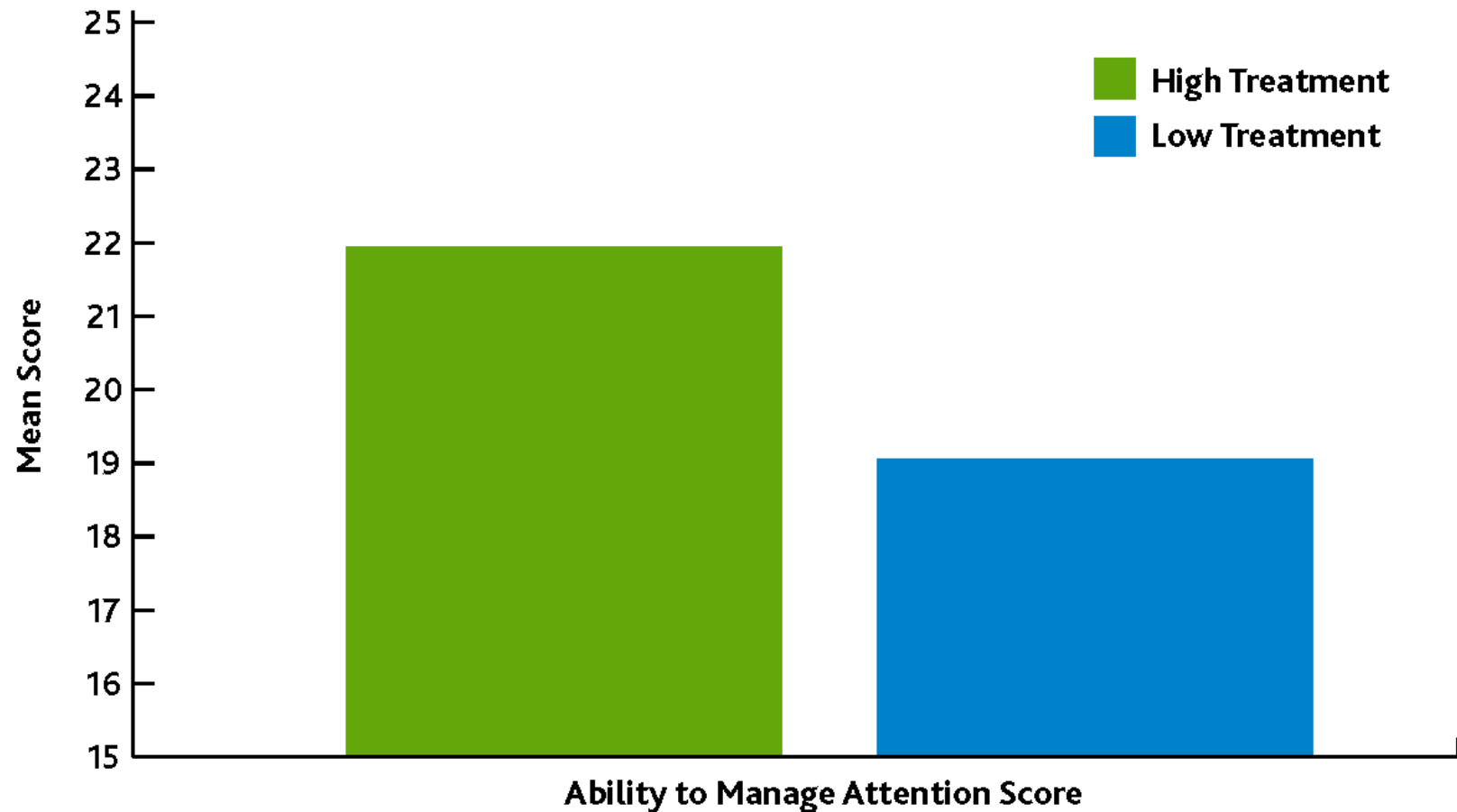
Source: Doyle (2017).

Percentage of Children 'Not on Track' on Measures of Social and Emotional Development At School Entry



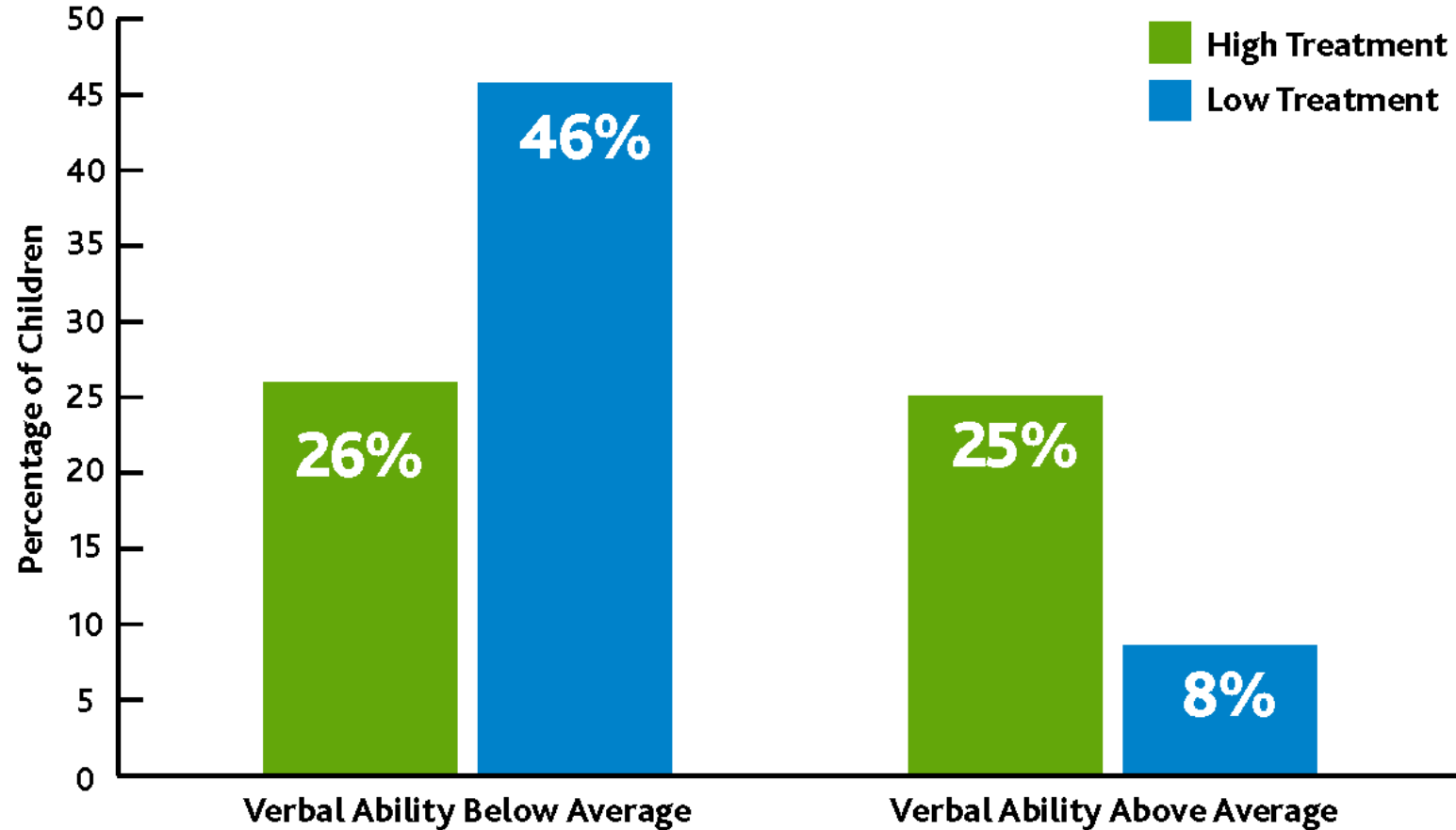
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Mean Scores of Children on Ability to Manage Attention Task At School Entry



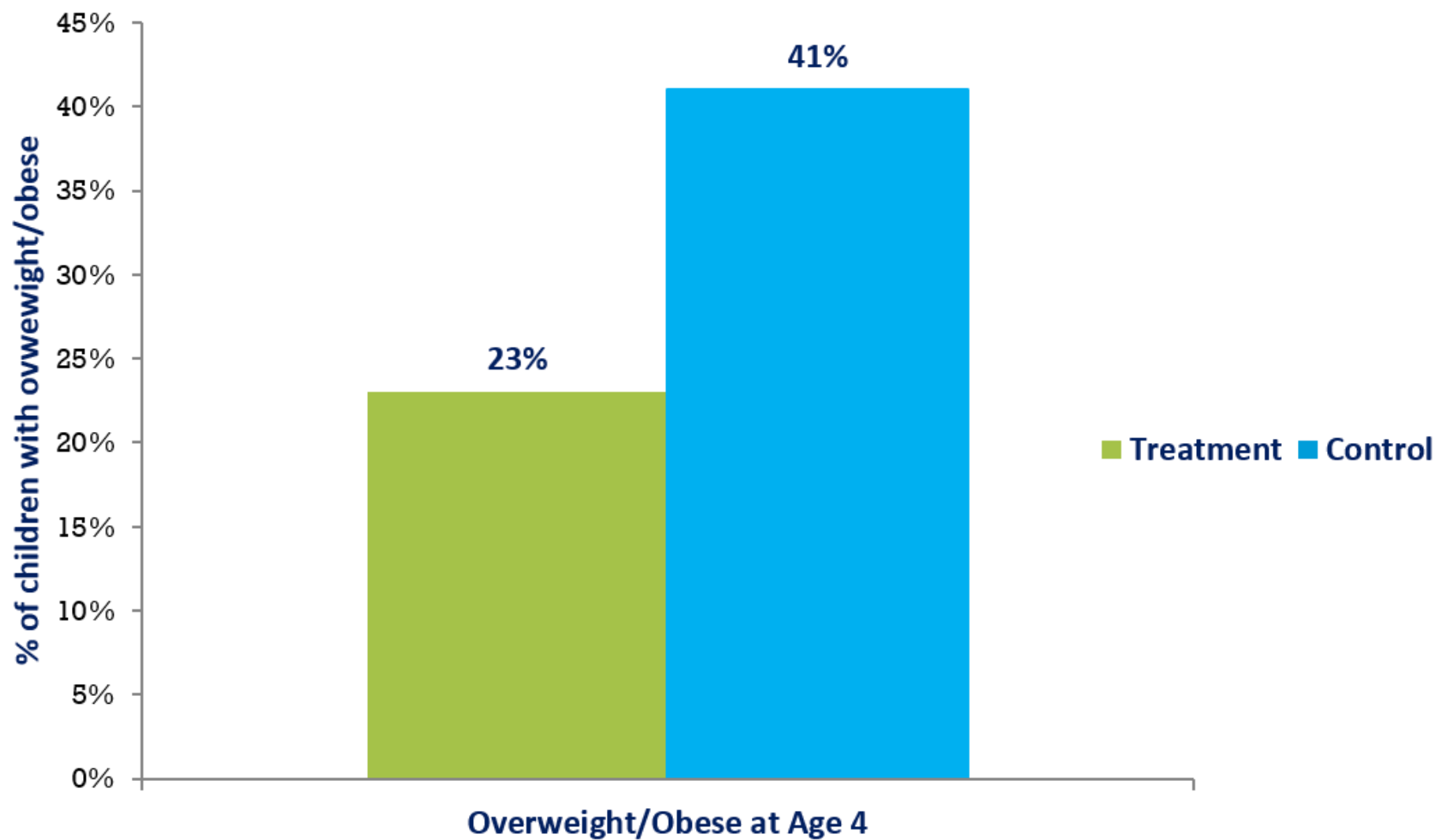
Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Percentage of Children Scoring Above and Below Average in Verbal Ability At School Entry



Source: PFL Evaluation Team at the UCD Geary Institute for Public Policy (2016).

Body Mass Index at Age 4*



Source: Preparing for Life (Doyle et al., 2016).

*IPW-adjusted permutation tests with 100,000 replications controlling for gender. One tailed (right-sided) test.




Universal ingredient of effective programs:

They promote parenting, mentoring, and parent-child interactions.



The early years are sensitive periods, but skill development occurs over the life cycle

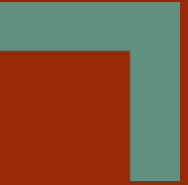


Later skill development more
effective the stronger the skill base
at earlier ages.



Human development continues through later childhood, early adolescence, and young adulthood.

In fact, it is a life cycle process.



Enriched charter schools starting
at age 4 feature mentoring through
elementary school.

Achievement Outcomes for lottery winners and lottery losers: University of Chicago Enriched Charter Schools (UCCS)

	Grade 3	Grade 4	Grade 5	Middle Grades 6, 7, 8
Lottery winners ^a	.496	.393	.419	.631
Lottery losers ^{b,c}	.250	.098	.187	.098
Mean difference	.246(.095)	.285(.114)	.232(.114)	.533(.159)

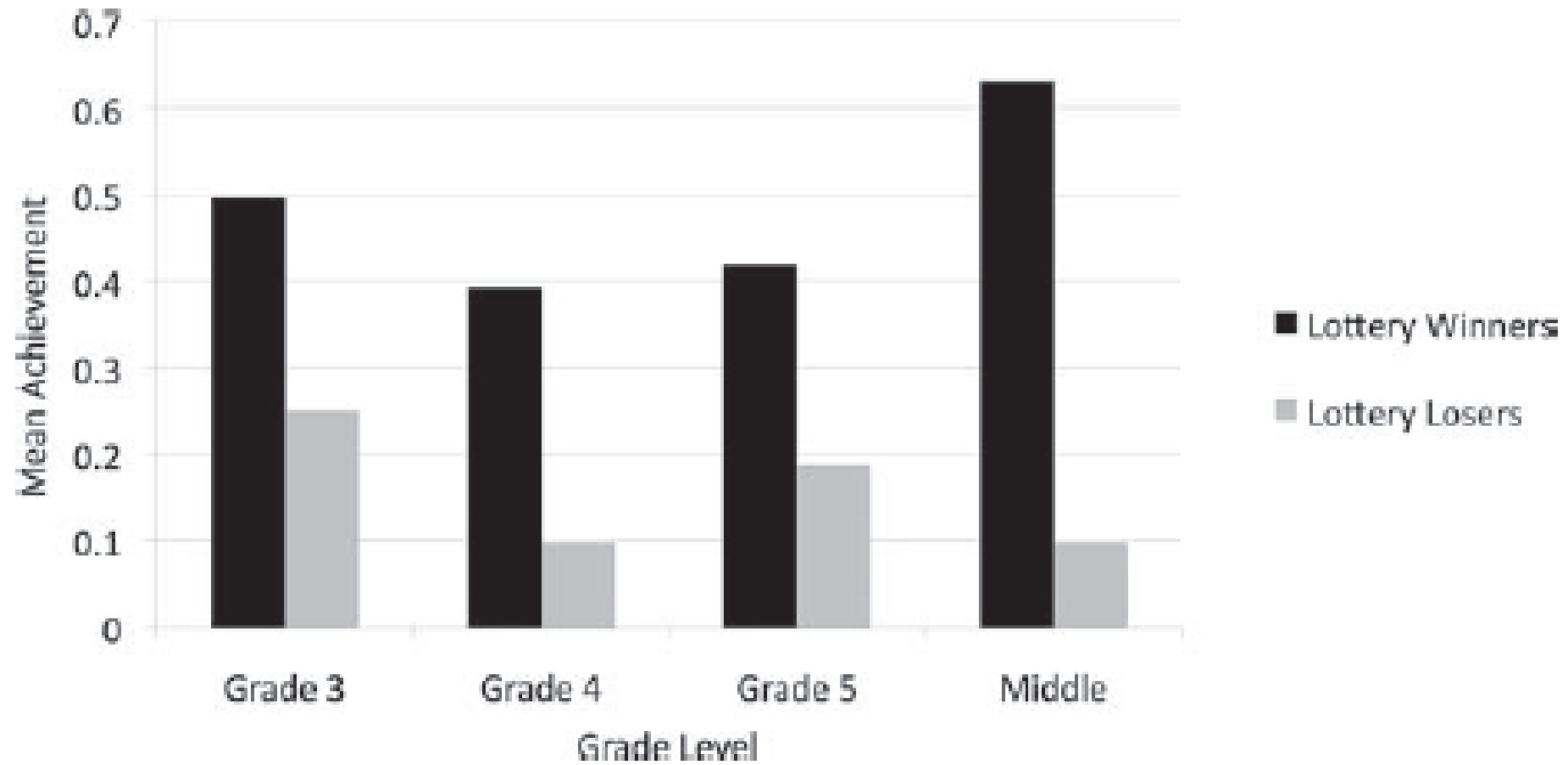
Source: Hassrick, E. M., Raudenbush, S. W., & Rosen, L. S. (2017).

Notes: *a* n = 138 lottery winners produced 276 test scores.

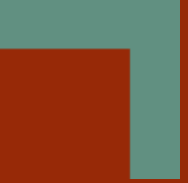
b n = 319 lottery losers produced 778 test scores.

c Lottery losers produced slightly more test scores on average than did lottery winners because (a) the probability of winning the lottery declined sharply for lotteries for grades after kindergarten, as fewer seats are open in UCCS after kindergarten; and (b) these later lotteries produced more test scores because testing begins at grade 3 (see table 8.2).

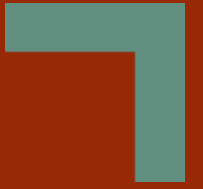
Achievement Test Results by Grade (UCCS)



Source: Hassrick, E. M., Raudenbush, S. W., & Rosen, L. S. (2017).



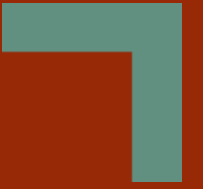
Adolescence is a major target of opportunity.



Consider the Life Cycle Evolution of Criminal Activity



One major source of the benefits
of early intervention is *reduced
adult crime*.



Terrie Moffitt:

Two types of criminal trajectories:

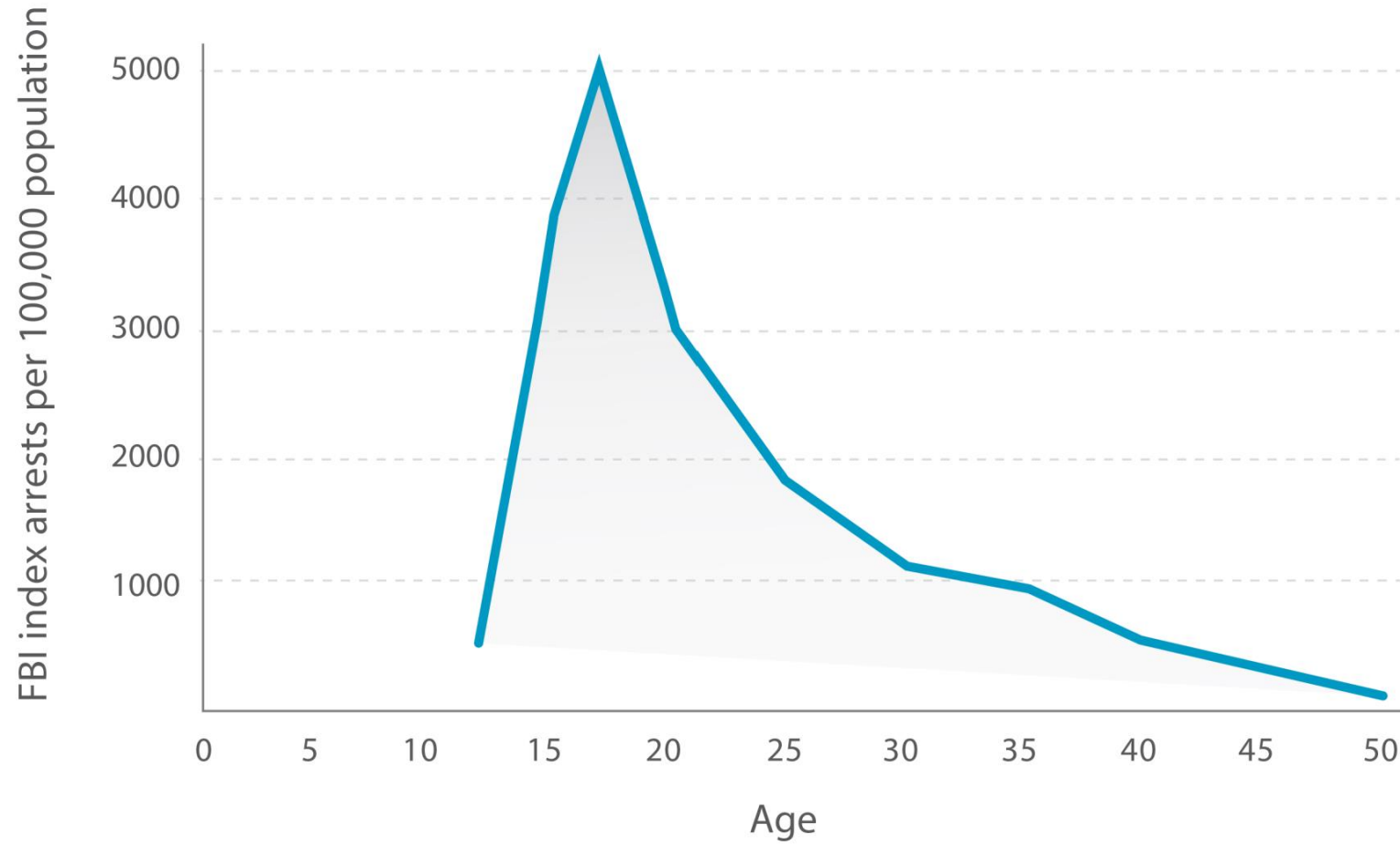
- Life persistent (starting at age 3-4 by aggressive behavior).
- Adolescence limited.



Perry focused on at-risk children ages 3-4 and substantially reduced adult crime.

Major contributor to its effectiveness.

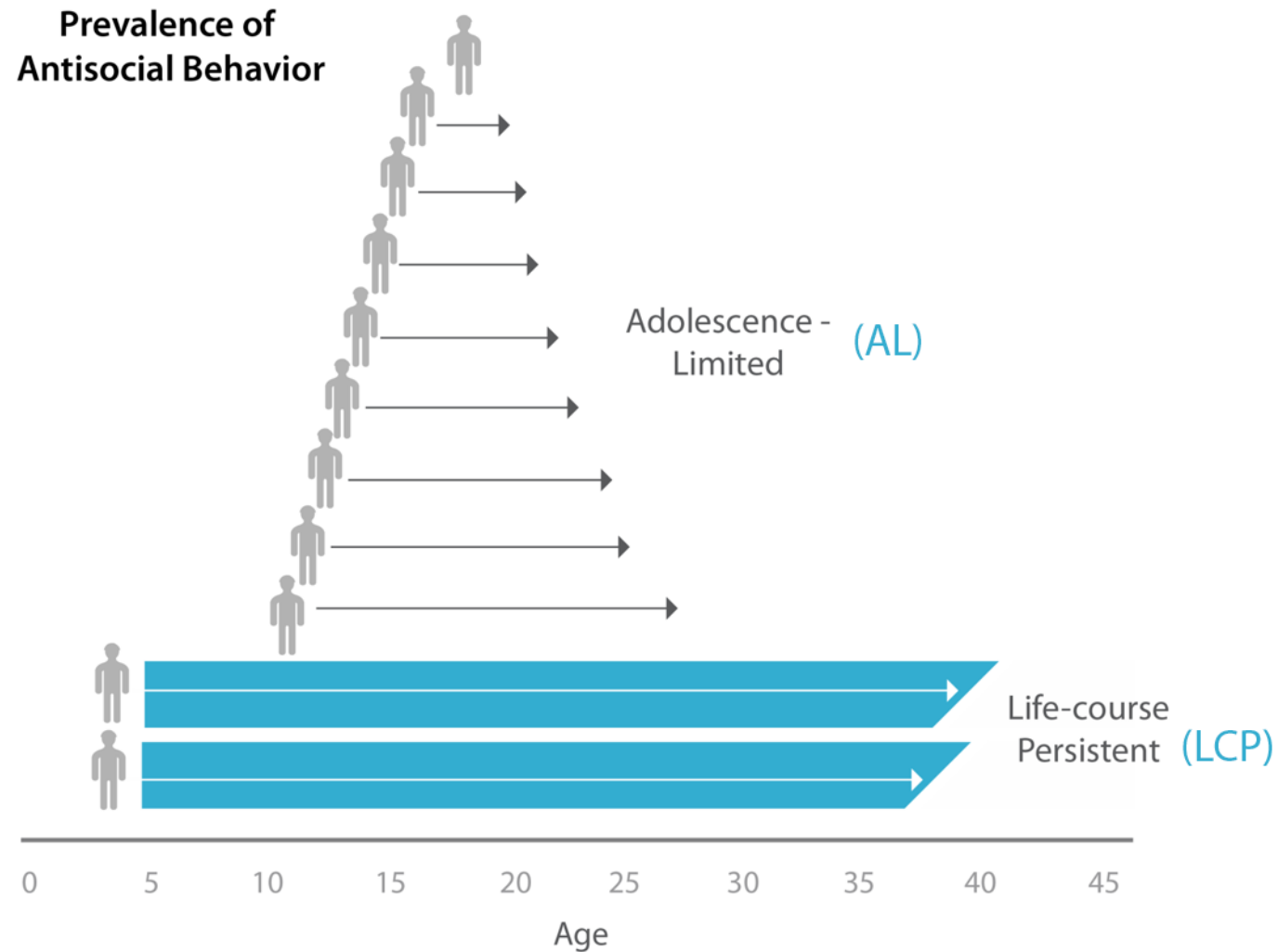
Age-Crime Curve



Note: The age-crime curve, circa 1980s. The onset of illegal behavior was typically between ages 8-14 years, the peak age of offending was between 15-19 years, and desistance was typically between 20-29 years.

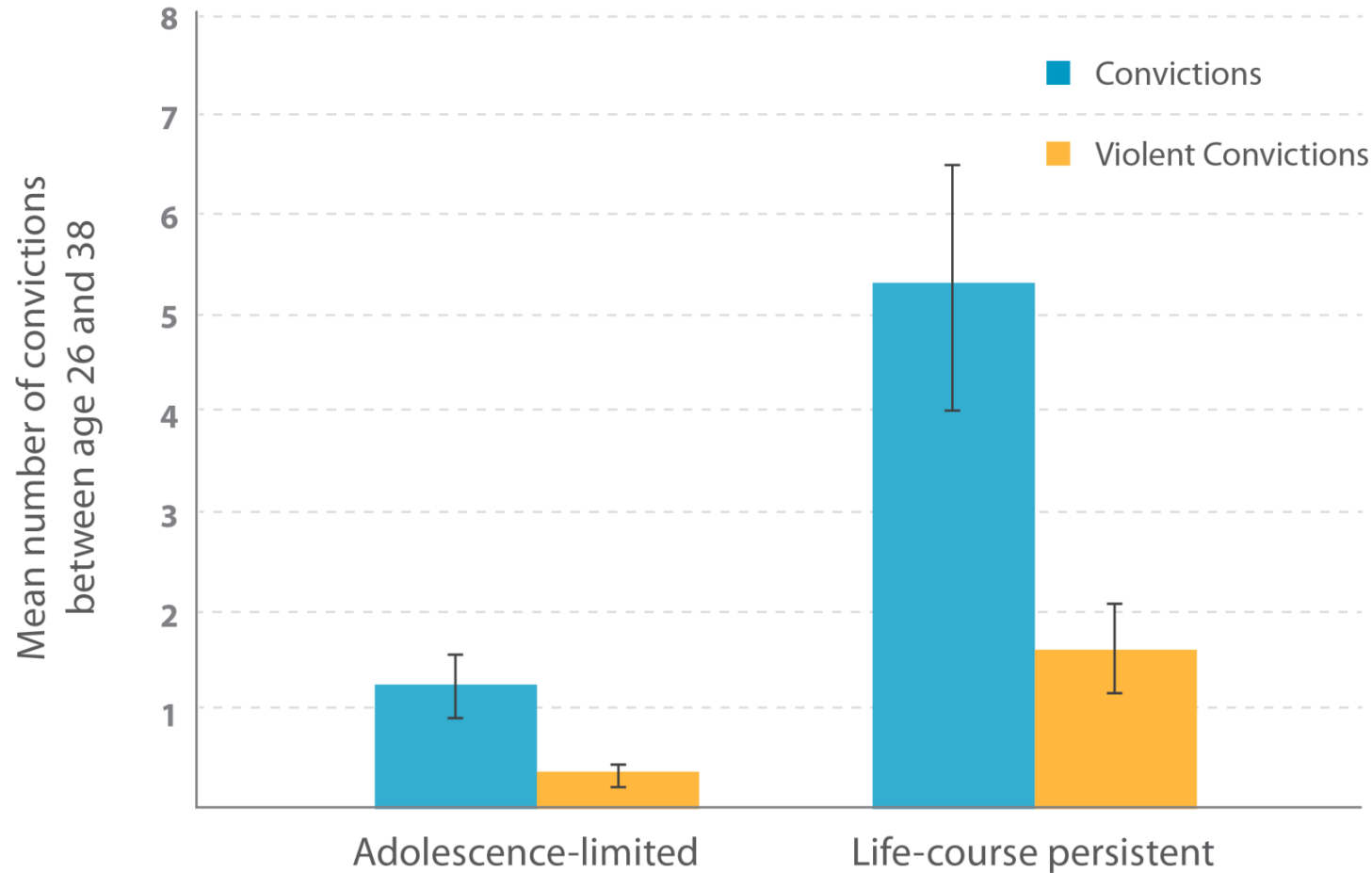
Source: Moffitt (2017).

Life-Course Persistent (LCP) and Adolescence-Limited (AL) Antisocial Behavior



Note: The developmental taxonomy proposed that the age-crime curve conceals two groups, and proffered two distinct theories.
Source: Moffitt (2017).

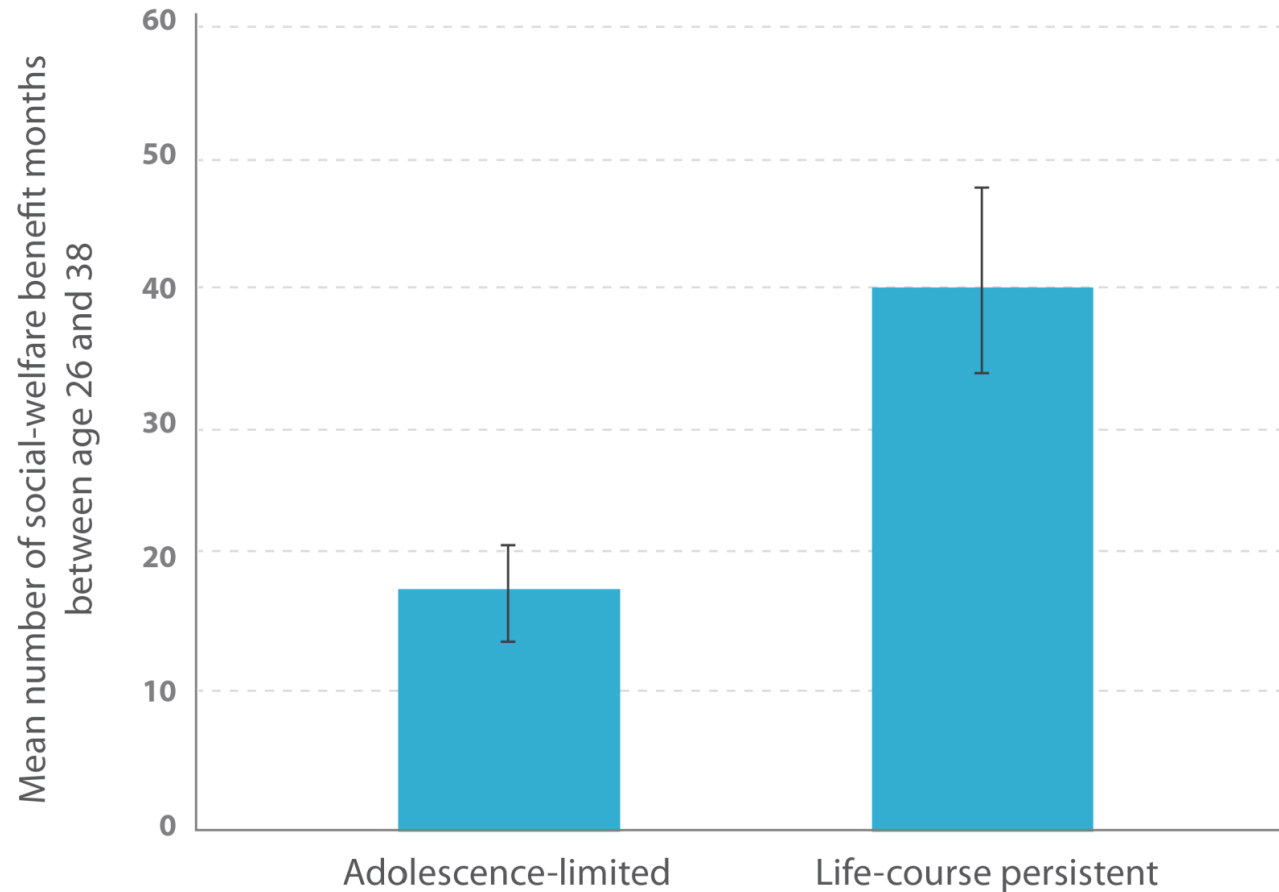
Figure 2: The Dunedin Study



Note: Approaching midlife, most LCP men had not desisted from crime; 55% were convicted between ages 26-38 years, versus 30% of AL men. By comparison, 18% of all men in the cohort were convicted between age 26-38.


Source: Moffitt (2017).

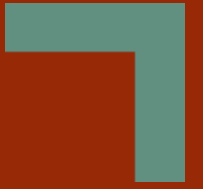
Figure 2: The Dunedin Study



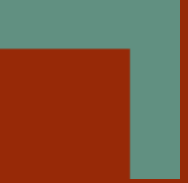
Note: Searches of national administrative databases revealed that LCP men had received social-welfare benefits for on average 3.3 years per group member between ages 26-38 years, significantly more than AL men. Cohort men averaged 12 months of benefits. Of note, LCP men had high levels of conviction and benefit receipt despite the fact that many had been in prison, where they were ineligible for further conviction or social-welfare benefits. One in four LCP men had been incarcerated (18 months per group member on average), in comparison to only one in twenty of AL men (2 months on average).

Source: Moffitt (2017).

- 
- Policies that are effective for disadvantaged adolescents provide mentoring and integrate schooling and work.
 - At the core of effective mentoring is what is at the core of effective parenting: attachment, interaction, and trust.
 - Effective policies focus on developing social and emotional skills, teaching conscientiousness.



Mentoring: Age-Adjusted Parenting

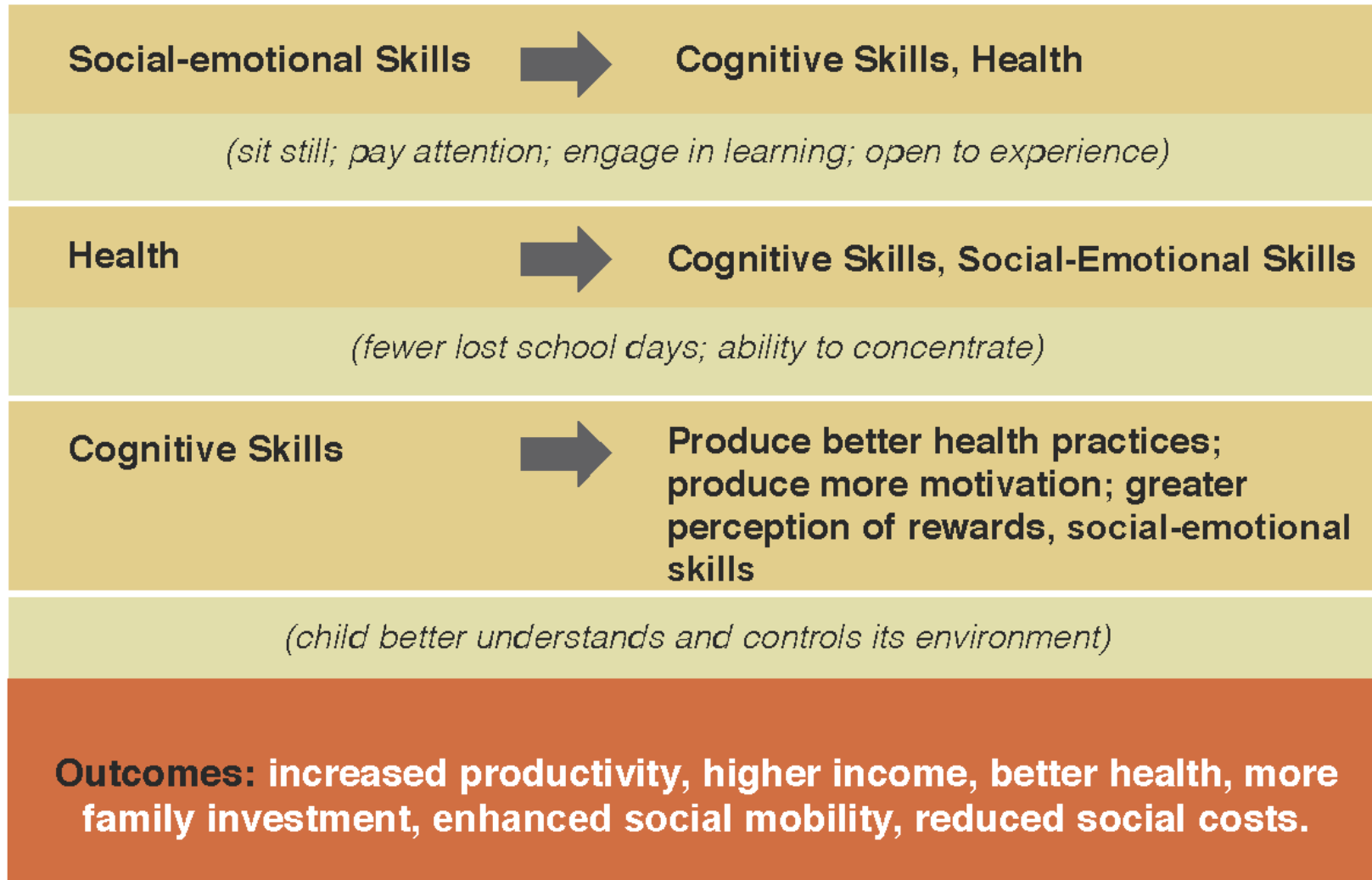


Nurture the slowly-developing
prefrontal cortex, which regulates
decision making and judgement.

Skills Beget Skills

Understanding the Dynamics of Skill Formation

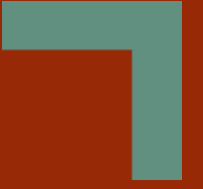
The Importance of the Early Years





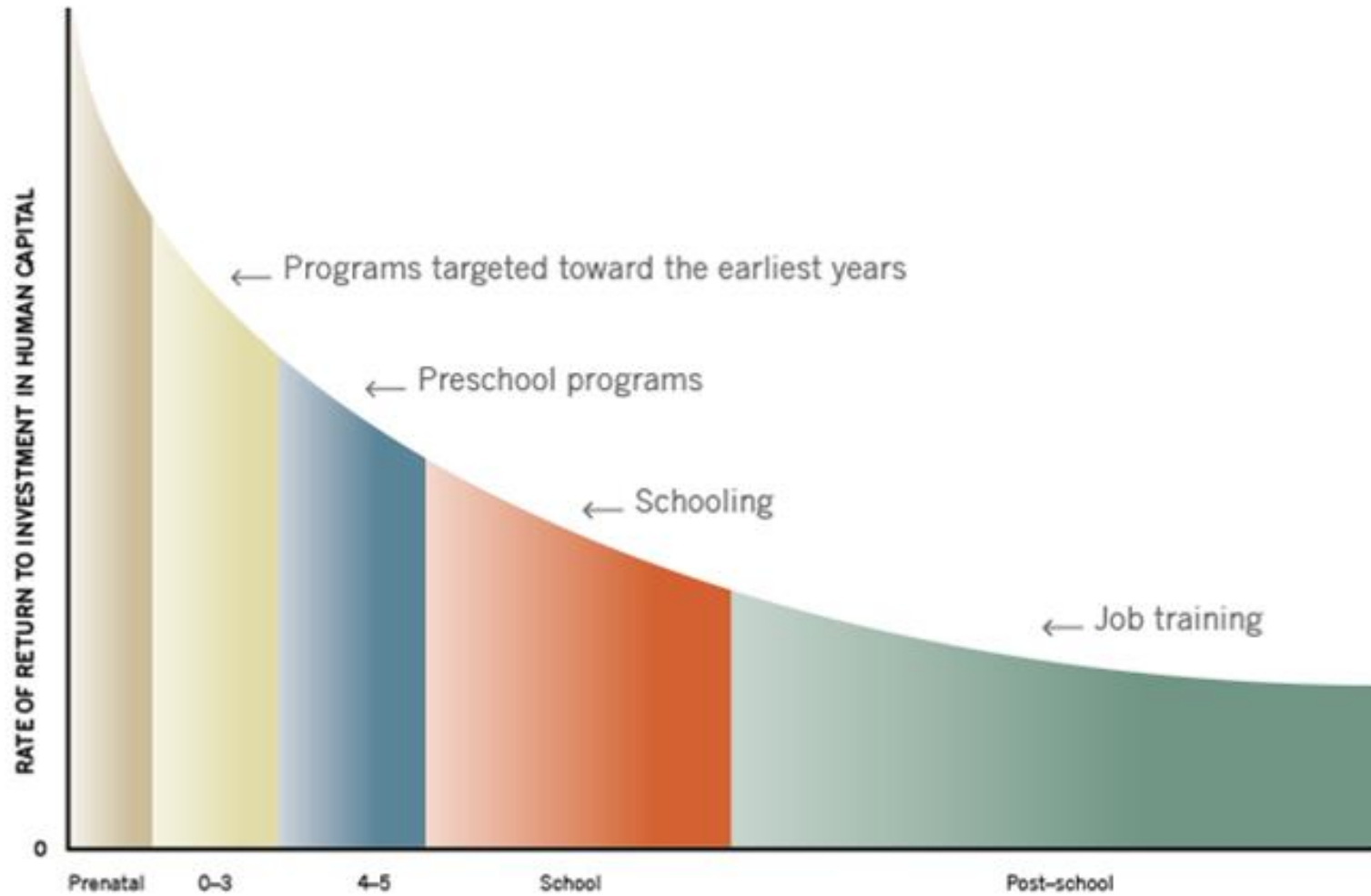
Dynamic Complementarity:

- Investing early creates greater receptivity to investment in the future





- Accounts for higher future returns for children who are invested in early.

Returns to a Real Invested



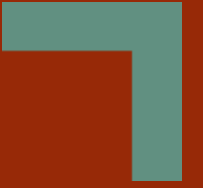
Source: Heckman (2008)

- 
- This diagram and its policy message have to be carefully digested.
 - It presents the rate of return (measured the perspective of the date of birth) to a first unit of investment in children at different stages of the life cycle.

- 
- Returns to college education are very high for the most able and motivated students (22% for college education for the most capable).



Summary

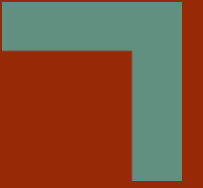


Skills Matter

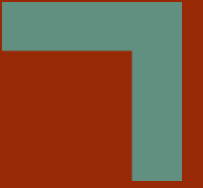


Skill Gaps by Family Background *Are Real*

- 
- They can be addressed by intervention.



- Families are main producers of skills.



Need a Comprehensive Approach to Skill Formation