



The Benefits of Basic Research: Long-Term Evidence on Policies that Promote Families and Children

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**CENTER FOR THE ECONOMICS
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- This meeting is about developing effective strategies for promoting social mobility within and across generations.
- Today, I want to emphasize that:
 - a. Effective early childhood policy is effective **family** policy
 - b. Of particular importance are policies supporting the mothers of families and especially the mothers of single-parents families.
 - c. Building and supporting families is at the core of any successful child development strategy.
 - d. Any effective early childhood policy works with, promotes and enhances the family.
 - e. Parent-child, caretaker-child and caretaker-parent interactions are essential ingredients of successful policies.

- f. But in moving forward, we also have to recognize that **a lot remains to be understood.**
- g. Research on the family and its role in shaping the lives of its children and effective interventions that promote family life is essential to the progress of the field and to devising effective policy.
- h. Research on family mechanisms and family supplemental mechanisms promoting child development, not just “evaluations” of specific packages of interventions (this program vs. that).**
- i. The mechanisms of mothering, mentoring and building attachments are universal and not specific to any particular program or any particular time period.**
- j. Field is littered with claims about the success of one particular intervention or the other – usually made on the basis of some short-term evaluation. (See Kautz et al. at <http://tinyurl.com/OECD-Report-2014>.)

- k. Much more needs to be known. While many here call for action, I call for measured action guided by evidence and theory and the expansion of the evidence and theory base to guide future actions.
- l. In the new political environment, rigorous evidence on the costs and benefits of programs based on long-run follow-up will be essential for making the case at both state and national levels.
- m. Time for some unpleasant truths.

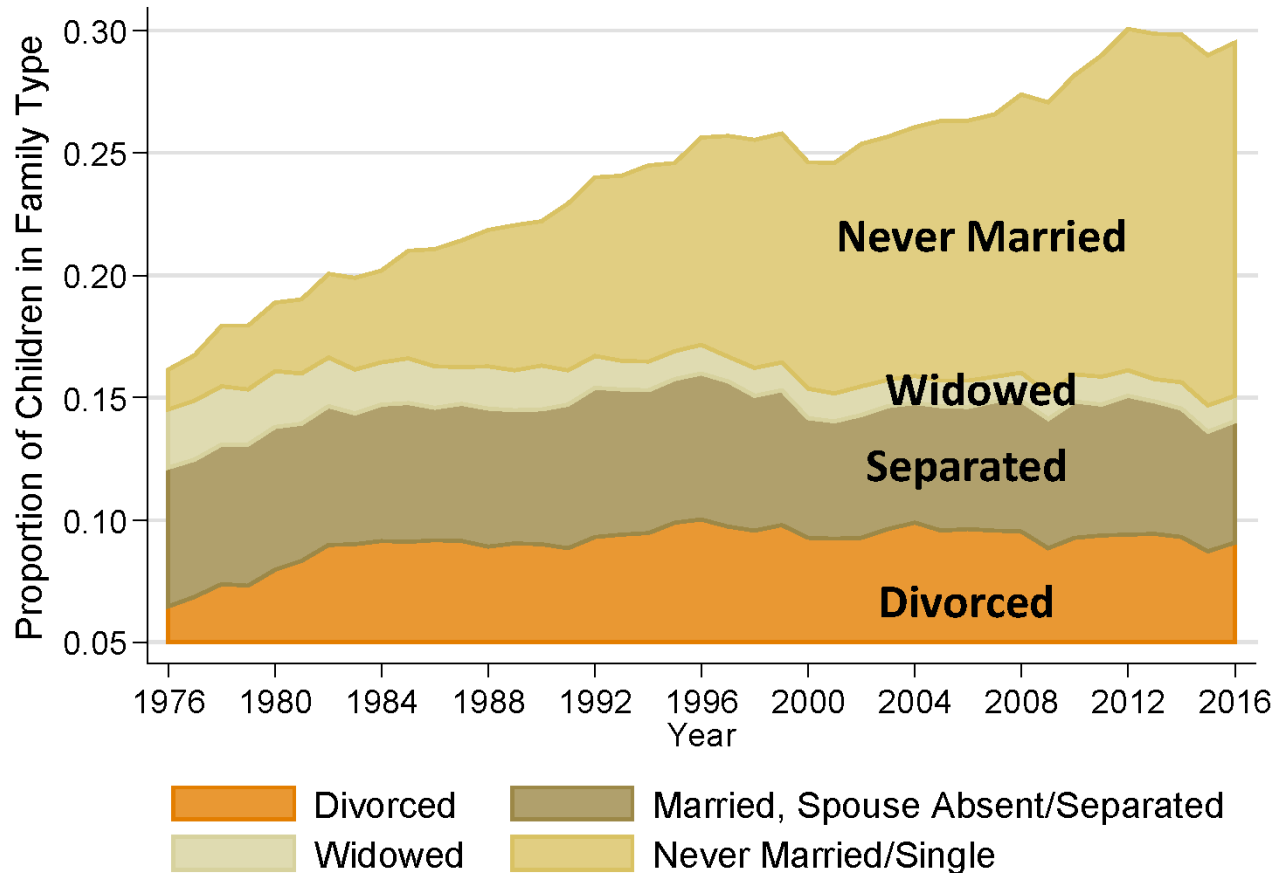
Unify the study of the family
with the study of early
childhood interventions.



- Families, schools, and specific intervention programs create skills.
- Placing them in a common framework shapes thinking about which families should be targeted.
- Understand the ingredients of successful interventions: the crucial role of the family and engaging the family.
- Support families on a voluntary basis
- Understanding parenting and effects of early interventions on parenting
- Mentoring and adolescent interventions

- American family in flux. Any effective policies have to deal with the changing family and the role of women.
- Child care and child development inextricably linked.

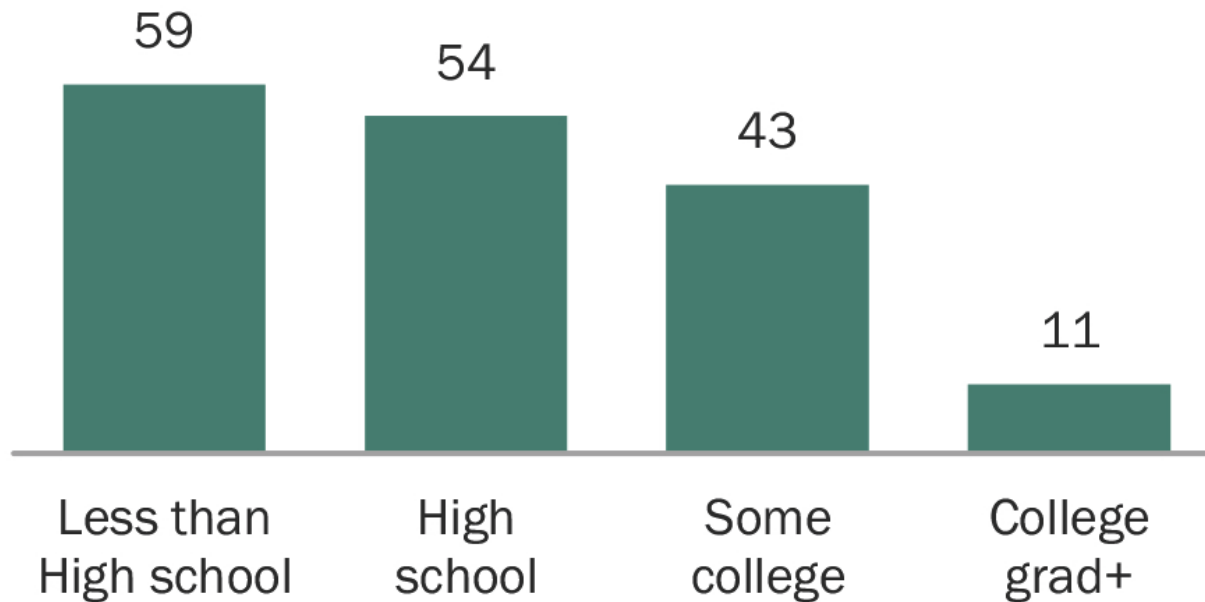
Children Under 18 Living in Single Parent Households by Marital Status of Parent



Source: IPUMS CPS 1976-2016

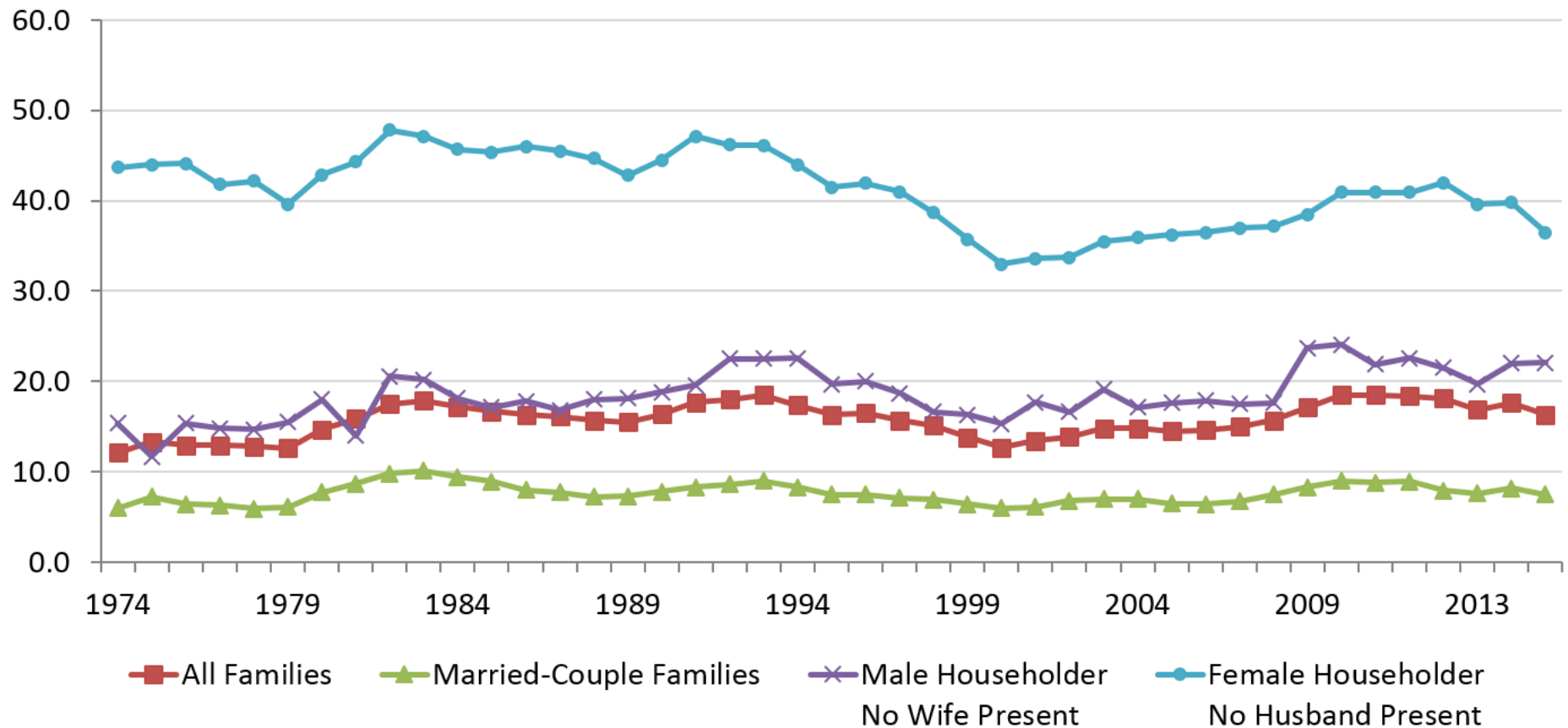
For the Less Educated: More Births Outside of Marriage

% of new mothers who are unmarried



Note: Based on women ages 15-44 who have given birth in the past year. Marital status is based on time of survey.
Source: Pew Research Center analysis of 2014 American Community Survey (IPUMS).

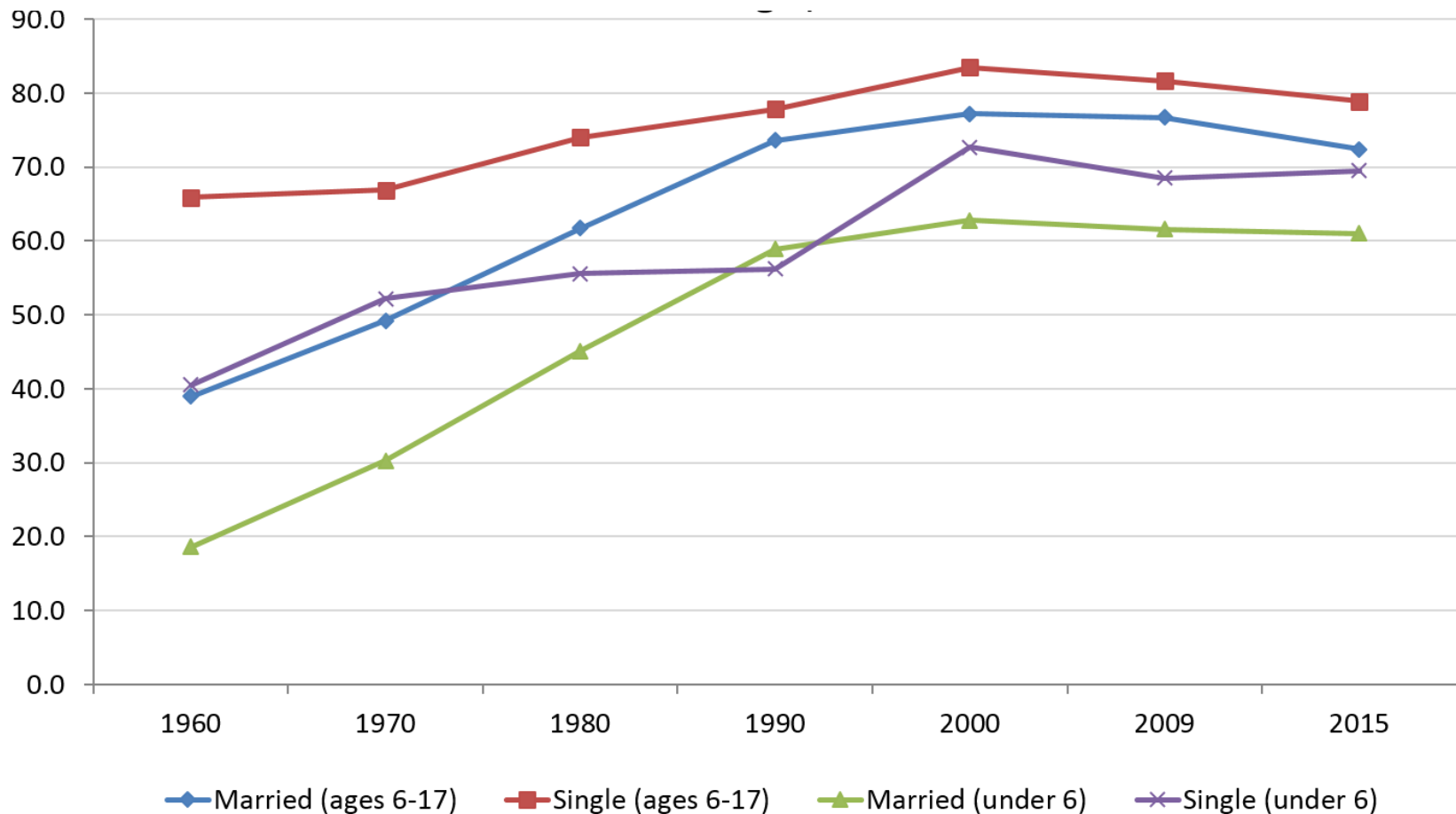
Family Poverty Rates by Household Type, 1974-2015 : Households with Children Under Age 18



Source: <http://www.census.gov>.

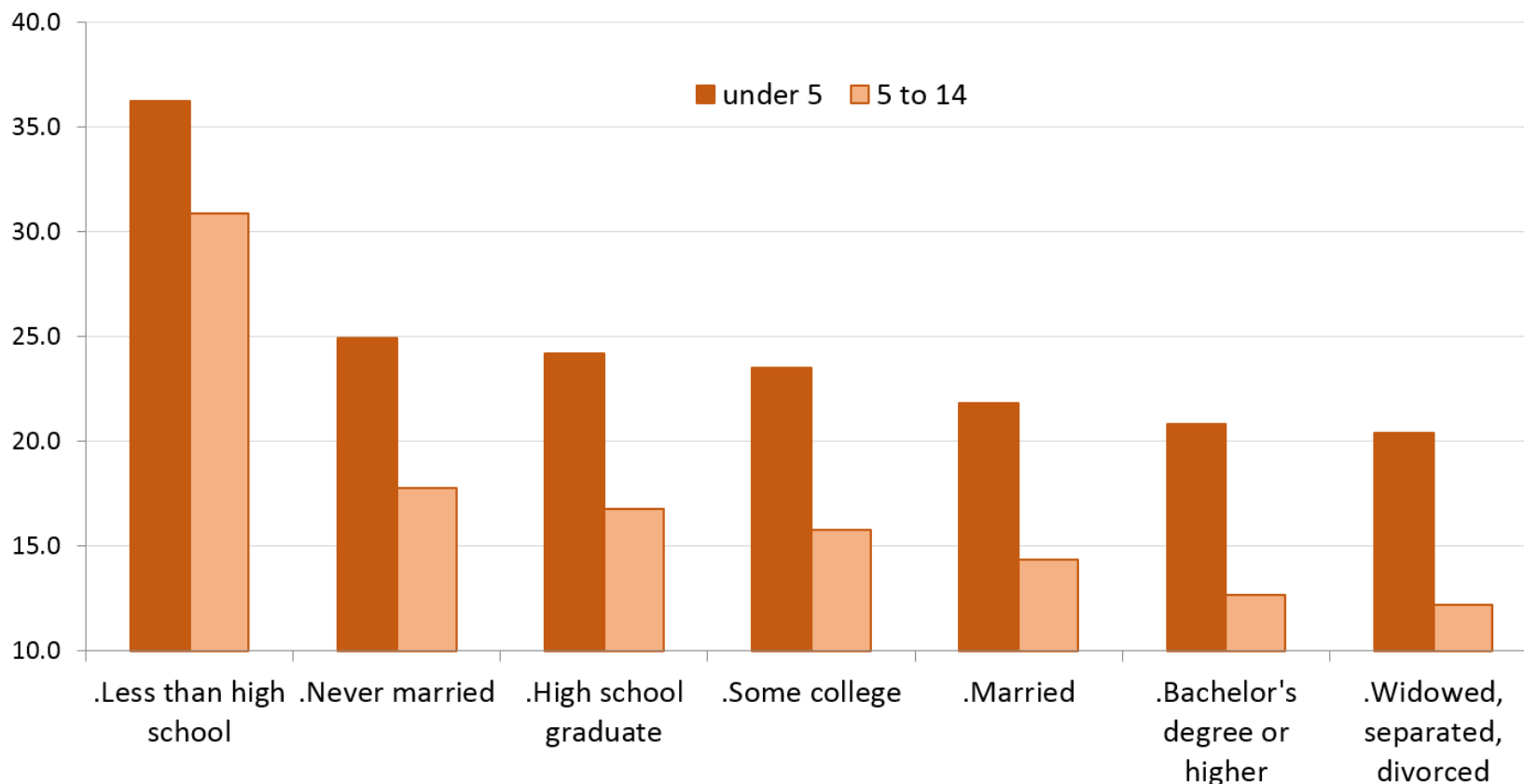
Note: The Census Bureau assigns each person or family one out of 48 possible poverty thresholds. Thresholds vary by the size of the family and age of the members. The same thresholds are used throughout the United States. Thresholds are updated annually for inflation using the Consumer Price Index for All Urban Consumers (CPI-U). To calculate total family income, the incomes of all related family members that live together are added up to determine poverty status. If an individual or group of individuals (such as housemates) are not living with family members, their own individual income is compared with their individual poverty threshold. Thus, all family members have the same poverty status, and some families may be composed of single unrelated individuals. If total family income is less than the poverty threshold for that family - that family and everyone in it is considered to be in poverty.

Labor Force Participation Rates of Mothers by Marital Status and Child's Age (US)



Source: Census The 2012 Statistical Abstract, Women in the Labor Force: A Databook 2015, United States Department of Labor. Note: Married category includes married husband present. Single category includes never married, widowed, divorced or separated and married with spouse absent.

Ratio of Child Care Expenditures to Mother's Income



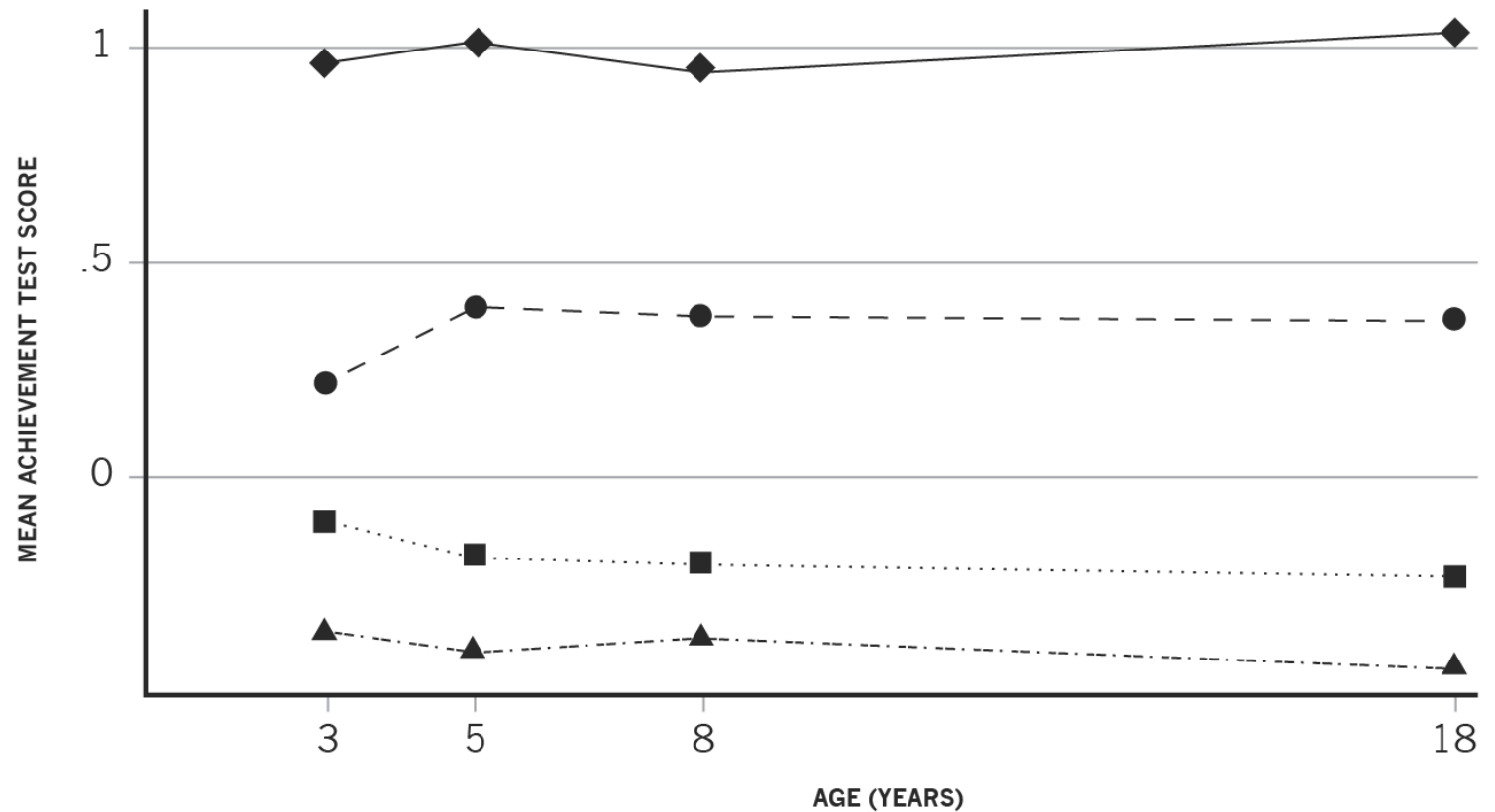
Source: <http://www.census.gov>. Child Care Arrangements: 2010 - Detailed Tables.

Note: The Child Care Expenditures reported are weekly Child Care Expenditures of Families with Employed Mothers that Make Payments. Percent is a ratio of average monthly child care payments (prorated from weekly averages) to average monthly mother's income. The universe of respondents for the SIPP child care topical module consists of a reference parent of children under 15 years old. The data presented in this report reflect the experiences of respondents during the month preceding the interview.

Skill Gaps Open Up Early

- Gaps in skills across socioeconomic groups open up very early:
 - Persist strongly for cognitive skills
 - Less strongly for non-cognitive skills
 - Widen by age for many biological skills
- Skills are not set in stone at birth – but they solidify as people age. They have genetic components.
- Skills evolve and can be shaped in substantial part by investments and environments.
- Start well before Pre-K.

Mean Achievement Test Scores by Age by Maternal Education



◆ College Grad ● - Some College ■ ··· HS Grad ▲--- Dropout

Hart & Risley, 1995

- In the USA, children enter school with “meaningful differences” in vocabulary knowledge.

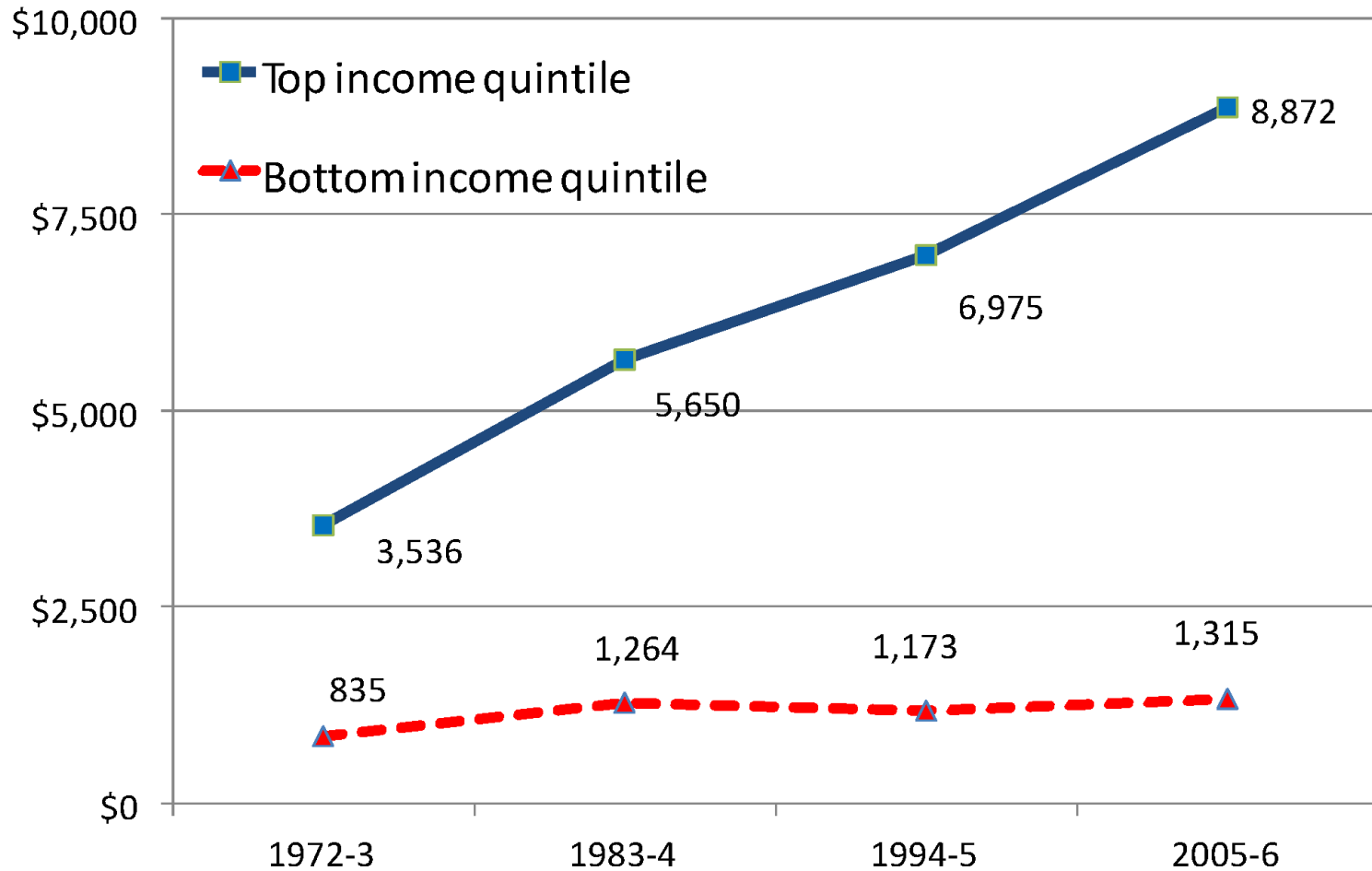
1. Emergence of the Problem: In a typical hour, the average child hears:

Family Status	Actual Differences in <i>Quantity</i> of Words Heard	Actual Differences in <i>Quality</i> 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:

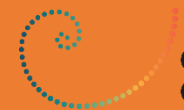
Children from welfare families:	500 words
Children from working class families:	700 words
Children from professional families:	1,100 words

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



Source: Duncan and Murnane (2011).

Targeting Early Disadvantage is an Effective Policy



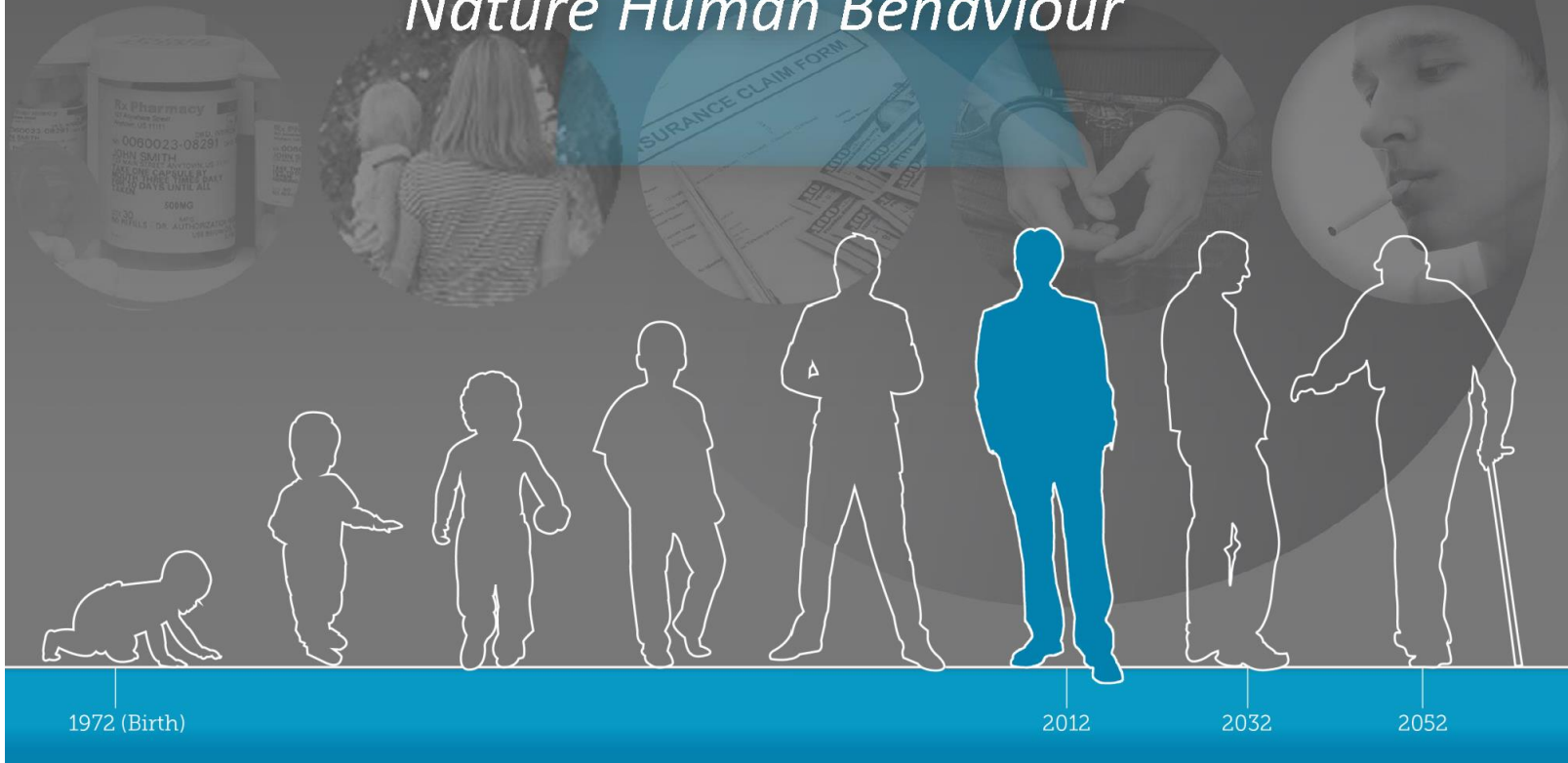
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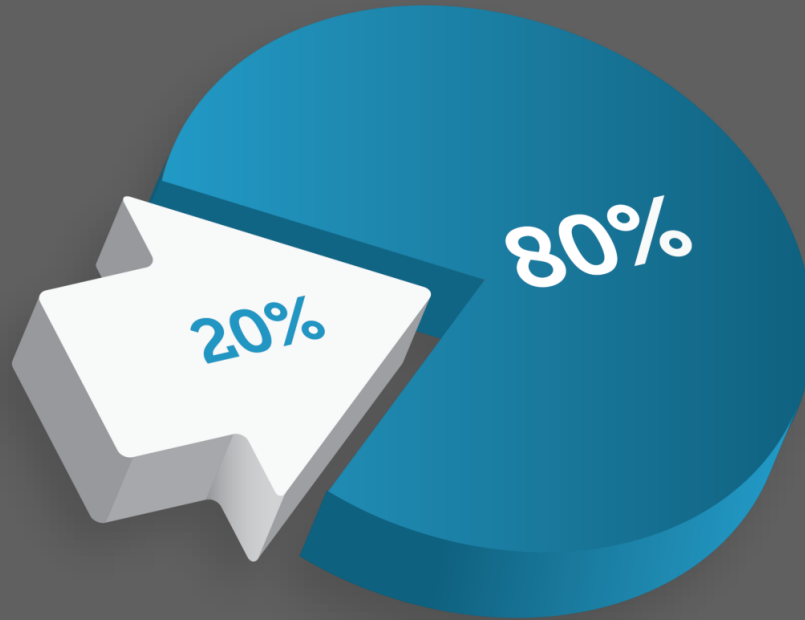
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Childhood Forecasting of a Small Segment of the Population with Large Economic Burden

Caspi, Moffitt, et al. (2017)
Nature Human Behaviour



The Pareto Principle



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

Vilfredo Pareto, 1848-1923



Beyond Treatment Effects

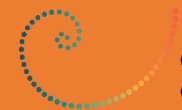
Understanding Mechanisms is the
Key to Devising Effective Policy

- Program evaluation mentality pervades the field of child development.
- Looks for “best program”
- Most programs consist of bundles of components.
- To devise effective programs, need to understand mechanisms.
- Which components (if any) create beneficial effects?
- Also, most evaluations are short-term in nature.
- Often create false promises not realized in practice.

Some Long-Run Evidence on the Effects of Quality Early Interventions

- Many successful early childhood interventions followed over the life cycle operate primarily through boosting **non-cognitive** skills. IQ is often barely budged for interventions past age 3.
- Long term evaluations of interventions often provide a different assessment of the effectiveness of interventions than do short run evaluations.

Powerful Evidence For Effectiveness of Targeted Interventions

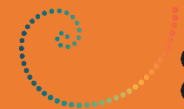


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HighScope/ Perry Preschool Project



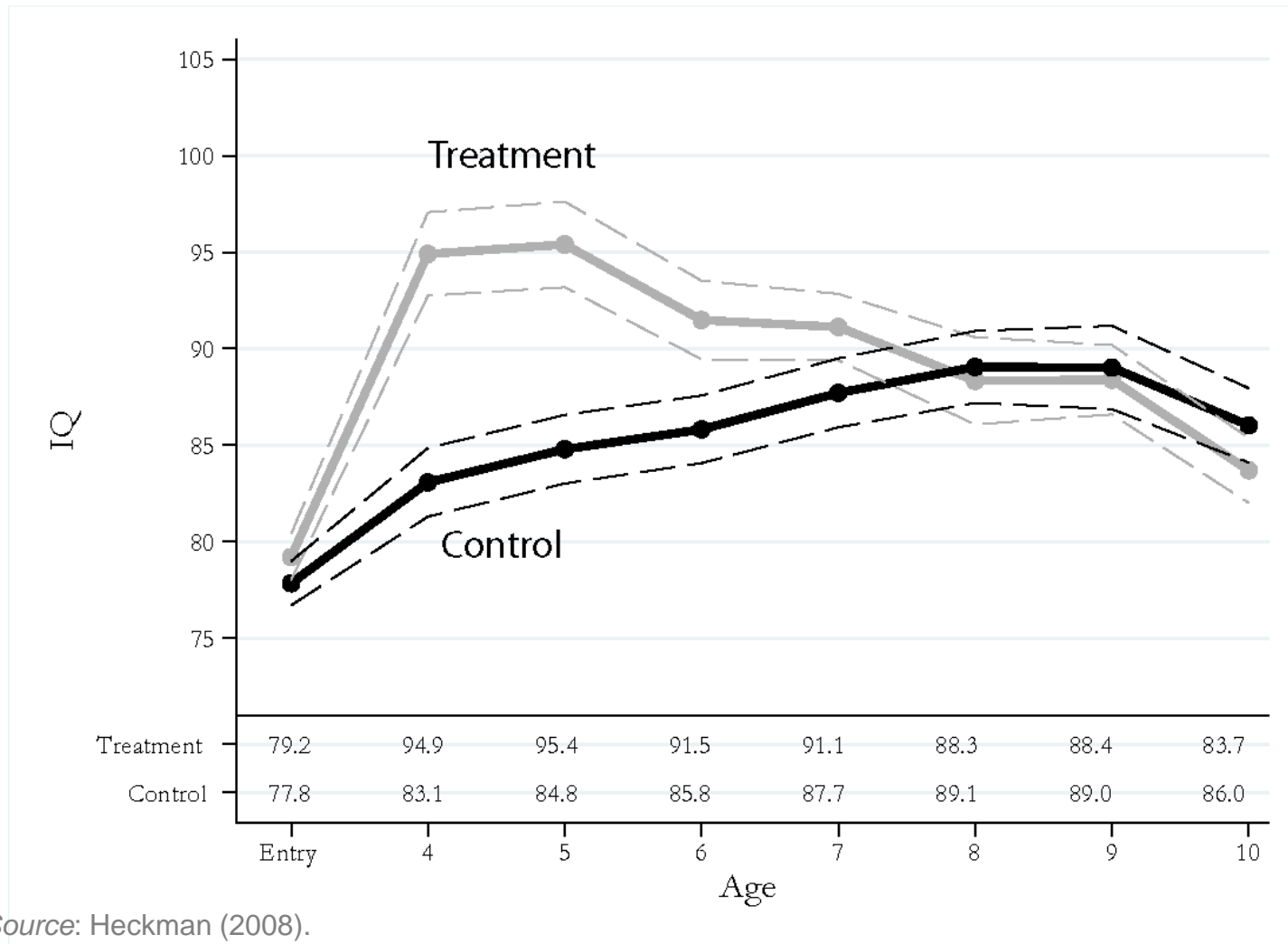
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Cognitive Evolution through Time, High Scope/Perry Males

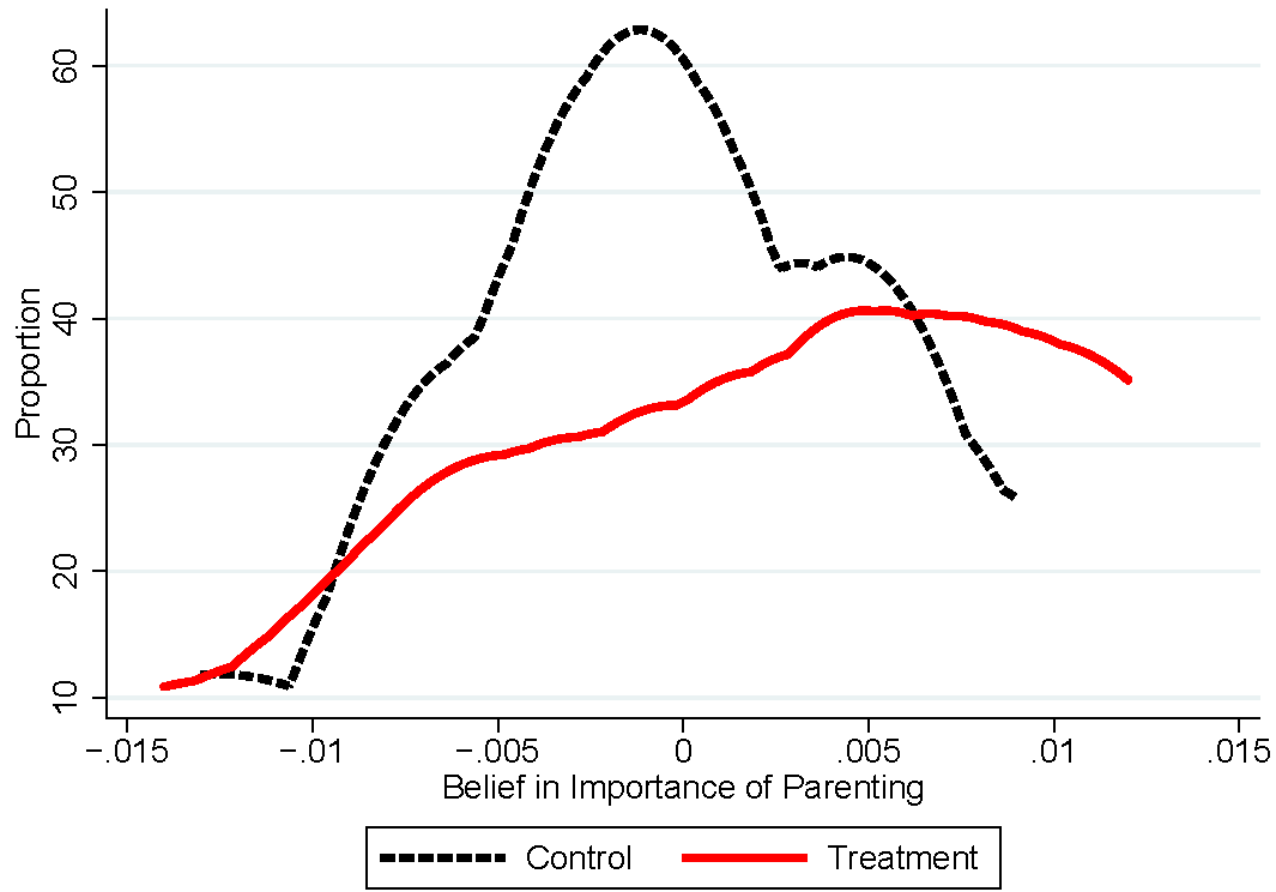
Male Cognitive Dynamics



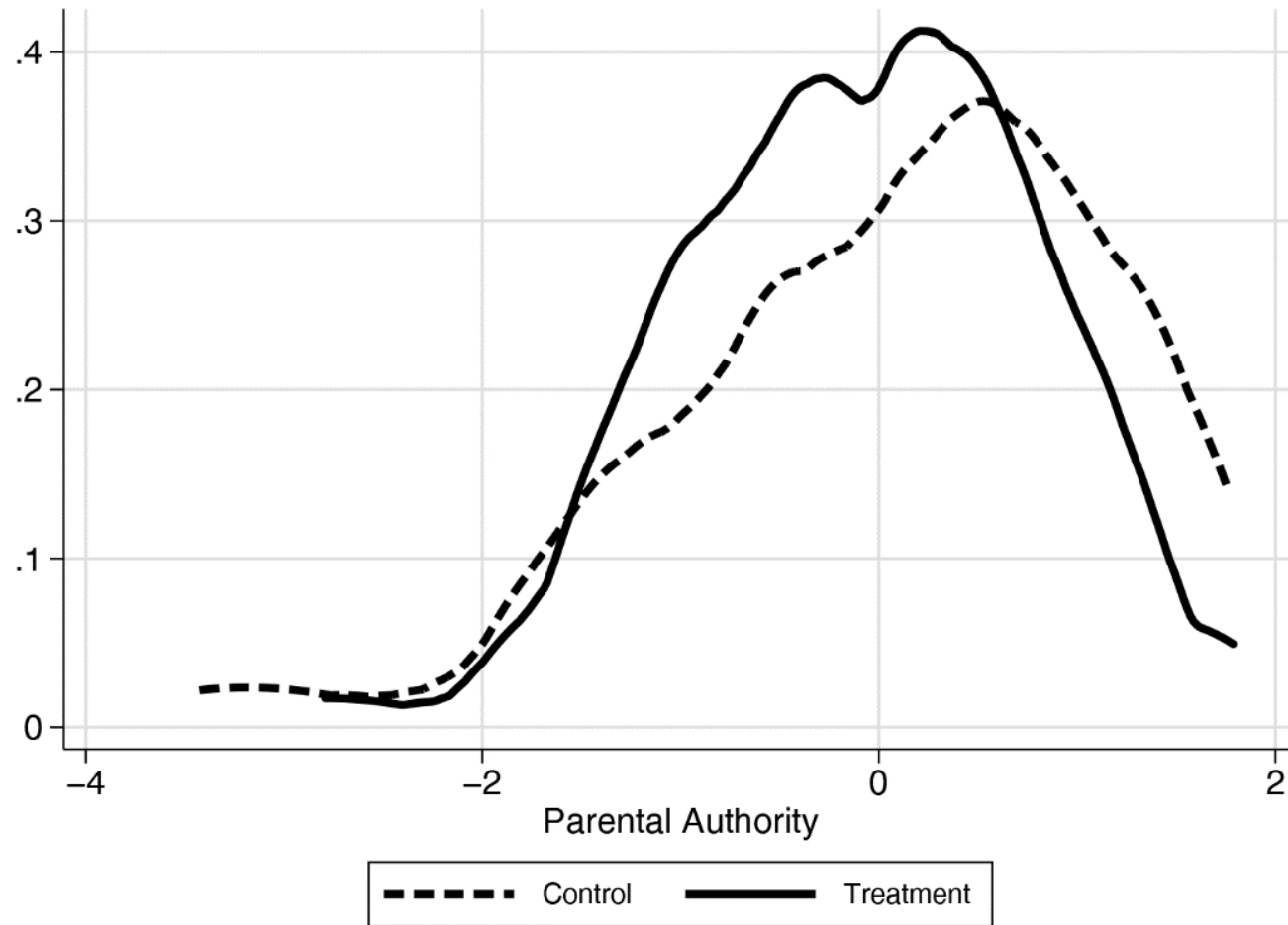
Source: Heckman (2008).

The Perry Program has a statistically significant annual rate of return of around 7%-10% per annum – for both boys and girls – in the range of the post-World War II stock market returns to equity in the U.S. labor market, estimated to be 6.9%.

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

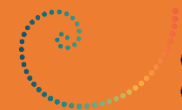


Parental Authoritarianism, Perry Preschool



Note: This figure presents the densities – pooled and by treatment status – for a single factor summarizing a set of questions in the Perry questionnaire attempting to measure how much affection the child gets from the parent(s).

Intergenerational Effects of Perry

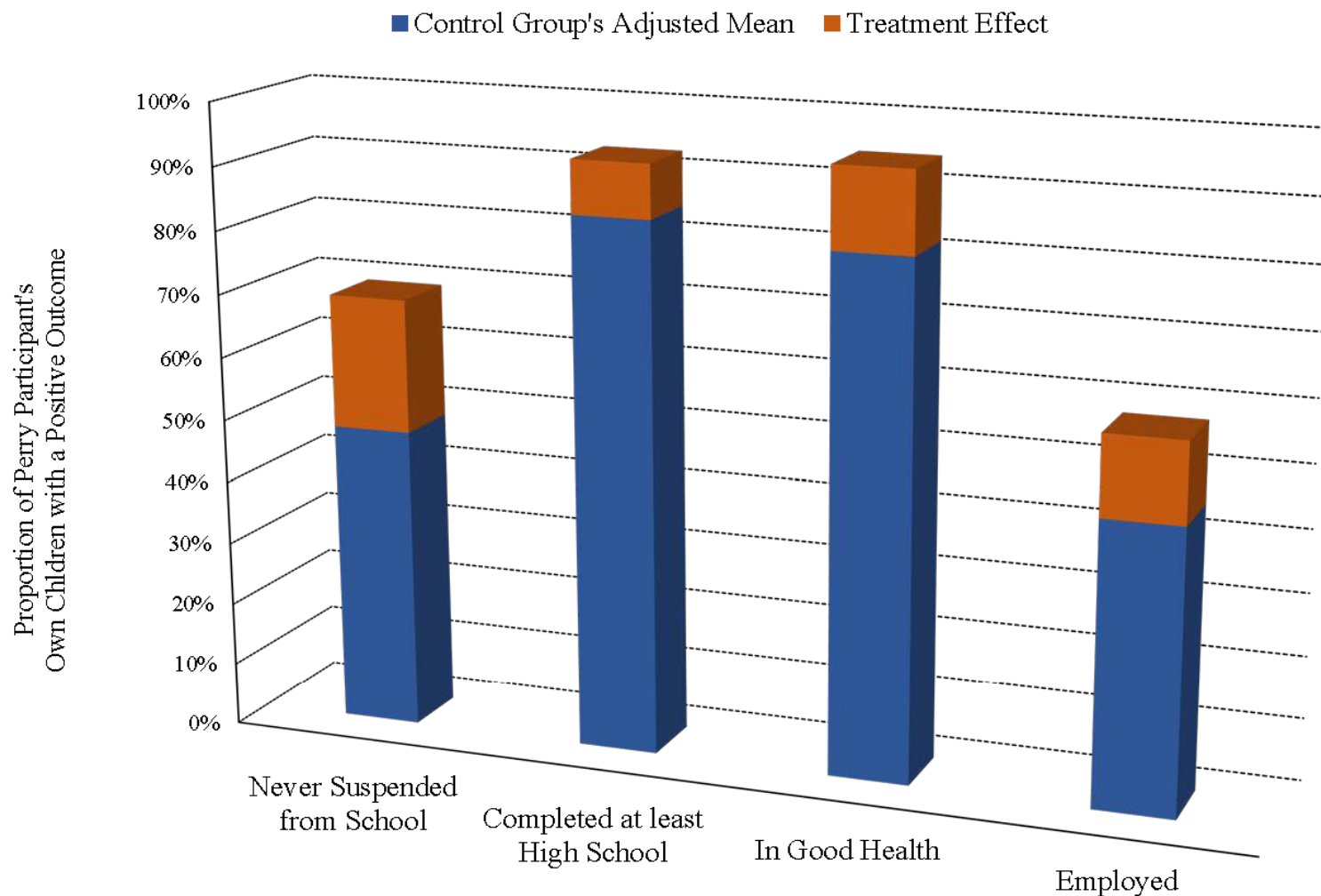


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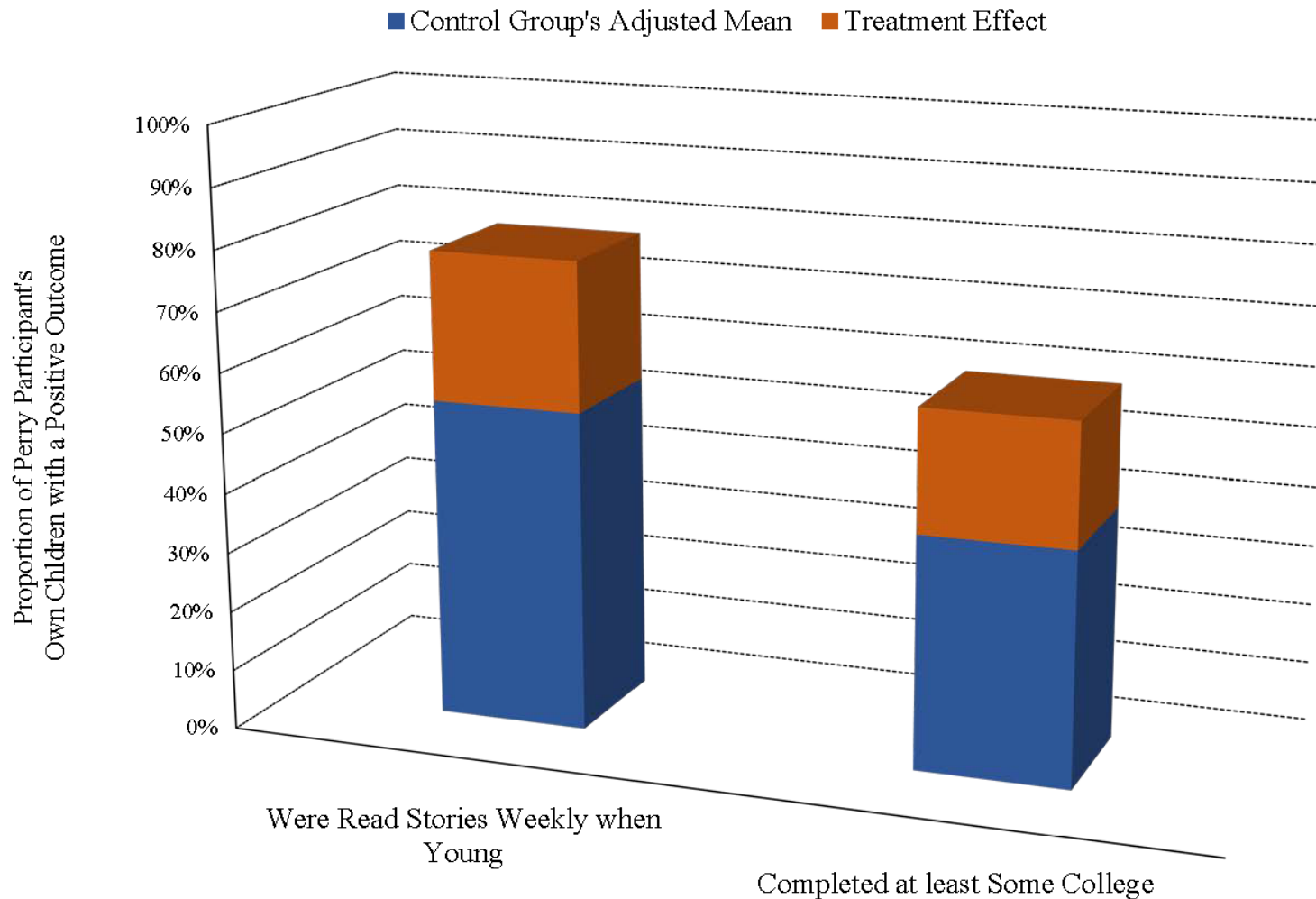
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Selected Outcomes for Children of Perry Preschool Program Participants



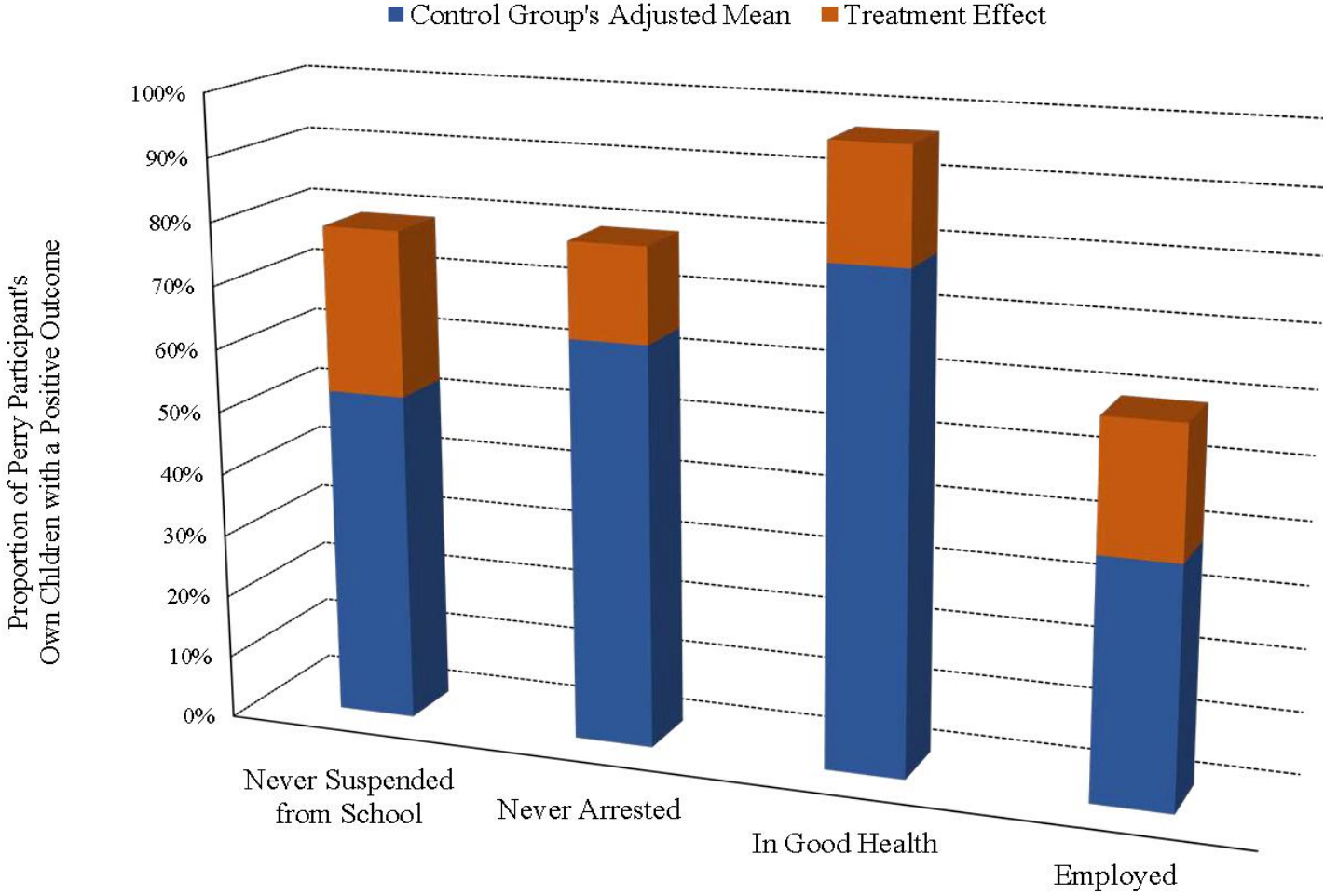
Source: Heckman, Pantano and Karapakula (Jan, 2017).

Selected Outcomes for Children of Female Perry Preschool Program Participants



Source: Heckman, Pantano and Karapakula (Jan, 2017).

Selected Outcomes for Children of Male Perry Preschool Program Participants



Source: Heckman, Pantano and Karapakula (Jan, 2017).

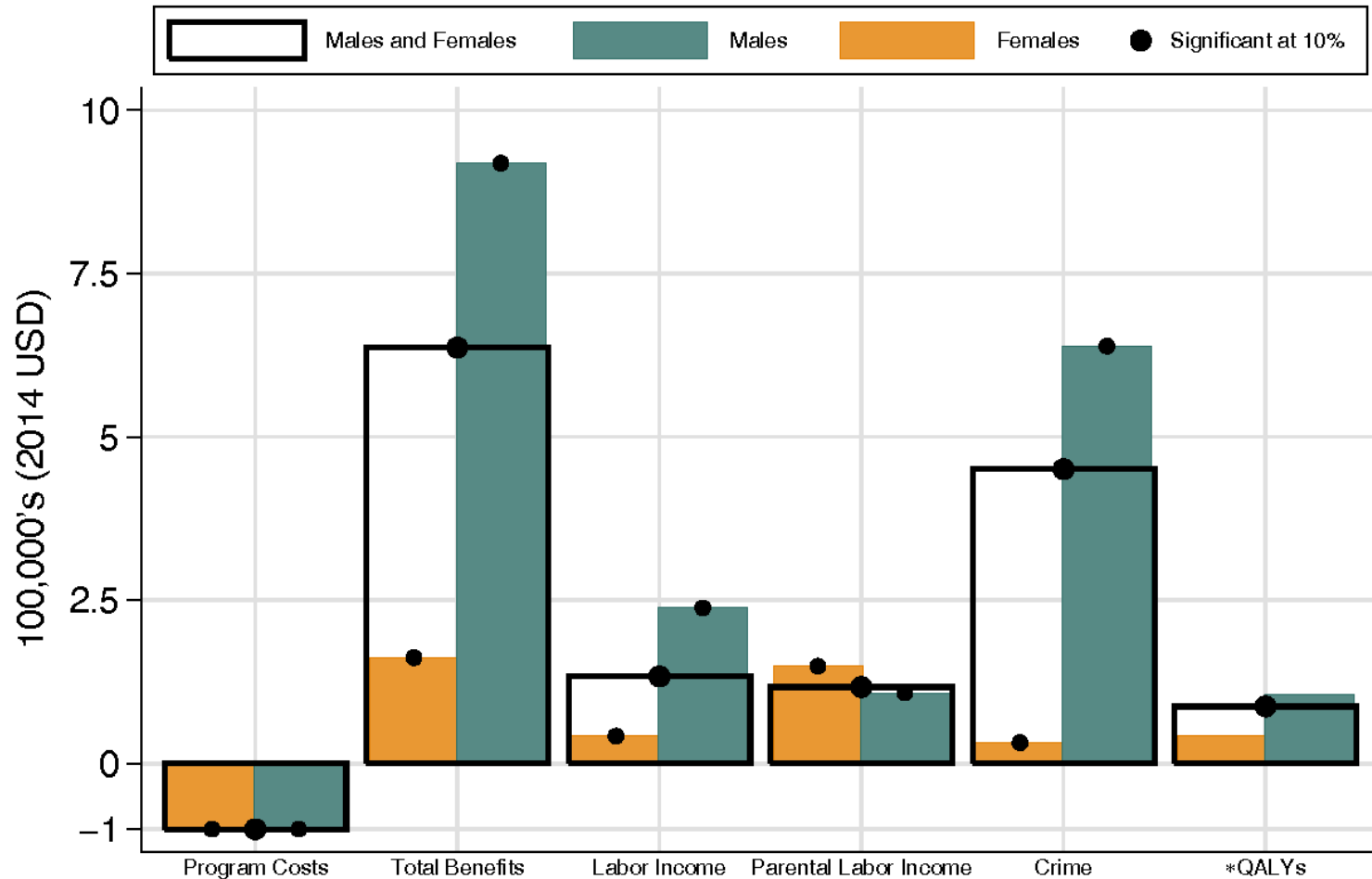
The Carolina Abecedarian Project

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 et. al (2014).

Net Present Value of Main Components of the Cost/Benefit Analysis Over the Life Cycle per Program Participant, Treatment vs. Next Best



Per-annum Rate of Return: Males and Females 13.7% (s.e. 3%); Males 14.6% (s.e. 4%); Females 10% (s.e. 8%).

Benefit-cost Ratio: Males and Females 7.3 (s.e. 1.8); Males 10.2 (s.e. 2.9); Females 2.6 (s.e. .73).

Source: Garcia et. al (2016).

Rate of Return:

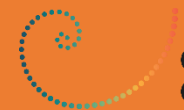
Overall: 13.7% per annum

Males: 14% per annum

Females: 10% per annum

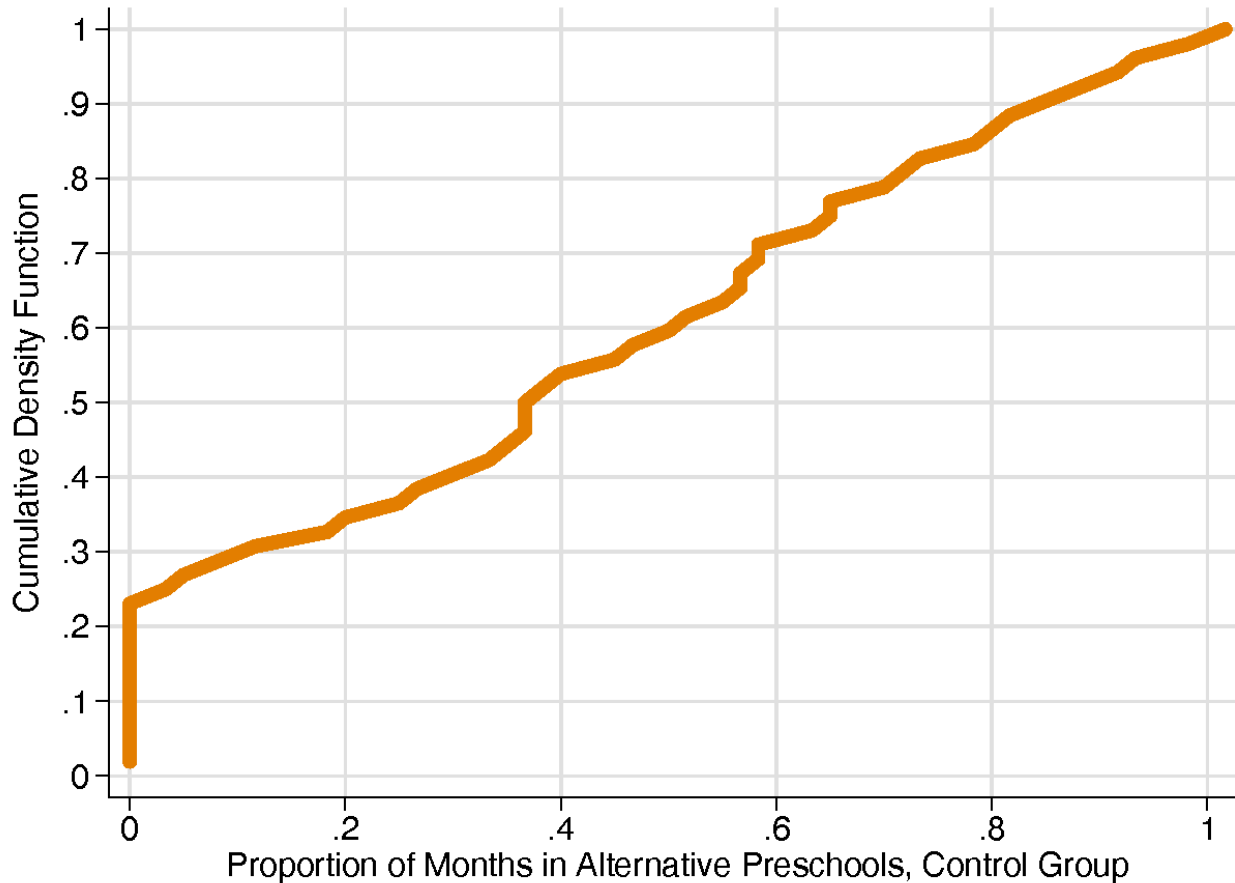
Source: Garcia et. al (2016).

Experiments Have to be Carefully Analyzed – Too Much Blind Faith in RCTs



Control-Group Substitution, ABC

Months in Alternative Preschools, ABC Control Group



Source: Garcia et. al (2016).

- Substitution bias pervasive (Heckman et al., 2000).
- Head Start Study: Controlling for substitution bias shows benefits of the program.

More Rigorous and Reliable Estimates of Benefit/Cost Ratios

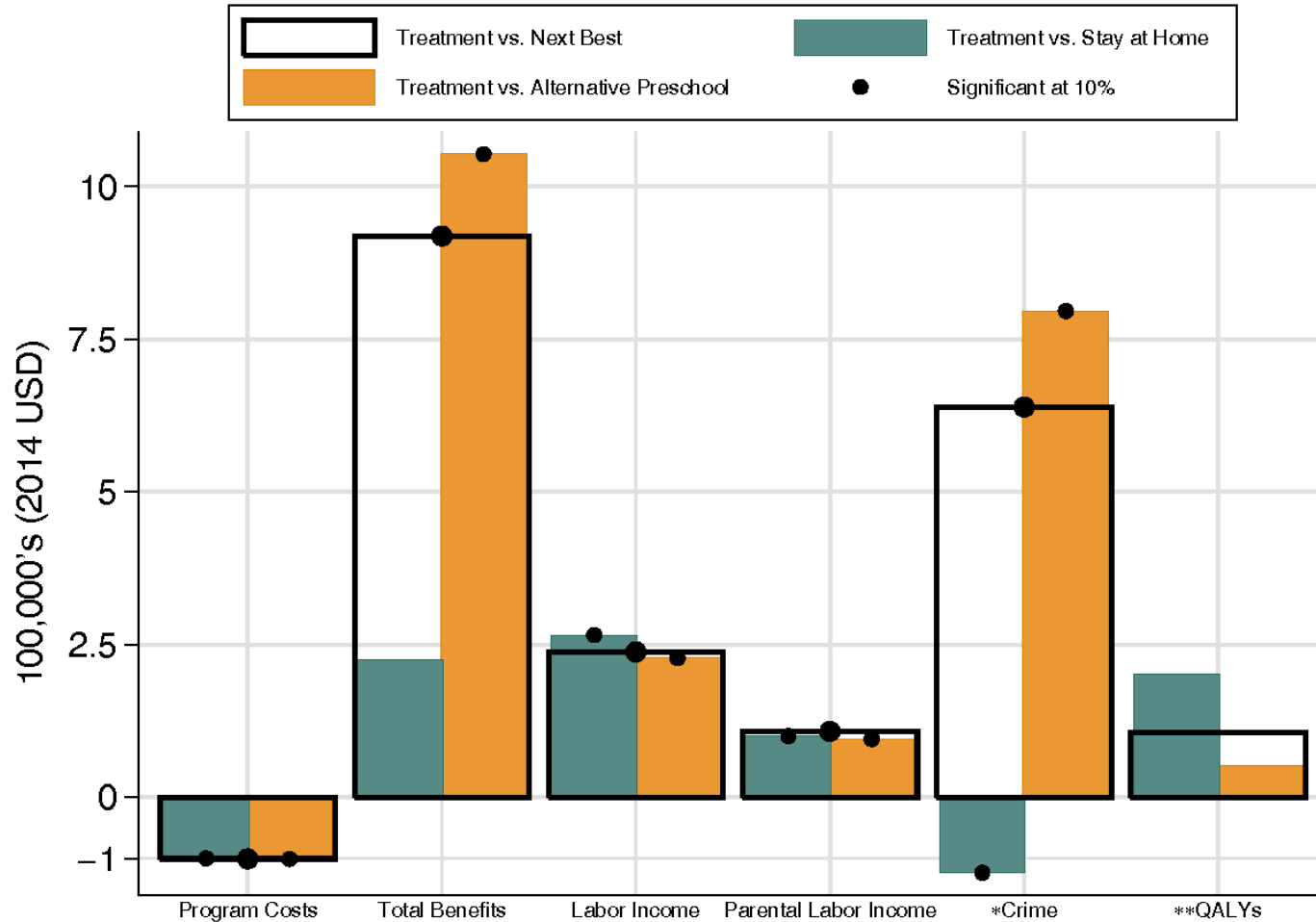
	Outcomes Analyzed	
Standard Approach (Kline and Walters; Chetty et al.)	Labor Income at Age 27	.09 (.04)
Our Approach	Lifetime Labor Income	1.55 (.76)
	All Sources	7.33 (1.84)

Source: Garcia et. al (2016).

- Standard approach: follow-up through age 27
- Focus only on earnings
- Our approach: long-term follow-up through age 34
- More than earnings
- Project outcomes using auxiliary data and conducting sensitivity studies

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

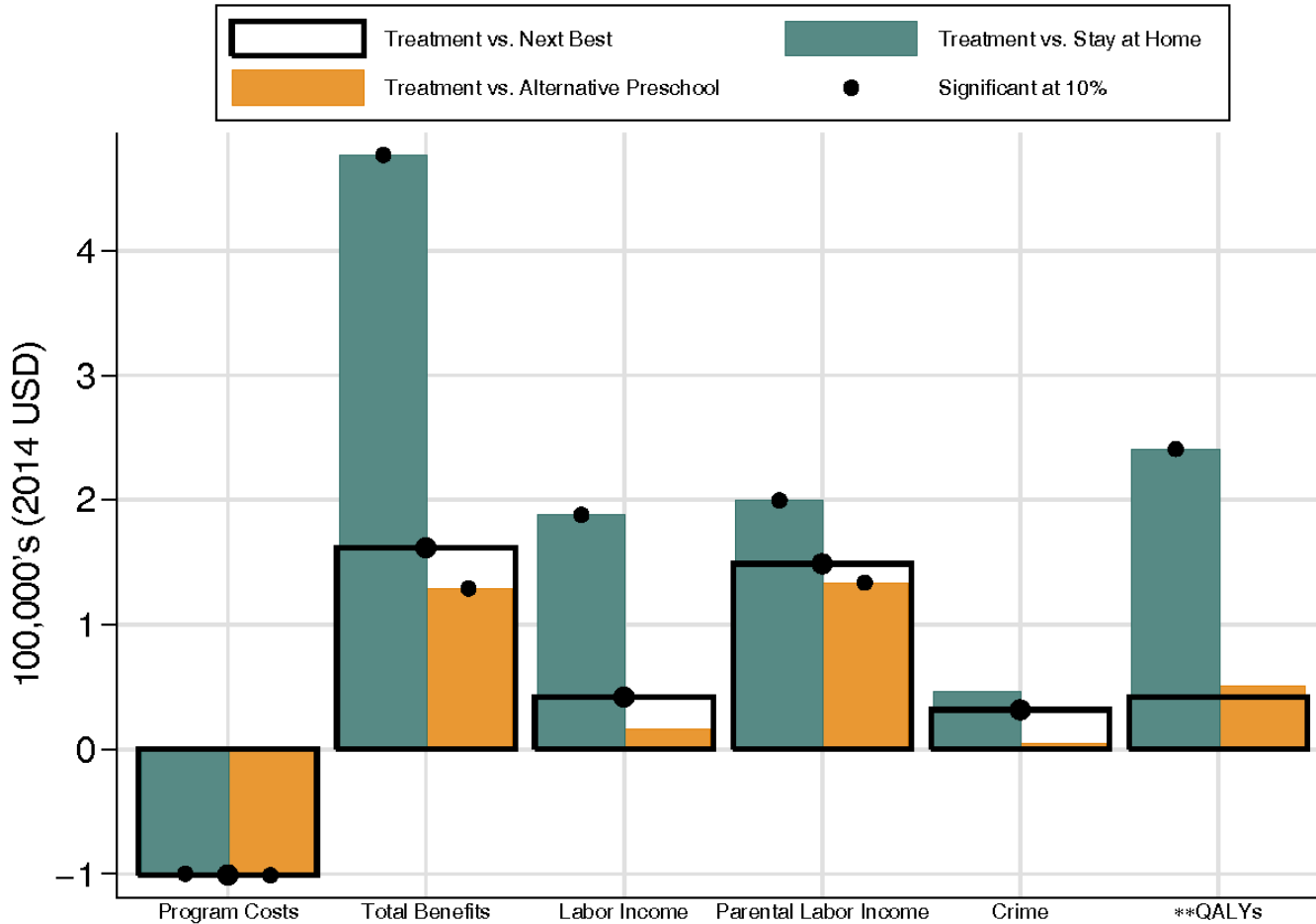
(a) Males



Source: Garcia et. al (2016).

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

(b) Females

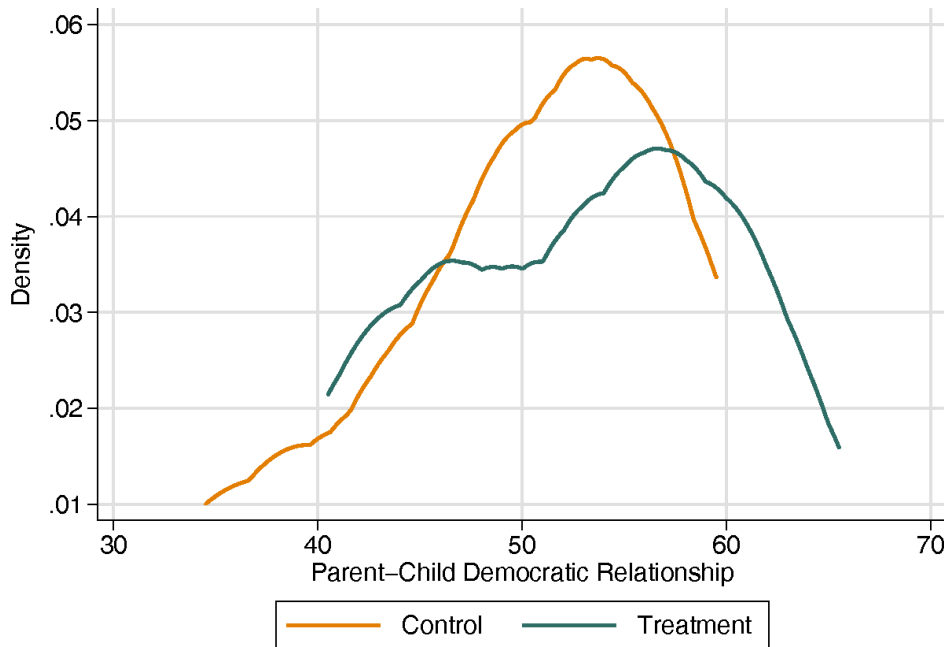


Source: Garcia et. al (2016).

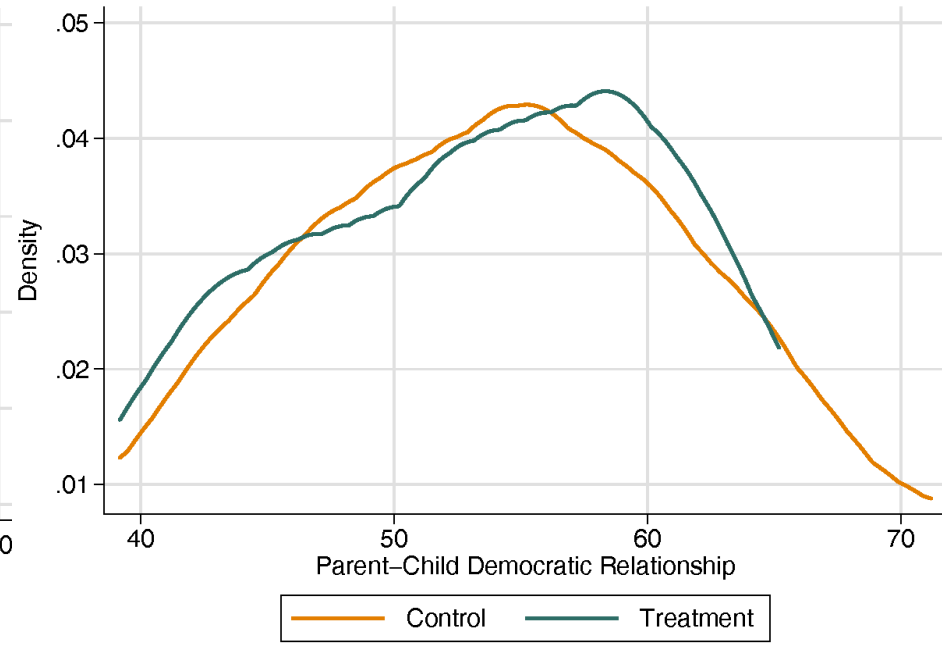
Democratic Parenting

Females

Males



Treatment Effect: 2.5172 (p-value = .0831).



Treatment Effect: -.9543 (p-value = .3315).

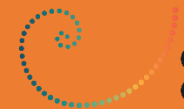
Source: Garcia et. al (2015).

Isolating Components of Program Effectiveness

The Jamaica Study: Grantham-McGregor et al.

- Parenting intervention at ages 18-34 months of the child
- Teaches mother to interact with child
- Cheap and easily replicated
- Long-term effectiveness

Summary



Value of basic research

- The field should move beyond sound bites, however good they may be for advocacy.
- Trivial to say “relationships matter” without a deeper understanding of what aspects of relationships matter and why.
- Finding that the brain lights up under stimulation tells us **nothing**. It is neither surprising or especially informative. The important question is what stimulation has long-term impacts.

Long-term evaluations are
essential

Literature filled with large – even
miraculous – short-term
evaluation results that fade out
when considered long-term

Needed for Guiding Effective Policy:

- (a) Hard evidence that survives critical scrutiny.
- (b) Long-term evaluations
- (c) Rates of return, not just batteries of treatment effects about school readiness.
- (d) Evidence that links childcare policy and child development: Family policy and child development policy.
- (e) Better documentation of the harm given to children placed in poor family or childcare environment: the cost of poor quality early childhood environments and the opportunities foregone by not providing high quality environments.

Needed for Guiding Effective Policy:

- (f) Better understanding of the skills that matter.
- (g) Understanding the mechanisms underlying successful interventions with long-term follow-up – isolate key components of successful interventions.
- (h) Recognition that high-quality mothering and family environments are very effective if under-researched: Rate of return for middle class mothers is likely over 30% per annum.
- (i) Understanding that enriched childcare can confer some of the benefits of high-quality homes on disadvantaged children.
- (j) Benefits within and across generations
- (k) Three Generation Effects**

- Are Perry & ABC & IHDP “old”?
- Their ingredients are not.
- A proper understanding of them is valuable provides long-run evidence.
- Targeting disadvantaged children is economically and socially efficient.

Thank You

Funders:

Buffett Early
Childhood Fund
investing in the early years

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