



Investing in Disadvantaged Young Children Is Good Economics and Good Public Policy

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- Chairman Schumer and other distinguished members of the Joint Economic Committee, it is my great honor to be invited to participate in this hearing.
 - The issues addressed here today are of basic importance to the nation; they concern the well being of our children and hence the future of American society.



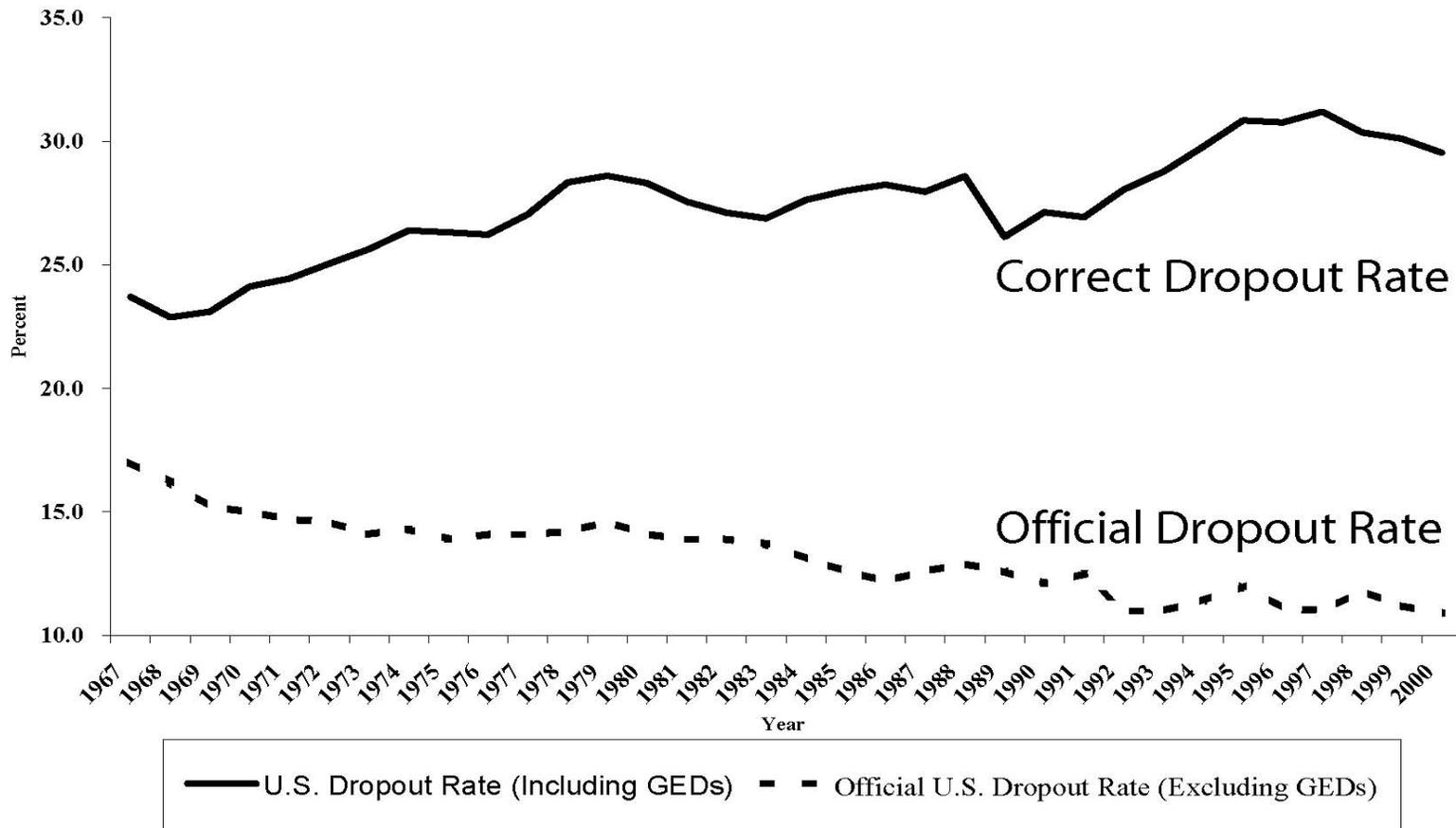
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- A large, convincing, body of research in psychology, economics and neuroscience points to the importance of the early years in producing successful outcomes for the advantaged and in accounting for social pathologies found among the disadvantaged.
 - This research should cause us to rethink policies focused on human development.
 - We have come to understand that the accident of birth is the greatest source of inequality in American society.
 - Public policy should recognize this.



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- ❑ Consider the problem of rising inequality.
 - ❑ This is a problem that has its roots in disadvantage in early childhood.
 - ❑ Unnoticed in the recent discussions of inequality is the growth in the percentage of American youth who are high school dropouts.
 - ❑ Properly counted, the high school dropout rate is increasing.



Figure 1: The American High School Dropout Rate is Increasing



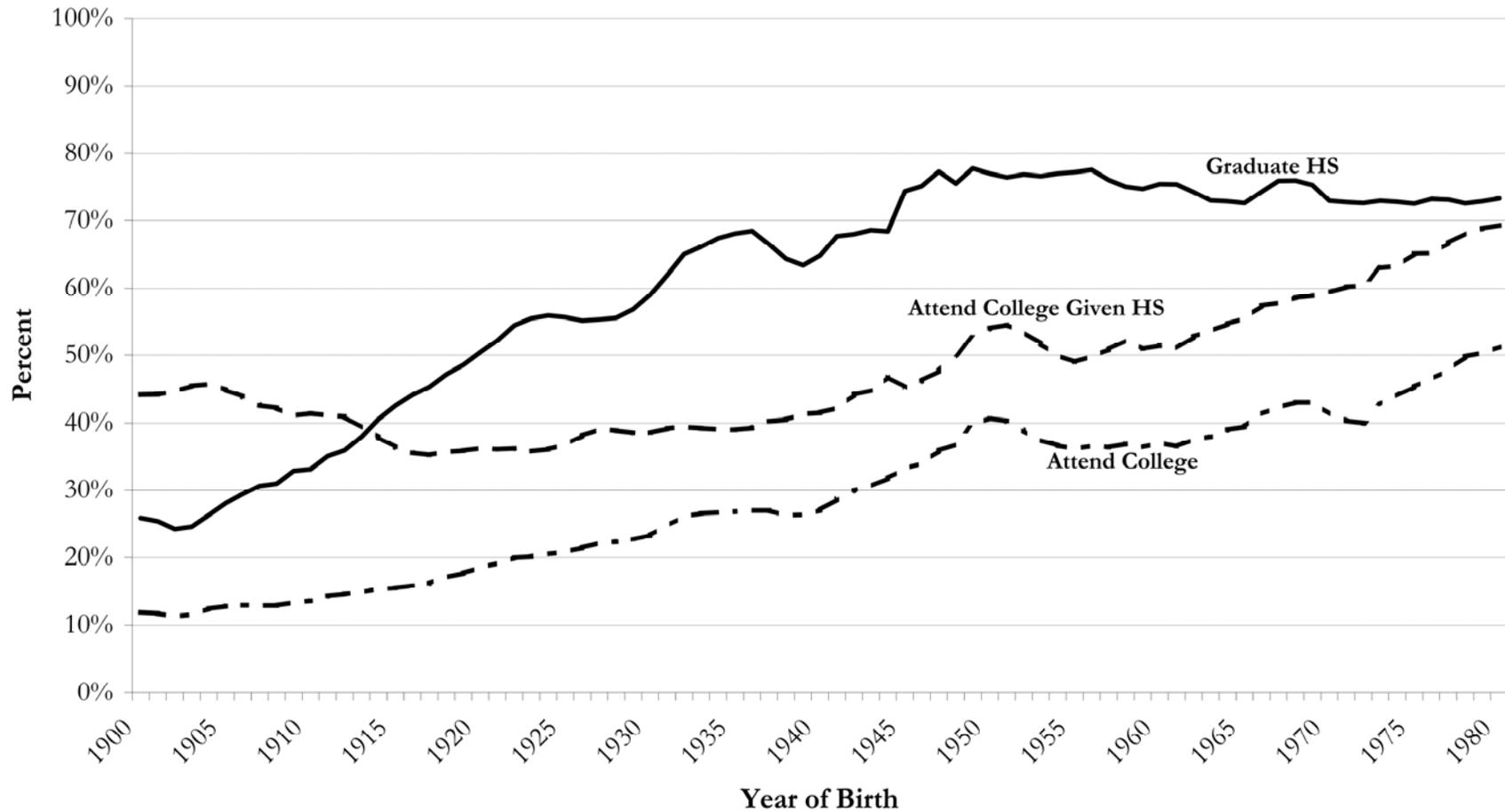
Source: (1) The National Center for Education Statistics Digest of Educational Statistics, 2001, Tables 103 and 108; (2) NCES, Dropout Rates in the United States, 2002



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- ❑ This may seem surprising to many persons.
 - ❑ The official dropout rate understates the true dropout rate because it counts exam certified “graduates” (GEDs) as regular high school graduates who show up for class and complete courses.
 - ❑ In truth, GEDs – exam certified graduates – are dropouts; they earn the wages of dropouts and have the same poor labor market performance.
 - ❑ At the same time, more genuine high school graduates are attending college.



Figure 2: The Slowdown in the Growth of College Attendance is Due to the Growing High School Dropout Rate





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- This produces a growing polarization in American society – the percentage of people who graduate college is growing, so is the percentage of people who have dropped out of high school. This is producing a shrinking middle class.

 - Gaps in educational attainment have increased between majority and minority youth.



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- The growth in the high school dropout rate will produce serious problems in the future for American society because crime, health, productivity, teenage pregnancy and drug use are all linked to education.
 - More American workers in the future will come from minority populations where the high school dropout problem is acute and growing.
 - A large body of research establishes that investing in disadvantaged young children improves the productivity of the economy and, at the same time, reduces social and economic inequality.



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- In the world of Washington politics where “tradeoffs” are the rule, a policy of investing in disadvantaged young children is rare. For this policy, there is no tradeoff between equity and efficiency, between fairness and economic productivity.
 - 60 years ago, Harry Truman said he would like to have a one handed economist.
 - Asked why, he said that every economist he met gave him a menu of choices and not a preferred choice.



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- They would say, “on the one hand, if you adopt this policy you will get these benefits and costs; on the other hand, if you adopt another policy then there are these benefits and costs.”

 - If there were only one hand, the choice would be clear.

 - Investing in disadvantaged young children is one policy where the choice is clear and the two hands clap together.



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- How is it possible to avoid an equity/efficiency tradeoff?
 - The early years exert a powerful influence over the rest of the life of a child.
 - I am talking about the years 0-3 as well as the later preschool years 4-5.
 - Children raised in disadvantaged environments are much less likely to succeed in schools and in economic and social life and are much less likely to be healthy adults.



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- The good news for policy makers is that there is strong evidence that early environments can be enriched and that we can offset, in part, the powerful consequences of the accident of birth.

 - Let me summarize the argument for early intervention.



The Argument in a Nutshell

- I. Many major economic and social problems such as crime, teenage pregnancy, dropping out of high school and adverse health conditions can be traced to low levels of skill and ability in the population.
- II. Ability gaps between the advantaged and disadvantaged open up early in the life of the child.
- III. Life cycle skill formation is dynamic in nature. Skill begets skill; motivation begets motivation. If a child is not motivated and stimulated to learn and engage early on in life, the more likely it is that when the child becomes an adult, it will fail in social and economic life. The longer we wait to intervene in the life cycle of the child the more costly it is to remediate.



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- IV. In analyzing policies directed toward children, we should recognize the multiplicity of abilities.
- V. Much public policy discussion focuses on promoting and measuring cognitive ability through IQ and achievement tests. No Child Left Behind focuses on achievement test scores in the 4th grade, not looking at a range of other factors that promote success in school and life.



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- VI. Cognitive abilities are important for socioeconomic success.

 - VII. But socioemotional skills, physical and mental health, perseverance, attention, motivation, self confidence are also important for success in life.

 - VIII. Motivation, perseverance and tenacity feed into performance in society at large and even affect scores on achievement tests.



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- IX. Early family environments are major predictors of cognitive and socioemotional abilities, as well as crime, health and obesity.

 - X. This observation is a major source of concern because family environments in the U.S. and many other countries around the world have deteriorated over the past 40 years.

 - XI. Experiments support a large body of non-experimental evidence that adverse family environments promote adult failure.



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- XII. If society intervenes early enough, it can affect cognitive, and socioemotional abilities and the health of disadvantaged children.

 - XIII. Early interventions promote schooling, reduce crime, promote workforce productivity and reduce teenage pregnancy.

 - XIV. These interventions are estimated to have high benefit-cost ratios and rates of return.



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- XV. Early interventions have much higher returns than other later interventions such as reduced pupil-teacher ratios, public job training, convict rehabilitation programs, tuition subsidies or expenditure on police.
- XVI. A major refocus of policy is required to understand the lifecycle of skill and health formation and the importance of the early years.



Ability Matters

- Social problems including disease are strongly related to shortfalls in both cognitive skills, noncognitive skills (motivation, perseverance, self discipline, self control), and health.

- Controlling for ability, minorities are *more likely* to attend college than others despite their lower family incomes (Cameron and Heckman, 2001).



Table 1a: Ability Explains Schooling Gaps

	White-Black Educational Gap	White-Hispanic Educational Gap
Complete Grade 9 or More by Age 15		
Actual White-Minority Gap	.16	.21
Ability Adjusted Gap	-.10	-.02
High School Completion Gap		
Actual White-Minority Gap	.06	.14
Ability Adjusted Gap	-.14	-.12



Table 1b: Ability Explains Schooling Gaps

	White-Black Educational Gap	White-Hispanic Educational Gap
College Entry Probabilities given High School Completion		
Actual White-Minority Gap	.11	.07
Ability Adjusted Gap	-.14	-.14
College Entry Gap (Unconditional on High School Completion)		
Actual White-Minority Gap	.12	.14
Ability Adjusted Gap	-.16	-.15



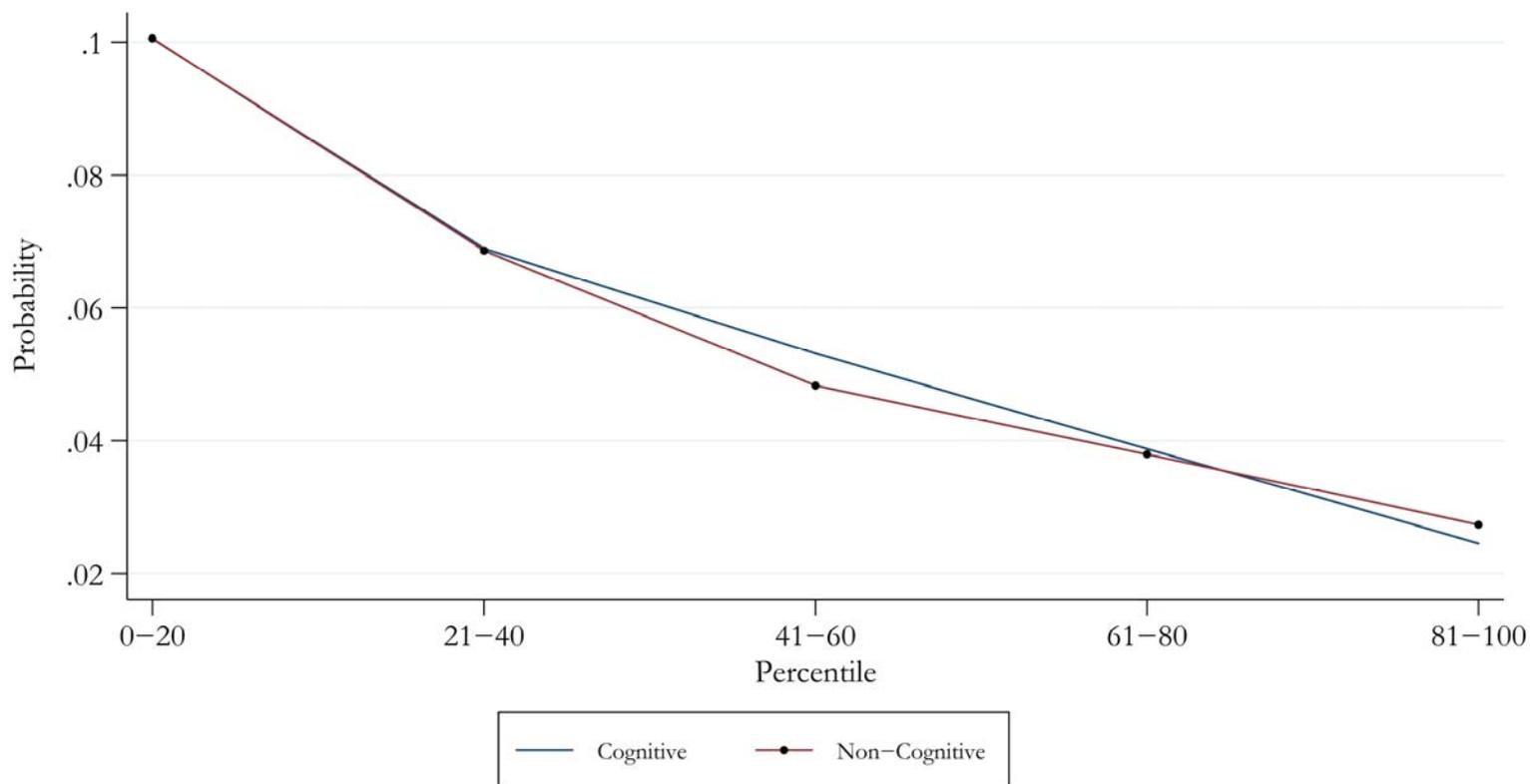
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- Both cognitive and socioemotional abilities explain many features of economic and social performance and the emergence of health differentials.

 - Consider just one aspect: teenage pregnancy.

 - The same is true for many dimensions of performance.



Figure 3: Probability of Being Single With Children (Teenage Pregnancy)



Note: This figure plots the probability of a given behavior associated with moving up in one ability distribution for someone after integrating out the other distribution. For example, the lines with markers show the effect of increasing noncognitive ability after integrating the cognitive ability. Source: Heckman, Stixrud, and Urzua (2006).



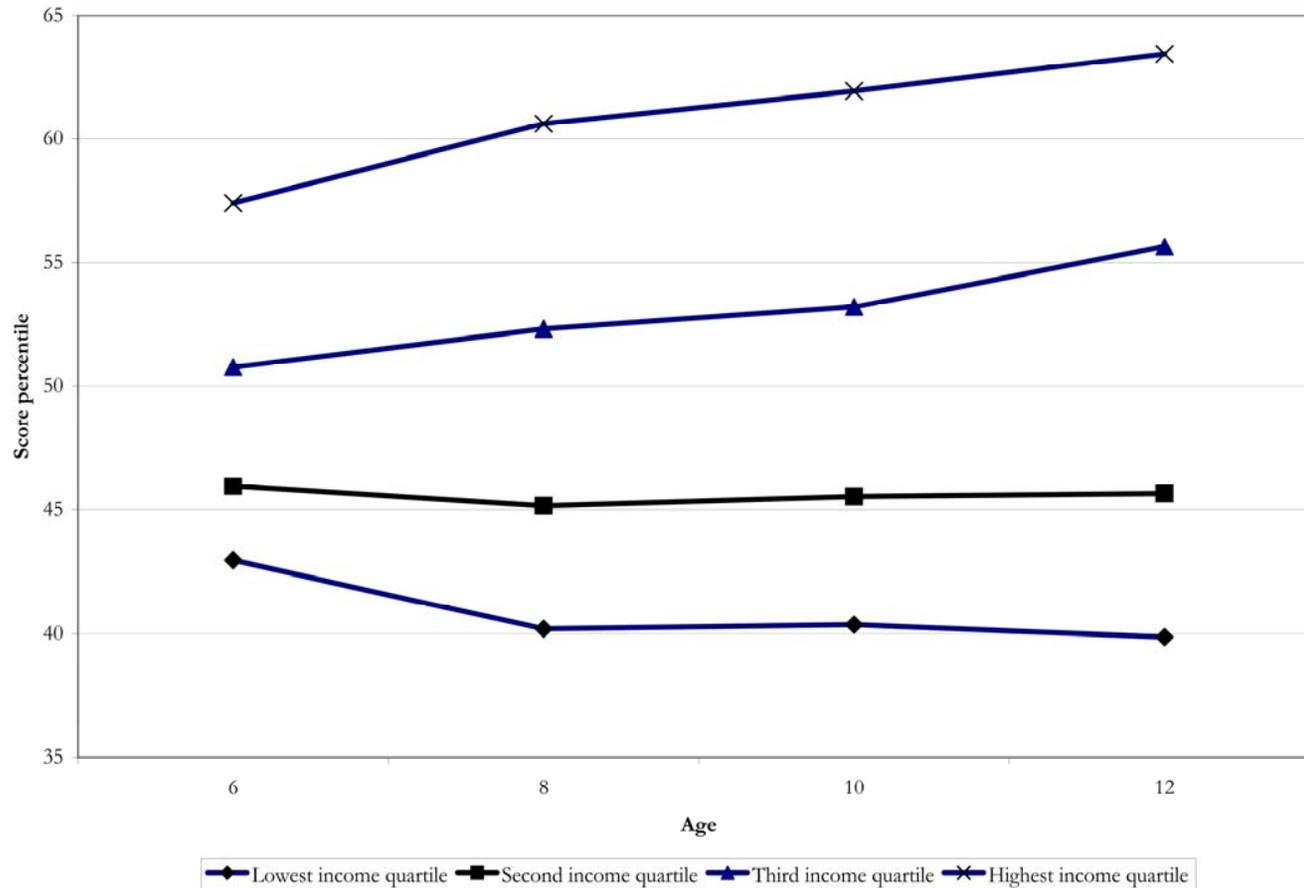
Gaps in Ability Open up Early

- ❑ Going across income groups, gaps in cognitive ability widen slightly in the early years of schooling.
- ❑ They stay constant after age 8.
- ❑ Research shows that schooling quality, pupil teacher ratios, teacher pay and the like play only a small role in accounting for these gaps or in widening or narrowing them.
- ❑ The gaps start early before school begins and they persist.
- ❑ Once one controls for early family environments, the gaps substantially narrow.



Figure 4: Children of NLSY

Average percentile rank on Math score, by income quartile*

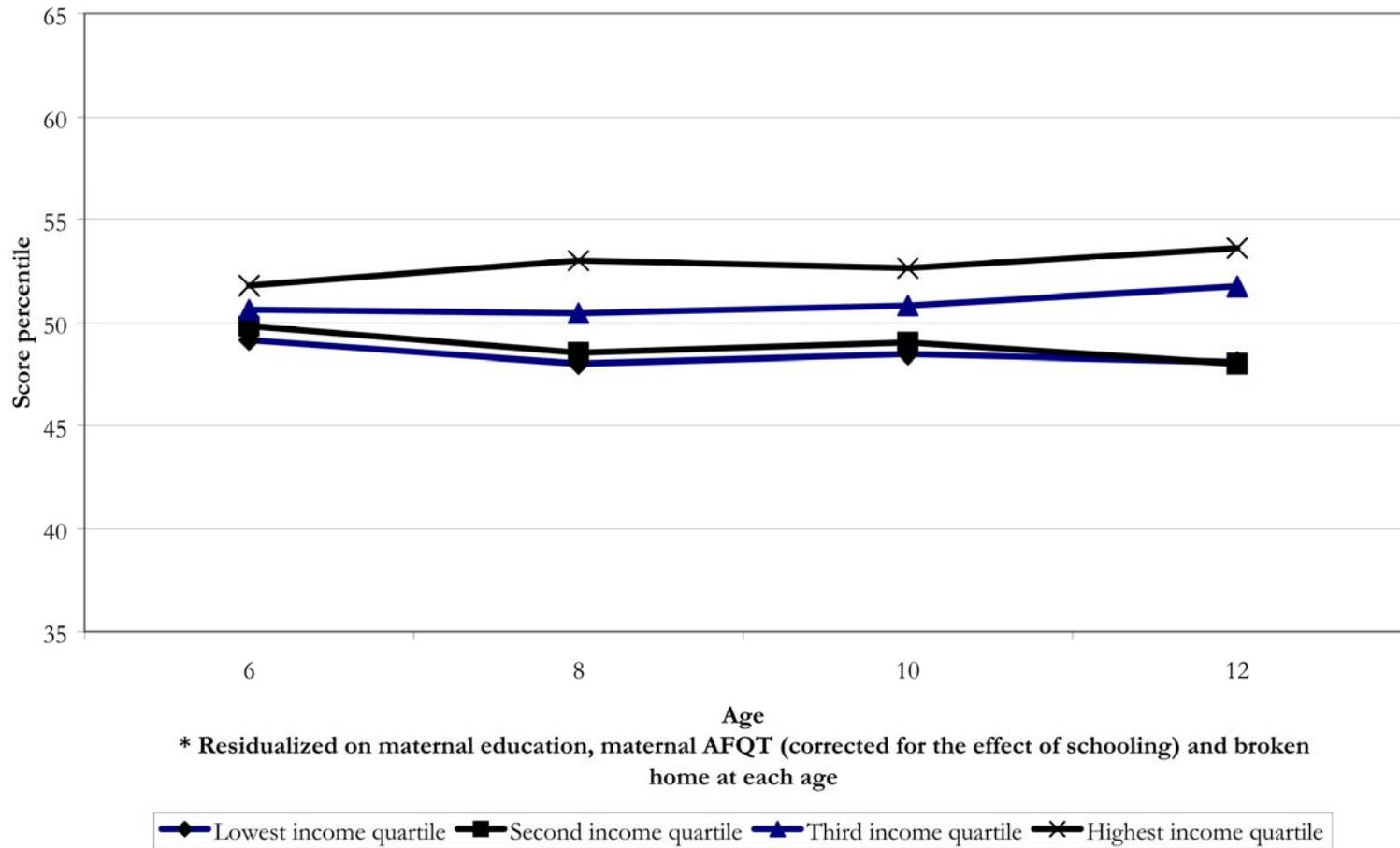


*Income quartiles are computed from average family income between the ages of 6 and 10.
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Figure 5: Children of NLSY

Adjusted average Math score percentiles by income quartile*





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- Similar phenomena characterize noncognitive skills.
 - Gaps by family income appear early and persist.
 - Schooling quality plays only a small role in accounting for gaps or their stability despite the large variability across schools.

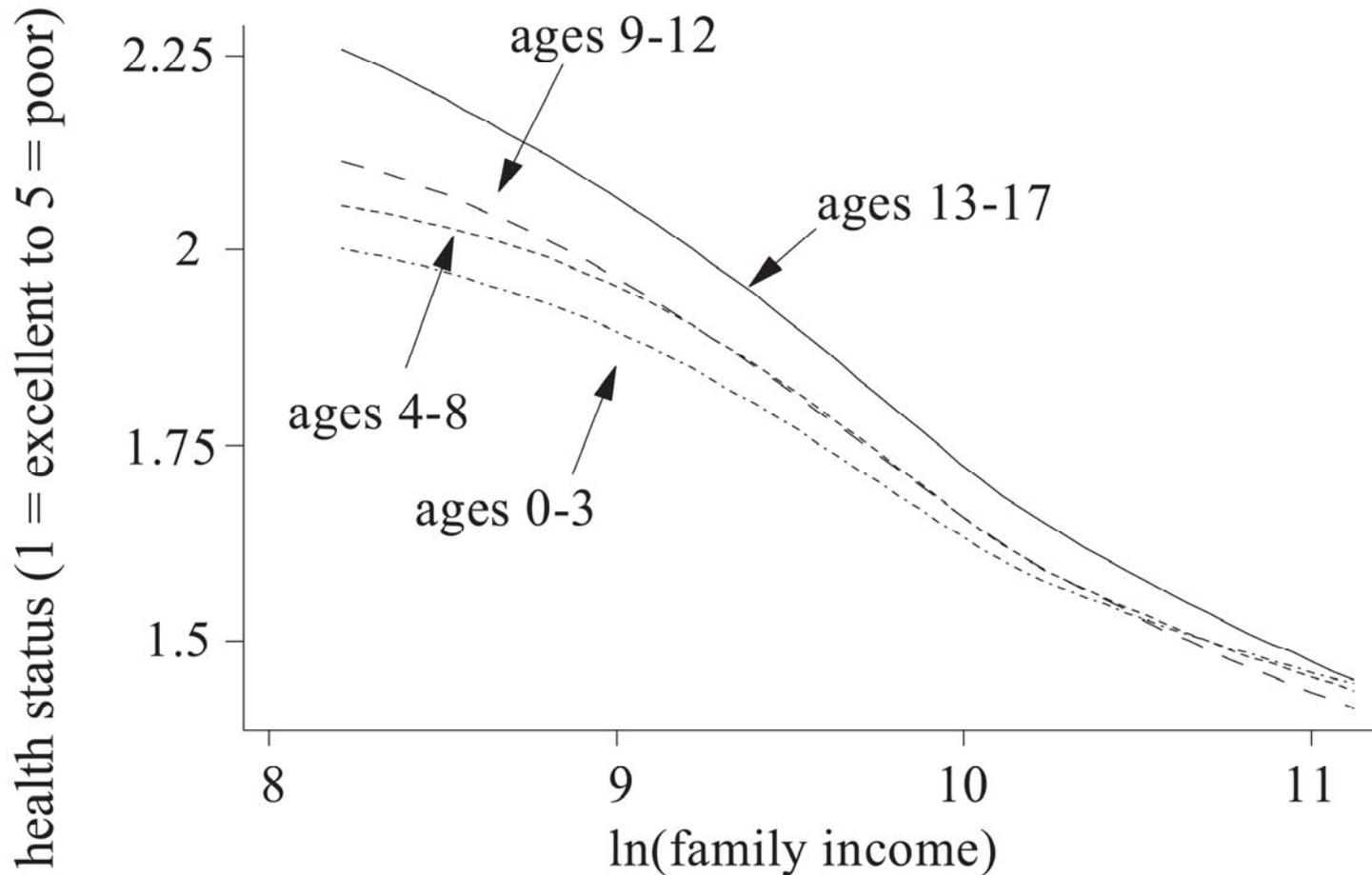


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- Health gaps by income open up early and widen as children age.



Figure 6: Health and Income for Children and Adults

U.S. national health interview survey 1986-1995: High Score is Bad



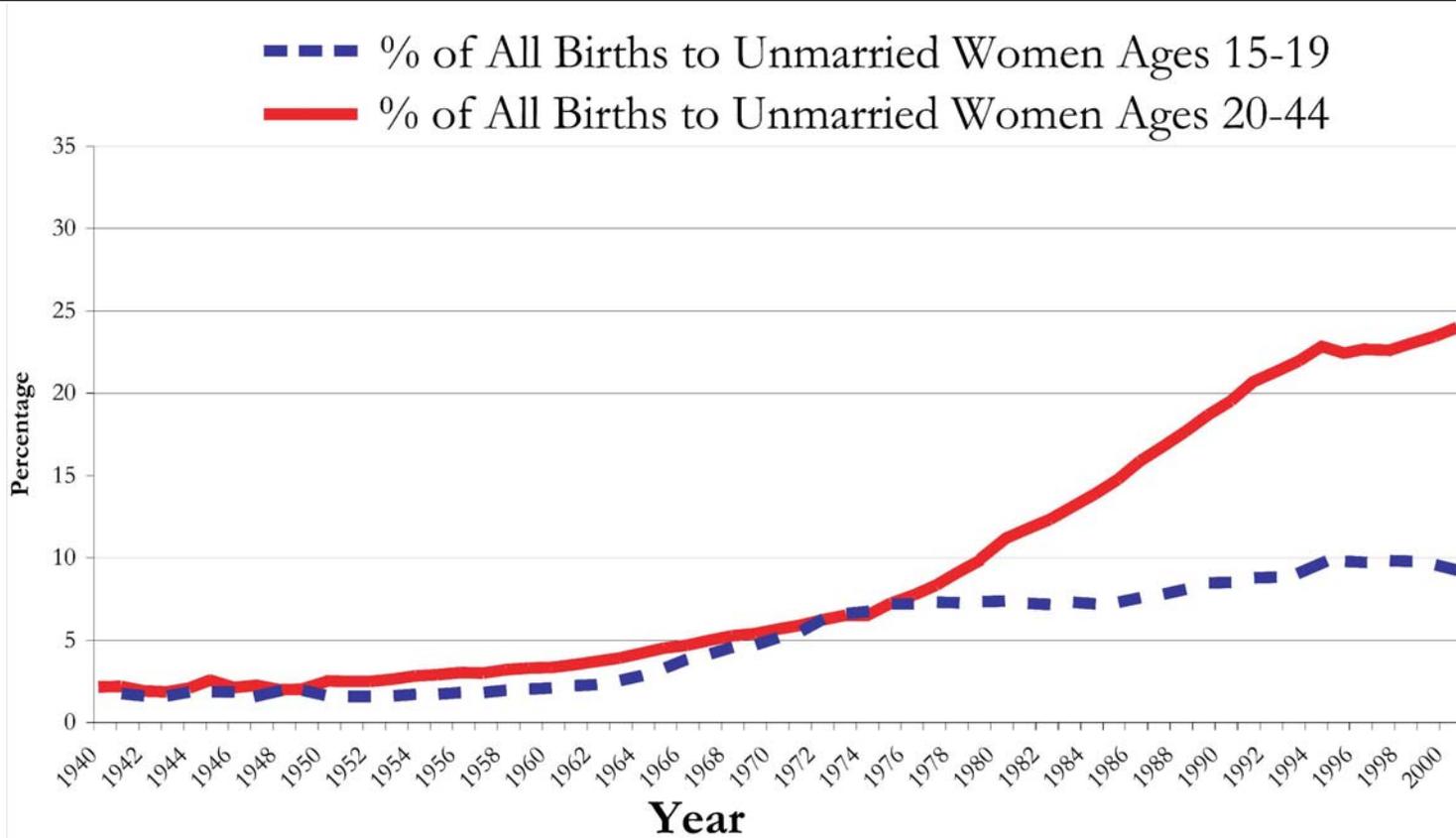


Early Family Environments

- Early family environments are major predictors of abilities (both cognitive and noncognitive).
- This is a source of concern because they have deteriorated over the past 30 years.
- Relatively more U.S. children are born into disadvantaged environments compared to 40 years ago.



Figure 7: Family Environments for Children Have Worsened Over Time



Note: Birth rates to unmarried women from Ventura and Bachrach (2000). Other measures are the author's calculations based on weighted CPS March 1968-2000 data. Poverty is defined as those households under the federal poverty line in the given year.



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- Experiments indicate that improvements in family environments can affect both cognitive and noncognitive skills.



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- ❑ A great deal of public policy discussion around the world focuses on cognitive test score measurements.
 - ❑ It is important to recognize that more than raw smarts or knowledge on an achievement test is required for success in life.
 - ❑ Failure to do so leads to bad policy results.
 - ❑ Head Start in the late 1960's was deemed a failure because it did not raise IQ.



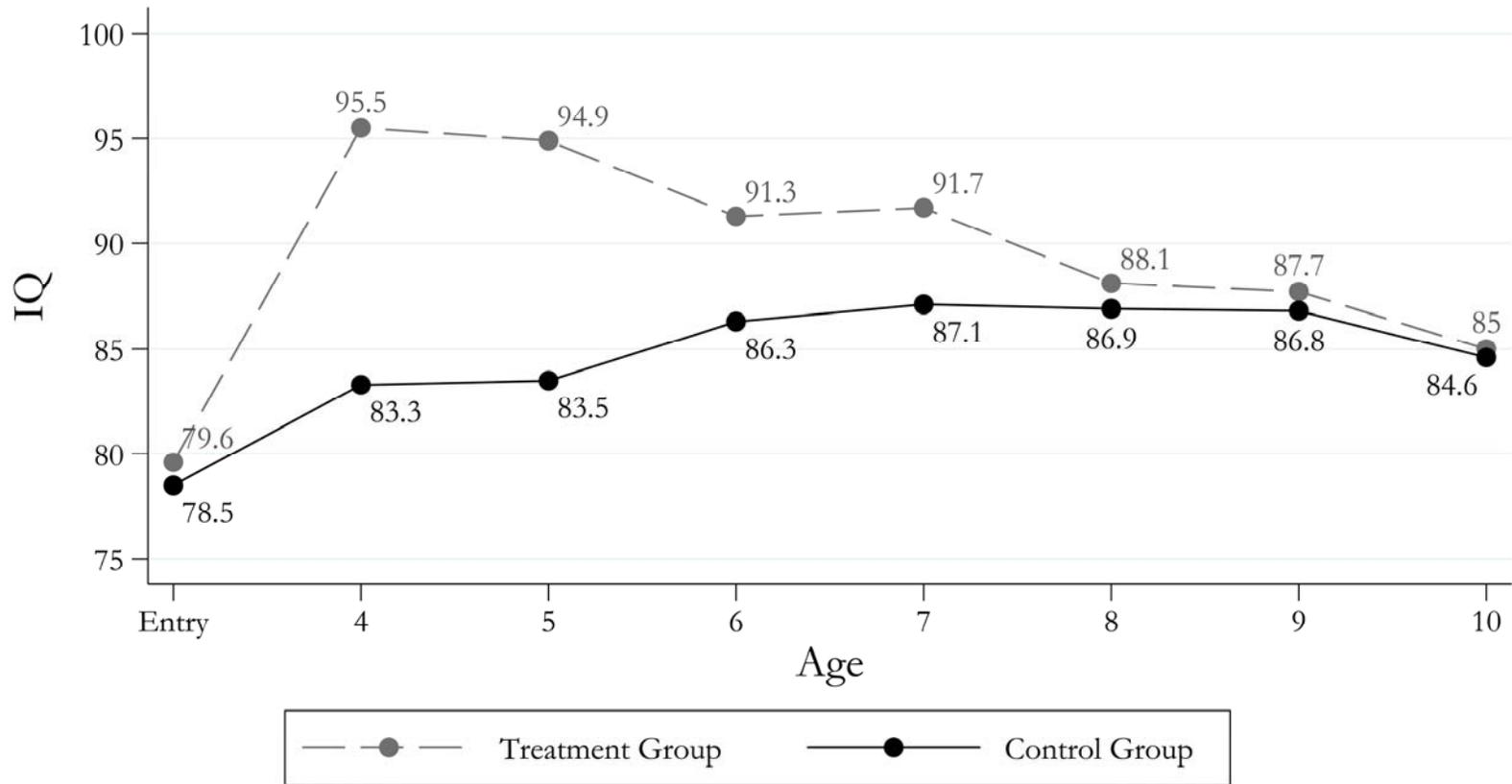
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- But such a judgment was premature and there is powerful evidence that a strengthened Head Start can be effective.
 - Consider just one example of a successful early intervention: the Perry Preschool Program.
 - This was an experimental intervention in the lives of disadvantaged minority children with subnormal IQs.
 - The children were 4-5 years of age, relatively late in the life of the child as we have come to understand and yet the intervention was effective.



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- The Perry intervention group had no higher IQ scores than the treatment group (see Figure 8a).
 - Yet, in a follow up to age 40, the Perry treatment children had higher achievement test scores than did the control children.
 - On many dimensions, the Perry treatment children are far more successful than the controls (see Figures 8b-8d).



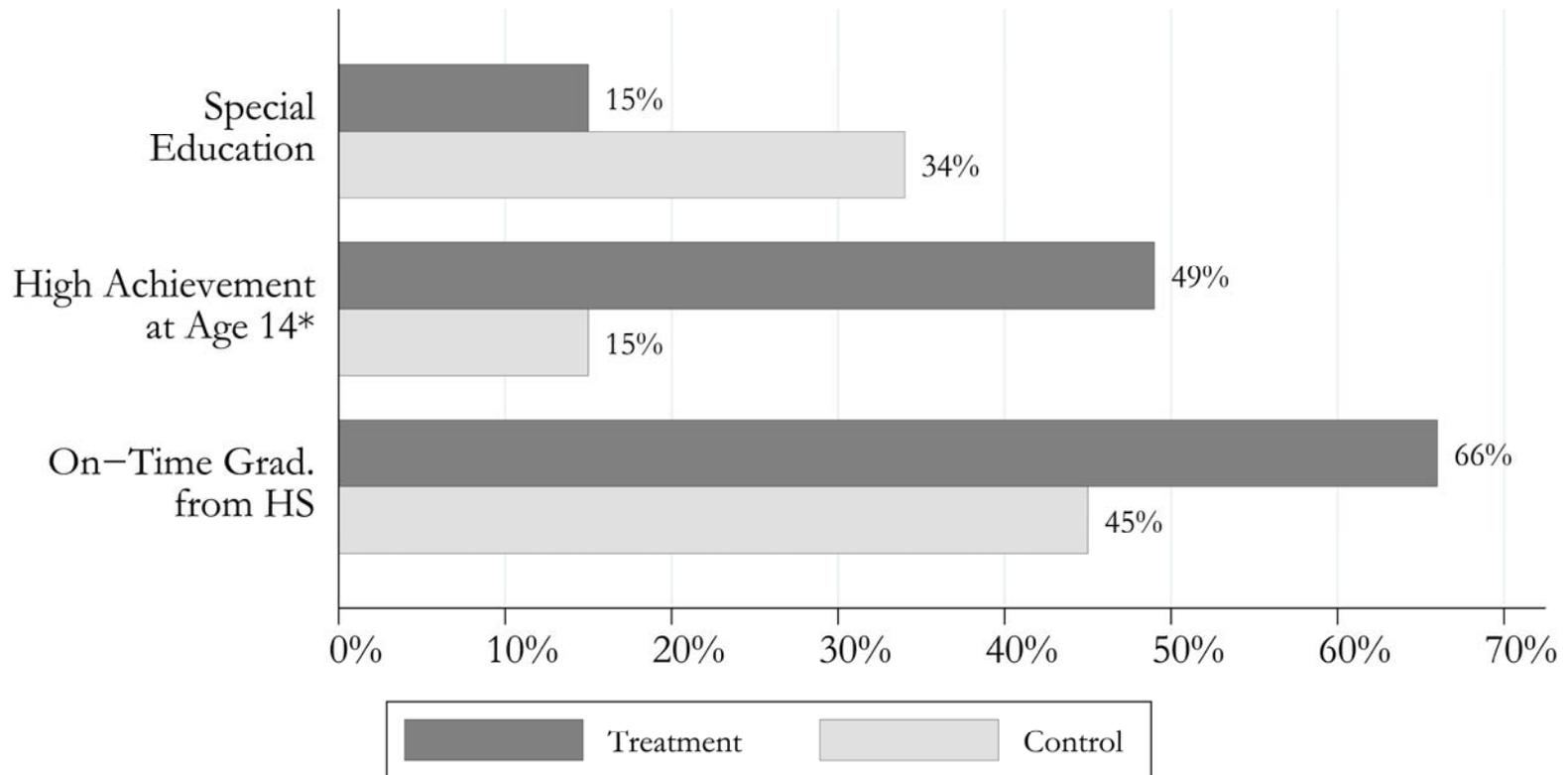
Figure 8a: Perry Preschool Program IQ, by age and treatment group



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.



Figure 8b: Perry Preschool Program Educational effects, by treatment group

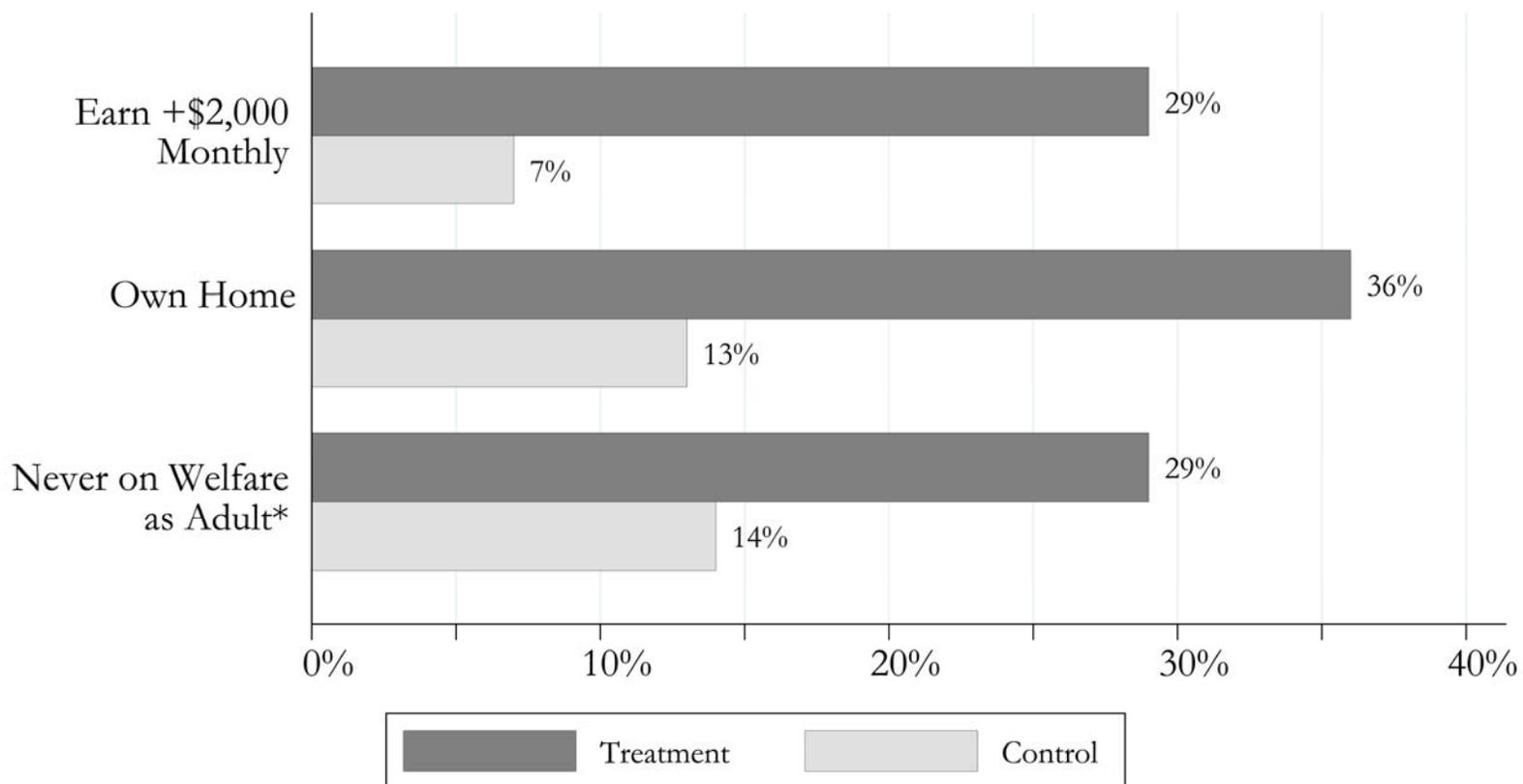


Source: Barnett (2004).

Notes: *High achievement defined as performance at or above the lowest 10th percentile on the California Achievement Test (1970).



Figure 8c: Perry Preschool Program Economic effects at age 27, by treatment group

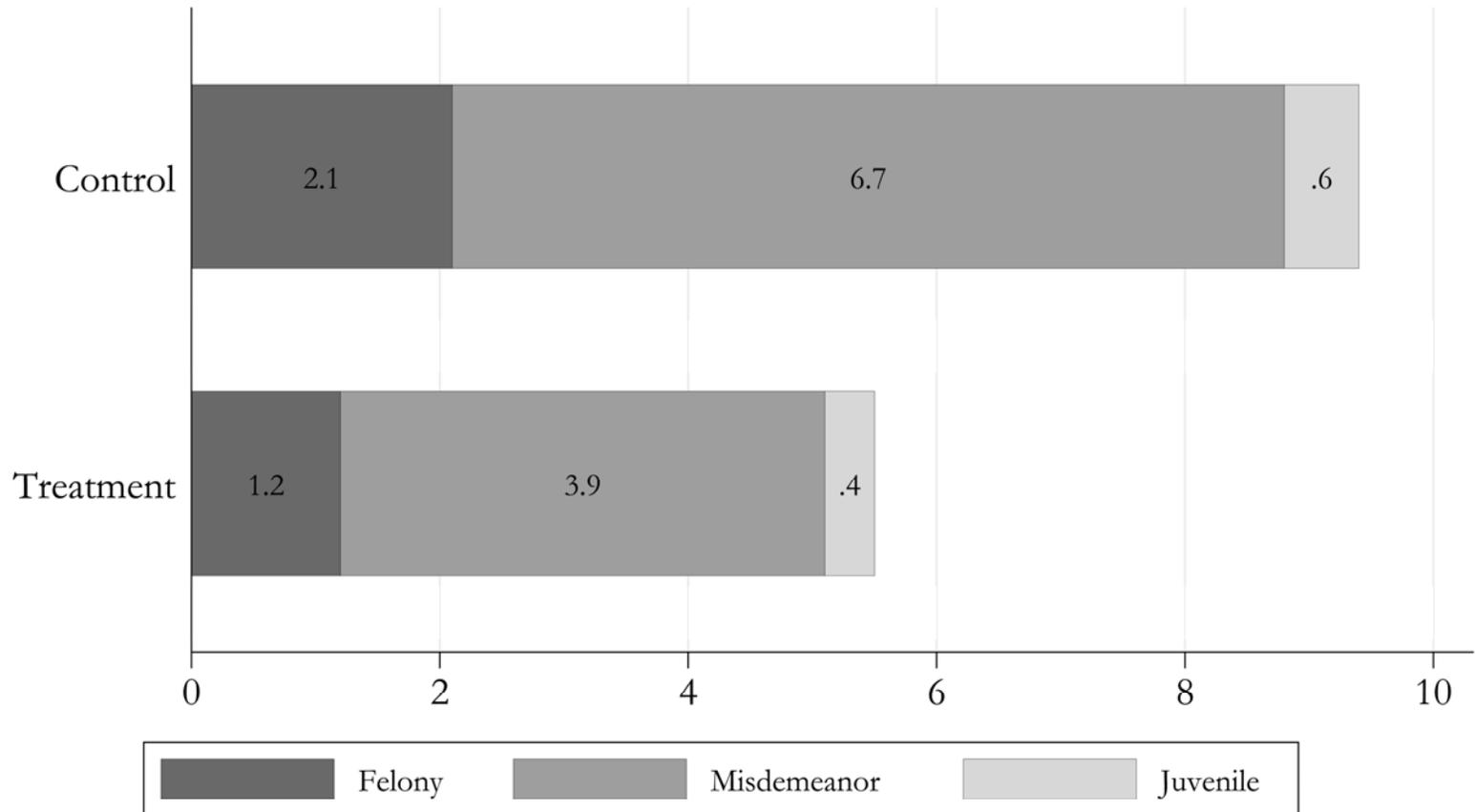


Source: Barnett (2004). *Updated through Age 40 using recent Perry Preschool Program data, derived from self-report and all available state records.



Figure 8d: Perry Preschool Program

Arrests per person before age 40, by treatment group



Source: Perry Preschool Program. Juvenile arrests are defined as arrests prior to age 19.



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- Early interventions can partially compensate for early disadvantage.
 - Perry intervened relatively late (at ages 4-6) in the life of the developing child.
 - Earlier interventions like the Abecedarian program, which started at 4 months, permanently raise the IQ and the socioemotional skills of the treatment group over the control group.



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- The Nurse Family Partnership Act which intervenes with pregnant teenage mothers and teaches them mothering and infant care has strong effects on adult success.
 - A consortium of scholars researching early childhood based at the Harris school at the University of Chicago is synthesizing and refining this evidence and conducting new experiments.
 - The lesson is clear: the earlier the better and the more disadvantaged the child the more powerful effects of the intervention.



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- ❑ The economic benefits of the Perry Program are substantial.
 - ❑ Rate of return is estimated by Art Rolnick of the Minneapolis Federal Reserve to be 15-18%.
 - ❑ The benefit-cost ratio is estimated to be eight to one.
 - ❑ Similar returns are obtained for other early intervention programs.



Later Remediation is Costly

- What if we do not invest early, and let the problem foster?
- At current levels of spending it is ineffective.
For example:
 1. Class size reductions (reducing class size by five pupils per classroom)
 2. Adult literacy programs
 3. GED programs
 4. Public job training programs
 5. Tuition reduction policy
- To make these programs more effective, resources spent on them would have to increase substantially.



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- There is a substantial tradeoff between equity and efficiency for adolescent and young adult programs.

 - A better alternative is to increase the investment in the early years and avoid the need for remediation.



Table 2: Comparisons of the Costs of Different Investment Strategies Investing young vs. waiting and remediating in adolescence

Disadvantaged Children: First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Age 6

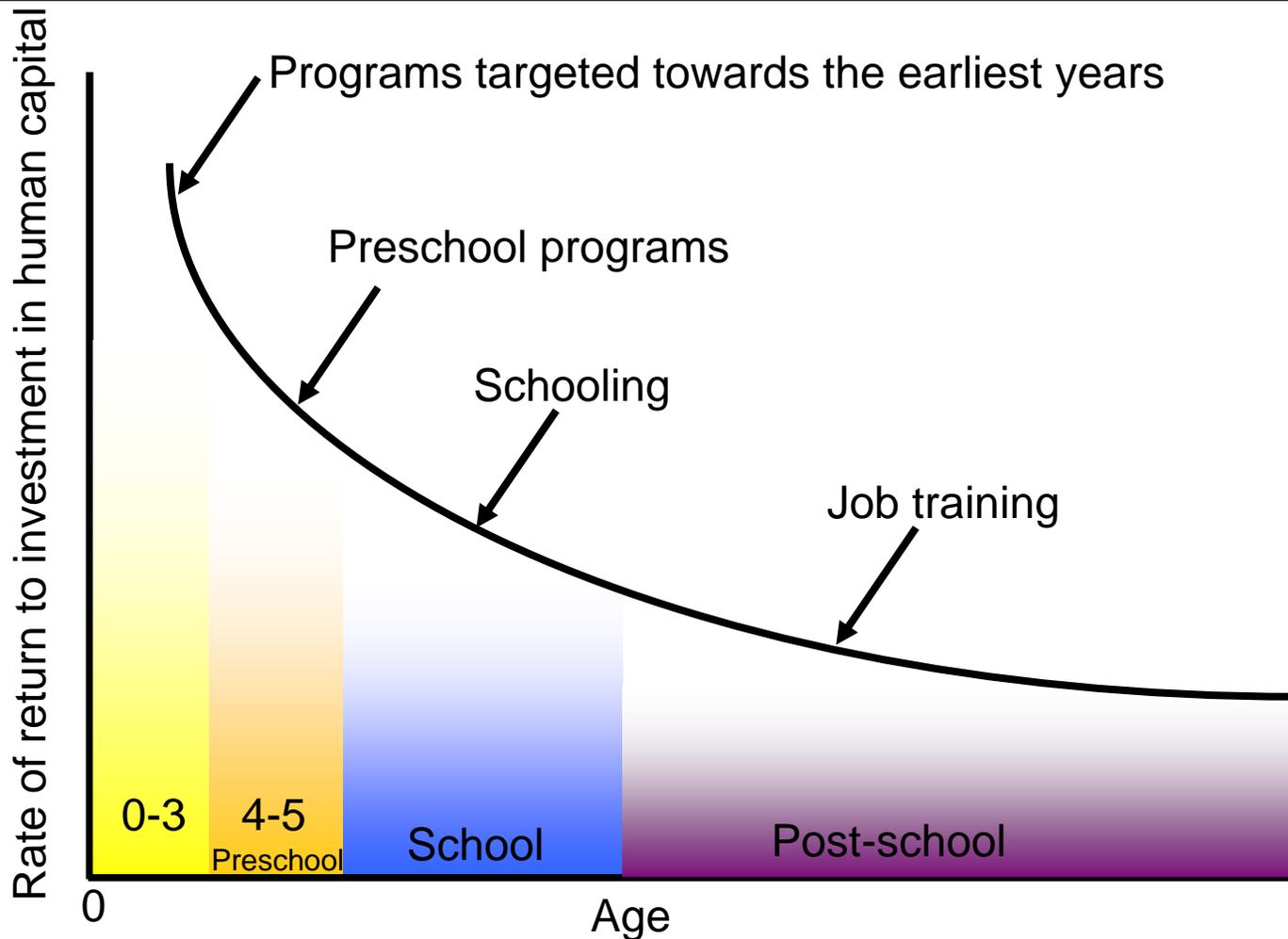
Mothers are in First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Ages 14-21

	Baseline	Changing initial conditions: moving children to the 4 th decile of distribution of skills only through early Investment	Adolescent intervention: moving investments at last transition from 1 st to 9 th decile
High School Graduation	0.4109	0.6579	0.6391
Enrollment in College	0.0448	0.1264	0.1165
Conviction	0.2276	0.1710	0.1773
Probation	0.2152	0.1487	0.1562
Welfare	0.1767	0.0905	0.0968

40% more costly



Figure 9: Rates of Return to Human Capital Investment at Different Ages: Return to an Extra Dollar at Various Ages





In Summary

- ❑ The economic returns to early investments are high.
- ❑ They promote efficiency and reduce inequality.
- ❑ The returns to later interventions are much lower.
- ❑ The reason is the technology of skill formation.
- ❑ Skill begets skill and early skill makes later skill acquisition easier.
- ❑ Remedial programs in the adolescent and young adult years are much more costly in producing the same level of skill attainment in adulthood.
- ❑ Most are economically inefficient.



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- Children from advantaged environments by and large receive substantial early investment.
 - Children from disadvantaged environments more often do not.
 - There is a strong case for public support for funding interventions in early childhood for **disadvantaged** children.