



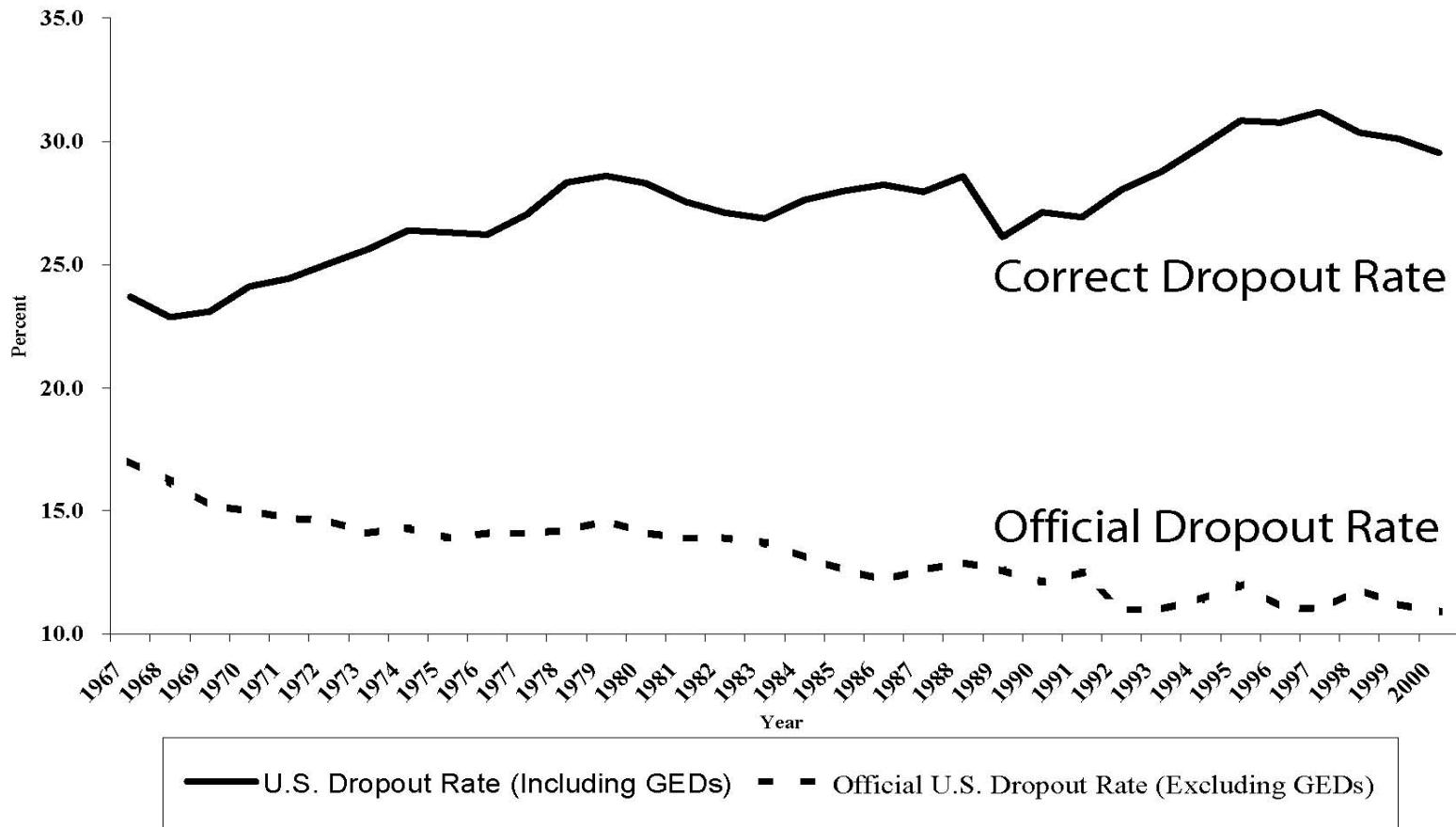
# Investing in Disadvantaged Young Children Is Good Economics and Good Public Policy

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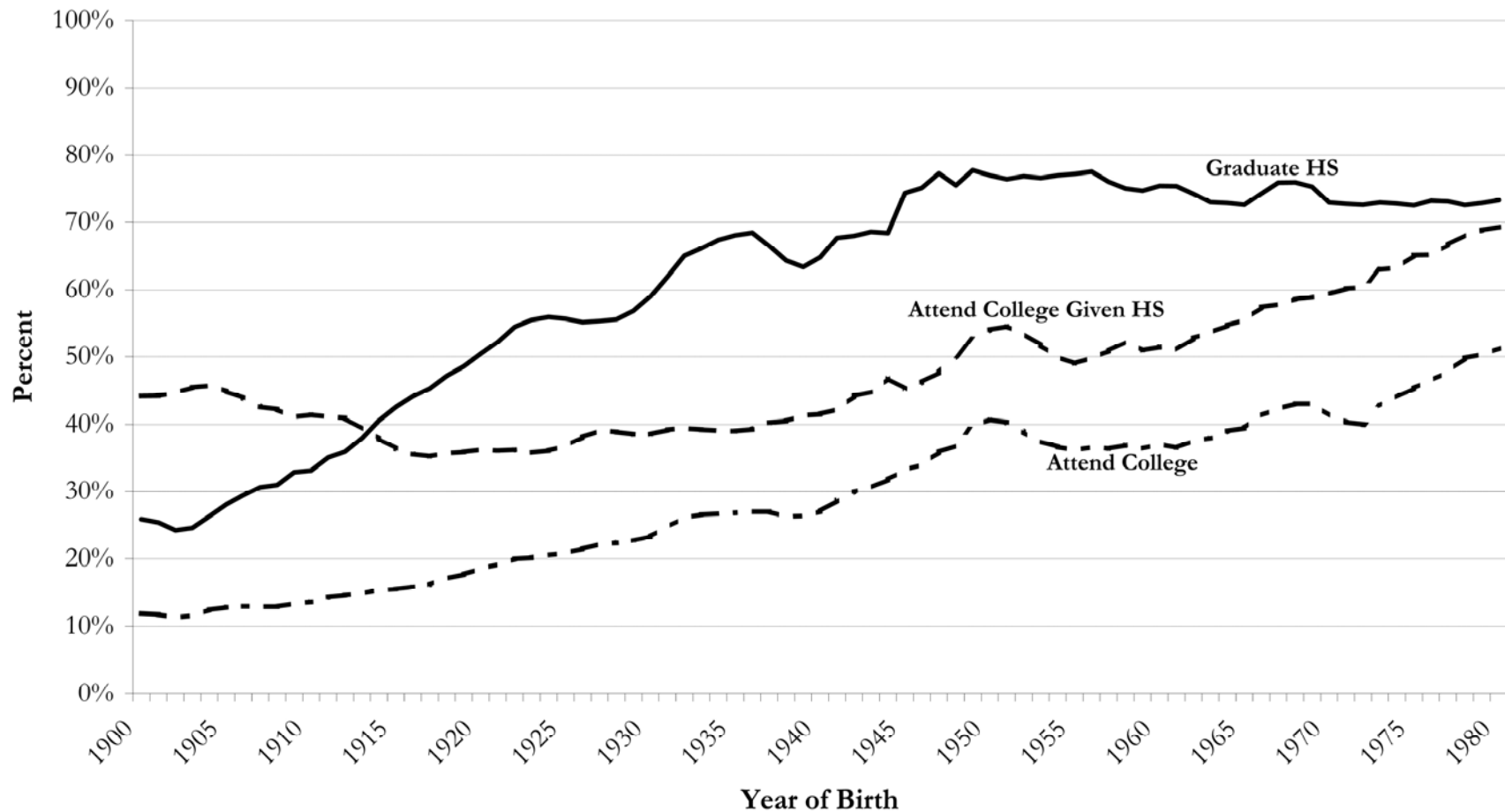
National Association for the Education of Young Children  
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# Figure 1: The American High School Dropout Rate is Increasing



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

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





## The Argument in a Nutshell

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- 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 to restore the child to its full potential.



## The Argument in a Nutshell Continued

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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.



## The Argument in a Nutshell Continued

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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.



## The Argument in a Nutshell Continued

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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.



## The Argument in a Nutshell Continued

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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.



## The Argument in a Nutshell Continued

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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.

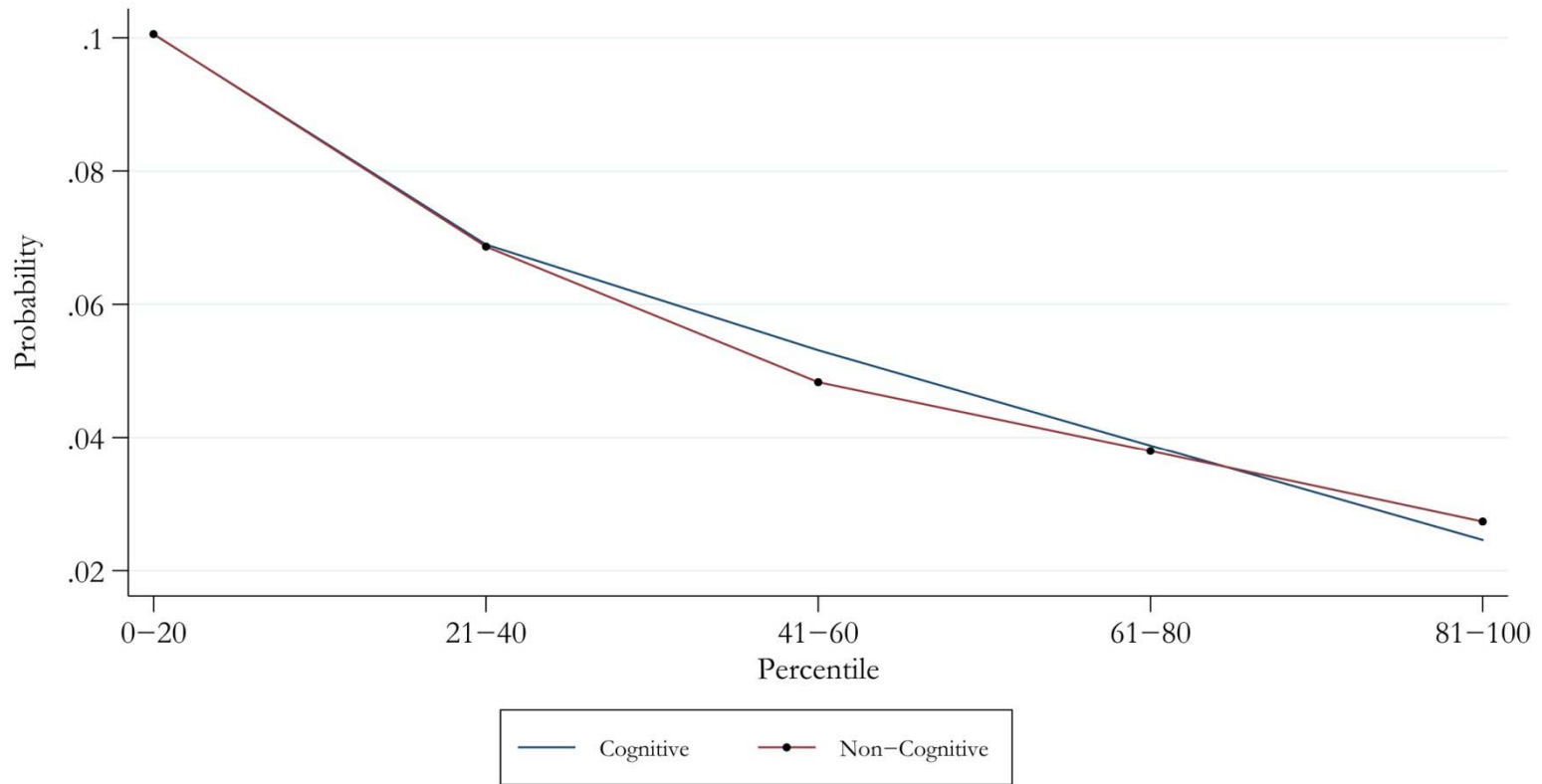
Table 1a: Ability Explains Schooling Gaps

	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

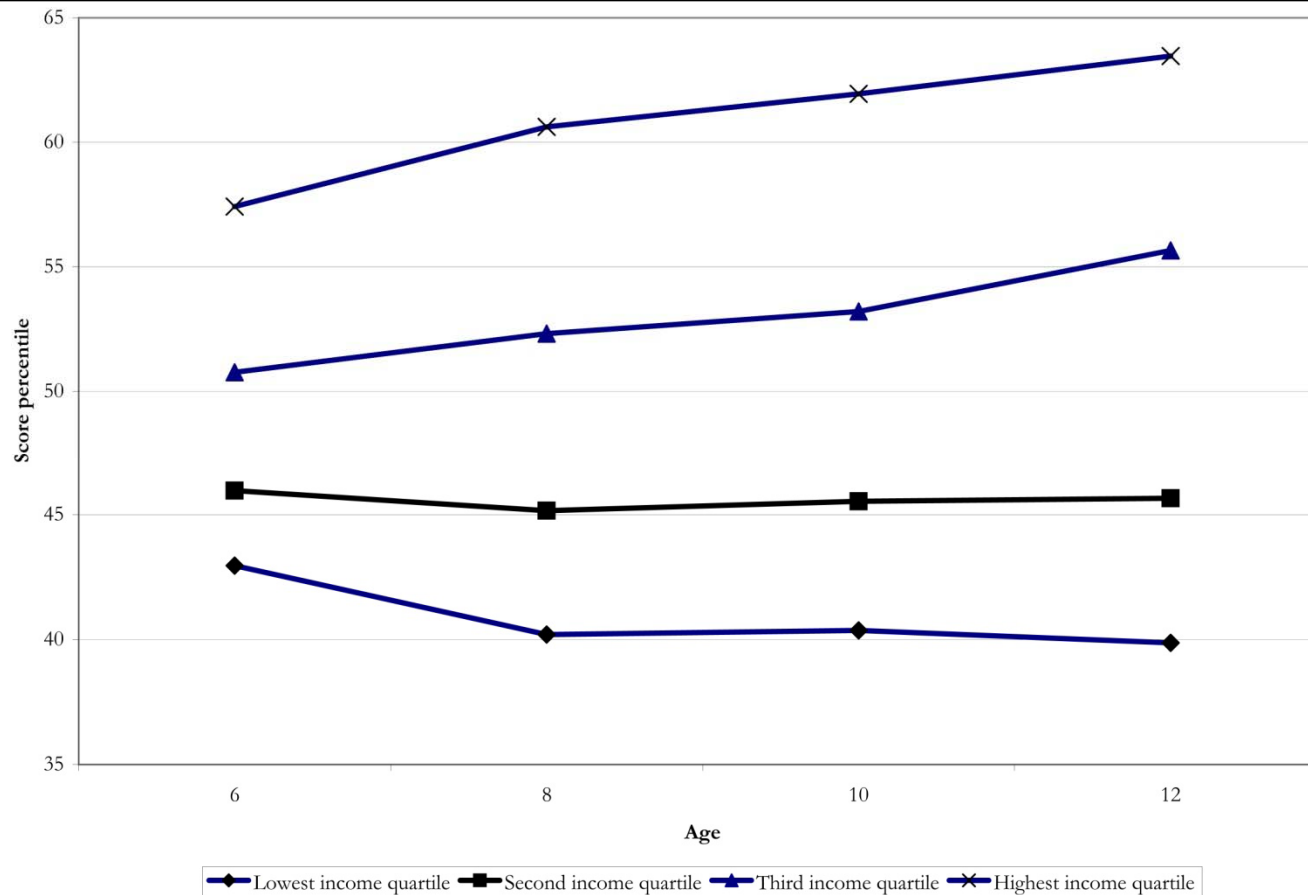
	White-Black Educational Gap	White-Hispanic Educational Gap
College Entry Probabilities given High School Completion		
Actual White-Minority Gap	.11	.07
Ability Adjusted Gap	-.14	-.14
College Entry Gap (Unconditional on High School Completion)		
Actual White-Minority Gap	.12	.14
Ability Adjusted Gap	-.16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

### 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).

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.  
10/6/2009

Figure 5: Children of NLSY  
Adjusted average Math score percentiles by income quartile\*

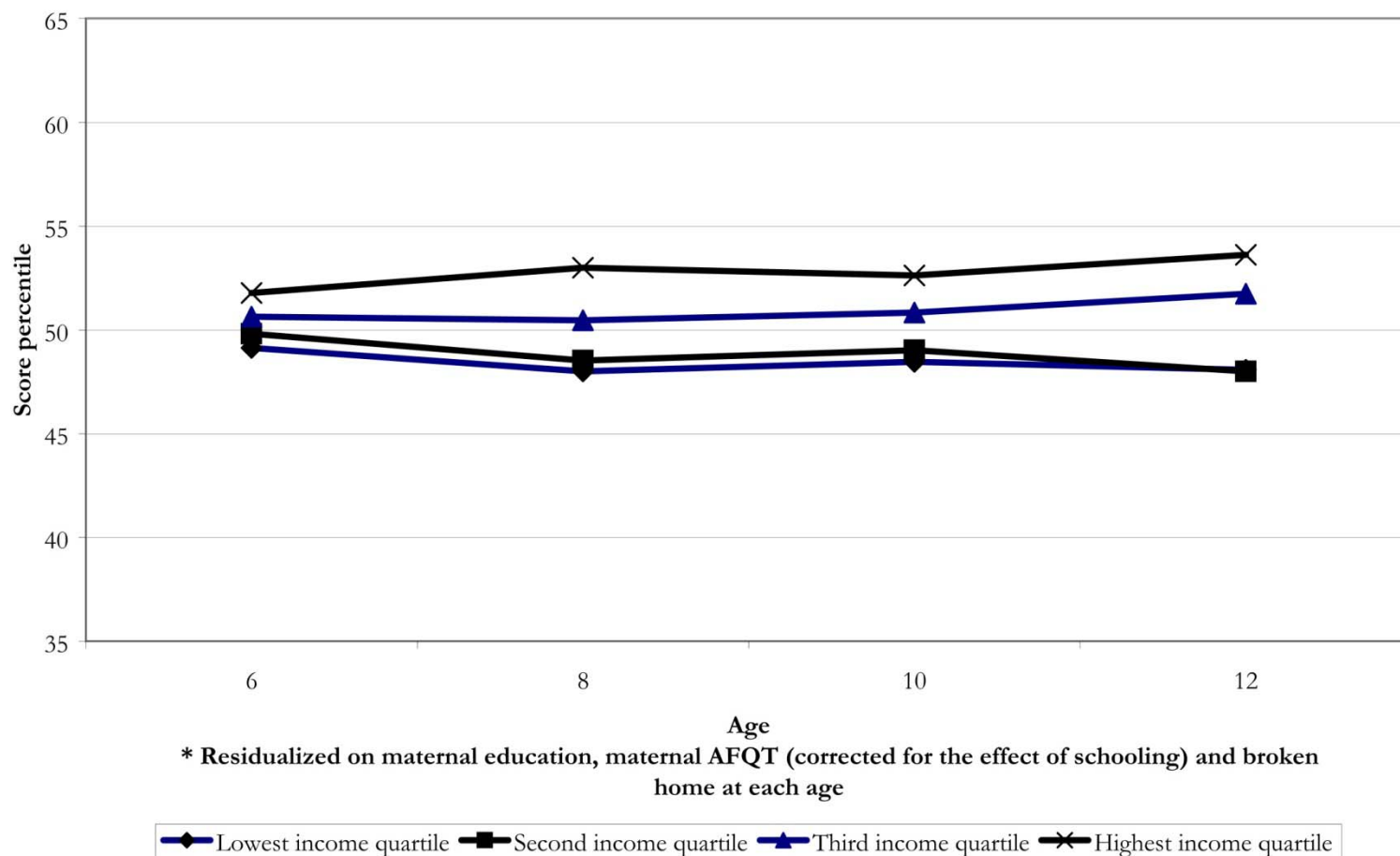
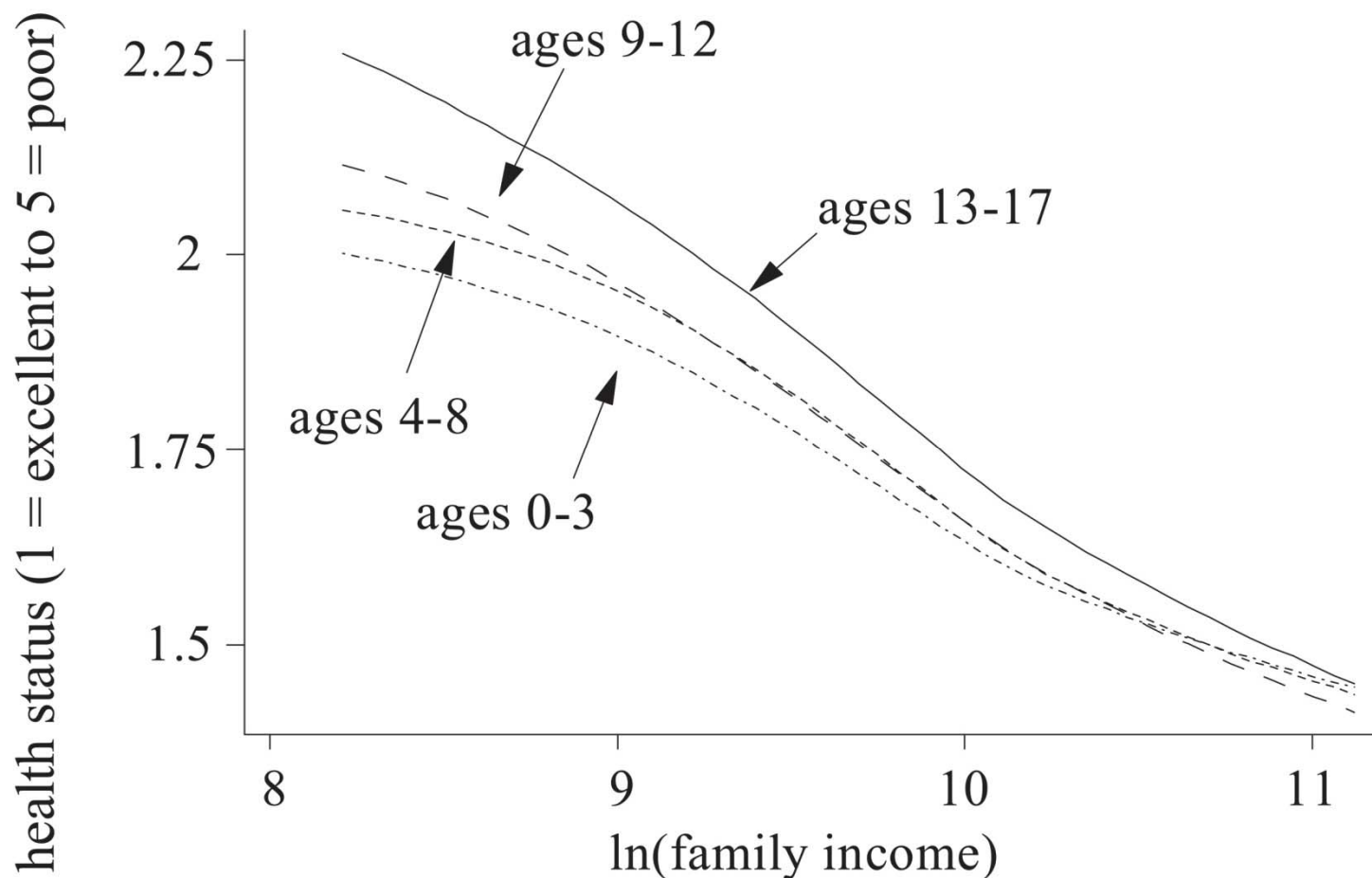
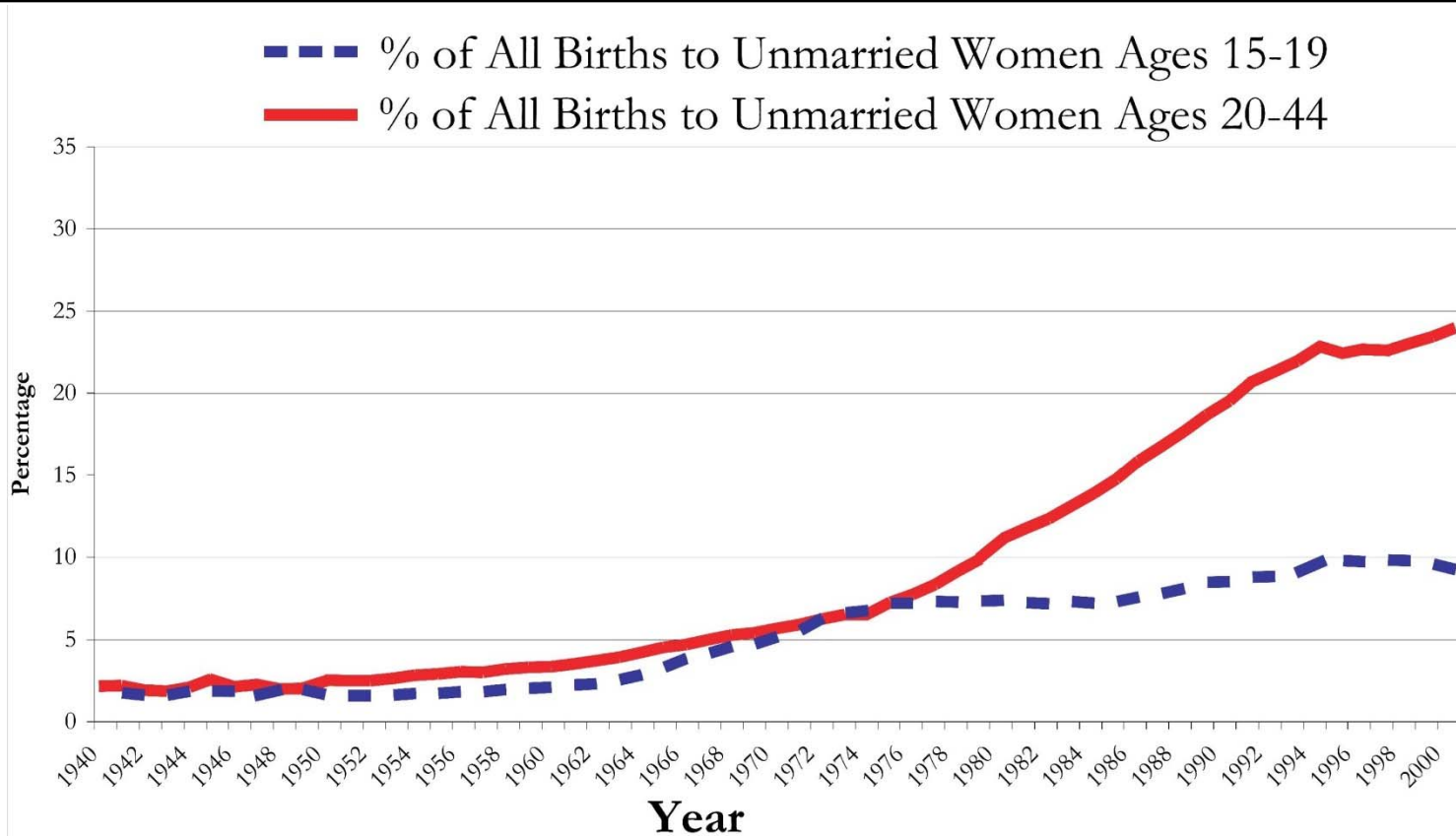


Figure 6: Health and Income for Children and Adults  
U.S. national health interview survey 1986-1995: High Score is Bad

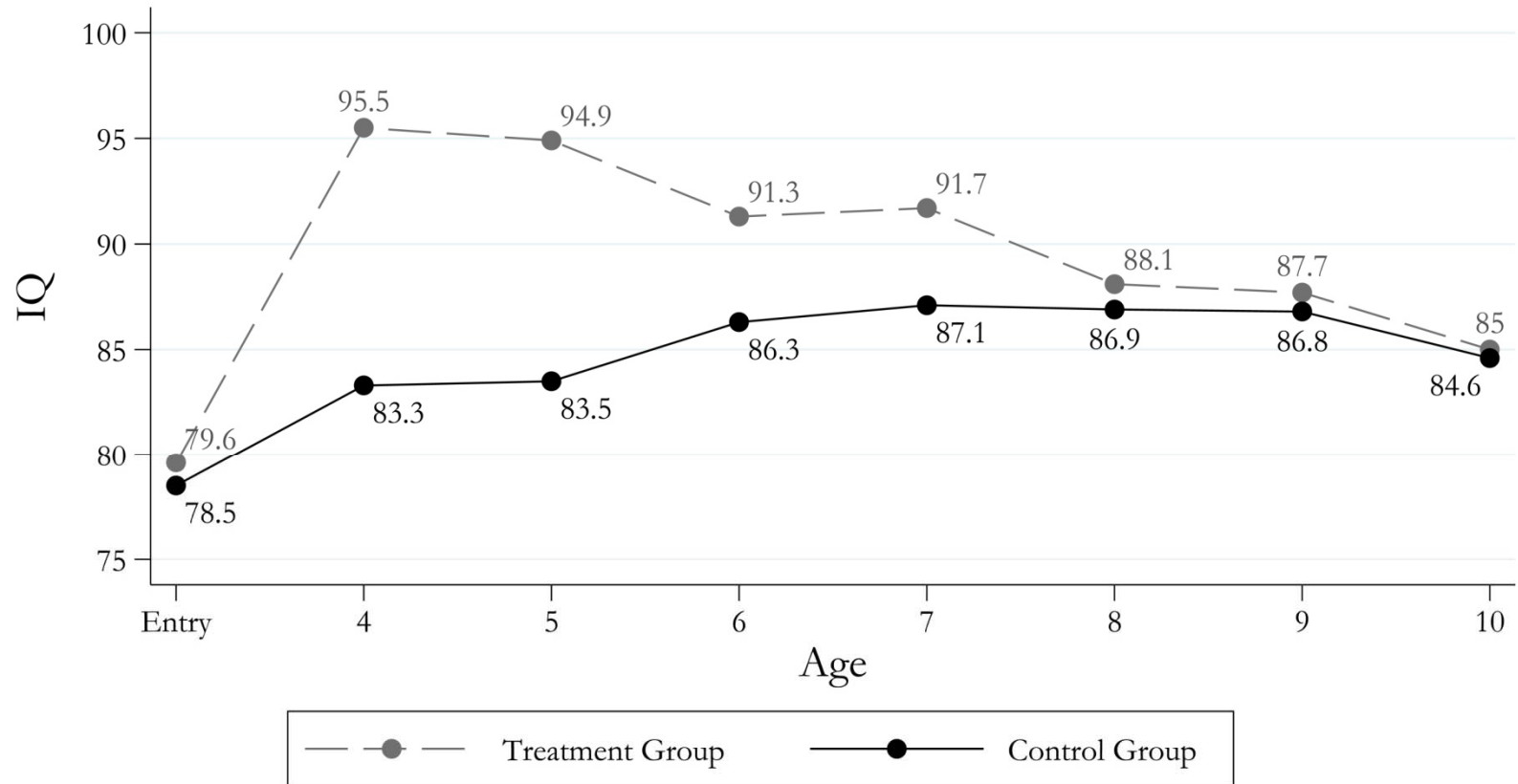


# Figure 7: Family Environments for Children Have Worsened Over Time



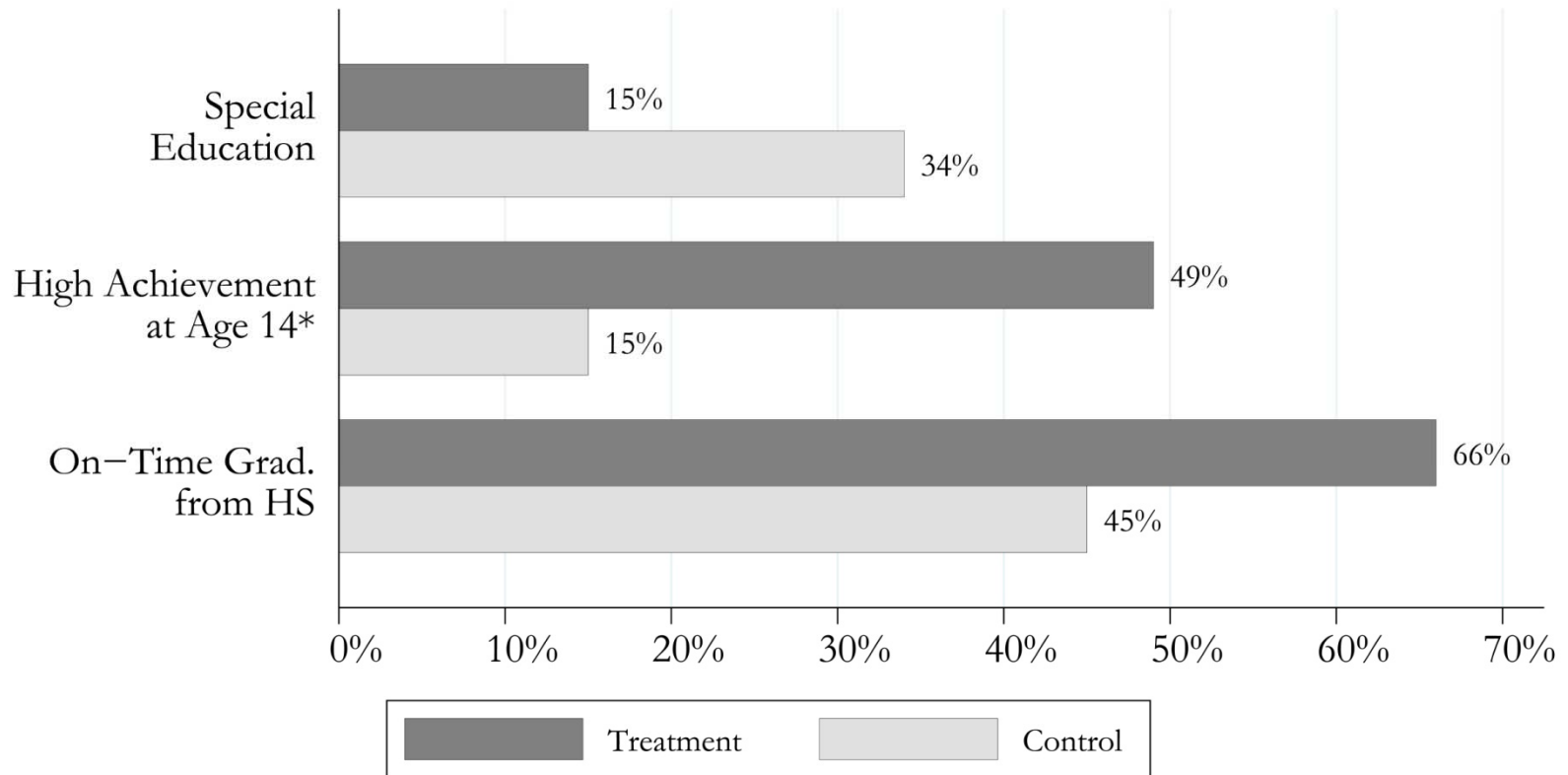
Note: Birth rates to unmarried women from Ventura and Bachrach (2000). Other measures are the author's calculations based on weighted CPS March 1968-2000 data. Poverty is defined as those households under the federal poverty line in the given year.

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.

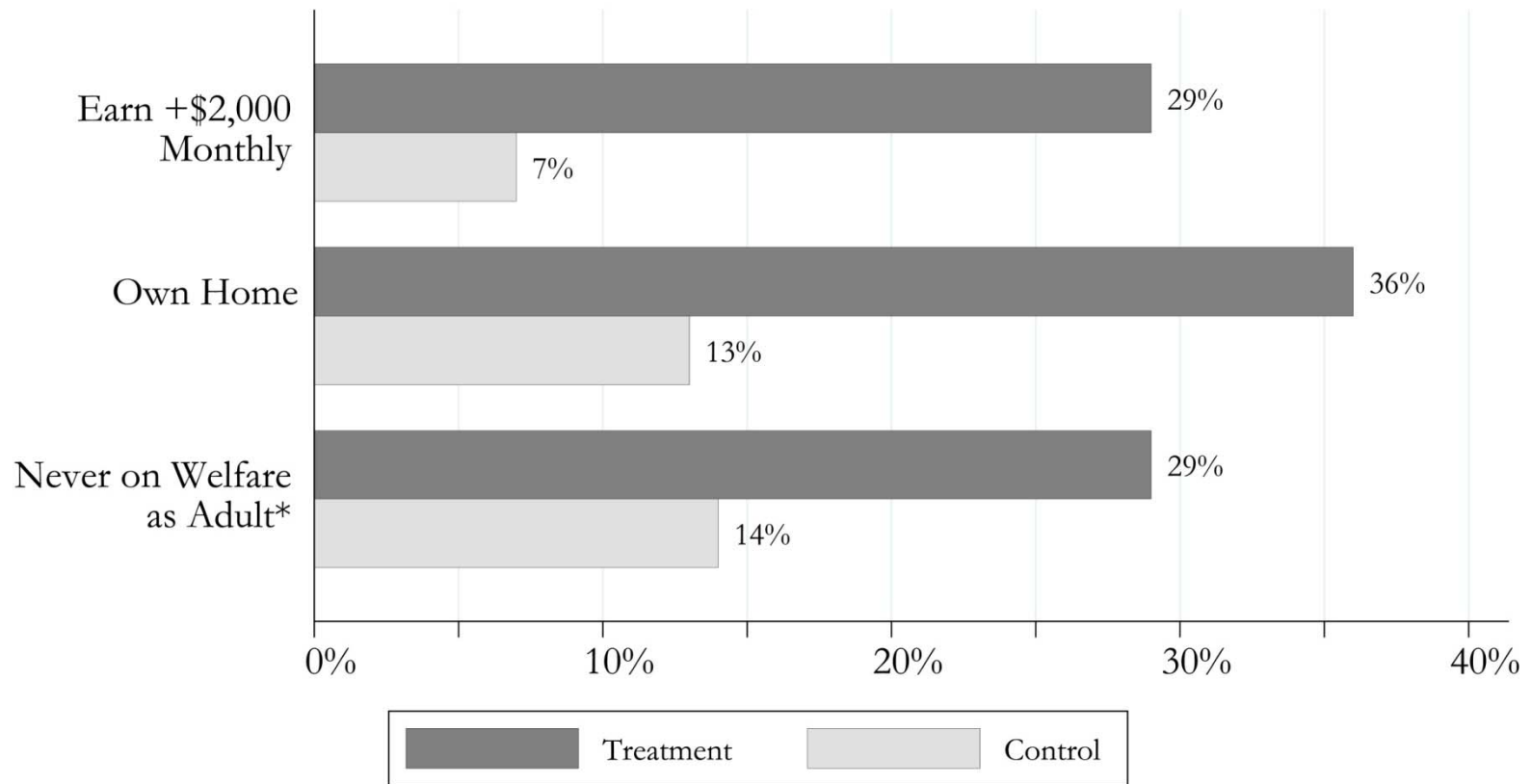
Figure 8b: Perry Preschool Program  
Educational effects, by treatment group



Source: Barnett (2004).

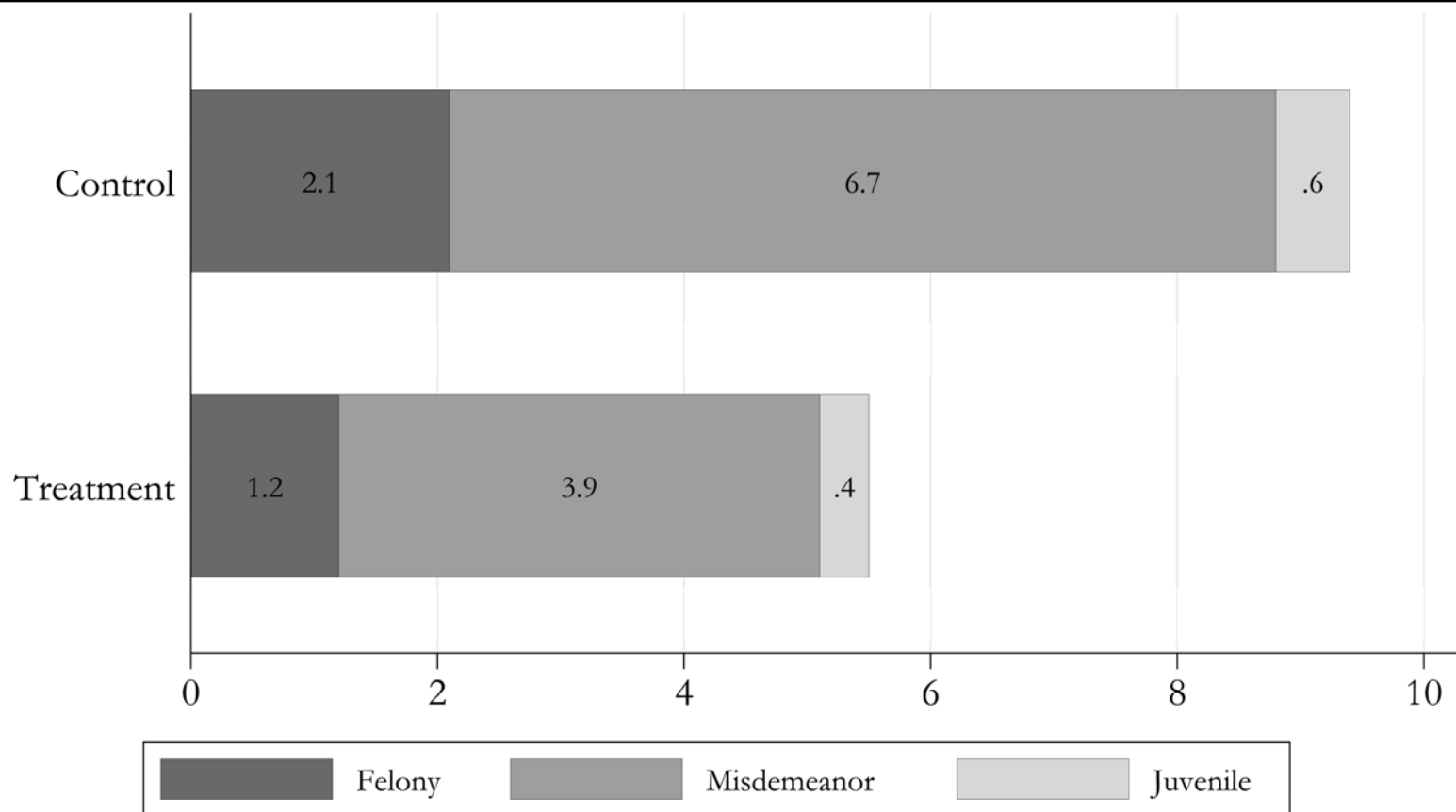
Notes: \*High achievement defined as performance at or above the lowest 10th percentile on the California Achievement Test (1970).

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.

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

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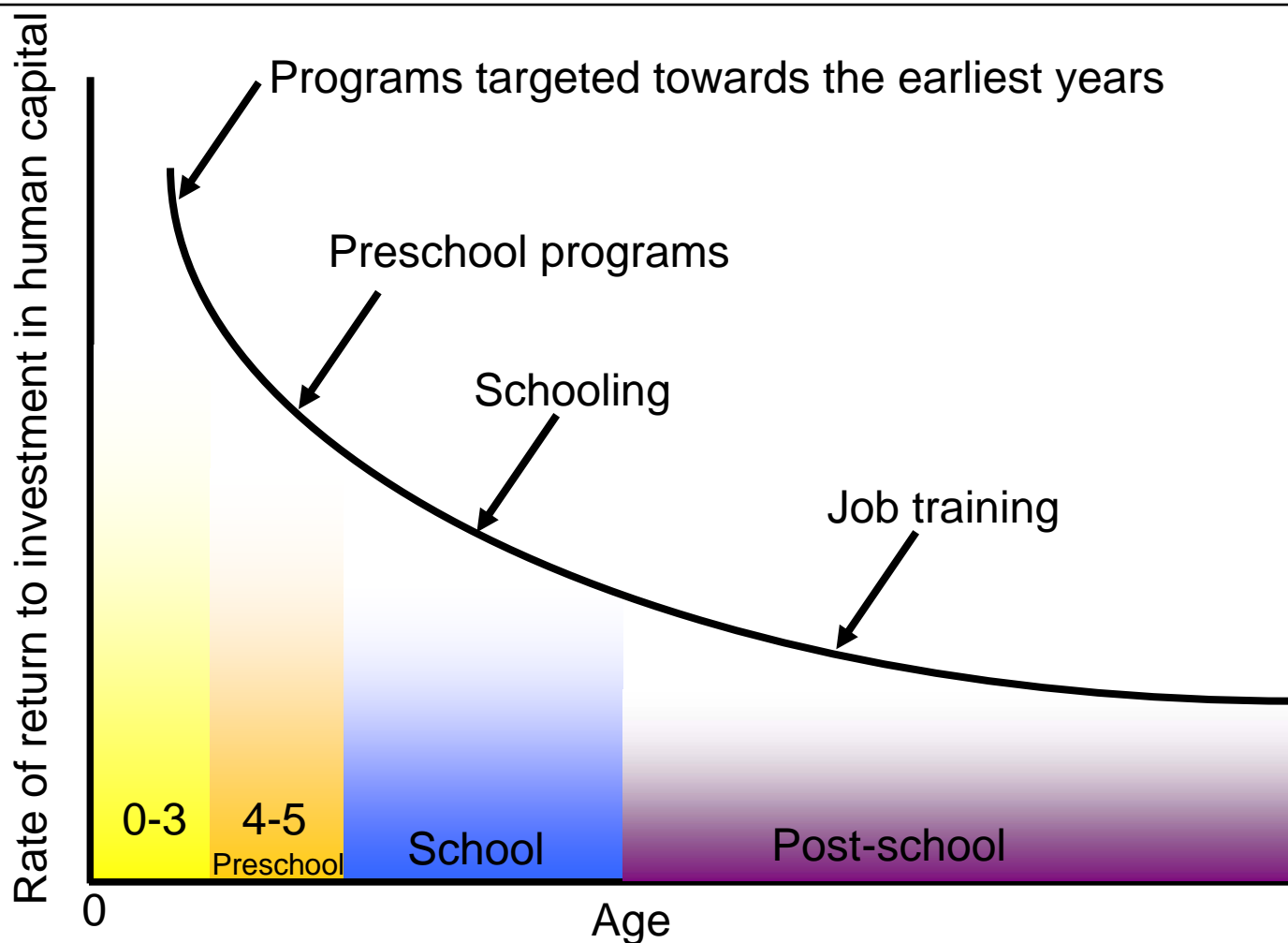
Disadvantaged Children: First Decile in the Distribution of  
Cognitive and Non-Cognitive Skills at Age 6

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 <sup>th</sup> decile of distribution of skills only through early Investment	Adolescent intervention: moving investments at last transition from 1 <sup>st</sup> to 9 <sup>th</sup> 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

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- ❑ 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.



## In Summary Continued

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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.