The Economic Case for Investing in Disadvantaged Young Children

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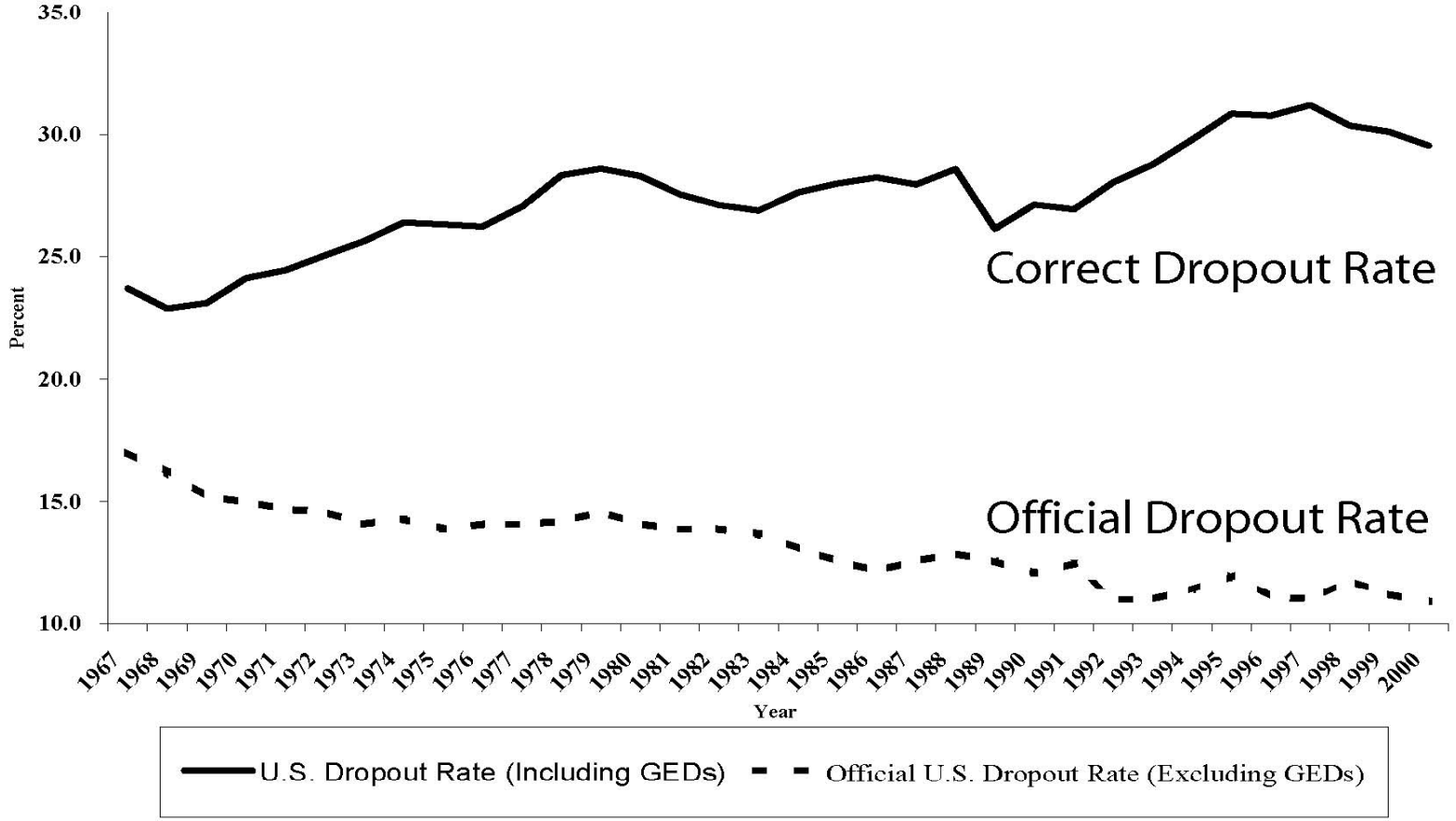
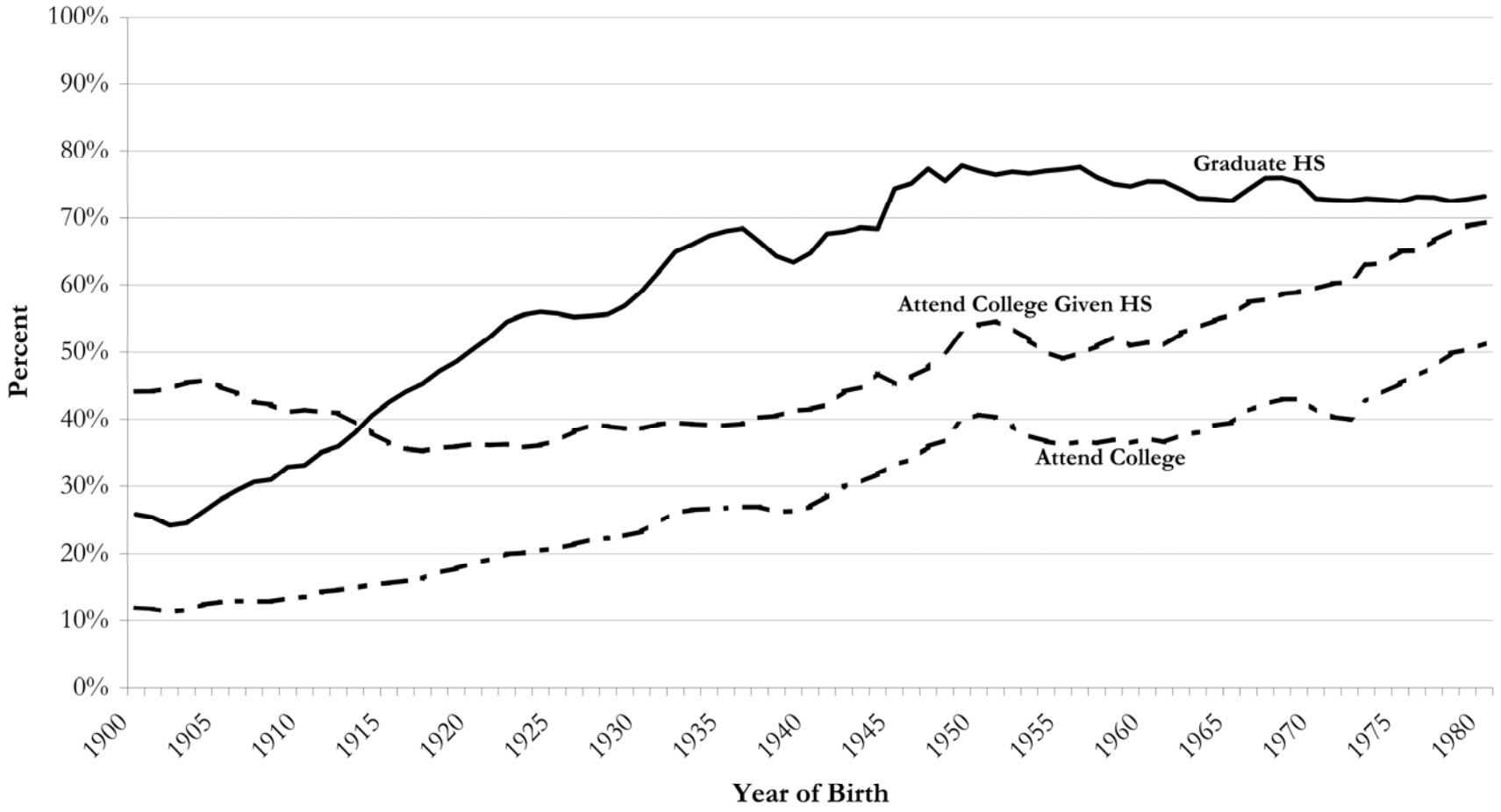
Figure 1: The American High School Dropout Rate is Increasing



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



Source: Heckman and LaFontaine (2007)

The Argument in a Nutshell

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IV. Cognitive abilities are important determinants of socioeconomic success.

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X. The real measure of child poverty is the quality of parenting.

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XI. Experimental evidence on the effectiveness of early interventions in disadvantaged families supports by a positive example a large body of non-experimental evidence that adverse family environments harm children.

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

XIV. These interventions are estimated to have high benefit-cost ratios and rates of return, in the range of 7-10% per annum compared to a post-war return to equity of 5.8%.

The Argument in a Nutshell

XV. As programs are currently configured, early interventions have much higher economic returns than later interventions such as reduced pupil-teacher ratios, public job training, convict rehabilitation programs, adult literacy programs, tuition subsidies or expenditure on police.

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XVI. 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 society waits to intervene in the life cycle of a disadvantaged child, the more costly it is to remediate disadvantage. Similar dynamics appear to be at work in creating child health and mental health.

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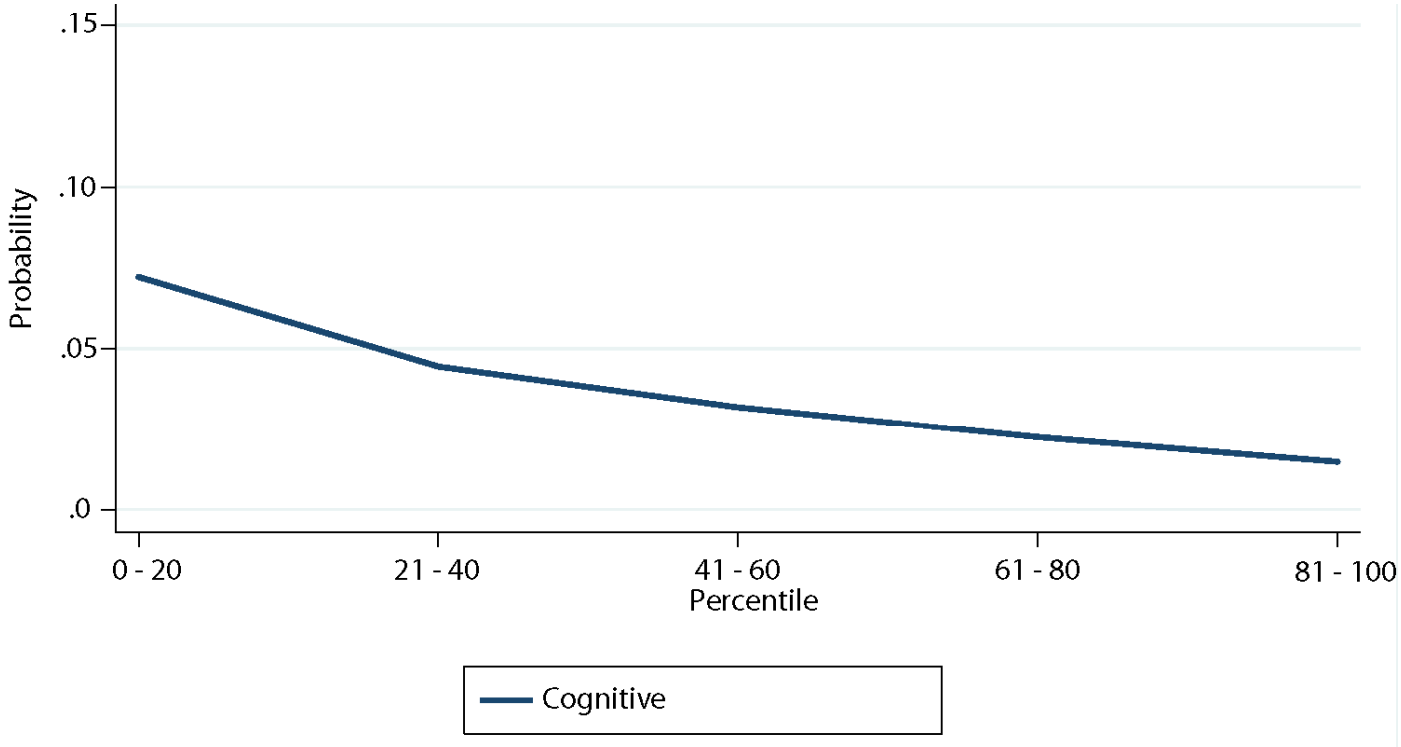
XVIII. A major refocus of policy is required to create a cost-effective human investment strategy based on modern understanding of the way skills and health are formed over the life cycle and the importance of the early years in creating inequality in America, and in producing skills for the workforce.

Table 1: Ability Explains Schooling Gaps

	White-Black Educational Gap	White-Hispanic Educational Gap
High School Completion Gap		
Actual White-Minority Gap	.06	.14
Ability Adjusted Gap	-.14	-.12
College Entry Gap		
Actual White-Minority Gap	.12	.14
Ability Adjusted Gap	-.16	-.15

Source: Cameron and Heckman (2001)

Figure 3: Ever been in jail by age 30, by ability (males)



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)

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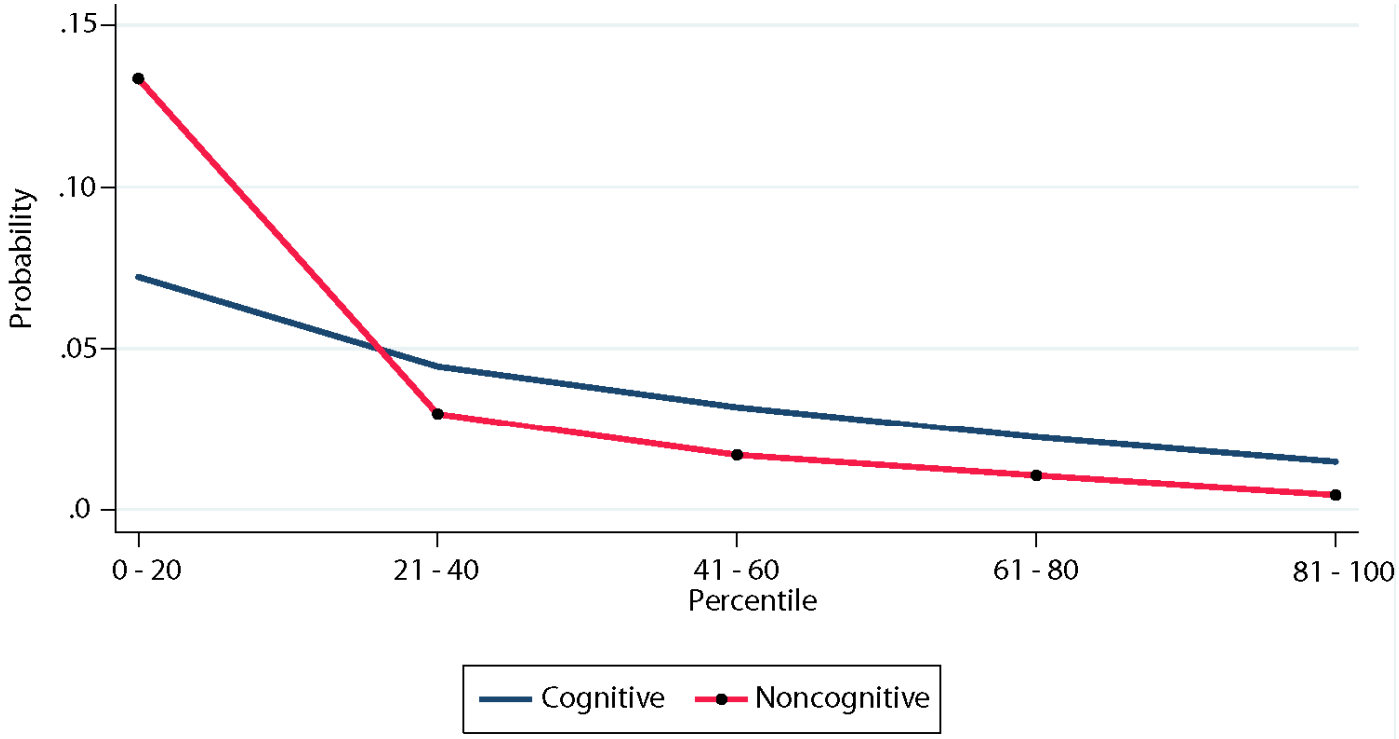

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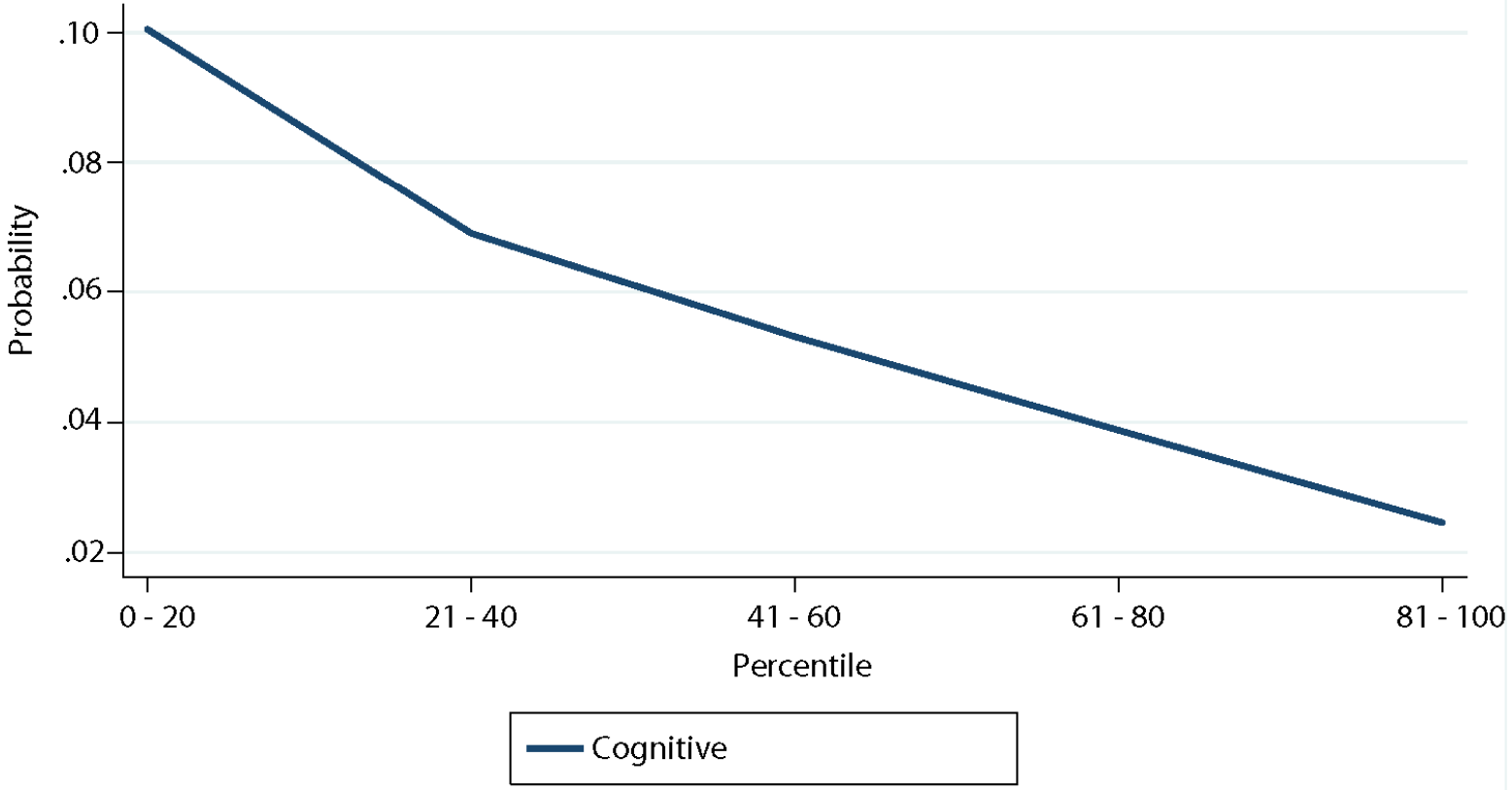
Figure 4: Probability of Being Single With Children (Teenage Pregnancy)



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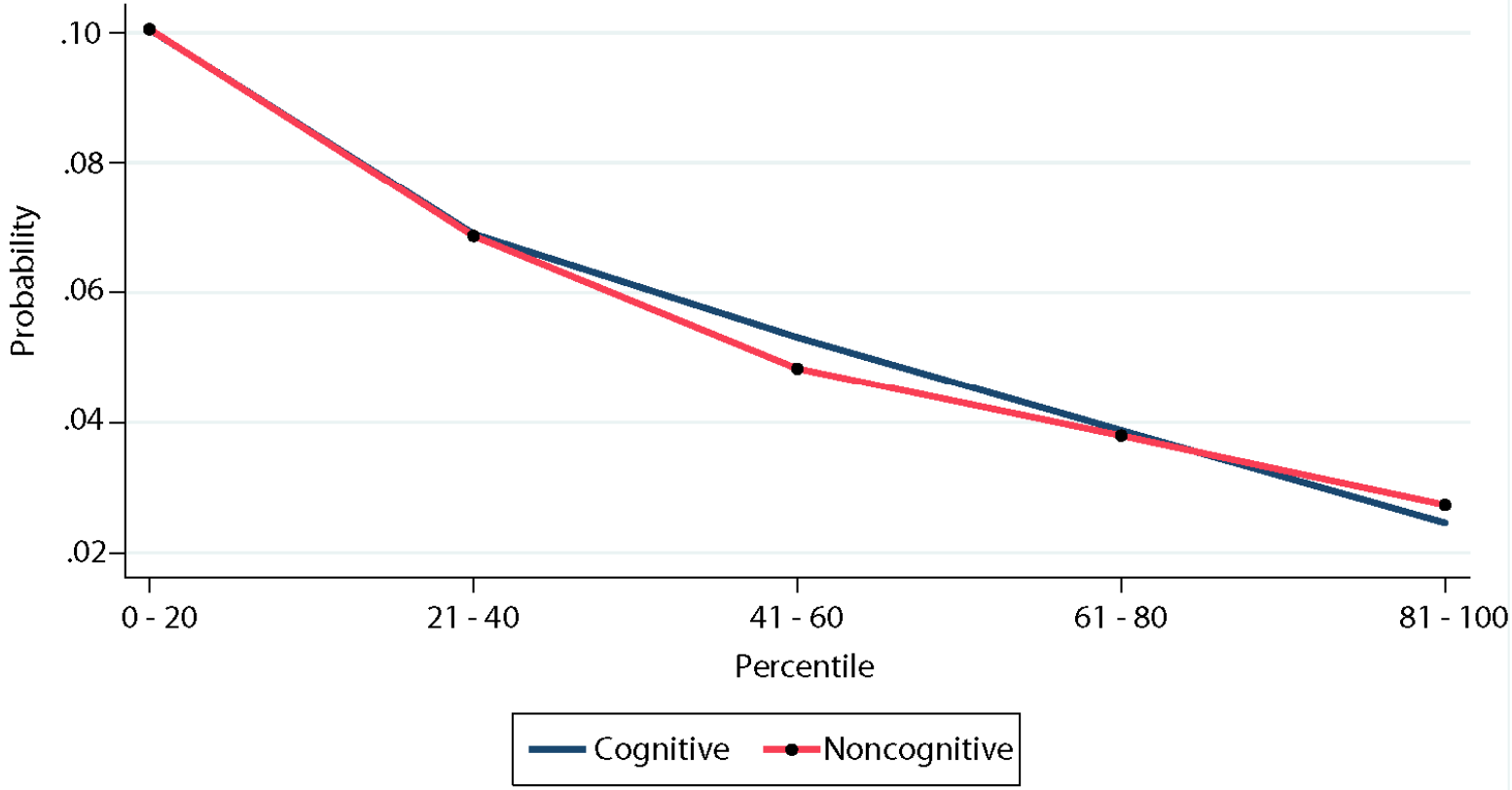

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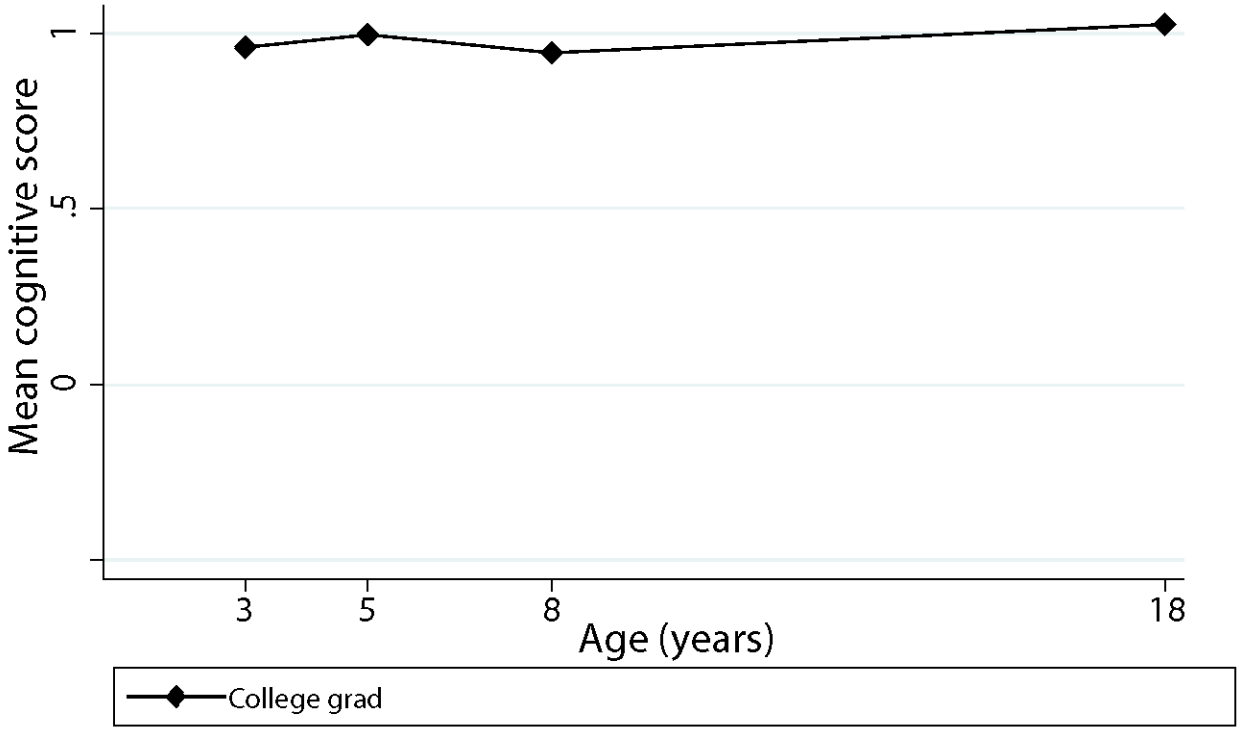
Figure 5: Trend in mean cognitive score by maternal education



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

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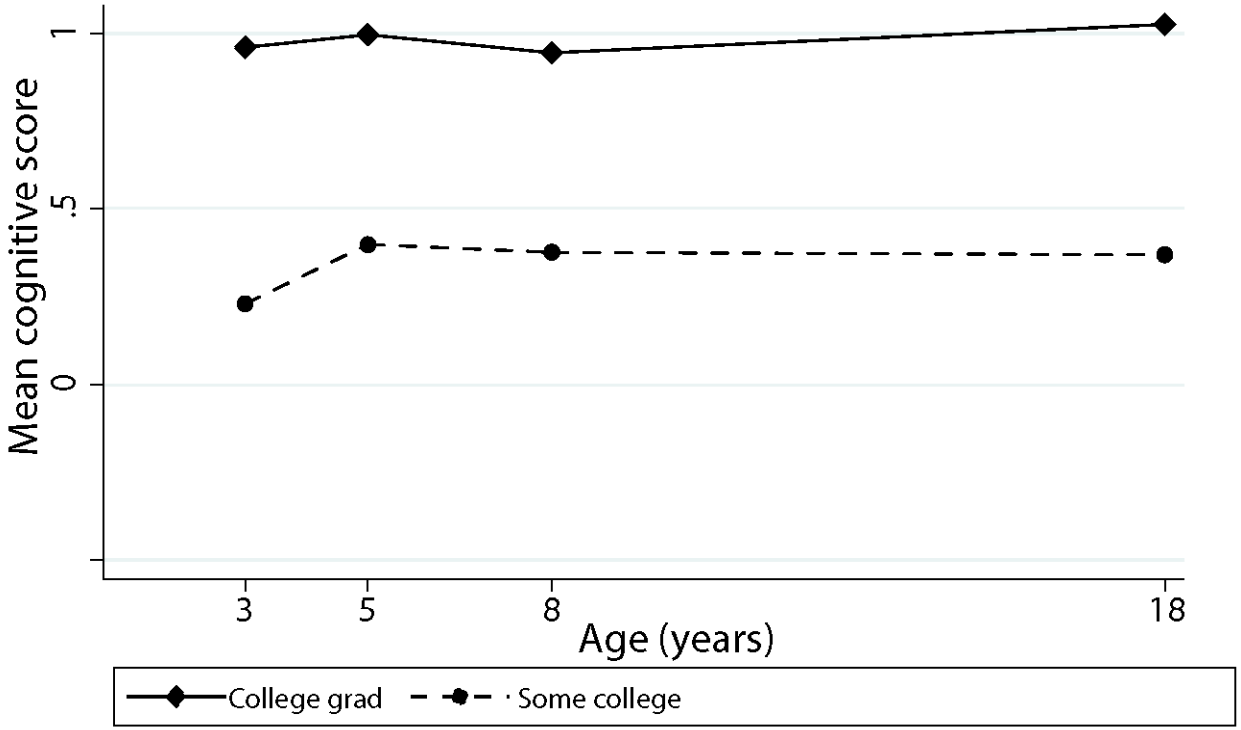

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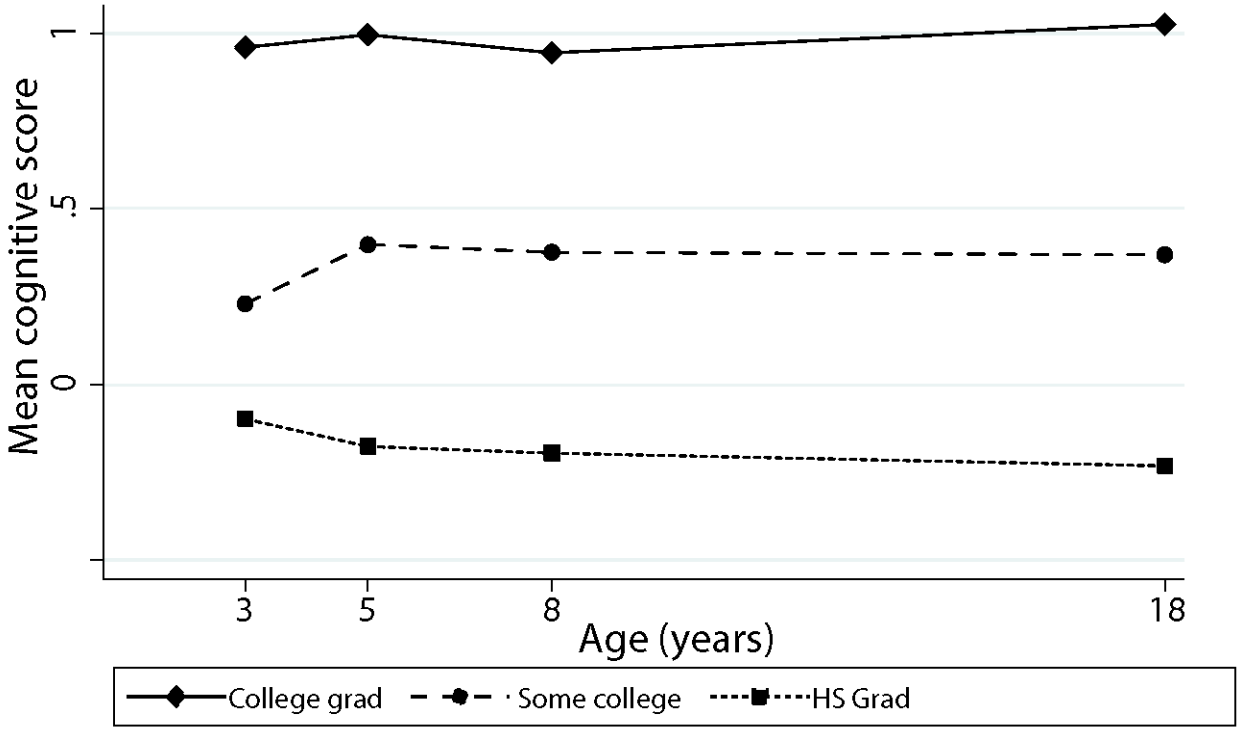

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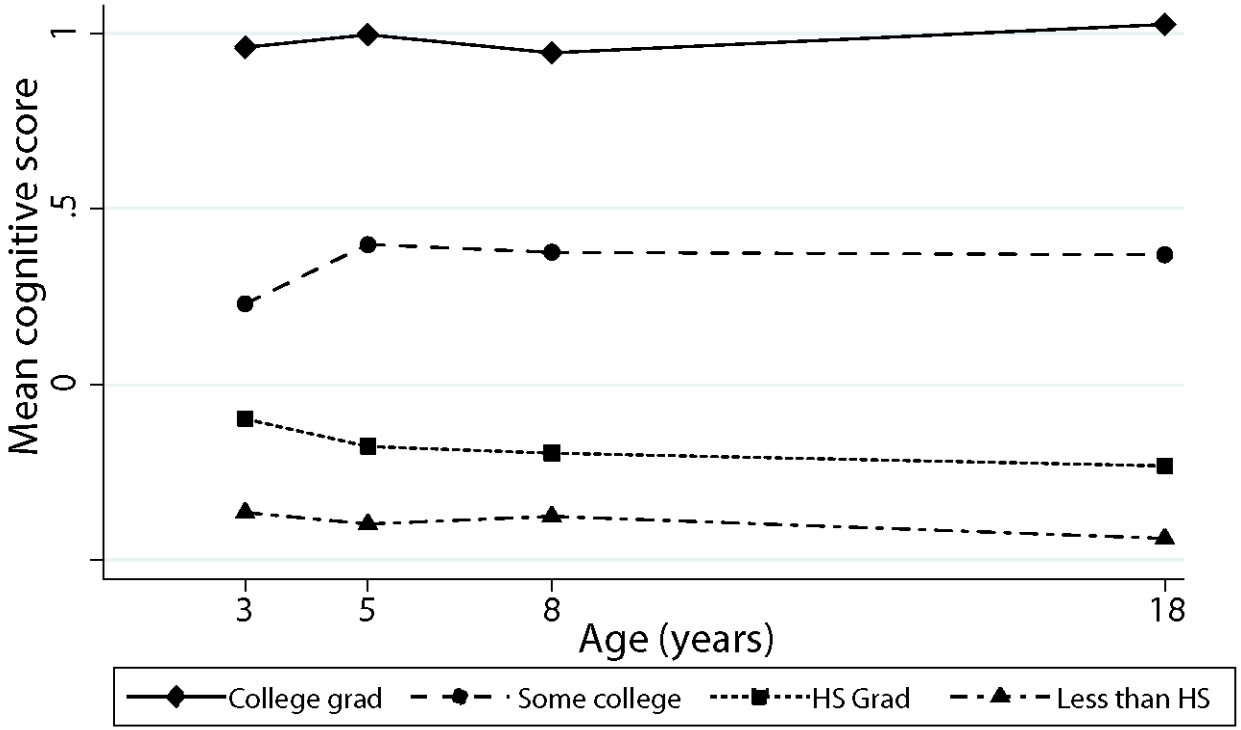

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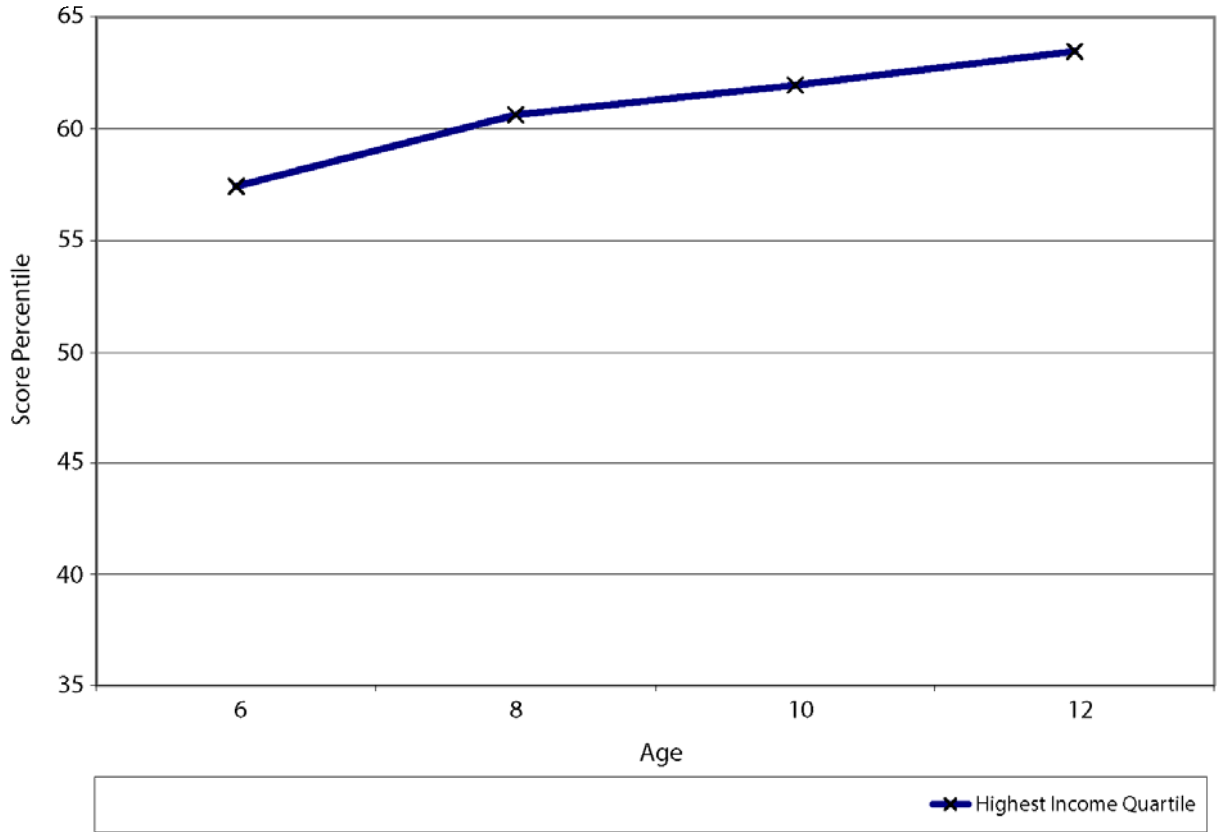
Figure 6: Children of NLSY
Average percentile rank on Math score, by income quartile*



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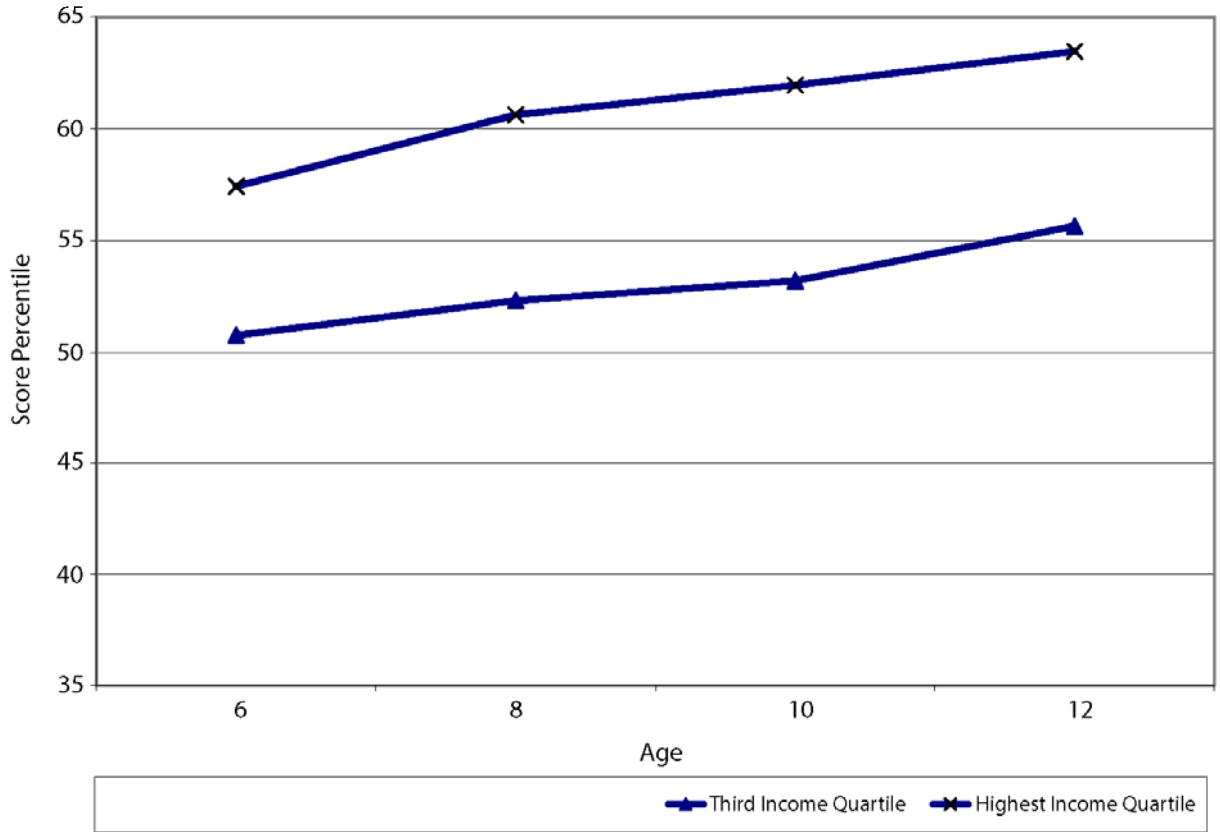

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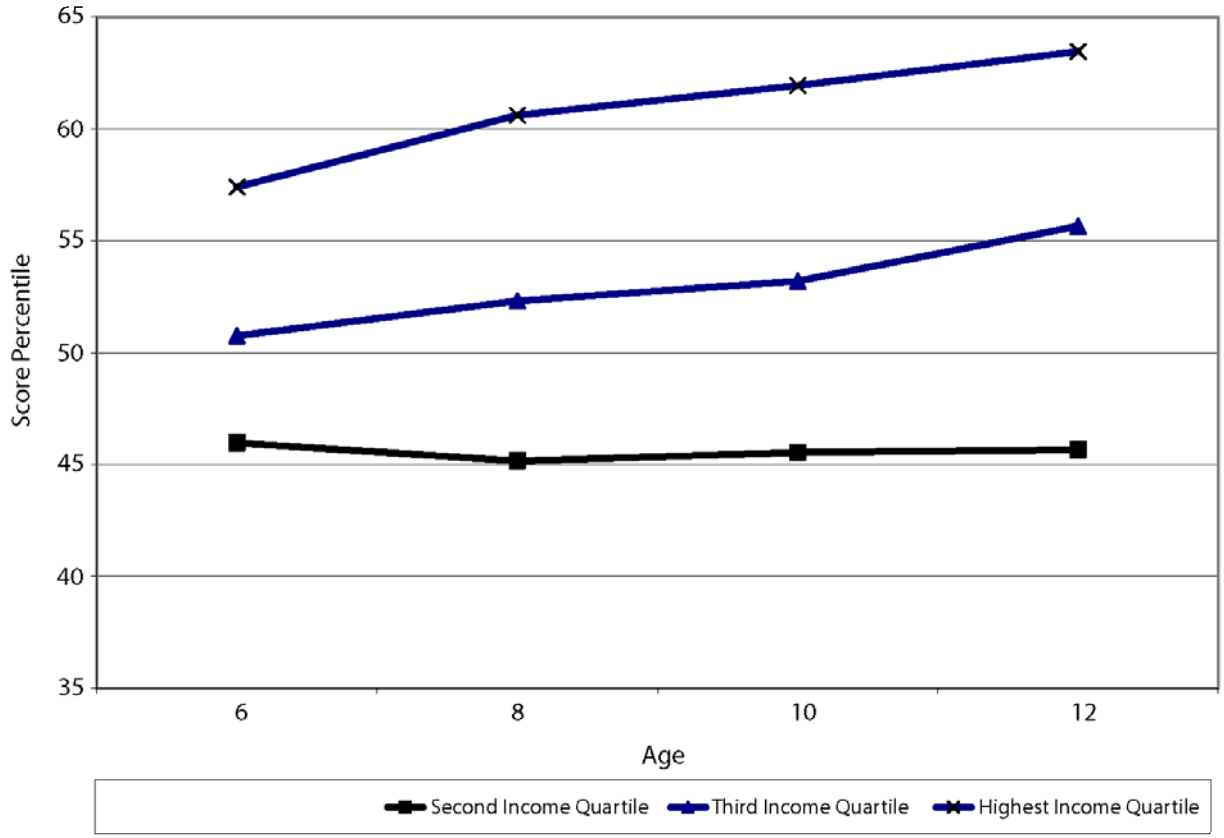

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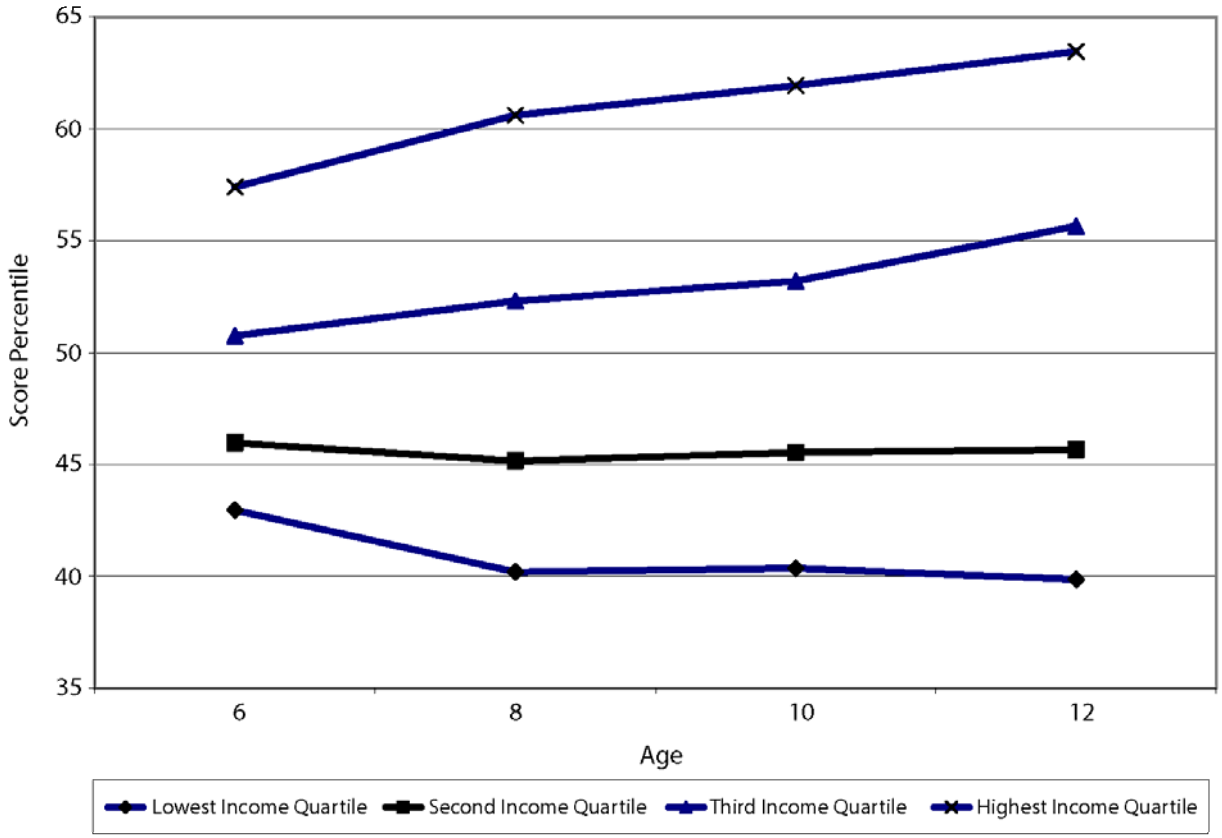

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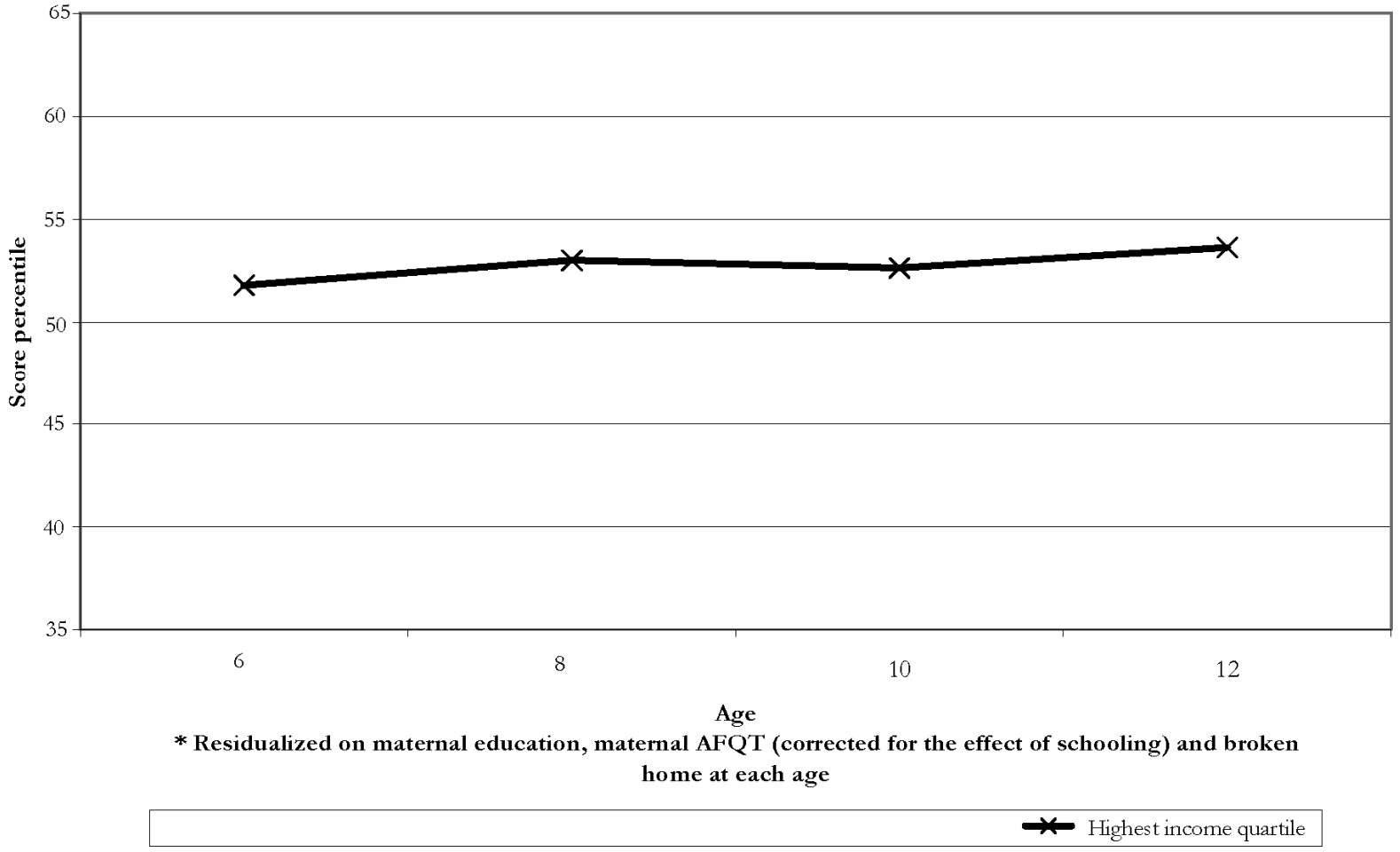

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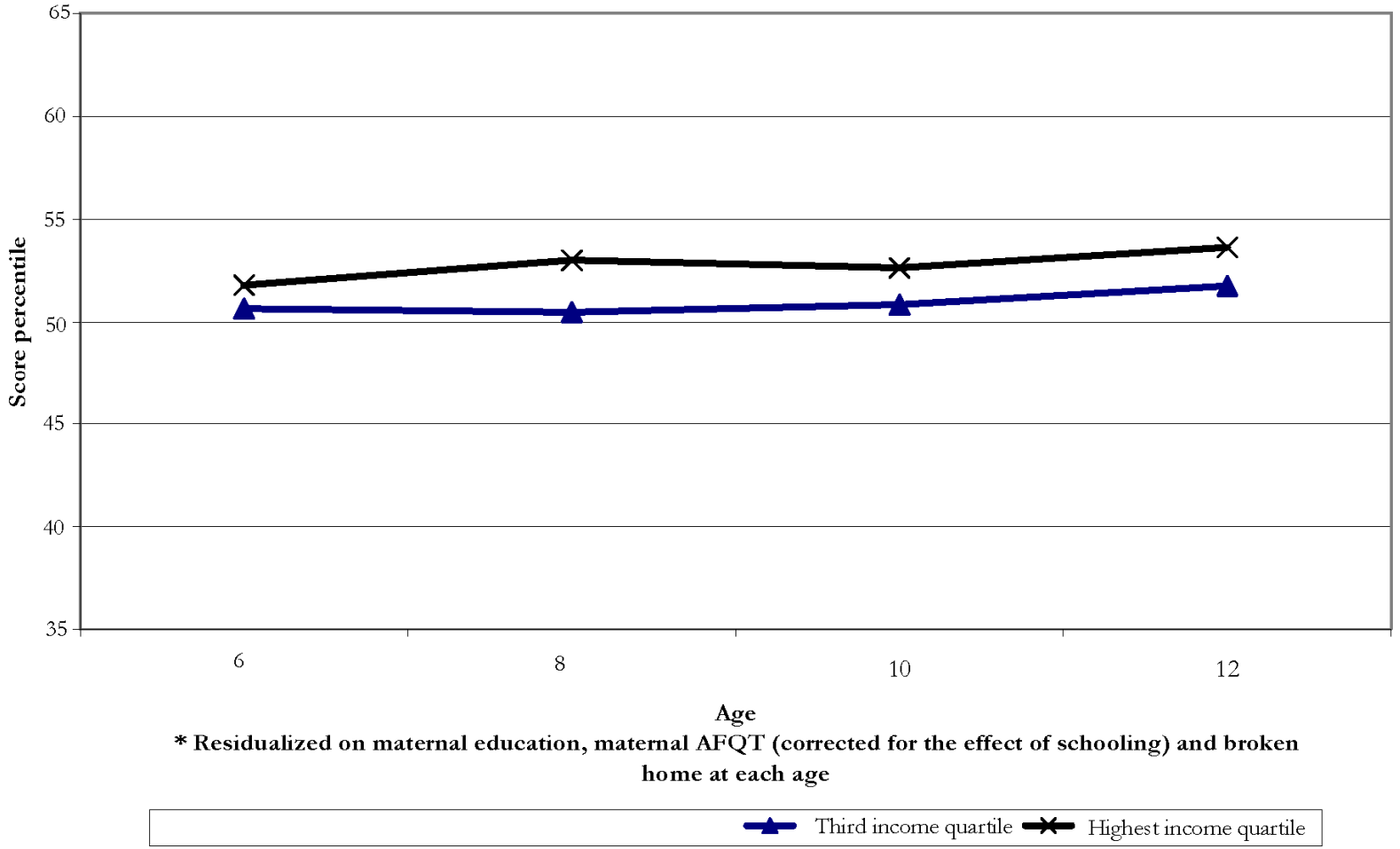

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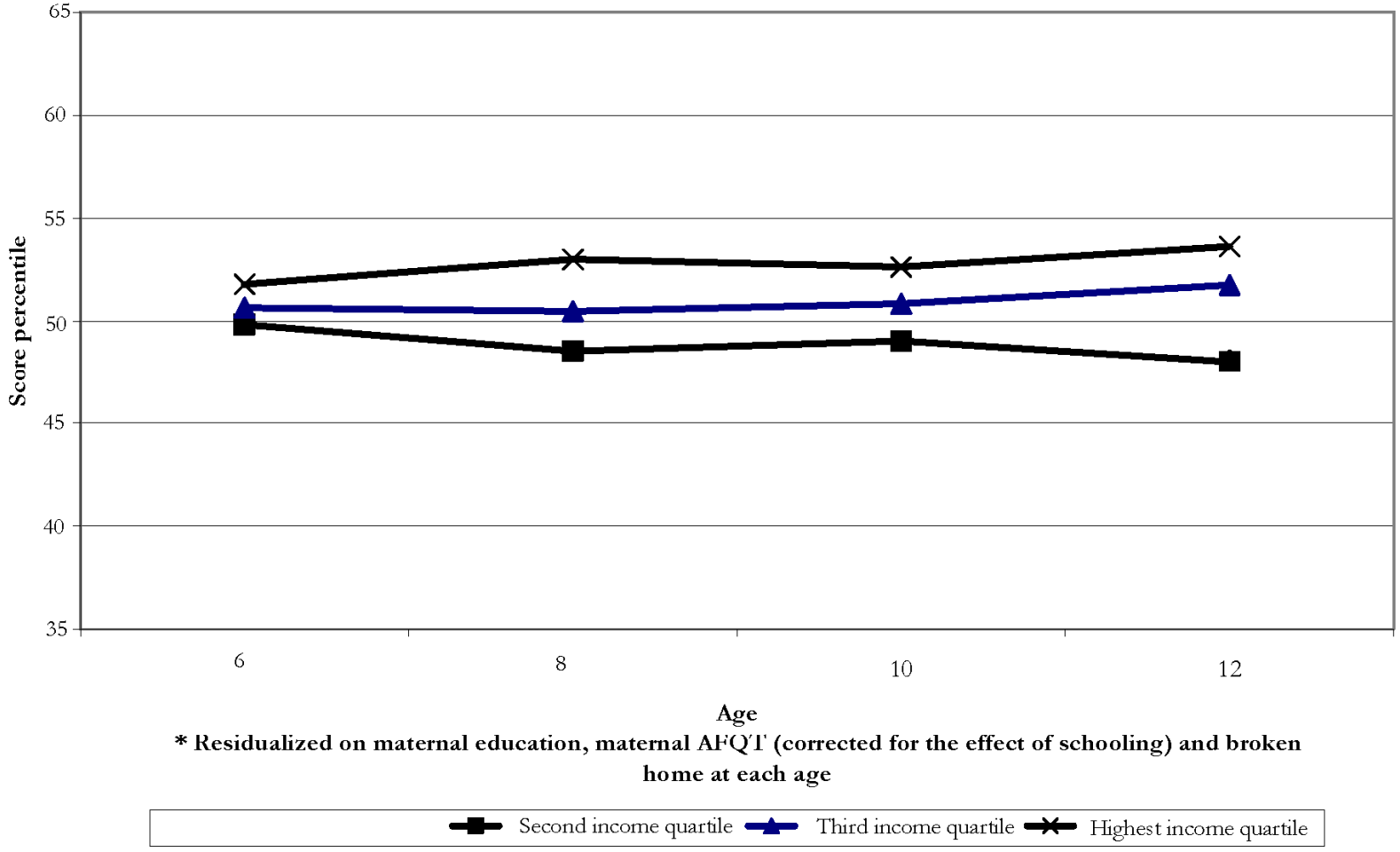

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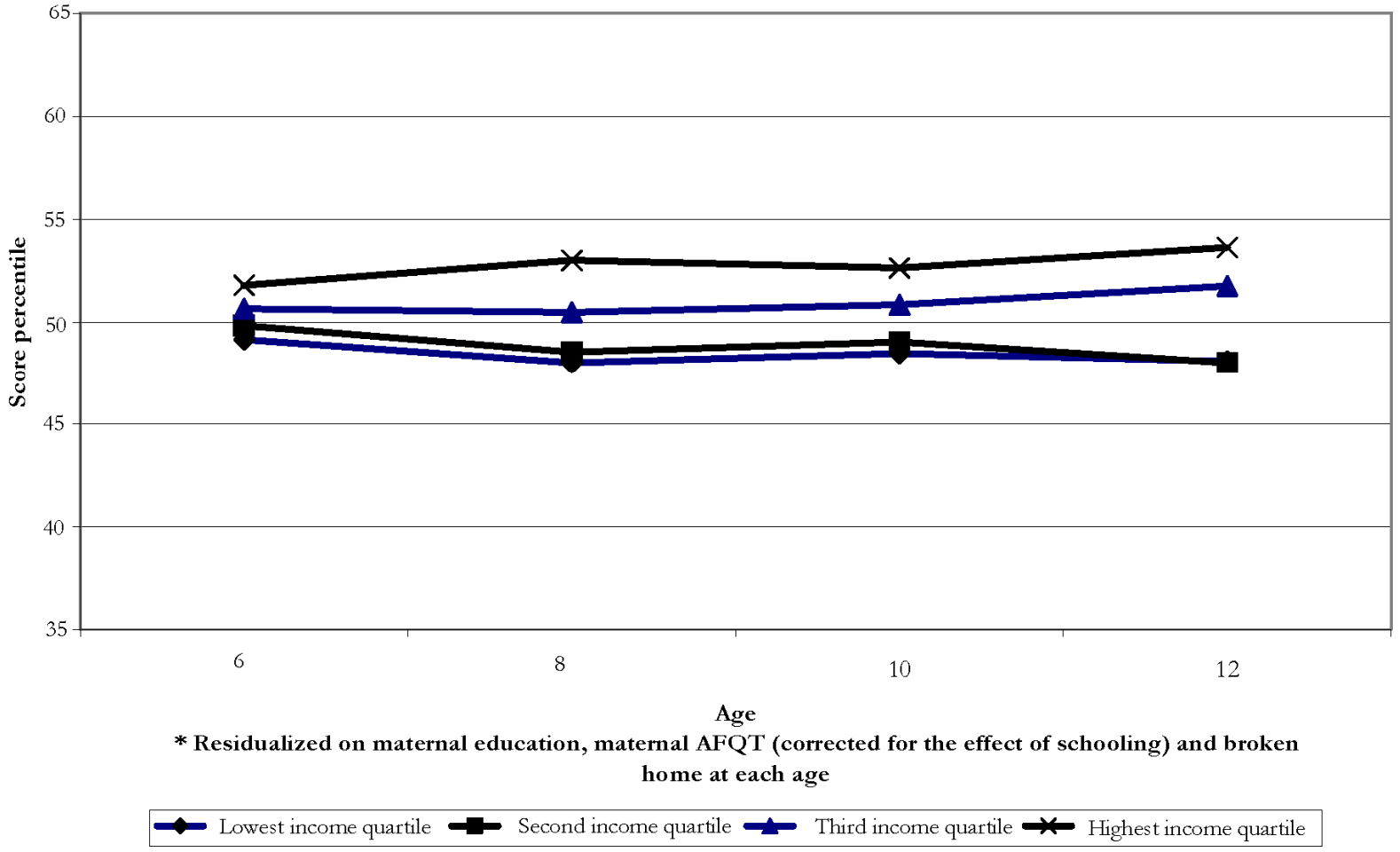


Figure 8a: Percent of Children Under 18 Living with One Parent, By Marital Status of Single Parent

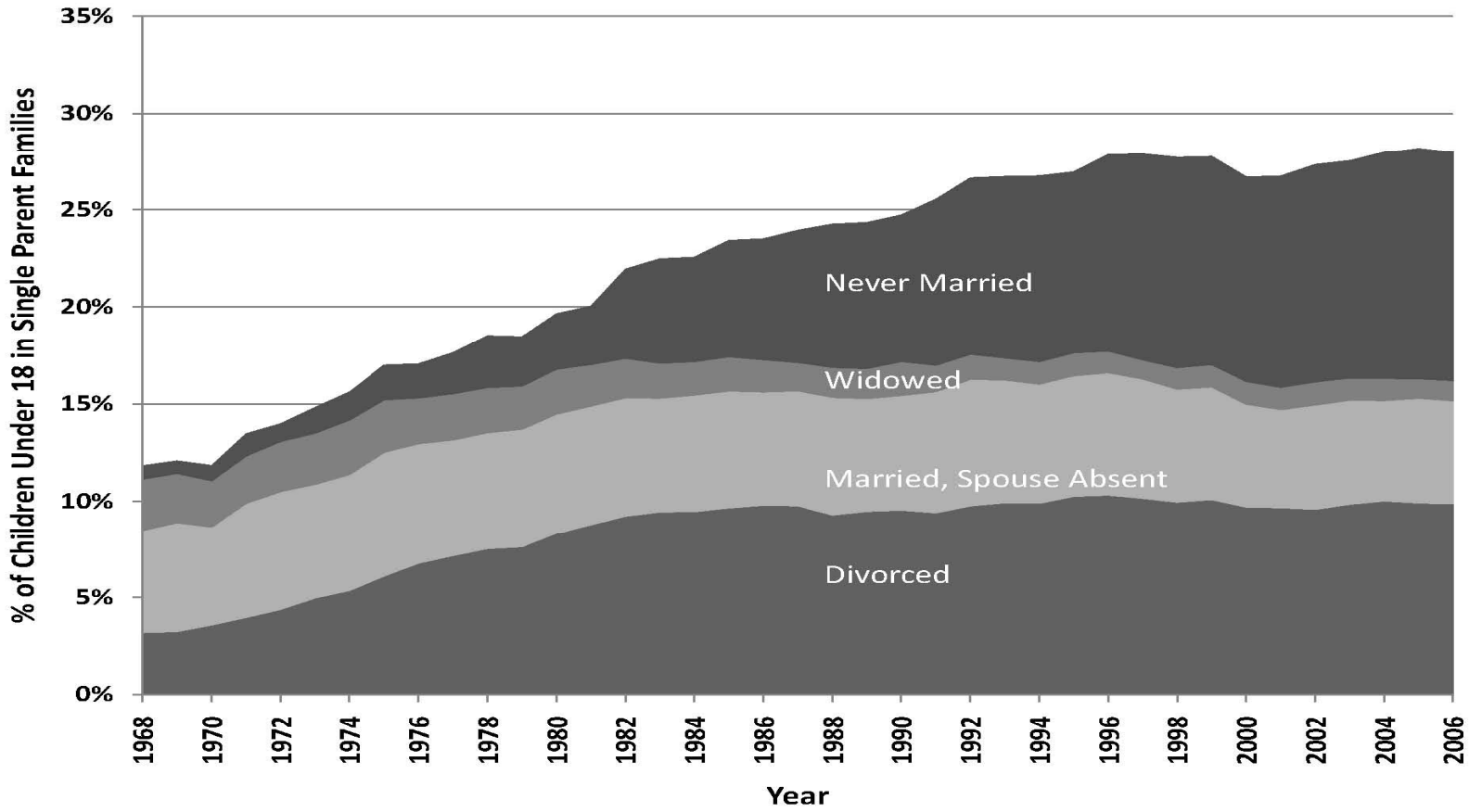


Figure 8b: Percent of All Children Less than Five With Never-Married Mother by Race

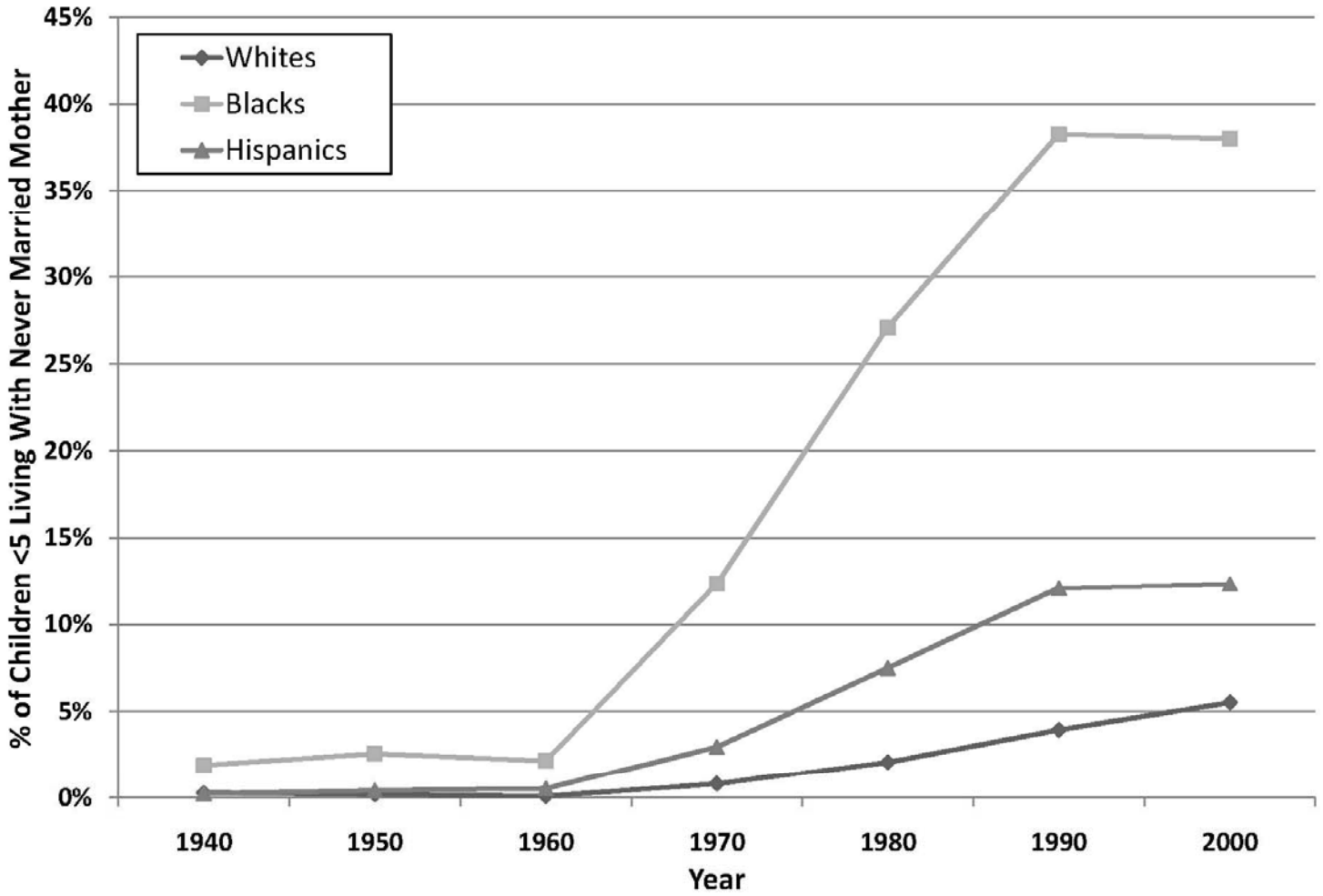
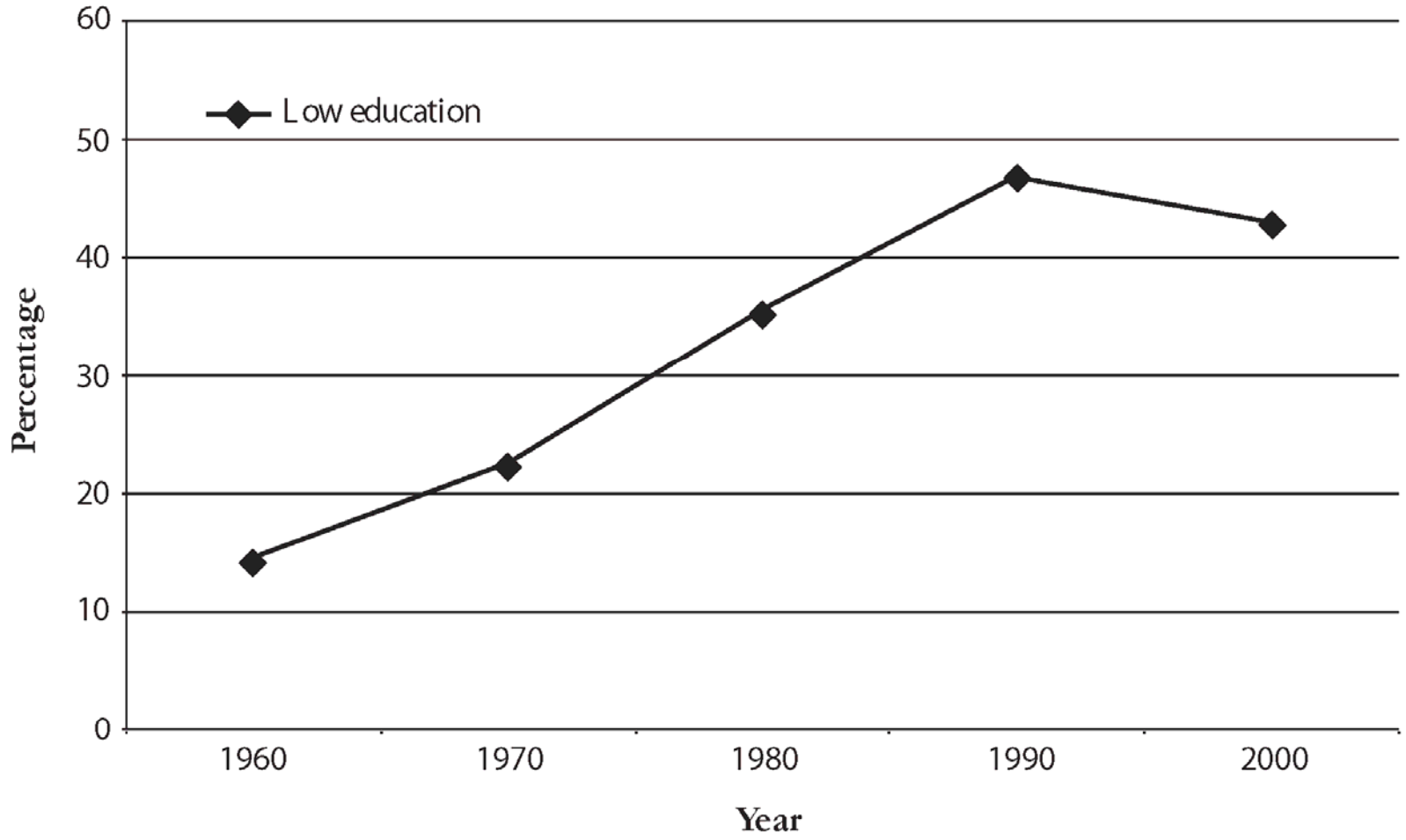


Figure 8c: Trends in Single Motherhood, 1960 to 2000



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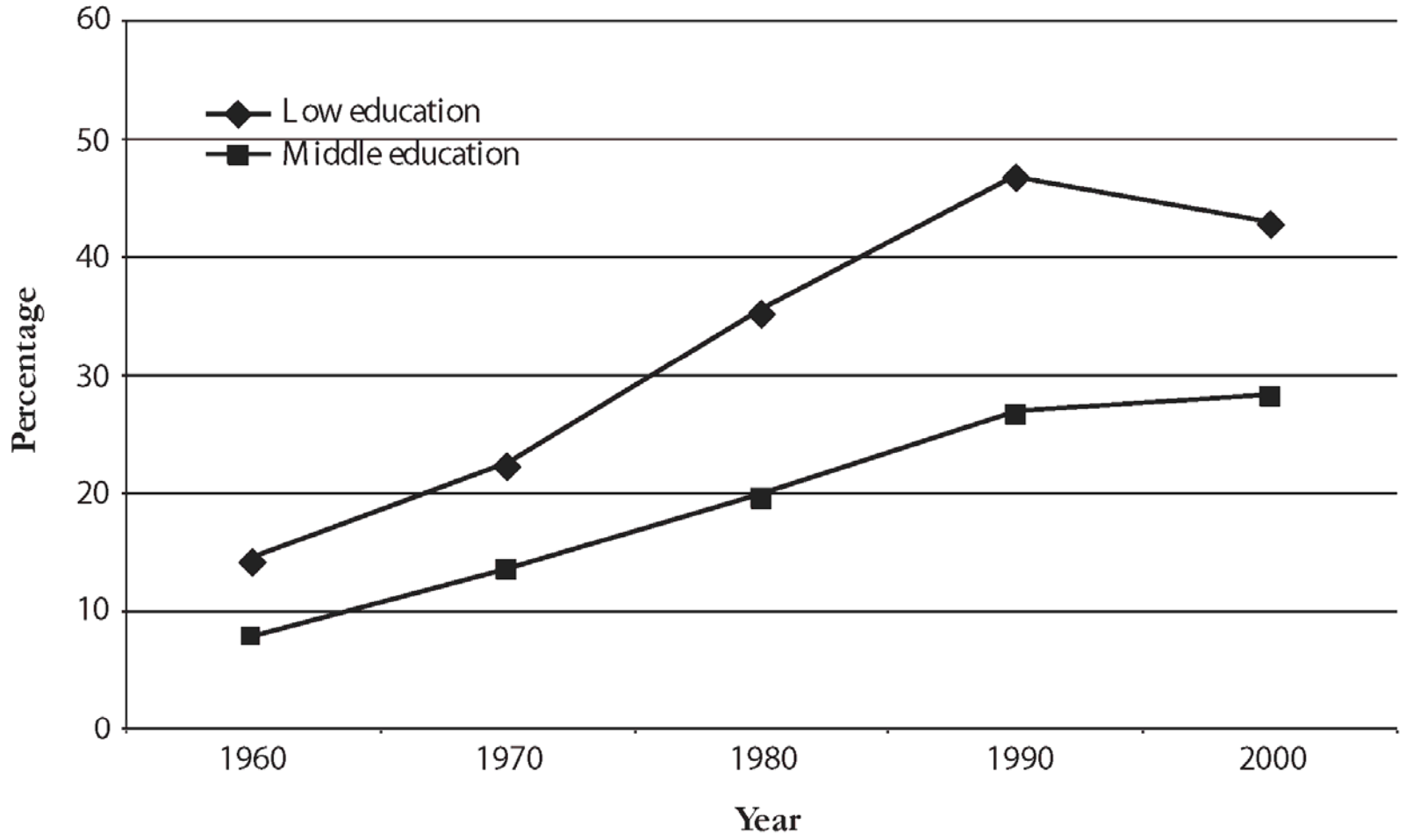

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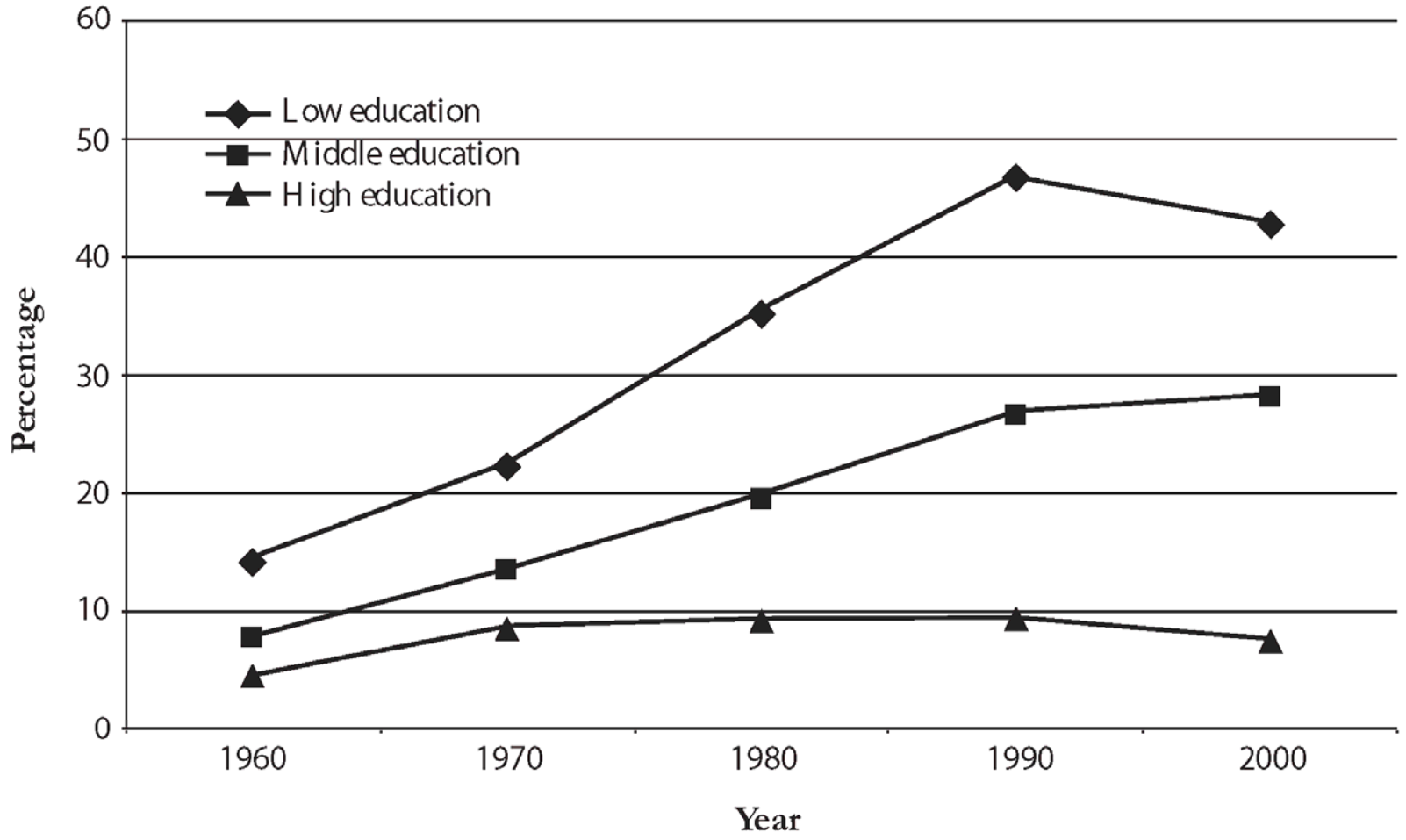
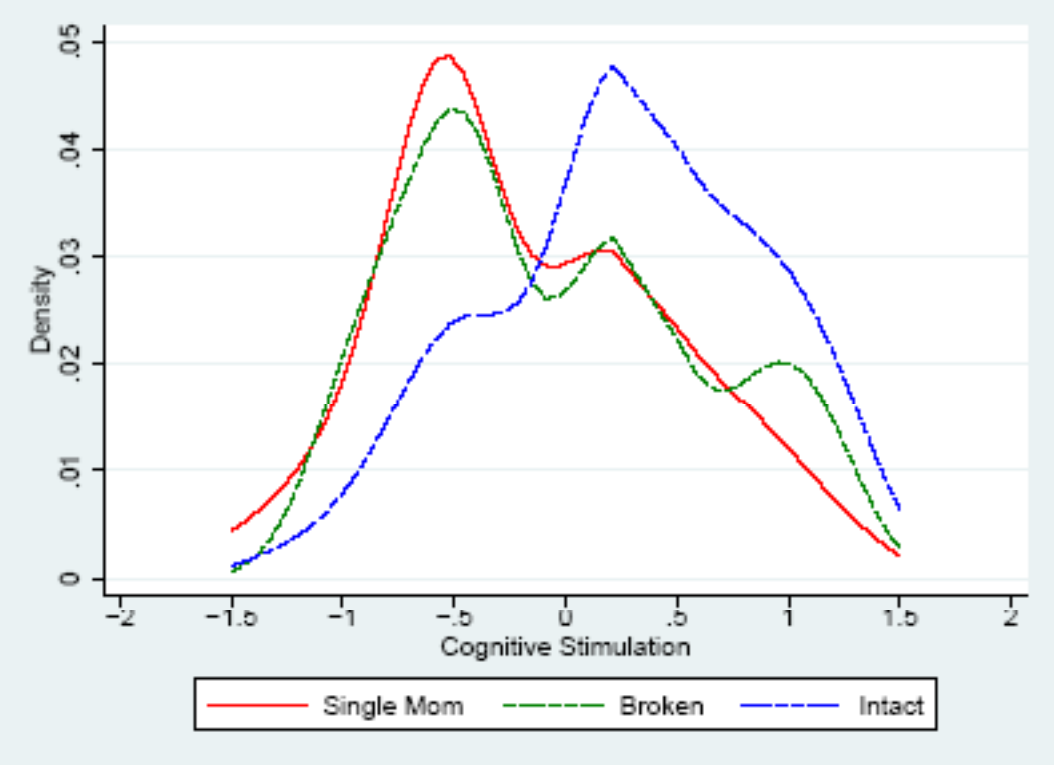


Figure 9a: Age 0-2, Female White Children, by Family Type, Cognitive Stimulation.



Source: Seong Moon (2008) analysis of CNLSY data.

Figure 9b: Age 0-2, Female White Children, by Family Type, Affection.

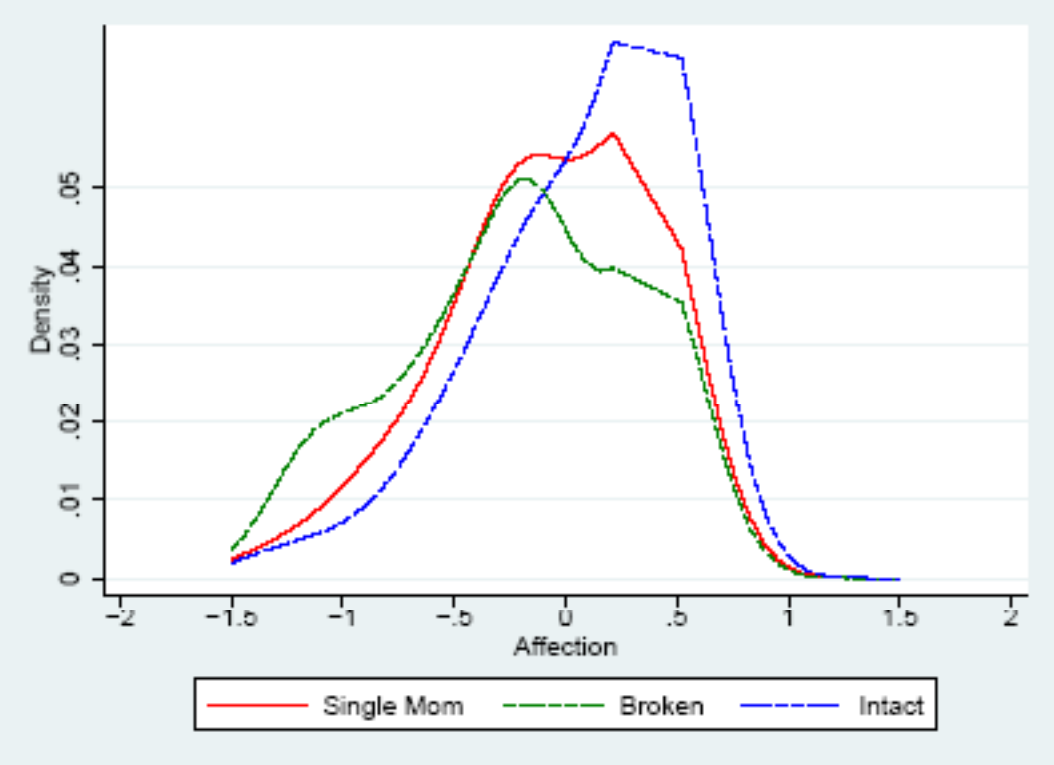


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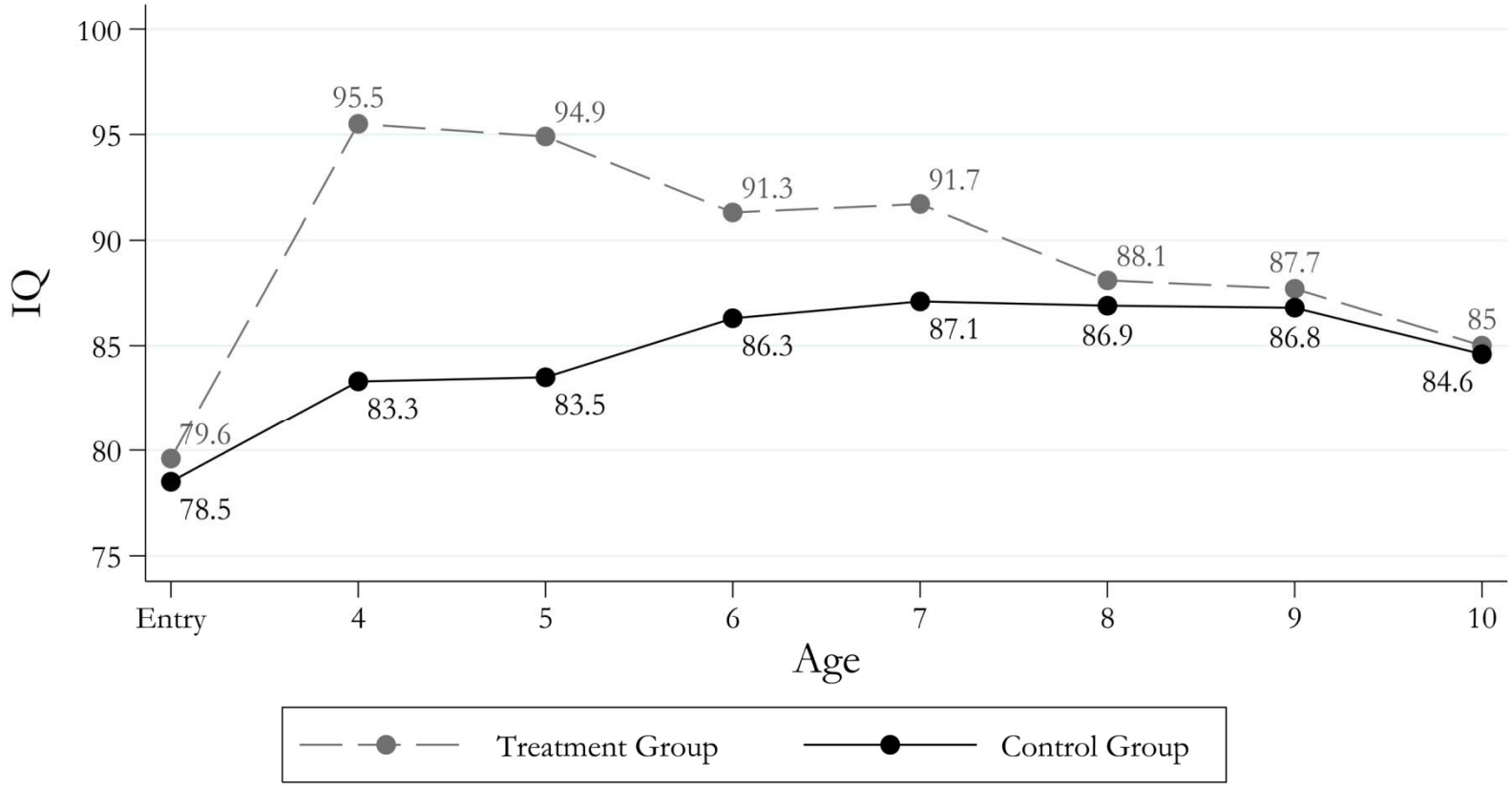
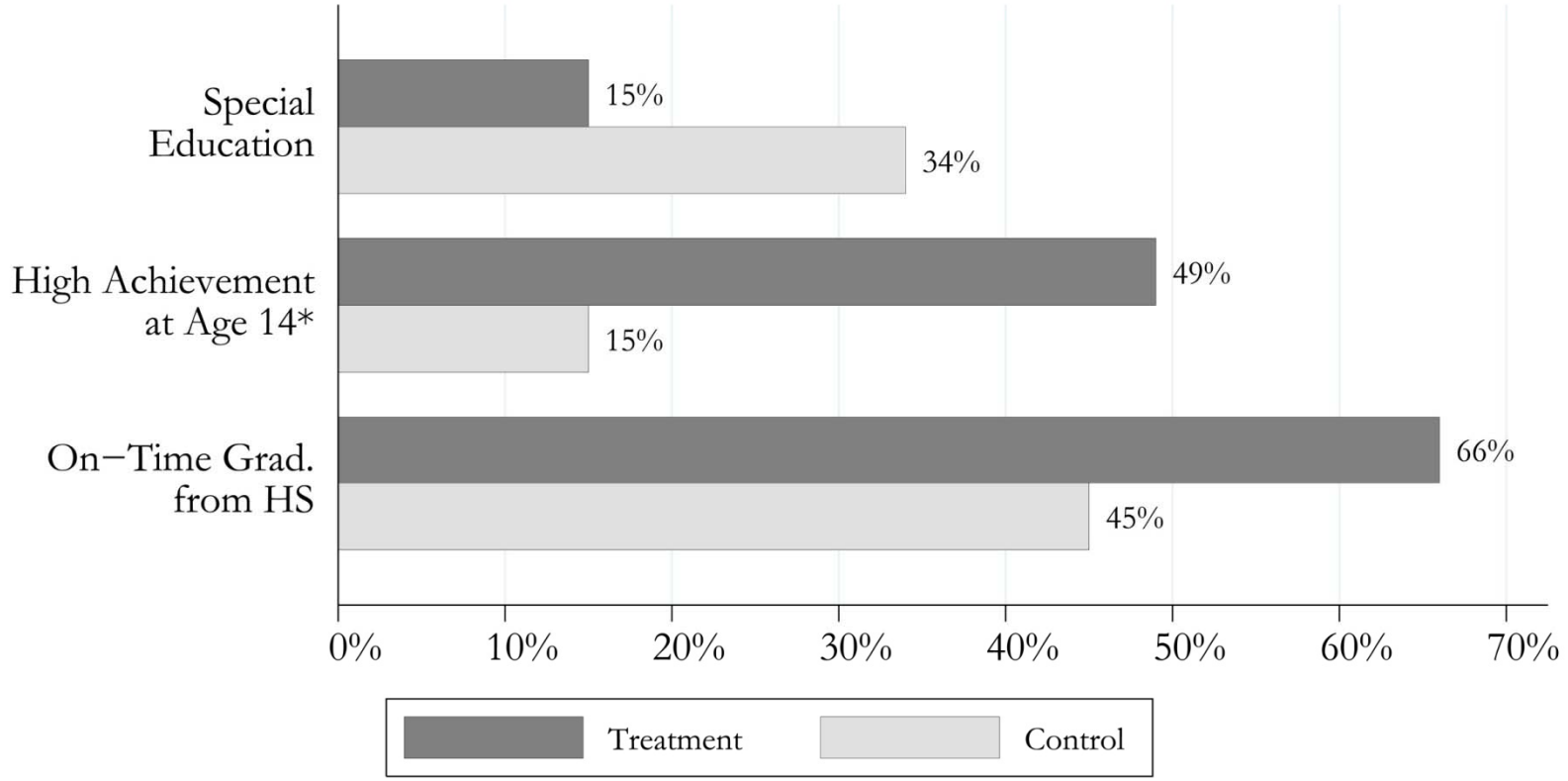
Figure 10a: Perry Preschool Program
IQ, by age and treatment group



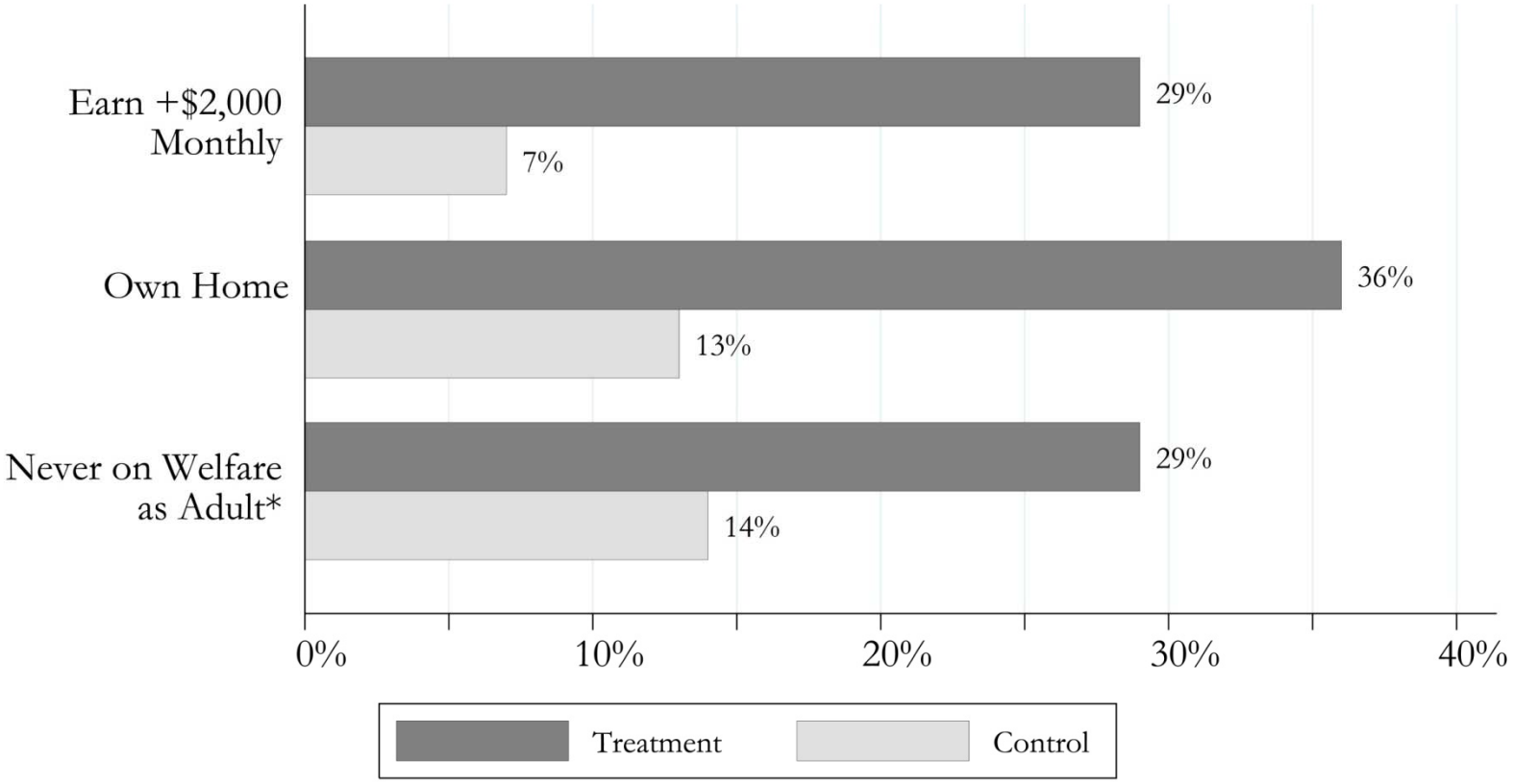
Source: Perry Preschool Program. IQ measured on the Stanford–Binet Intelligence Scale (Terman & Merrill, 1960). Test was administered at program entry and each of the ages indicated.

Figure 10b: Perry Preschool Program Educational effects, by treatment group



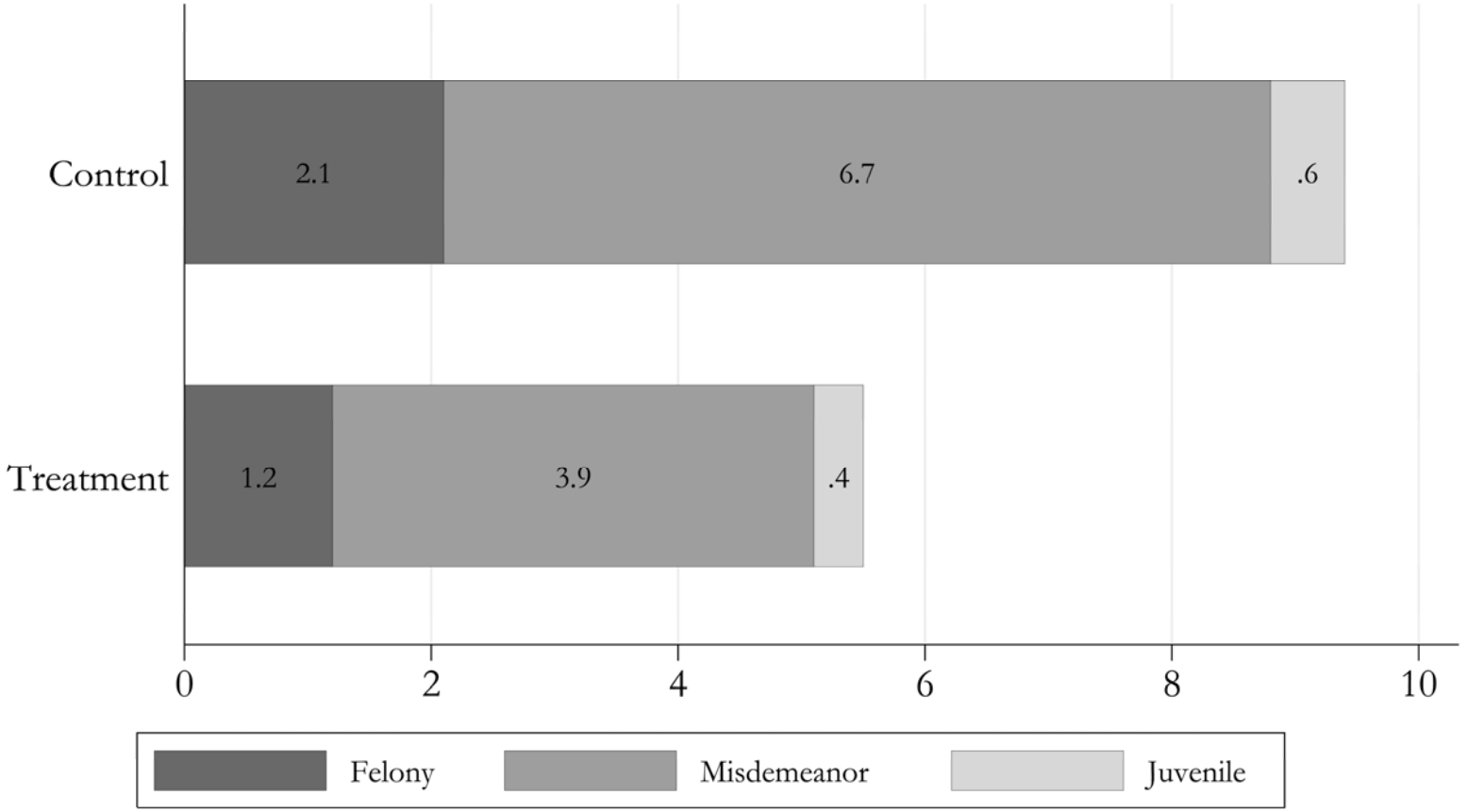
Source: Barnett (2004).
Notes: *High achievement defined as performance at or above the lowest 10th percentile on the California Achievement Test (1970).

Figure 10c: 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 10d: 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.

- Perry operates by enhancing the **noncognitive** skills of its participants.

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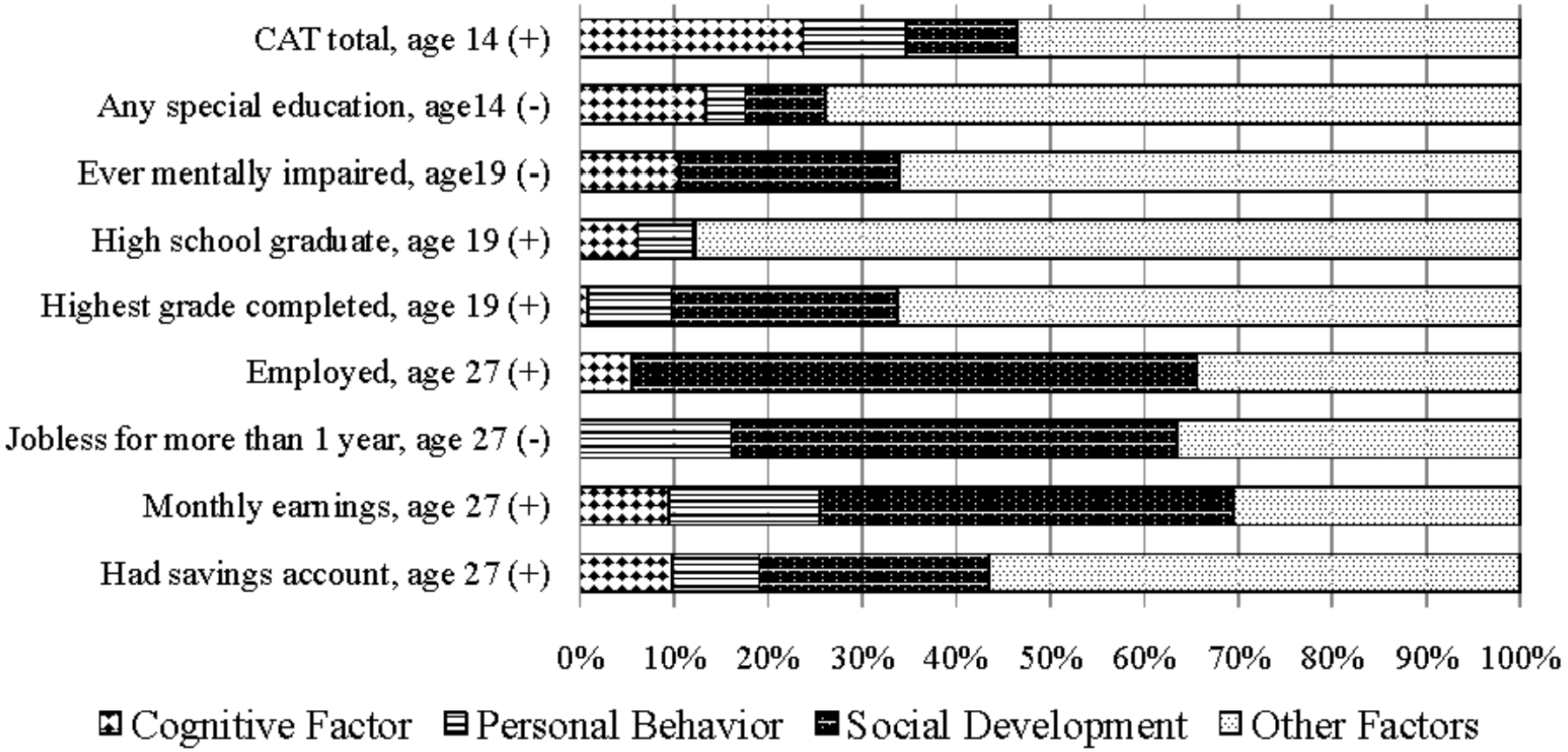
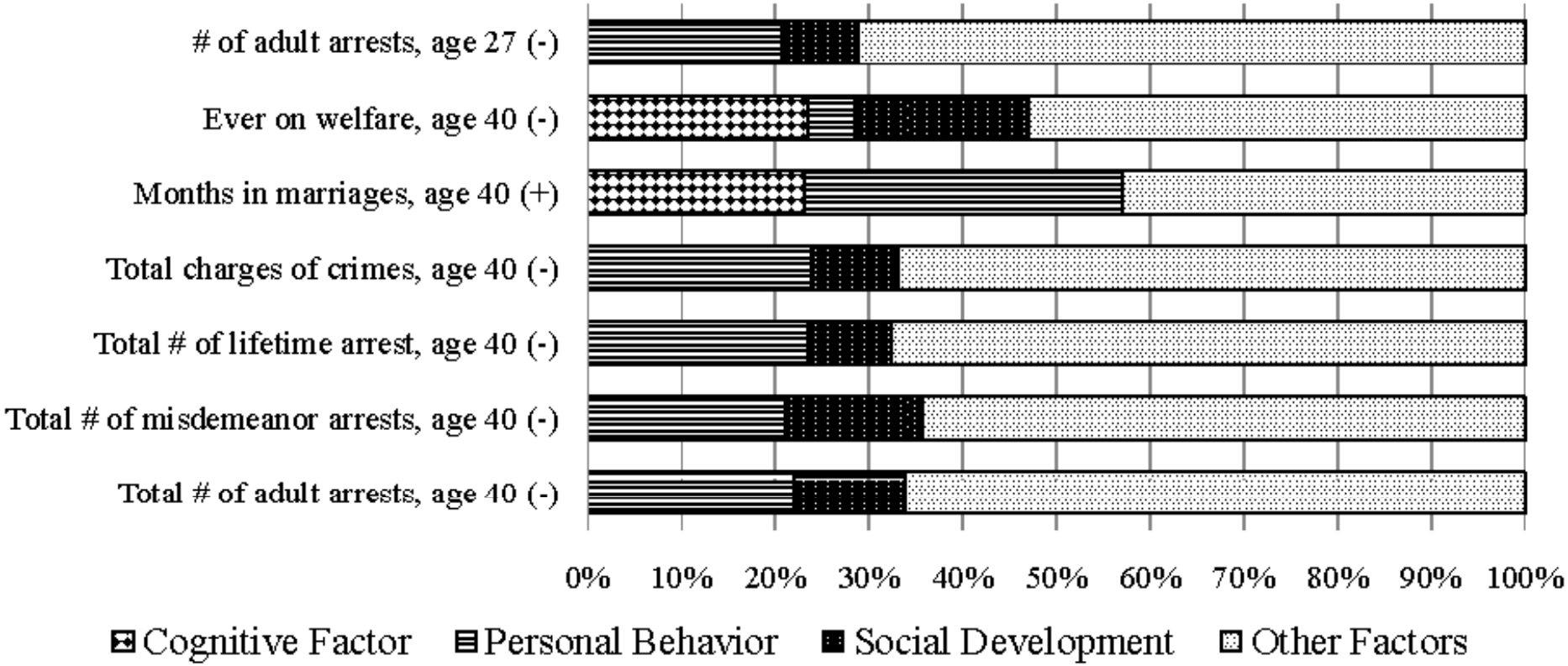
- Explains much of its treatment effect.

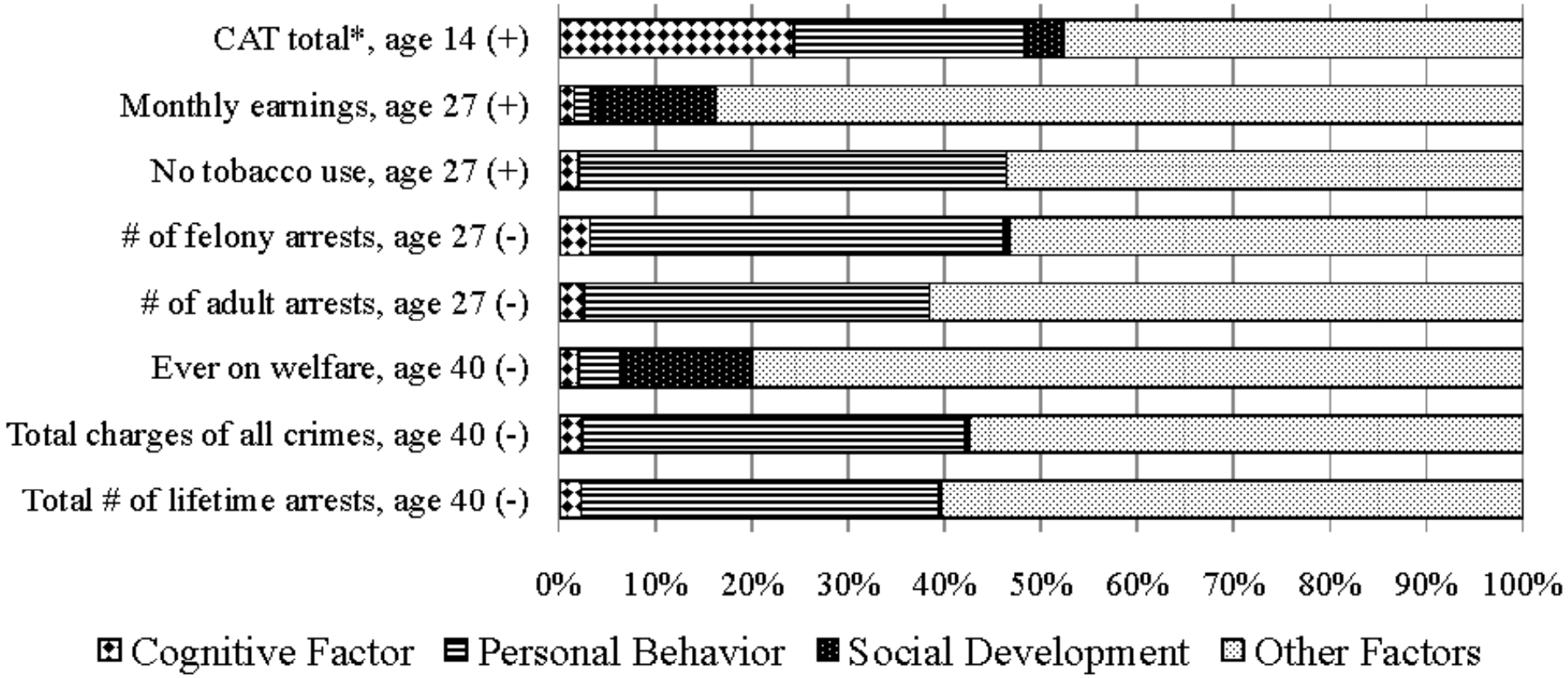
Decomposition of Treatment Effects, Females, Part I



Decomposition of Treatment Effects, Females, Part II



Decomposition of Treatment Effects, Males, Part I



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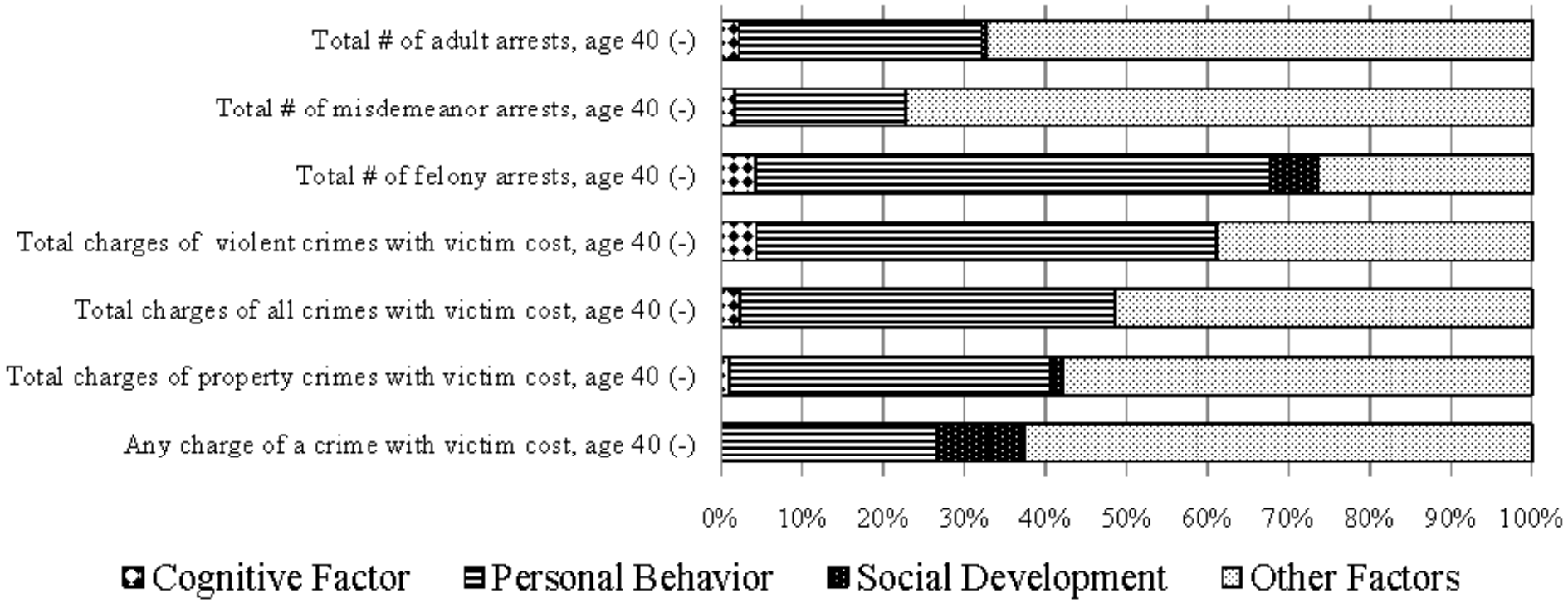

Table 2:
Comparisons of the Costs of Different Investment Strategies
Investing young vs. waiting and remediating in adolescence

Perry preschool progam

Variables	Baseline	Early Investment in Children[1]
High School Graduation	0.4109	0.6579
Enrollment in College	0.0448	0.1264
Conviction	0.2276	0.1710
Probation	0.2152	0.1487
Welfare	0.1767	0.0905

*Note: Constants include **Disadvantaged Children** (First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Age 6) and **Mothers** (In First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Ages 14-21)*

[1]Changing initial conditions, moving children to the the 7th decile of distribution of skills only through early investment

[2]Moving investments at last transition from 1st to 9th decile

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Enrollment in College	0.0448	**0.1264**	0.1165	Early investment results in **higher enrollment**
Conviction	0.2276	**0.1710**	0.1773	Early investment results in **lower convictions**
Probation	0.2152	**0.1487**	0.1562	Early investment results in **lower probations**
Welfare	0.1767	**0.0905**	0.0968	Early investment results in **lower welfare recipients**

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Enrollment in College	0.0448	**0.1264**	0.1165	Early investment results in **higher enrollment**
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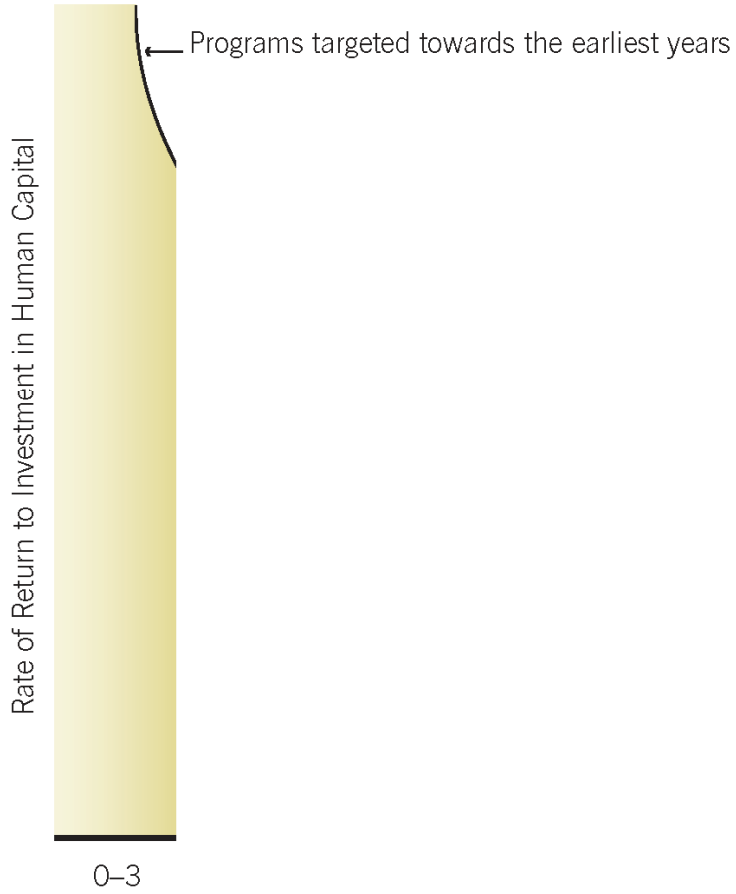
Probation	0.2152	**0.1487**	0.1562	Early investment results in **lower probations**
Welfare	0.1767	**0.0905**	0.0968	Early investment results in **lower welfare recipients**

*Note: Constants include **Disadvantaged Children** (First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Age 6) and **Mothers** (In First Decile in the Distribution of Cognitive and Non-Cognitive Skills at Ages 14-21)*

[1]Changing initial conditions, moving children to the the 7th decile of distribution of skills only through early investment

[2]Moving investments at last transition from 1st to 9th decile

Figure 11: Rates of Return to Human Capital Investment at Different Ages: Return to an Extra Dollar at Various Ages



Source: Heckman (2008).

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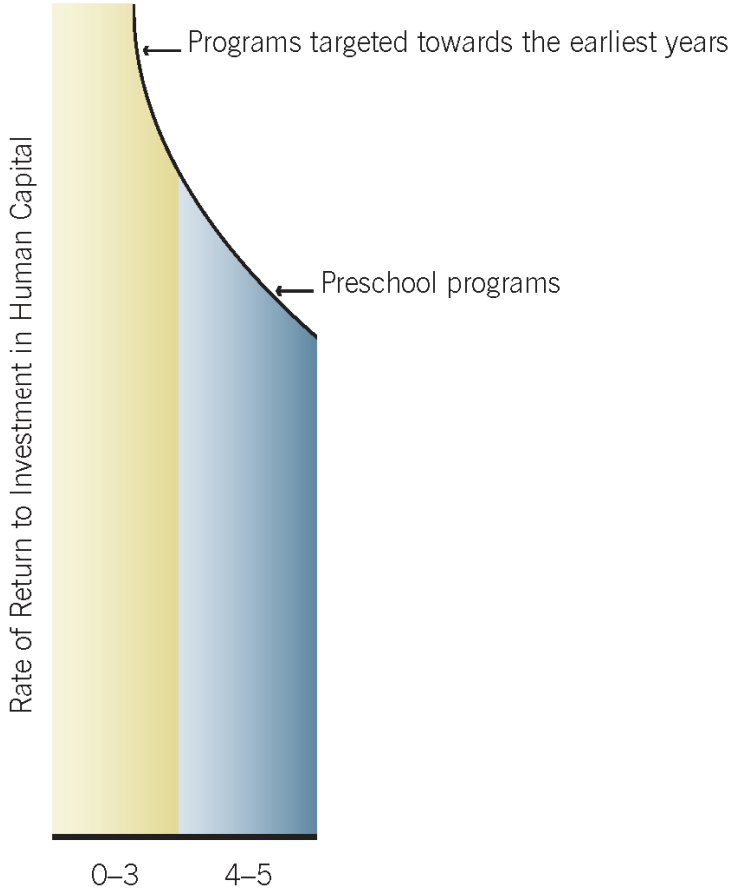

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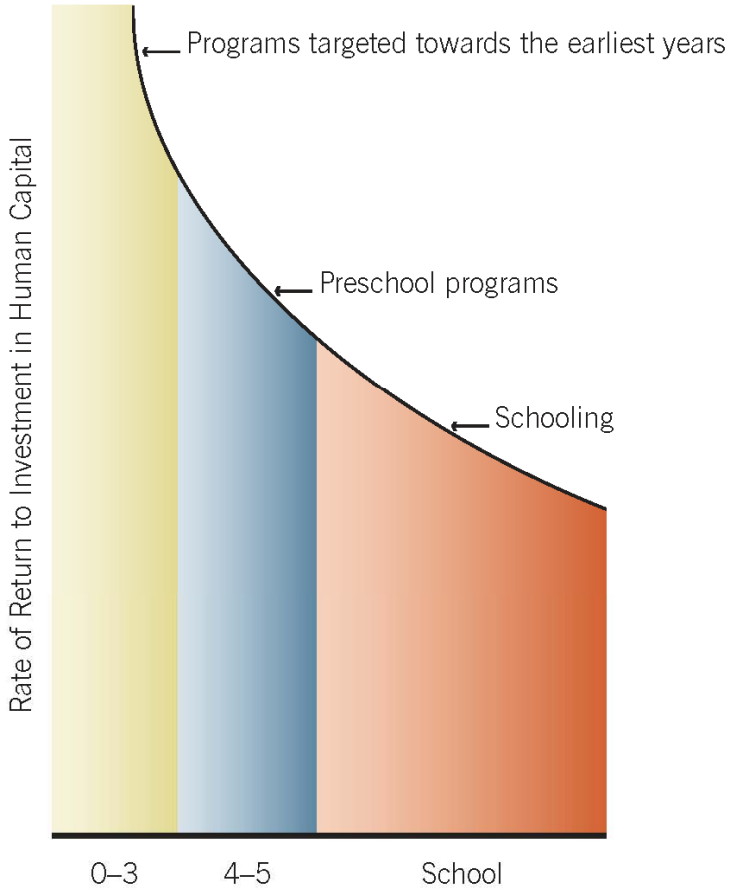

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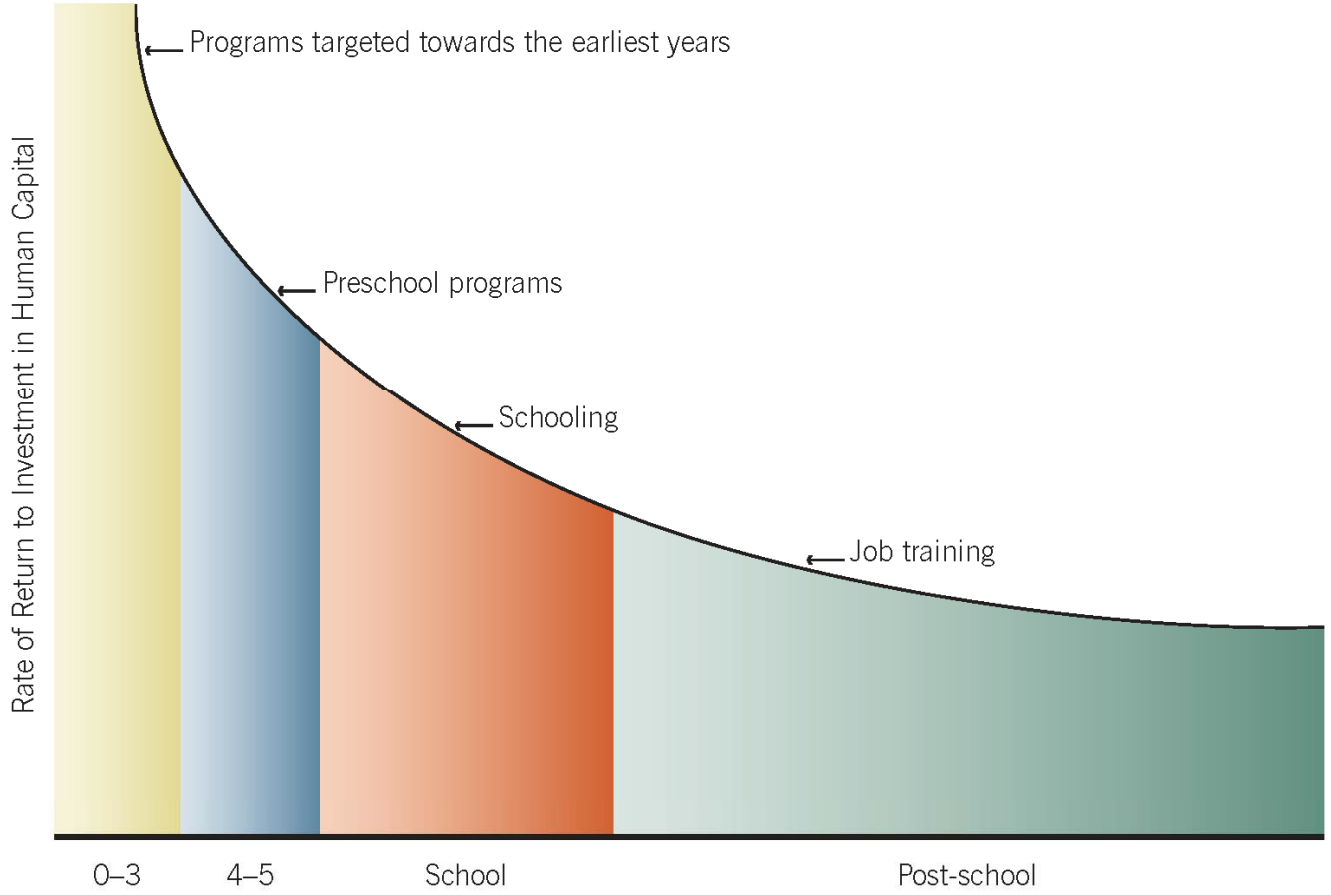

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Practical Issues

A. Whom to target?

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C. Who should provide the programs?

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C. Who should provide the programs?

D. Who should pay for them?

E. Issues of compliance.

A. Whom to Target?

i. Returns higher to disadvantaged.

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ii. What is the proper measure of disadvantage? Is it poverty?

Measures of childhood home life?

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iii. Evidence suggests quality of parenting is the key.

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ii. What is the proper measure of disadvantage? Is it poverty? Measures of childhood home life?

iii. Evidence suggests quality of parenting is the key.

iv. Parenting is the scarce resource.

A. Whom to Target?

v. Not always closely linked to family income or even parental education.

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vi. Explains in part why certain culture groups produce successful children and others do not.

B. What Programs?

i. Programs that target the early years seem to have the greatest promise.

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ii. Nurse Family Partnership Program / Abecedarian / Perry

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iii. Home visits affect the lives of the parents, create a permanent change in the home environment.

iv. Programs that build character and motivation—not just cognition—are essential.

C. Who should Provide Them?

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   b. Create community support.

D. Who Pays?

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ii. Offer a sliding fee schedule to avoid deadweight losses.

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iii. Mobilize private resources to support the subsidy.

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ii. This may run counter to the values of parents (e.g., James Dobson).

iii. There may be serious tension between the need of child and the acceptance of intervention by the parent.

iv. Then there is a basic conflict between values of society (as it seeks to develop the potential of the child) and the values of the family.

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- Skill begets skill and early skill makes later skill acquisition easier.

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- Most are economically inefficient.
- Children from advantaged environments by and large receive substantial early investment.
- Children from disadvantaged environments more often do not.

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- The measurement of disadvantage is the quality of parenting.
- The knowledge base needs to be expanded. A fruitful symbiosis of science and policy. Science guides policy and policy problems motivate scientific policy.