

Questions
Addressed

1. What is the evidence on the effect of personality on health in economics?
2. What are the issues?
3. What is the role of early life factors in explaining the education-health gradient?
4. What is the effect of self-regulation, cognition and early health on late life health?
5. Are there gender differences?
6. What is the relationship between self-regulation and cognition?
7. Is education a complement or a substitute for early life traits?

Conclusions

THE EDUCATION-HEALTH GRADIENT

Gabriella Conti
University of Chicago

Spencer/INET Conference
Associations, Investments and Interventions
Chicago, 10 December 2010

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1. Conti, G., J.J. Heckman and S. Urzua [2010], "The Education-Health Gradient", *AER P&P*, 100, 234-238.
2. Conti, G. and J.J. Heckman [2010], "Understanding the Early Origins of the Education-Health Gradient: A Framework That Can Also Be Applied to Analyze GeneEnvironment Interactions", *Perspectives on Psychological Science*, 5:5 (October), 585-605.
3. Conti, G., J.J. Heckman and S. Urzua [2010], "Early Endowments, Education, and Health", unpublished manuscript, Department of Economics, University of Chicago.

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What is the evidence on the effect of personality on health in economics?

Personality and Health - Economics

Author	Year	Data	Personality	Outcomes	Effect?
Fuchs	1982		time preferences	health	NO
Barsky <i>et al.</i>	1997	HRS	risk tolerance	smoking drinking	YES YES
Carneiro <i>et al.</i>	2007	NCDS	social adjustment score	health depression smoking	YES YES YES
Murasko	2007	BCS	locus of control self-esteem	health	YES YES
Coneus and Laucht	2008	MARS	attention span	smoking drinking	YES YES
Kaestner	2009	NLSY	locus of control self-esteem	SF (P&M) CESD SF (P&M) CESD	NO NO YES YES
Jones <i>et al.</i>	2010	NCDS	social adjustment score	health depression smoking	YES YES YES
Chiteji	2010	PSID	future-orientation & self-efficacy	drinking exercising	YES YES
Savelyev	2010	Terman	conscientiousness	mortality	YES
Cutler & Lleras-Muney	2010	many	various measures do not account for the education-health gradient		

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What are the issues?

Issues in Economic Research on Personality and Health

The
Education-Health
Gradient

Conti

Questions Addressed

1. Correlational vs. Causality
2. Timing of measurements
3. Comparability of constructs
4. Measurement error
5. The role of cognition
6. The role of early health
7. Mechanisms
8. Gender Differences
9. Personality vs. mental health
10. Timing of outcomes

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Some Evidence from Our Work

Evidence from the British Cohort Study

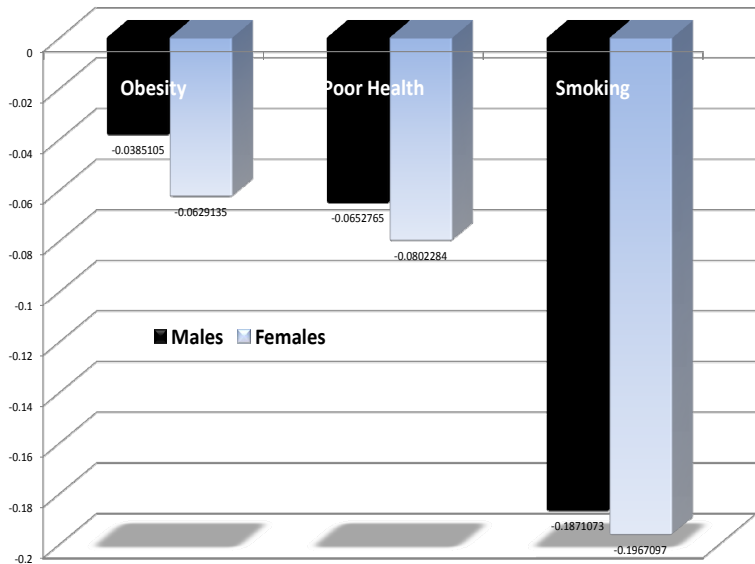
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Data: Observed health disparities at 30 in the BCS70.

Correlation and Causality

A positive correlation between health and schooling is well established – but is this causal?

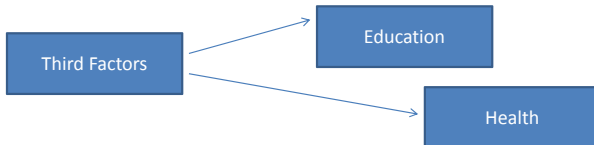
1. Education might causally affect health.



2. Early health can causally affect education (health selection hypothesis).



3. Both education and health can be affected by third factors (ability and personality).



- These third factors may be produced by early conditions or later life conditions.

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Understanding the Gradient

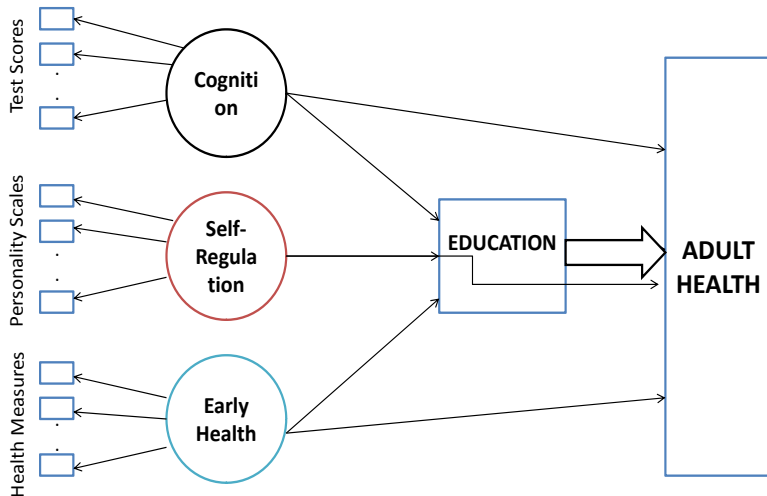
Questions Addressed

- ▶ **Are these differences causal – “true effects of education that can be promoted by policy” – or are they correlations arising from uncontrolled factors?**
- ▶ **Early factors that directly affect both the outcomes [age 30] and education [stay-on at age 16]?**
 1. Cognition (age 10)
 2. Self-regulation (age 10)
 3. Child Health (age 10)
 4. Family background (birth)

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Our Model



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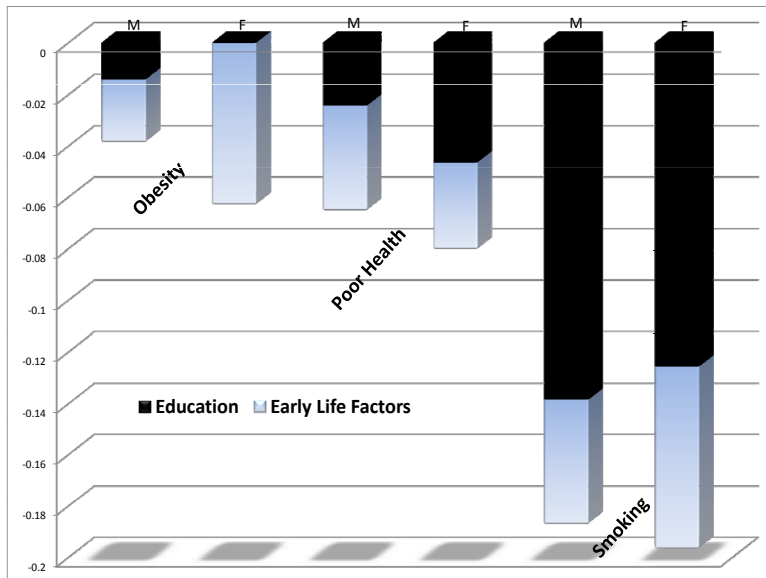
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What is the role of early life factors in explaining the education-health gradient?

Decomposition of Observed Health Disparities

The
Education-Health
Gradient

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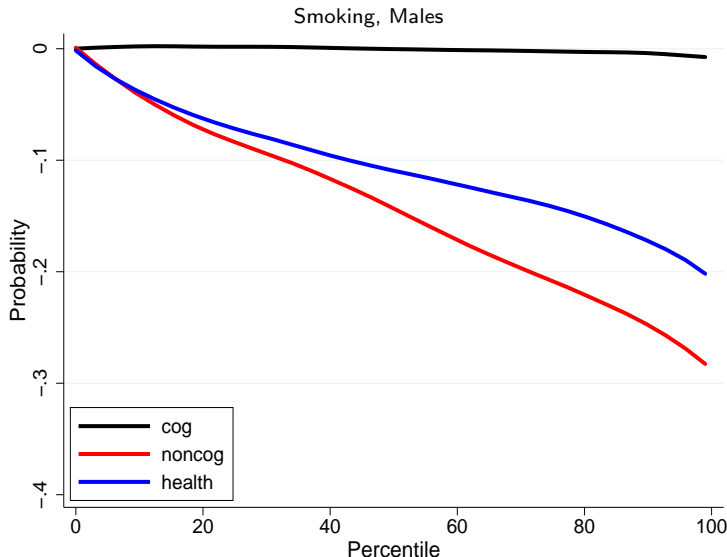
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**What is the effect of self-regulation,
cognition and early health on late life
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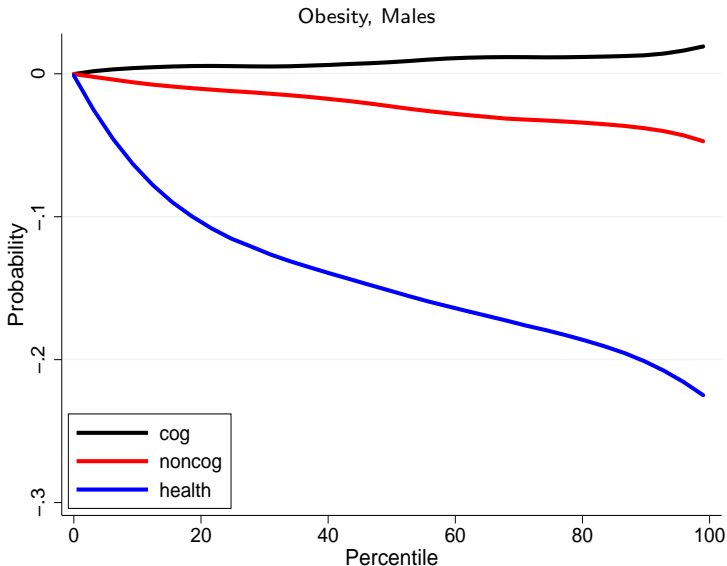


- Self-regulation is an important determinant of smoking.

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- Early health is the most important determinant of obesity.

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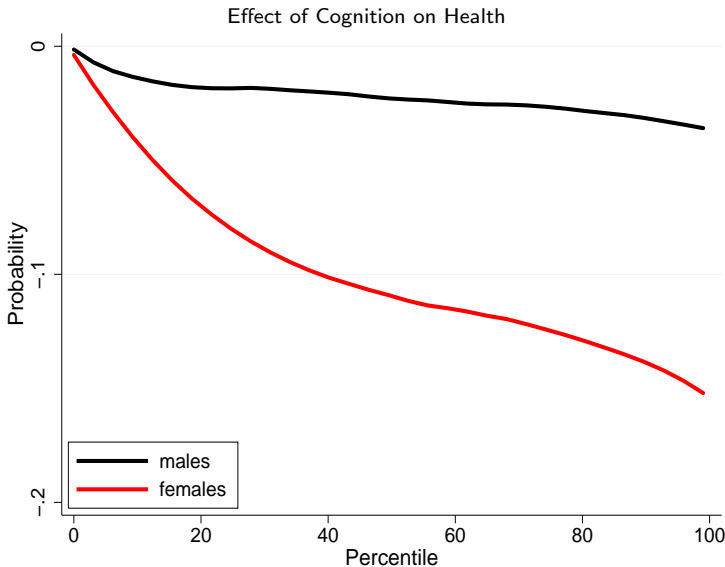
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Are there gender differences?

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- Cognition is a more important determinant of health for women.

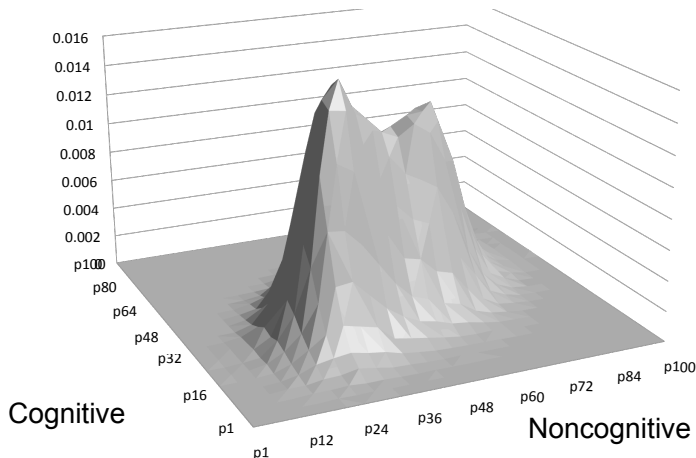
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What is the relationship between self-regulation and cognition?

Figure: Cognition and Self-Regulation, Males



► The correlation between cognition and self-regulation is 0.544 ($p=0.000$).

⇒ Both related to the executive system in the frontal lobe structure.

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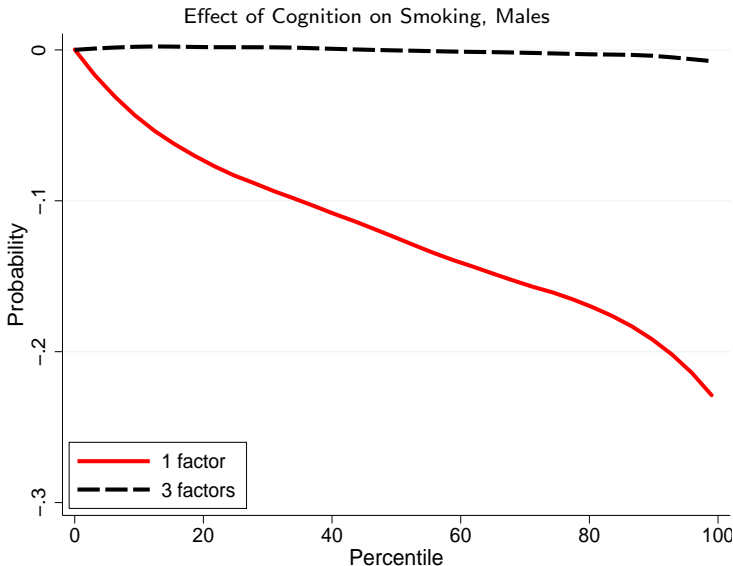
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- Not controlling for self-regulation leads to an overestimation of the effect of cognition.

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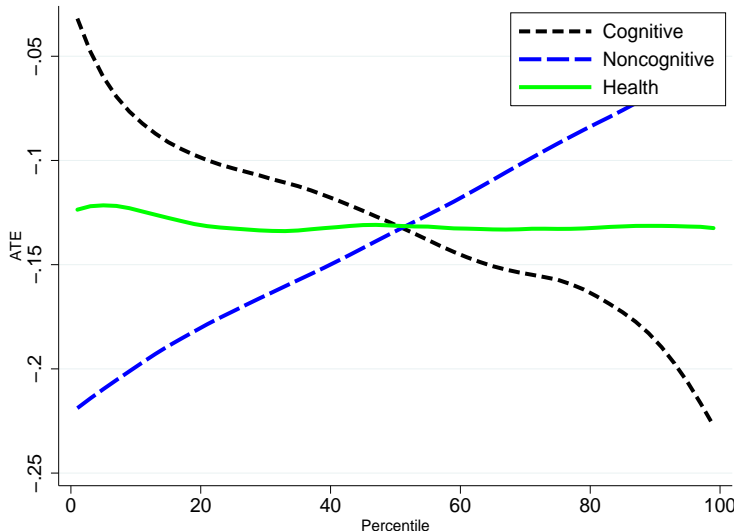
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Smoking, Males



- ▶ Education compensates for low self-regulation...
- ▶ ...but reinforces high cognitive endowments.

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- ▶ We are just beginning to analyze the relationship between personality traits and health in economics.
- ▶ Most of the evidence is still correlational.
- ▶ Many questions still unanswered.
- ▶ A few main results:
 - ▶ **personality matters:** self-regulation is an important determinant of many health outcomes.
 - ▶ **gender matters:** cognition is a more important determinant of health for women than for men.
 - ▶ **cognition matters?:** not controlling for self-regulation overestimates the effect of cognition.
 - ▶ **mechanisms matter:** early life traits explain a significant portion of the education-health gradient.
 - ▶ **interactions matter:** the effect of education on health is bigger for individuals with low self-regulation.

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- ▶ Understanding the dimensionality of the factors: Conti, Heckman, Lopes and Piatek.
- ▶ Teacher- vs. mother-rated traits: Conti, Heckman, Lopes and Piatek.
- ▶ Effect of Early Health Shocks on Personality: Conti, Heckman, Yi and Zhang.
- ▶ Effect of Rearing Conditions on Personality: Conti, Hansman, Heckman, Novak, Ruggiero and Suomi.
- ▶ Development of Cognition, Personality and Health in Children of Different Ethnicities: Biroli, Conti and Heckman.