

# Personality, Lifetime Earnings, and Retirement Wealth

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# Background

- Recent work shows that cognitive abilities, particularly mathematical ability, and some kinds of specific financial knowledge, are related to wealth
- But, behavioral economics suggests that other factors are at work in resisting impulse toward current consumption, making and sticking with plans, etc.
- Financial literacy alone may not be sufficient

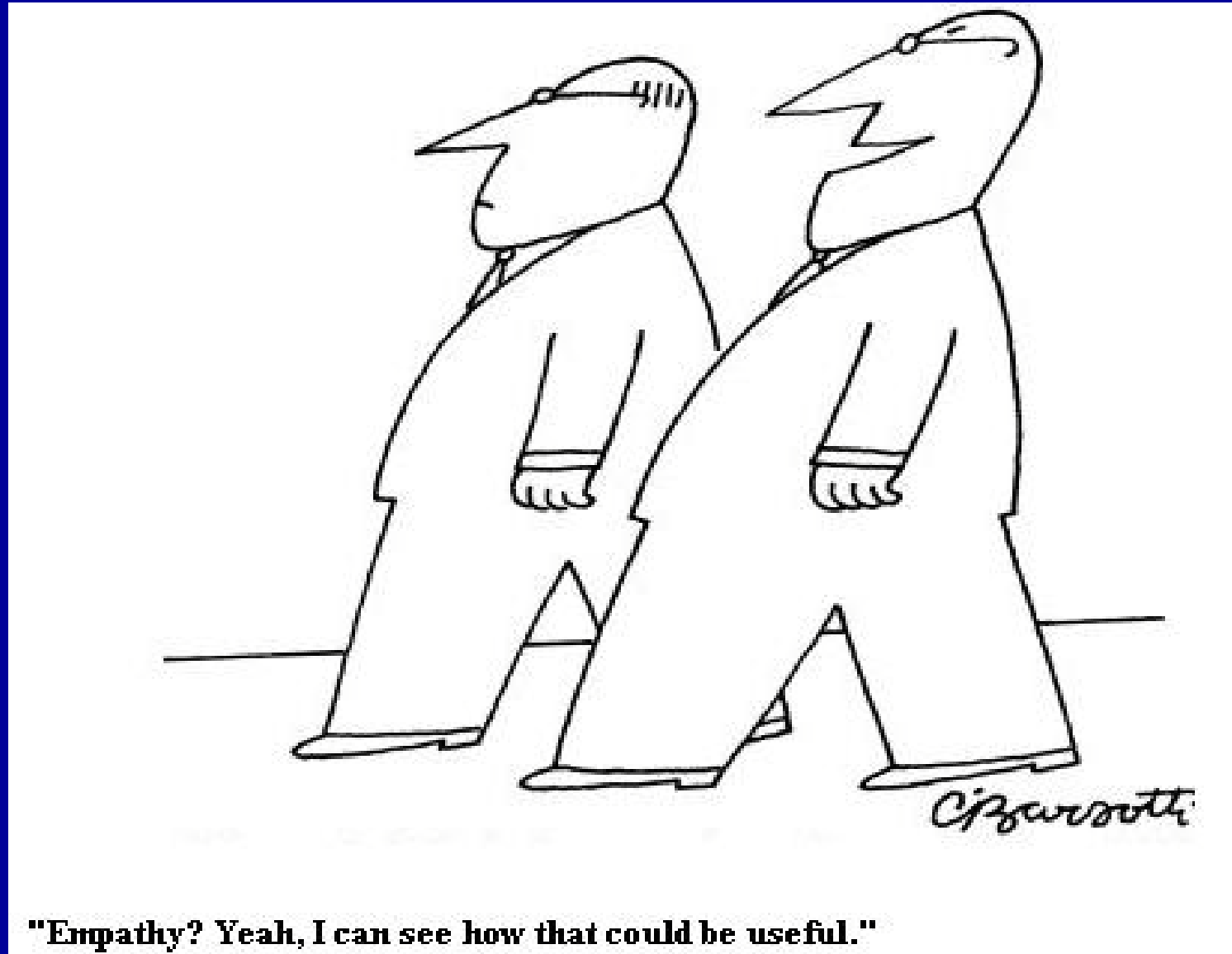
# Background

- Recent work on early stages of the life course suggests that non-cognitive skills may be as important as cognitive abilities for many life outcomes (Borghans et al., 2008; Heckman et al., 2009; Duckworth & Seligman, 2005)

# Goals

- To investigate relationship of non-cognitive skills to lifetime economic outcomes
- Exploratory, cannot on its own establish causality
- Focus on personality, the primary framework through which psychologists organize “non-cognitive” traits

# Economists Discover Personality



**"Empathy? Yeah, I can see how that could be useful."**

# What is personality?

- Personality traits are relative stable dispositions to act, feel, and think in certain ways
- “Relatively stable” does not imply that personality traits are immutable over the life course
- Nevertheless, traits are stable enough to be considered “real” (7-year test-retest  $r = .7$  by age 50)

# The Big Five

- There is some consensus among personality psychologists that personality traits cluster into five families:
  - Conscientiousness
  - Agreeableness
  - Neuroticism (inverse of emotional stability)
  - Openness to experience
  - Extraversion

# Health and Retirement Study

- The 2006 and 2008 waves of the HRS included in the Psychosocial Leave-Behind Participant Lifestyle Questionnaire a brief measure of Big Five personality
- Of these, conscientiousness was hypothesized to have greatest (positive) influence over health and economic outcomes
- Neuroticism was also expected to have (negative) influence



# Personality is distinct from cognitive ability

	<u>C</u>	<u>A</u>	<u>N</u>	<u>O</u>	<u>E</u>	<u>EM</u>	<u>WM</u>	<u>NUM</u>
Conscientiousness								
Agreeableness	45							
Neuroticism	-25	-12						
Openness	47	42	-20					
Extraversion	42	57	-22	54				
Memory	16	10	-7	16	8			
Mental status	12	3	-8	11	1	28		
Numeracy	14	-1	-8	16	1	30	44	
Vocabulary	13	3	-7	19	0	28	34	37

# Income and Wealth

- Earnings from linked SS records
  - Lifetime earnings
  - Average annual earnings
  - Total years in workforce
- Log household wealth (for today, limited to married couples) conditional on lifetime earnings
  - Reflects saving, investment behavior

# Control variables

- Year of birth
- Gender
- Ethnicity
- HRS cohort
- Years of education
- Cognitive abilities (episodic memory, working memory, numeracy, vocabulary)

# Log lifetime earnings

<u>C</u> onscientiousness	.09***
<u>A</u> greeableness	-.00
<u>N</u> euroticism	-.05***
<u>O</u> penness	-.01
<u>E</u> xtraversion	-.03

Predictors were standardized to  $M = 0$ ,  $SD = 1$

$N = 10,731$

# Average yearly earnings

<u>C</u> onscientiousness	1536***
<u>A</u> greeableness	-345
<u>N</u> euroticism	-698***
<u>O</u> penness	-5
<u>E</u> xtraversion	-799***

Predictors were standardized to  $M = 0$ ,  $SD = 1$

$N = 10,731$

# Years in workforce

<u>C</u> onscientiousness	0.36***
<u>A</u> greeableness	-0.02
<u>N</u> euroticism	-0.26***
<u>O</u> penness	-0.17
<u>E</u> xtraversion	0.13

Predictors were standardized to  $M = 0$ ,  $SD = 1$

$N = 10,731$

# C X N interaction

- A standard deviation increase above the mean in neuroticism raises the impact of conscientiousness on log lifetime earnings from 9 to 12%
- A standard deviation decrease in neuroticism reduces the impact of conscientiousness from 9% to 6%
- Conscientiousness and emotional stability are substitute goods

# Wealth

- We used couples as the unit of analysis with individual-level predictors
- We examined log wealth accumulation conditional on lifetime earnings of the husband and wife
- In a separate model (not shown here), we examined the log of the ratio of wealth to savings



# Log household wealth $N = 2,943$

	Husb	Wife
<u>C</u> onscientiousness	.15***	.15***
<u>A</u> greeableness	-.10**	-.08**
<u>N</u> euroticism	-.04	-.01
<u>O</u> penness	.00	-.04
<u>E</u> xtraversion	.00	.08*
Memory	.03	.04
Mental status	.07*	.09**
Numeracy	.14***	.04
Vocabulary	.00	.10**

Predictors were standardized to  $M = 0$ ,  $SD = 1$

# Summary

- Conscientiousness and neuroticism are both related to economic success
- The effect of conscientiousness is nearly as large as that of measured cognitive abilities (also measured ex post)
- The effects of cognitive ability seem to be partly mediated by education, but the effects of personality are not

# Causality

- Obviously we don't observe personality (or cognition) PRIOR to economic realizations in this sample
- We aren't asserting causality, and there are (weak) arguments for reverse causality, just as there are for financial knowledge or even math skills
- In context of other findings, we believe the case for causality is plausible enough to warrant further work

# Implications

- Theory
  - Human capital is multi-dimensional
- Practice
  - Direct interventions
  - Policies that compensate for low conscientiousness (e.g., strategic default options)

# Extra slides

# Limitations

- Ex post, cross-sectional analyses allow alternative causal stories
- Measures of personality were crude
  - Self-report only
  - Facet-level measures were not included
- Measures of cognitive ability may reflect age-related decline
- SS earnings is not the same as total earnings

# Big Five Conscientiousness

- Please indicate how well each of the following describes you  
(*a lot...some...a little...not at all*)

Organized

Responsible

Hardworking

Careless (reverse-scored)

Thorough

# Big Five Neuroticism

- Please indicate how well each of the following describes you  
(*a lot...some...a little...not at all*)

Moody

Worrying

Nervous

Calm (reverse-scored)



# Big Five Agreeableness

- Please indicate how well each of the following describes you  
(*a lot...some...a little...not at all*)

Helpful

Friendly

Warm

Caring

Softhearted

Sympathetic

# Openness items

- Creative
- Imaginative
- Intelligent
- Curious
- Broad-minded
- Sophisticated

# Extraversion items

- Outgoing
- Lively
- Active
- Talkative
- Adventurous