Psychology, Personality, and Health

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Overview: Three Questions

- **What** are the major “noncognitive” skills?
  What are the major content domains? Big Five
- Can we **measure** them? Do these measures **predict** important life outcomes?
- Are they “fixed”, or do they **change and develop**?

A Confluence of 3 Factors

- Employer surveys in the 21st Century
- Personality research
- The OECD

Survey Results: Skills Employers Want (by Importance)

- People/relationship skills
- Communication skills
- Problem solving skills
- Analytical abilities
- Leadership skills
- Industry-specific knowledge
- Functional knowledge
- Technological literacy
- Project management skills
- Creative thinking
- Other

- Problem-solving skills
- Communication skills-written
- Teamwork skills (works)
- Analytical skills
- Strong work ethic
- Interpersonal skills (relates)
- Flexibility/adaptability
- Communication skills-verbal
- Initiative
- Detail-oriented
- Organizational skills
- Leadership skills
- Self-confidence… etc.

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- *Communication skills-verbal*
- *Initiative*
- *Detail-oriented*
- *Organizational skills*
- *Leadership skills*
- *Self-confidence*… etc.

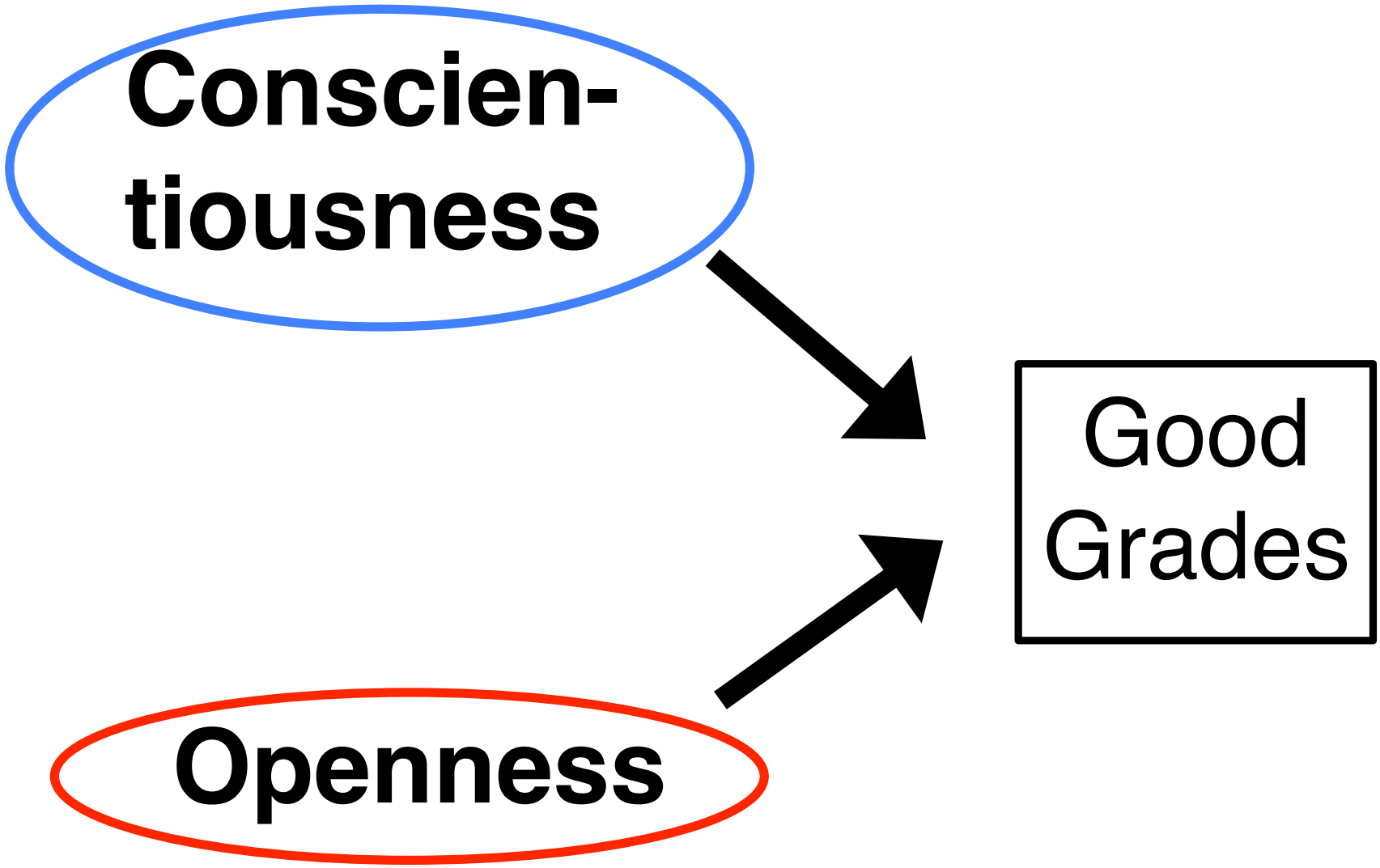
Another Kind of Skill

- Employability skills
- “Noncognitive” or personality skills (Heckman) are in demand
- 21st century skills (Trilling & Fadel, 2009)
  - The 4 Cs: creativity, collaboration, communication, critical thinking
- Socio-emotional skills
- Are they important? Personality psychologists have been studying them…

Correlations with School Performance at Age 12: **C** and **O**

Big Five Scales	Reading	Writing	Spelling	Math
Extraversion	−.08	−.13	−.09	−.07
Agreeableness	.06	.07	.07	.08
Conscientiousness	.20*	.23*	.24*	.20*
Neuroticism	−.05	−.08	−.12	−.06
Openness	.22*	.17*	.19*	.19*

John, Caspi, Robins, et al. (1994). The Little Five. *Child Development*.
Sample: 450 12-year old boys from the Pittsburgh Youth Study.


Conscien-
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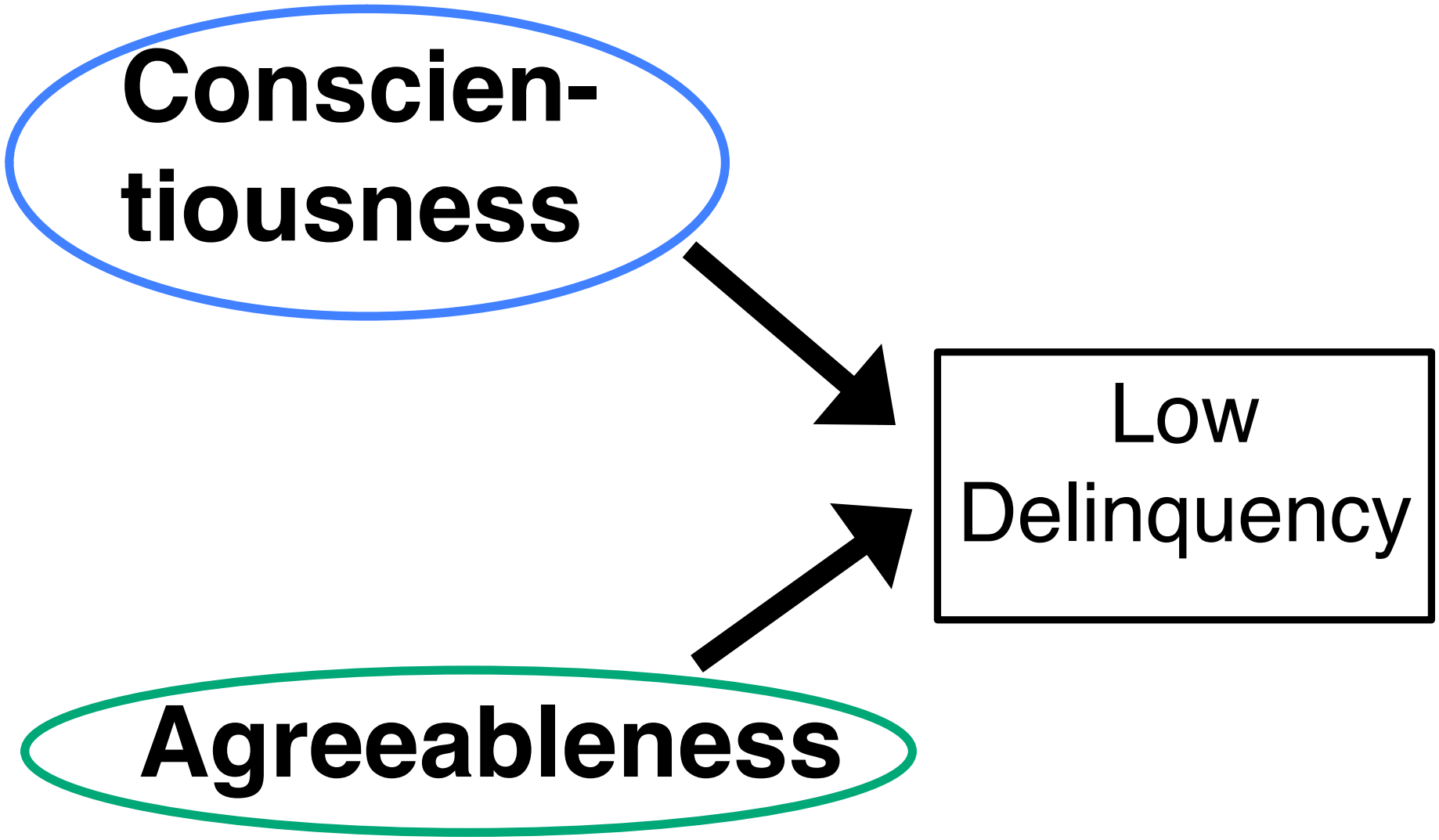
Openness
Good
Grades


Conscien-
tiousness
Low
Delinquency
Agreeableness

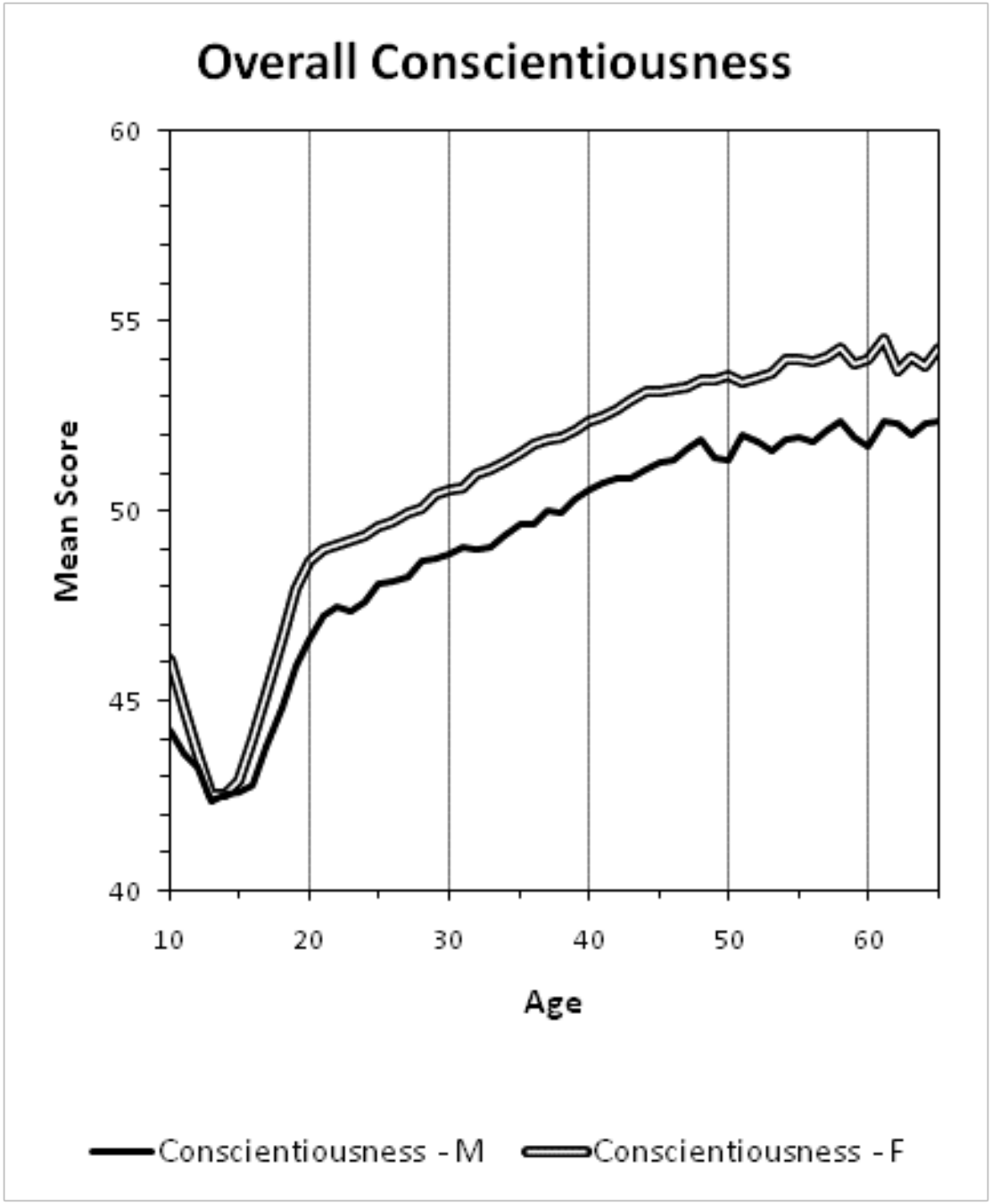
Antecedent traits at 21 predicting peak work outcomes at 52: Betas

Women at age 52	***Open-ness***	***Extra-version***	***Conscien-tiousness***
Job types (selection)			
Artistic/investigative	**.38****	-.01	.08
Enterprising/social	-.10	**.28***	.01
Work achievement (P x E fit)			
Occupational creativity	**.49****	.25*	.04
High status job	.34**	**.40****	.06
Work satisfaction (appraisal/construal)	-.01	**.34****	-.08

Source: George, Helson, & John (2011)

Socio-cultural factors and timing of work involvement

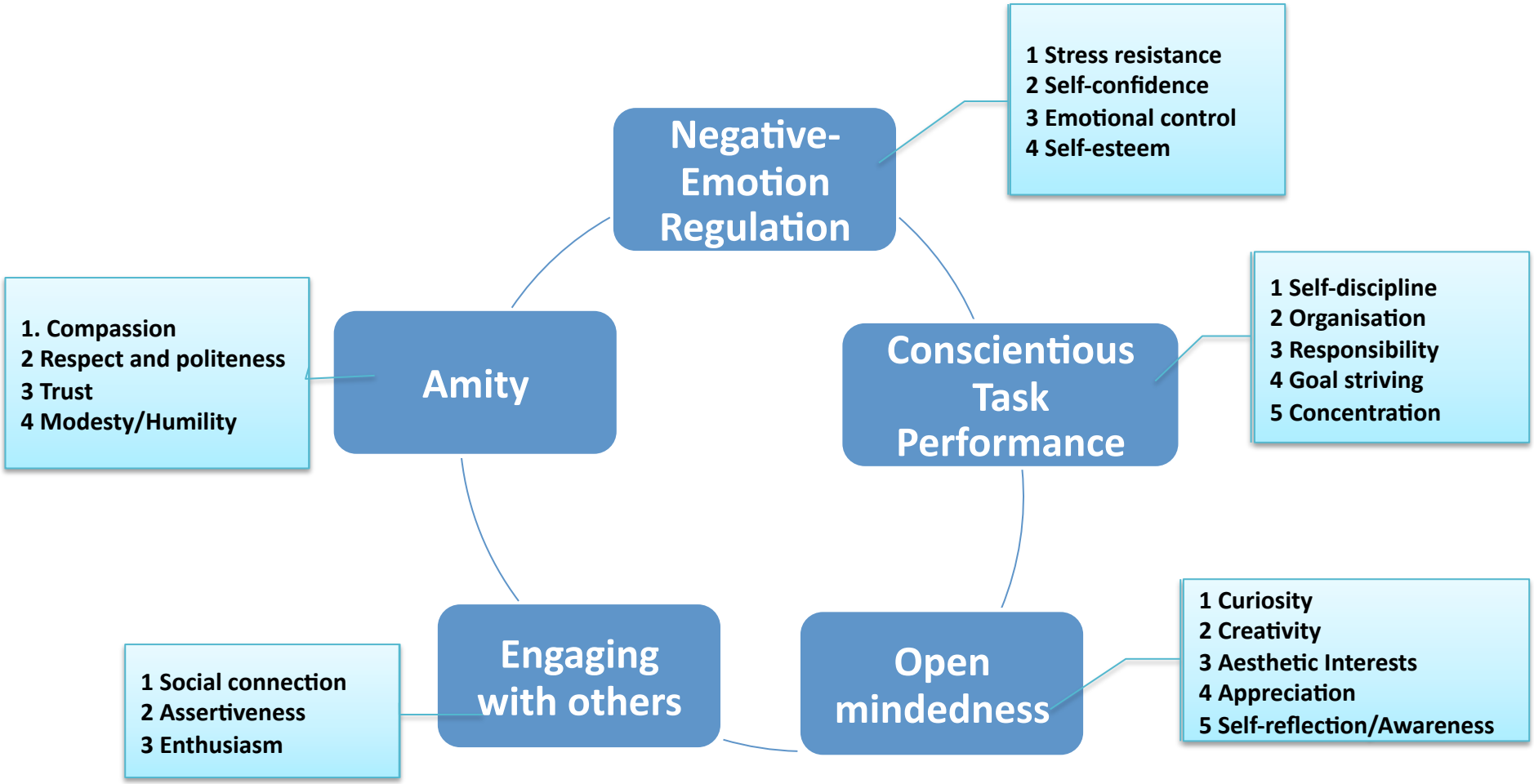
Work and social role measures	***Open-ness***	***Extra-version***	***Conscien-tiousness***
Work participation (ages 21-27)	-.04	-.09	.12
Work satisfaction (27)	.01	.02	.08
Early career begun and maintained to 43	**.35****	**.32****	.07
Work identity late 50s	.12	**.29***	**.35****
Socio-cultural factors			
Traditional role	-**.29****	-.12	**.23***
Early divorce	**-**.06	.17	**-.25***
Women's movement	.19	**.34****	.05


Overall Conscientiousness
60
55
50
45
40
Mean Score
10
20
30
40
50
60
Age
Conscientiousness - M
Conscientiousness - F

OECD: What are the skills individuals need to …

- Work with others (or better: get along)
  - Play, love, and bond (teams, families, …)
- Achieve complex and long-term goals
- Savor and manage emotions when we face
  - Success or failure (pride)
  - Opportunities/rewards or risk (excitement)
  - Stress and adversity (anxiety, anger)
- These are three core tasks throughout life

Proposed OECD Study: *Framework of S/E skills*

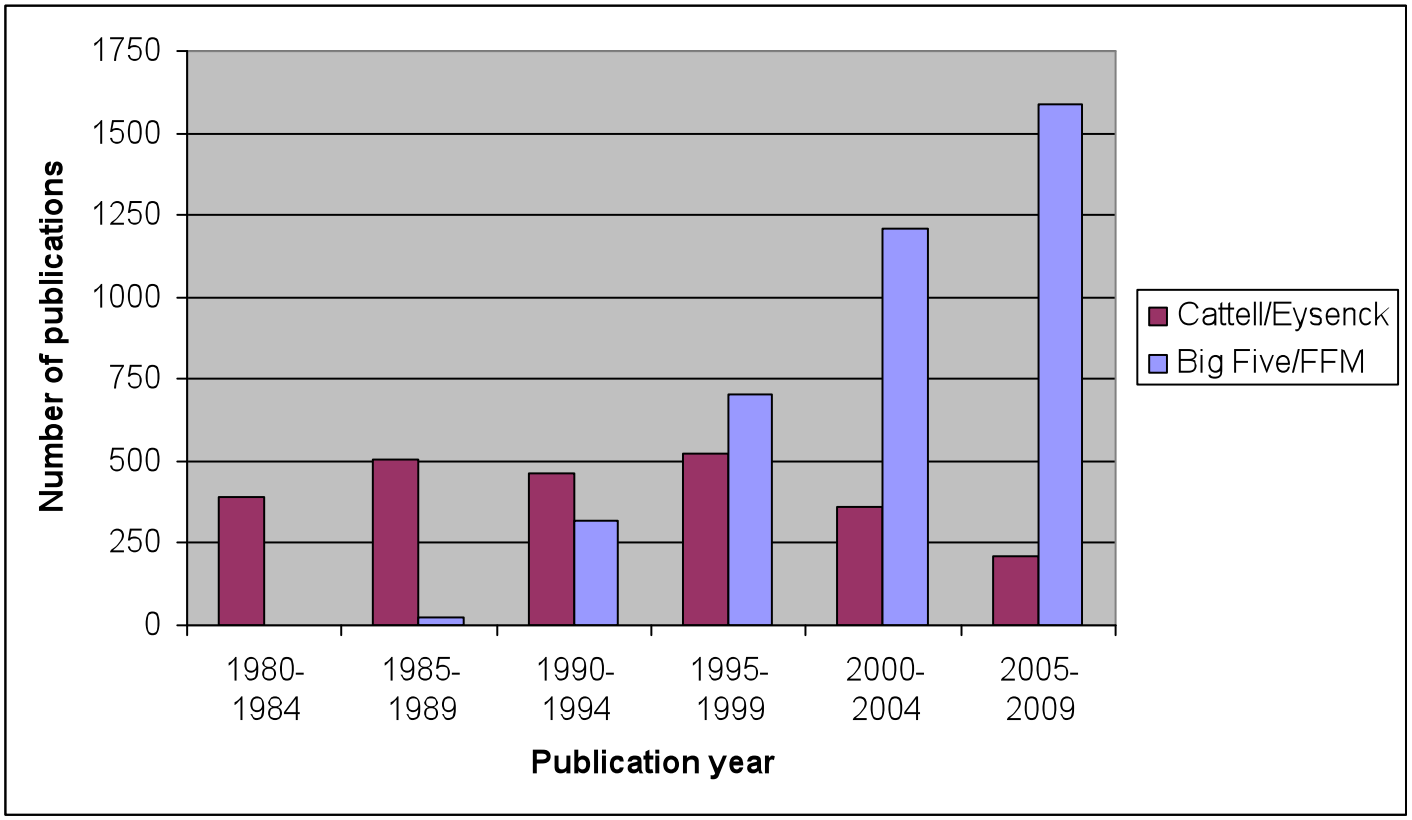


Oliver John and Filip de Fruyt, 2015

Taxonomy: Five Psychosocial Systems and Tasks of Living

- ***O:*** *Open-mindedness*: **Exploration**
  - Interests
- ***C:*** *Conscientious Task Perf.*: **Self-regulation**
  - Standards
- ***E:*** *Engagement*: **Approach**
  - Rewards/gains
- ***A:*** *Amity/Agreeableness*: **Belonging**
  - Close bonds/social support
- ***N:*** *Negative-Emotion Regulation*: **Coping**
  - Adversity: Failures/losses/punishments

The Big Five (in blue): Paradigm shift in publications only since 1995



Five Reasons Why the Big 5 “Stick”

1. Relatively **independent of IQ**
2. Found by many independent investigators
3. Universal? **Surprise**: Same five domains across cultures and language communities
4. **Replicate**: Hallmark of good science
5. They work: **Predict** important outcomes

Still, you may find the Big Five a bit odd/unfamiliar

Like “Green eggs and ham.” Dr. Seuss:

“You do not like them. So you SAY.

Try them, try them, and you may.”

Part 2: Can they be *measured*?

- Gold standard was *behavior in specific tasks*
- Delay test: objectively recorded in minutes
  - Too specific (one-shot); impractical
- *Observational measures:* People who have observed child across situations and time
  - Obervers: Parent and Teacher reports
  - Peer nominations; Self-reports
- Considered “subjective” measures
  - Because scaling done by human judges but
  - May better reflect natural range of behavior
  - And predict important outcomes (doing it right?)

Subjective Ratings of Open-mindedness

Original, curious, imaginative, complex

Correlate with:

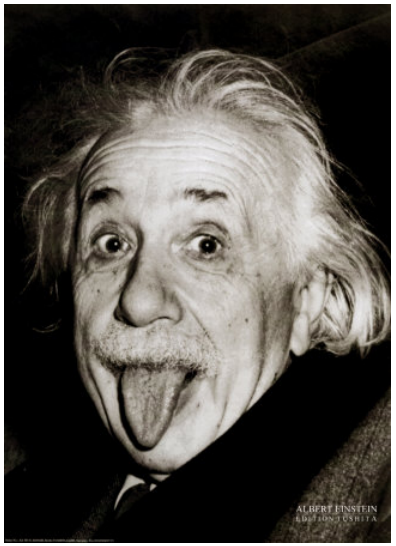
Better performance on creativity tests

Interest and success ($$) in investigative and artistic careers

Unconventional attitudes (and hair)

Intense interest/curiosity

Bored is worse than poor



Lower on these skills→

Openness:
Exploration System

- Interest, imagination, aesthetic reactions
- Mental states, experiential life (oops, cognitive)
- Manifestions in kids:
  - curiosity, “pretend” play, imaginary friends
- **Functions:** very 21st century
  - Flexible adaptation to changing environments
  - Innovation through learning
  - Critical for change and growth (Barbie, age 45)

California Child Q-Sort Items

Parent and teacher ratings of children for Openness:

Is curious and exploring; likes to learn new things
Has a vivid imagination
Is creative in the way s/he thinks, plays, or works
Daydreams; often lost in thoughts, fantasy world

Source: John, Caspi, et al. (1994)

Conscientious Task Performance

Self-regulation system: Meeting standards

Functions: "executive control"

Initiate, coordinate, monitor, and complete complex, long-term, and goal-directed behavior

California Child Q-sort items:

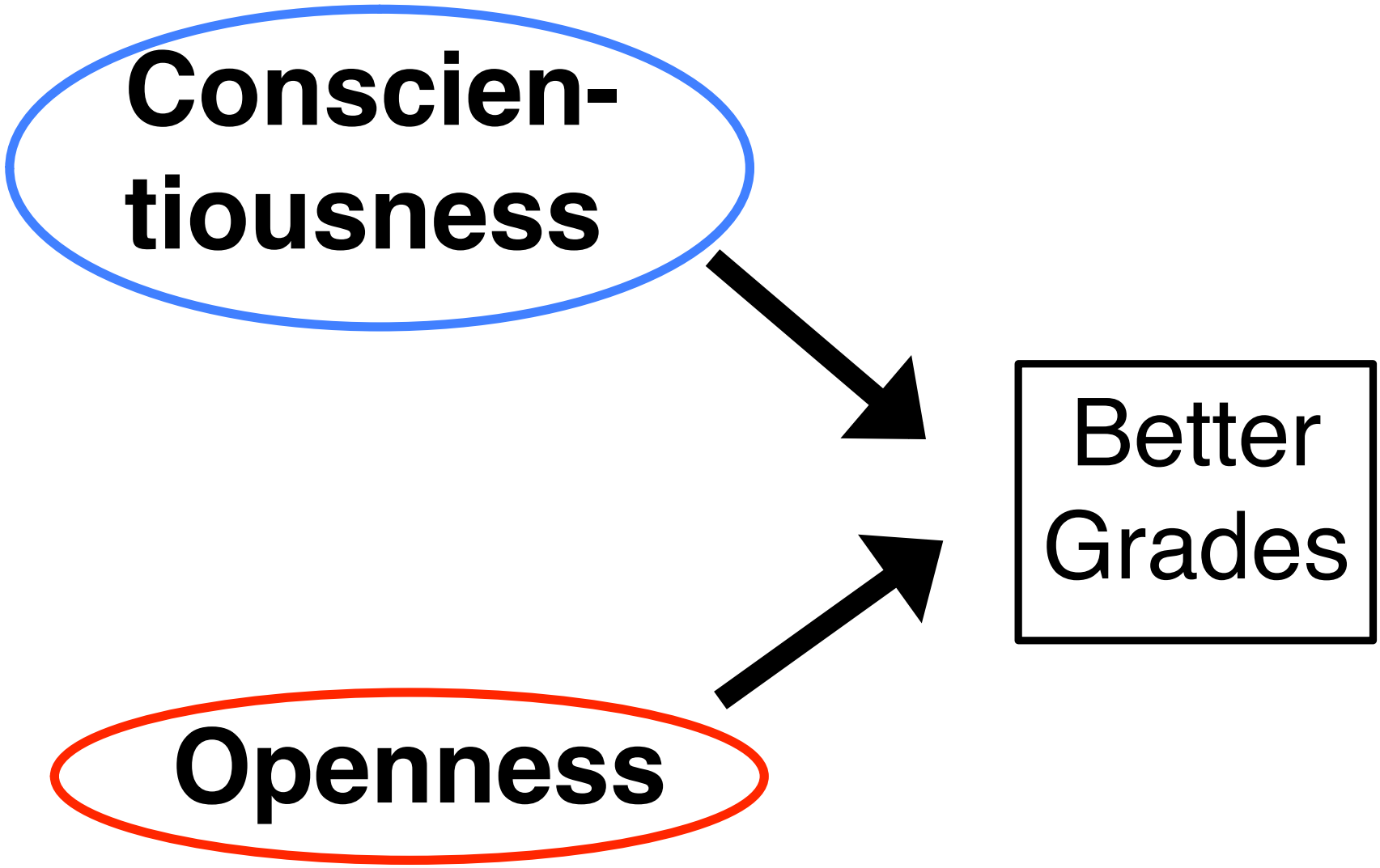
Has high standards for him/herself.

Plans things ahead.

Does not give up easily; persistent. [Grit]

Makes things happen; gets things done.

Inner-city Pittsburgh boys (N=450): Hard outcome measures (grades, j-d, beh. problems)


Conscien-
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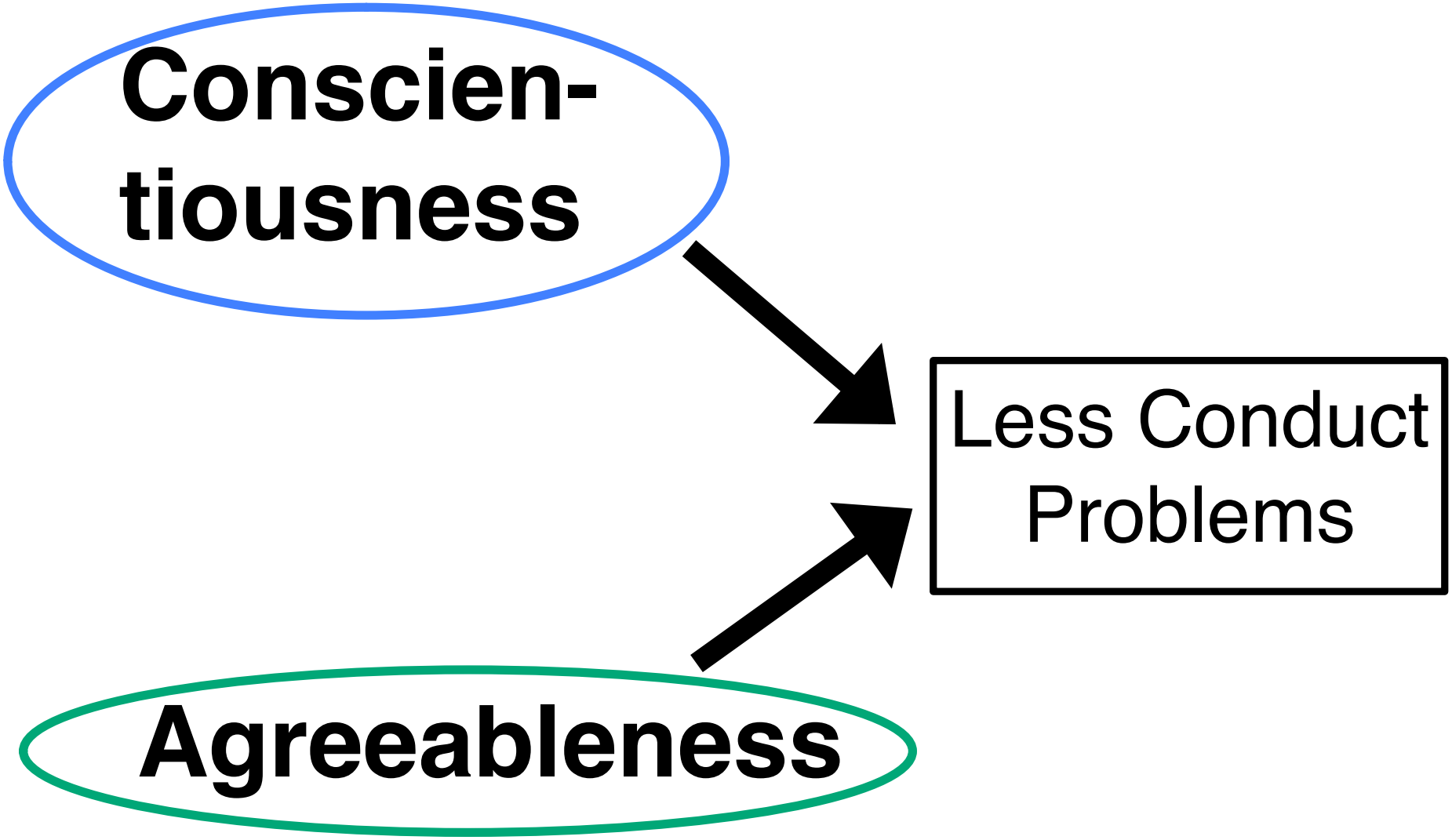
Better
Grades
Openness


Conscien-
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Agreeableness
Less Conduct
Problems

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Implications for Health

- Psychological health
  - Quality of life (impairments); life satisfaction; happiness; energy and engagement
  - Hedonic: Subjective well-being (Diener, Kahneman)
  - Eudaimonic: Purpose in life, Personal growth (Ryff)
- Physical health: Specific disease states
  - Cardiovacular, etc. (beyond Type A)
  - Importance of health behaviors
- Longevity

Big Five Inventory (BFI): Self-report

Instructions: Here are a number of characteristics that may or may not apply to you. For example, do you agree that you *like to spend time with others*? Please write a number next to each statement to indicate the extent to which you agree with that statement.

I am someone who…

- _____ Is talkative
- _____ Is helpful and unselfish with others
- _____ Does a thorough job
- _____ Is relaxed, handles stress well
- _____ Is curious about many different things
- _____ Is easily distracted
- _____ ….

Big Five Inventory (1991)

Items: Grade 5 reading level (age 10)

Short phrases (better than single adjectives)

- "Keeps working until the task is finished"
- "Likes to think, play with ideas"
- "Remains calm in tense situations"

Rate on a 5-point scale

- 1="Disagree strongly"; 5="Agree strongly"

Psychometrics

- *Retest reliability* high over 3-6 months
- *Validated* across self and observer ratings

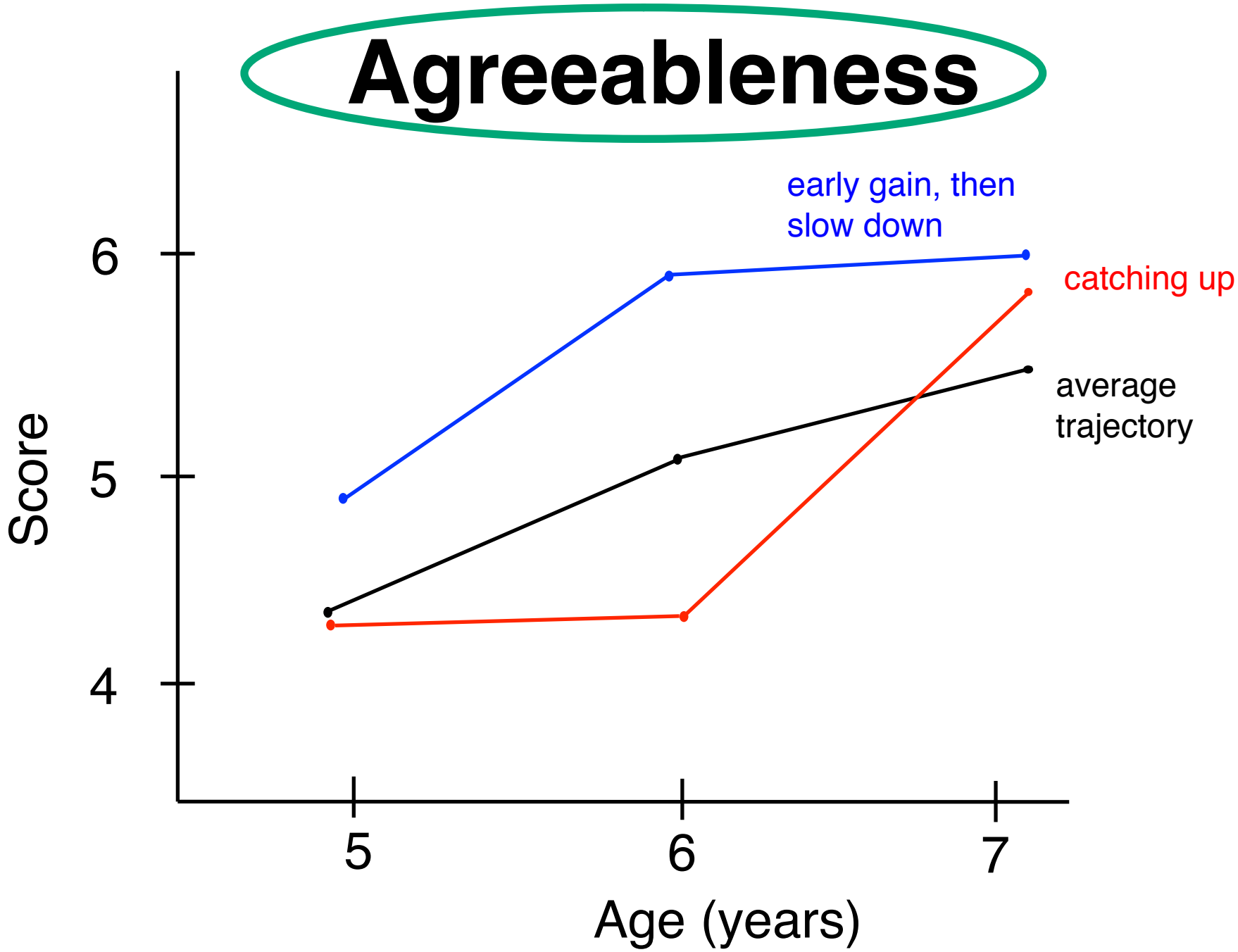
Large data base

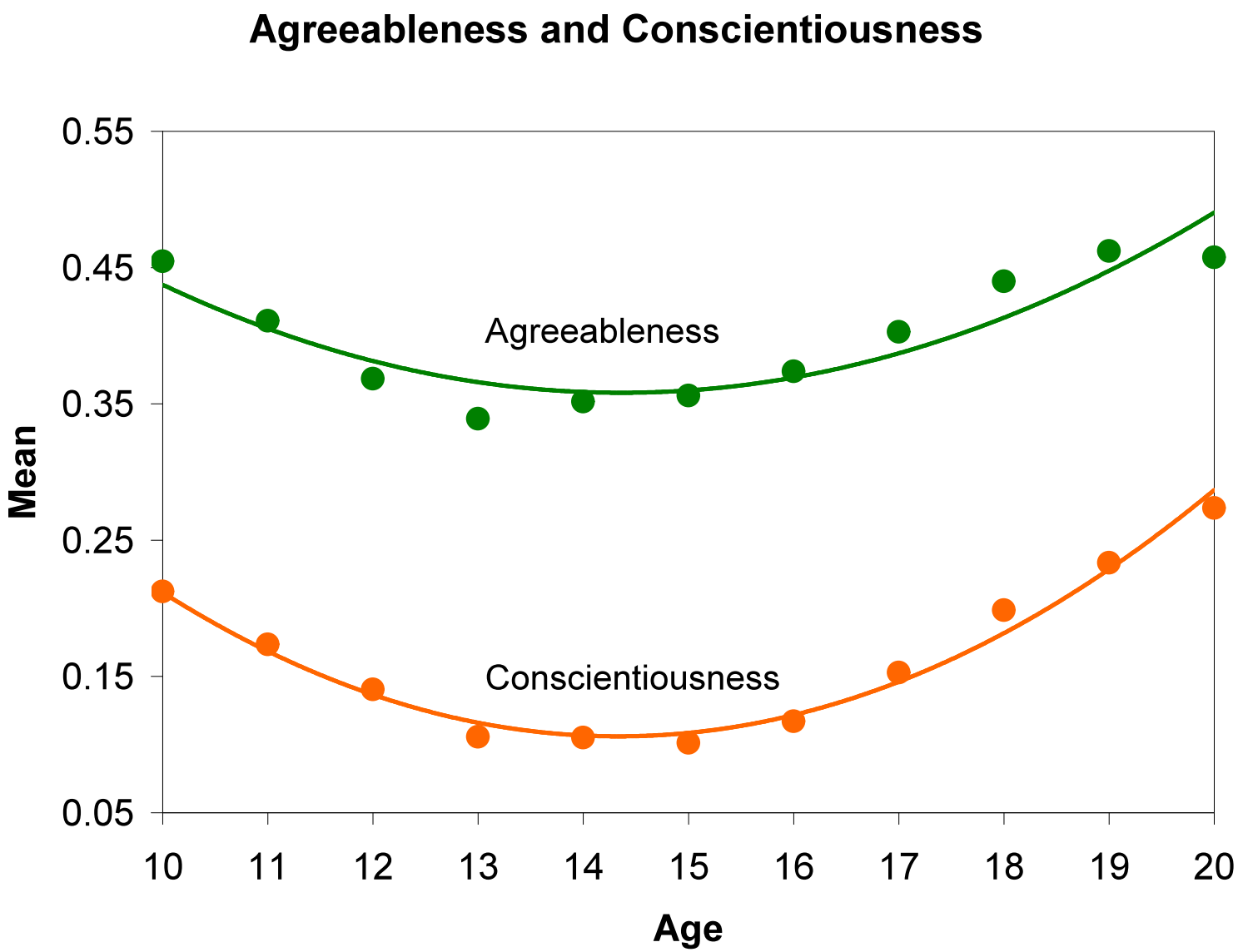
- Translated and adapted into *30 languages*
- Completed by *2 million* people (about 10 min)

Avoid 10-item measures (too short)

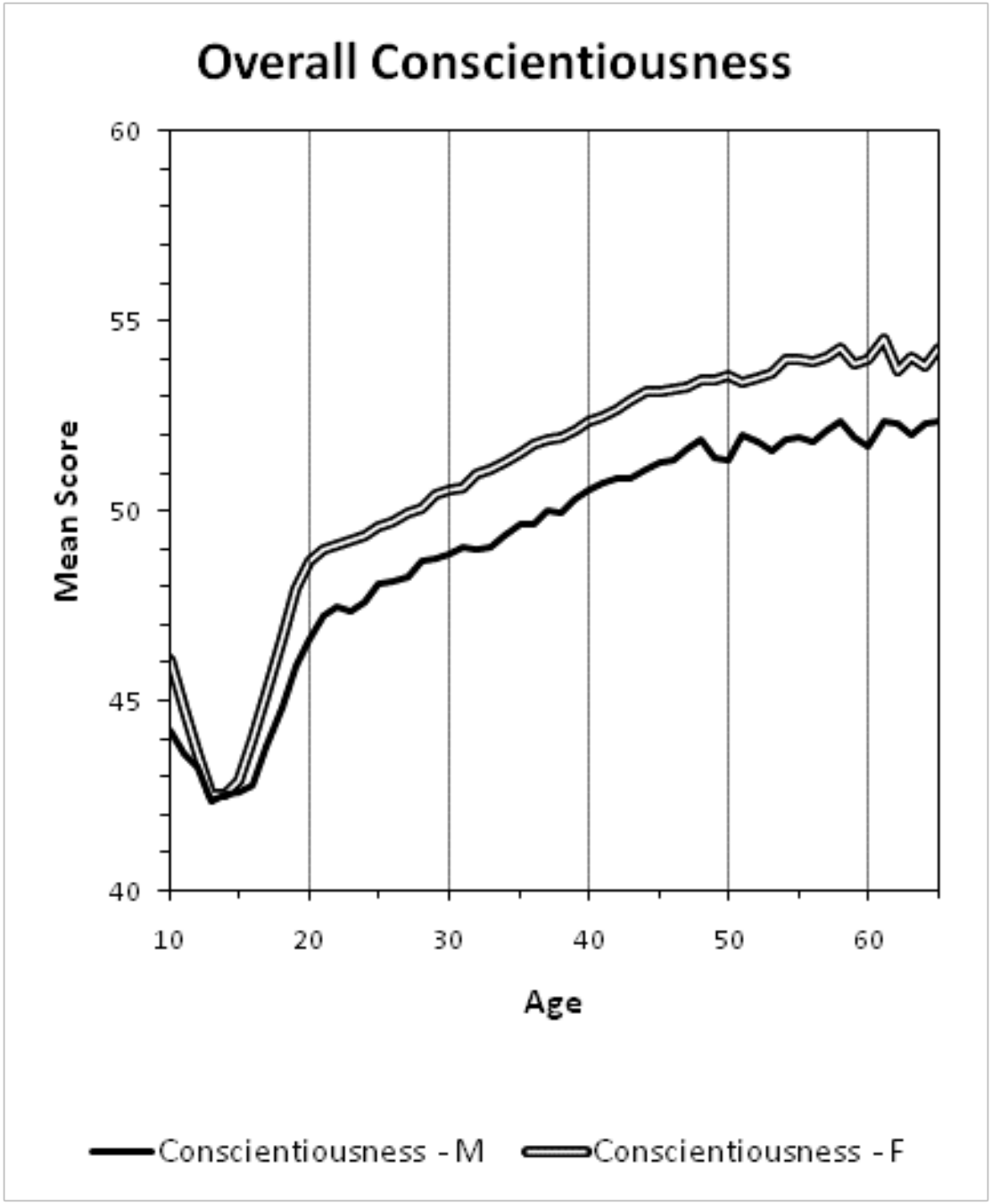
Part 3. *Do they change*?

- **Two critical school transitions**
  - Into school and middle childhood: Learning the “good student” identity: A, C, and NR up
  - Getting through adolescence: Learning the skills to form an adult identity and launch into adult world
- **General** “typical” developmental trends
  - Versus **individual trajectories**


Agreeableness
early gain, then
slow down
catching up
average
trajectory
Score
6
5
4
5
6
7
Age (years)



Note: Points are observed means. Trends are quadratic regression curves (Soto, John, Gosling, & Potter, 2011).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Limitations:
So much we do not know

- Most research **cross-sectional**
  - Different kids at different ages (hard to compare)
- OECD: **need longer-term longitudinal research**
  - Study *same* kids: map *individual* trajectories & outcomes
- Much of the research conducted in
  - USA, England, Germany, and Scandinavia
  - *Now Brazil!*
- OECD: we need a true **cross-country effort**
- We've learned much about "subjective" measures
- No longer scary (green eggs with ham)
- New measures: Economic games, school indicators

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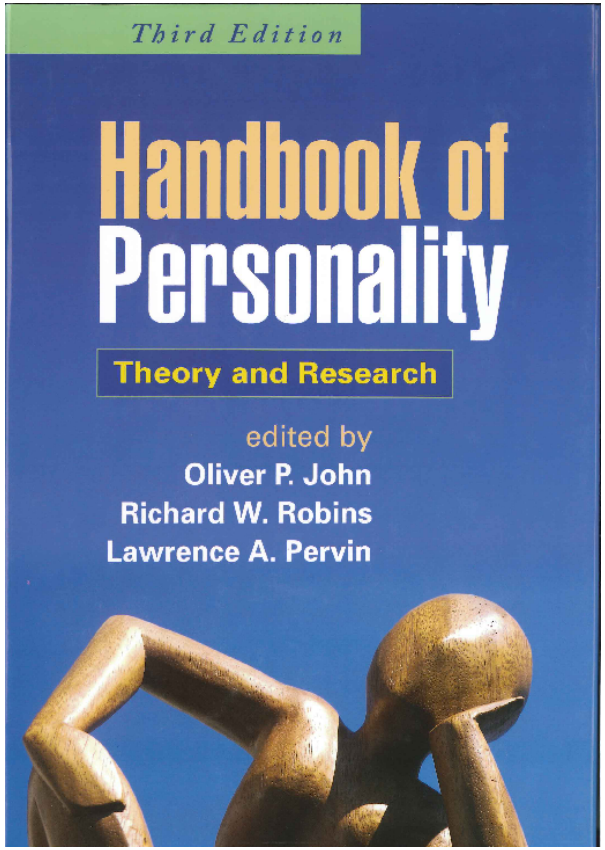
If you are still curious …

- (and truly high in Openness)
- You can find more info in
- the 3rd Edition of the
- **Handbook of Personality**



Thank you

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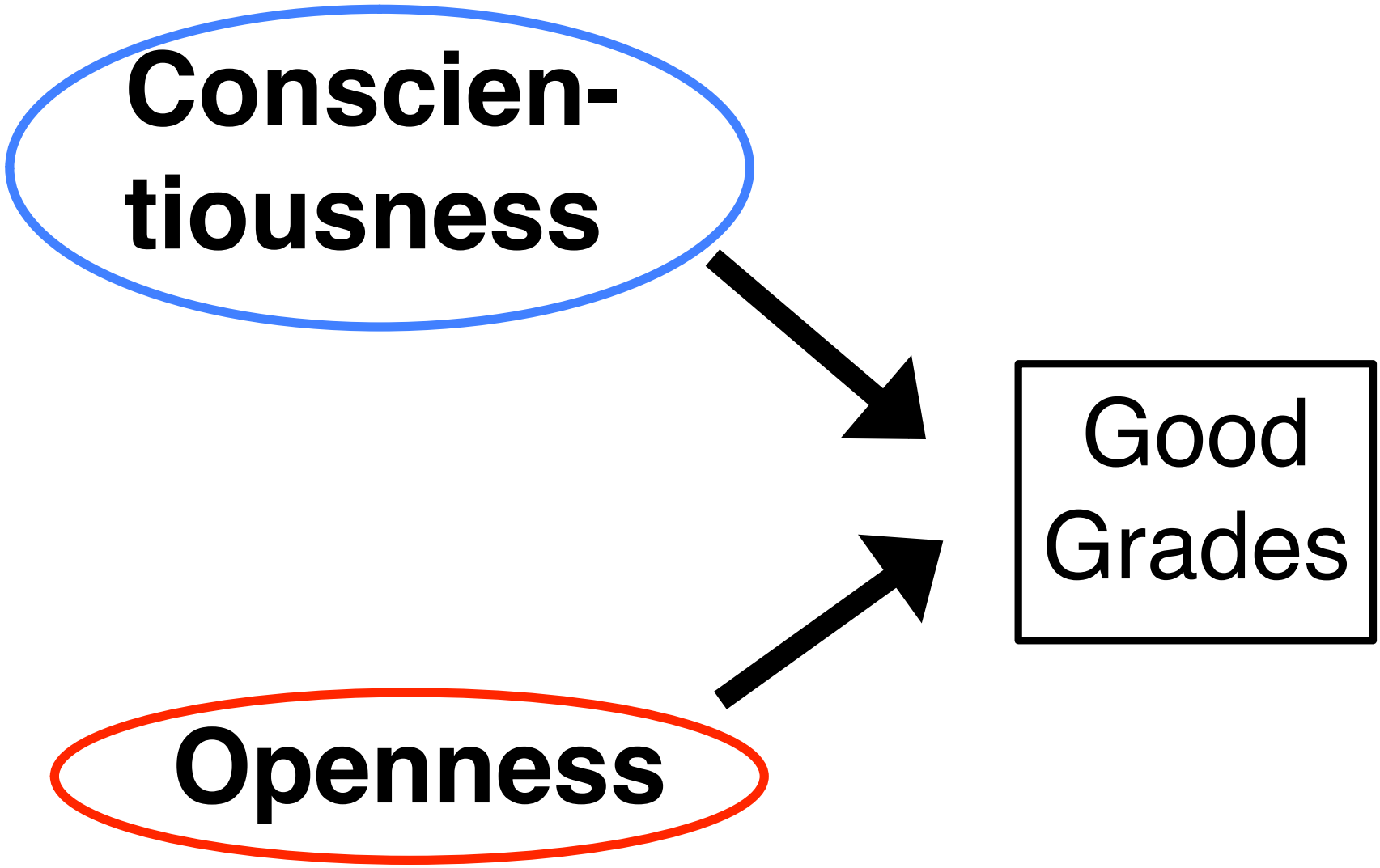
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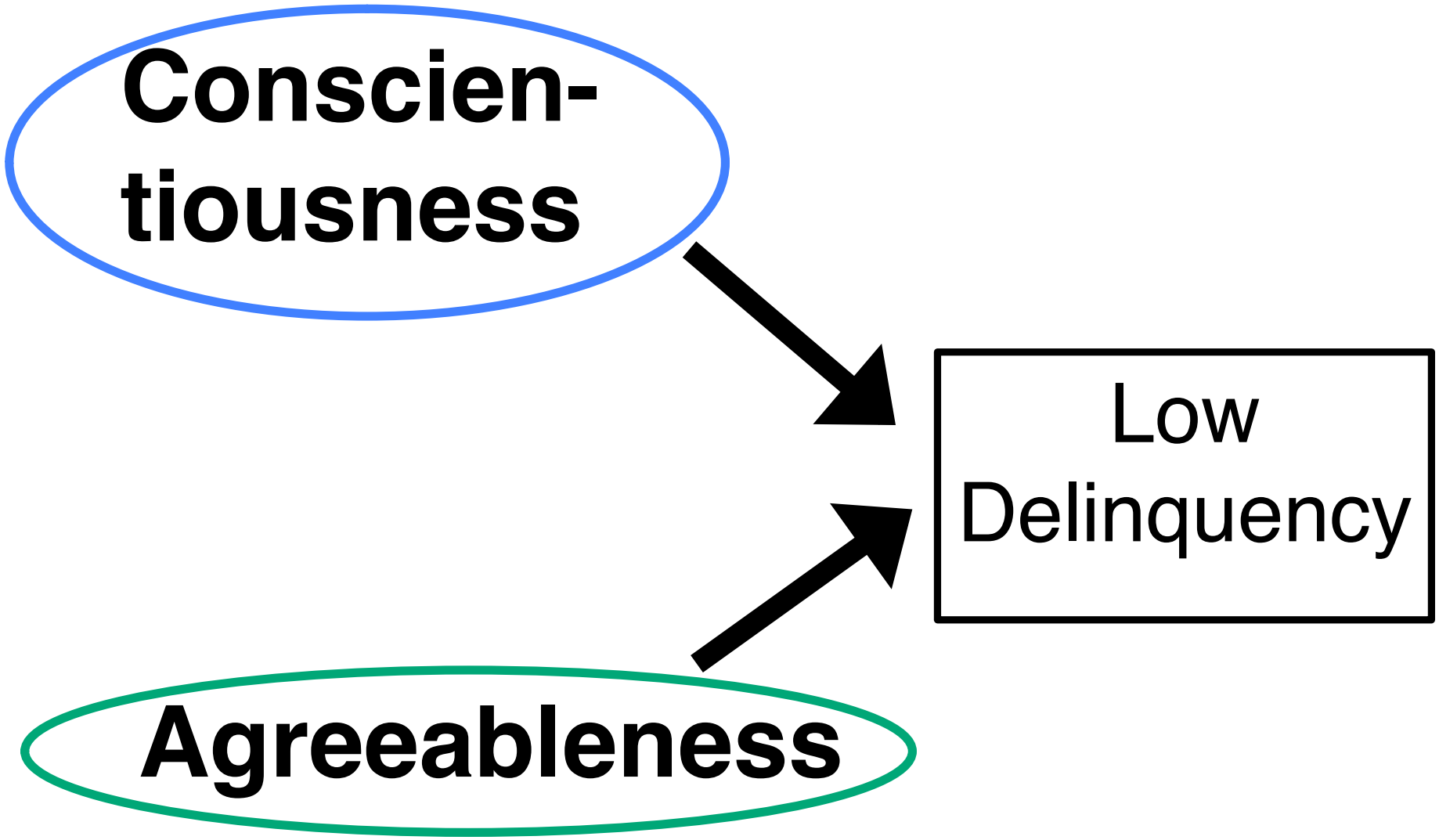
Conscien-
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Low
Delinquency
Agreeableness

Add graph that shows individual trajectories

Add graph that shows individual trajectories

What should we measure?

- Start with very **specific** skills?
  - Unlimited numbers
  - Complex
  - Highly contextualized
  - Often age specific

Some Specific Skills to Learn (8th Grade)

1. Help direct the discussion but don't derail it (Make notes about ideas you'd like to come back to later)
2. Respond to each other (Not just the teacher)
3. Stay curious and open to new ways of thinking (You don't have to know "the right answer," and *there may not even be one*.)

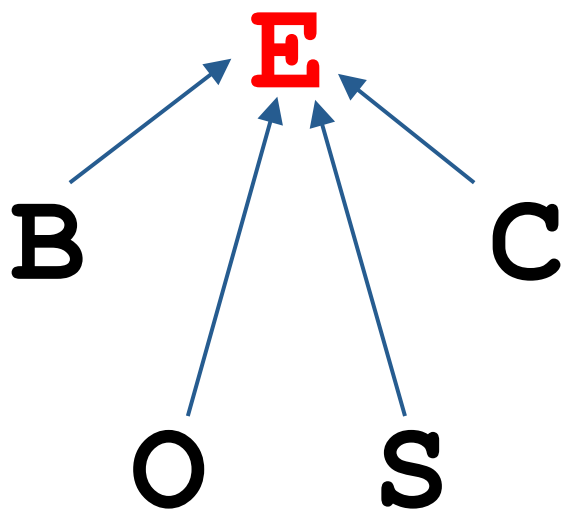
Big Five: Broad domains of social-emotional differences

- Some brief (rushed) background!!
- Let's start with Openness, which you will find easy to recognize
- Because you HERE, at this time, far away from home, in part because you are high in O
- E.g., you like to experience other cultures, try foods that are new to you, you are interested in ideas, willing to try out new or different ideas that you might not agree with or that challenge your own views

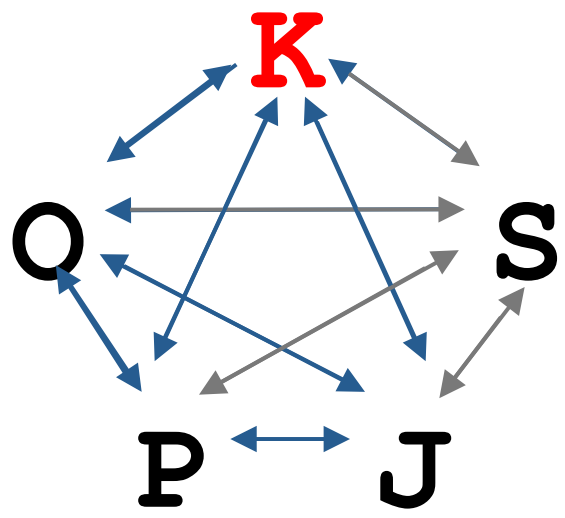
"Construct Validation"

- Generalizability (convergence) across different data sources, such as
  - Teacher, Parent, and Self-report
- Hypothesis tests: Does the measure predict expected behavior in specific settings?
  - C → Arrival time in minutes
  - C → Time spent working on task
  - C → Assessments completed in longitudinal study (ouch!)
- Discriminant validity—previous examples
  - C and O → Good grades
  - C and A → Better conduct

Multiple Perspectives on the Person: 360 Degree Assessment

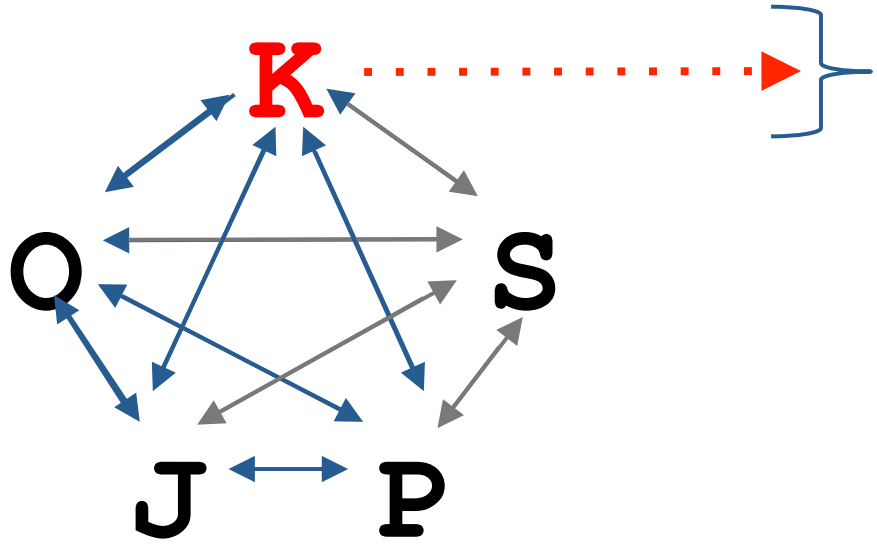


Modeling Convergent Validity: Agreement among Data Sources



John & Robins, 1994; Robins & John, 1997;
Kwan, John, et al., 2004, 2008

Self-ratings and Ratings of Others



Rating self

- How the person sees him or herself.
- "*I finish all my HW*"

Rating all others

- How the person sees each of the other group-members.
- "*Person S finishes all his homework*"

During early school years (middle childhood)

- Transition from preschool into the first grades must be very important
- On average, children acquire increasing skills related to
- Agreeableness
- Conscientiousness
- Emotional stability
- Bot not all kids show those gains, and follow different trajectories

Part 3. *When* should we measure?

- General “typical” developmental trends
  - Versus individual trajectories
- During transitions, start and end point, and trajectories differ sharply across kids
  - Like onset and end of physical growth spurt
- Individual child: Start ahead or fall behind?
- **Two critical school transitions**
  - Into school and middle childhood: Learning the “good student” identity: A, C, and ES up
  - Getting through adolescence: Learning the skills to form an adult identity and launch into adult world

Additional material (unused)