

THE PHILOSOPHY AND SCIENCE OF INTELLIGENCE

PHIL/NEUR 299, SPRING 2019

Dr. Devin Sanchez Curry

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Class sessions: Scovel 004, T/Th 2:30–3:50

Office hours: Scovel 002, M–Th 10–10:50, T/Th 4–5

This course will examine key episodes in the history of scientific and philosophical thinking about intelligence, including debates in current differential psychology and cognitive neuroscience. Topics will include conceptions of the intellect in ancient and modern philosophy, craniometry, psychometric IQ testing and the Flynn effect, the heritability of intelligence, mental chronometry, fMRI and PET studies of the neural correlates of intelligence, theories of the nature and composition of intelligence(s), and the relationships between general intelligence, fluid cognition, rationality, know-how, and creativity. Our guiding question throughout will be how various technical notions of intelligence relate to lay talk about people being smart.

Required book

Stephen Jay Gould, *The Mismeasure of Man* (Norton; 1996 Revised and Expanded Edition)

Brief grading breakdown

Preliminary paper: 10% (due 1/22)

Take-home exam on measuring intelligence: 20% (due 2/19)

Project on IQ in the news: 20% (due 3/7)

Draft of philosophical paper: 10% (due 4/11)

Take-home exam on theories of intelligence: 20% (due 5/2)

Final philosophical paper: 20% (due 5/8)

Brief schedule

Week 1: What is intelligence?

Measuring Intelligence

Week 2: The intellect in philosophy and faculty psychology

Week 3: Craniometry

Week 4: Mental age

Week 5: Psychometrics

Week 6: *g*

Week 7: Philosophy of science of IQ testing

Week 8: Heritability and inequality

Theories of Intelligence

Week 9: Are people getting measurably smarter?

Week 10: Multiple intelligences

Week 11: (Neuro)scientific theories of general intelligence

Week 12: Cognitive neuroscience of intelligence

Week 13: Neural *g*

Week 14: Intelligent behavior

Course Learning Goals

The readings, class discussions, and assignments in this course are all designed to help you work towards mastering the following skills.

1. *Interpretation and Analysis*

Students should be able to analyze, interpret, and understand philosophical texts and discourse. Success in achieving this objective will be measured by a student's ability to:

- Identify and describe the aim(s), strategy, assumption(s), and argument of a text.
- Recognize what is "at stake", and separate understanding and evaluating a text.
- Analyze key terms and identify vague, ambiguous, or nonsensical statements.
- Ask incisive questions, while applying the principle of charity in interpretation.

2. *Argumentation*

Students should be able to effectively identify, evaluate, and formulate arguments.

Success in achieving this objective will be measured by a student's ability to:

- Identify, extract, and summarize arguments from a text.
- Formulate strong objections to a given argument.
- Formulate well-reasoned arguments for and against a position.

3. *Philosophical Knowledge and Methodology*

Students should be able to demonstrate a high degree of fluency with the major traditions, figures, concepts, and methods of philosophy. Success in achieving this objective will be measured by a student's ability to:

- Recognize differences between philosophical and non-philosophical questions.
- Explain the relationships between the methodologies of philosophy and science.
- Distinguish between *a priori* and empirical claims.

4. *Communication*

Students should be able to develop, organize, and express ideas in a precise, clear, effective, and systematic manner in writing and discussion. Success in achieving this objective will be measured by a student's ability to:

- Listen, discuss, and debate in a thoughtful, engaging, and respectful manner.
- Research and strategically plan a paper, and structure it accordingly.
- Stick to the point, choosing the most appropriate and precise wording.

5. *Philosophical Independence*

Students should aim for independence in their thinking in order to be able to form their own philosophical views using the skills mentioned above. Success in achieving this objective will be measured by a student's ability to:

- Support an original philosophical position with well-reasoned argumentation.
- Formulate conceptual questions and distinguish them from empirical questions.

6. *Personal Development*

Students should cultivate philosophical virtues in ways that allow them to apply their philosophical skills beyond the philosophical academic context. Success in achieving this objective will be measured by a student's ability to:

- Apply philosophical skills to conceptual questions in sciences of intelligence.

Detailed grading breakdown

Preliminary paper (10%)

A 500–750 word preliminary paper will be due on the second day of class (1/22). Answer each of the following four questions. You will be graded on how thoughtfully and clearly you answer questions (2)–(4). Your answer to question (4) should take your answers to questions (2) and (3) into account.

- 1) Why did you sign up for this class? (Be honest; no worries if the answer is boring.)
- 2) Who is the smartest person you know, and what makes them smart?
- 3) Does that person lack any of the characteristics typically associated with intelligence?
- 4) What is intelligence? (That is, what do you mean when you say somebody is smart?)

Two take-home exams (20% each)

A take-home exam on the history of craniometry and psychometrics will be due on 2/19, and a take-home exam on psychological and neuroscientific theories of intelligence will be due on the last day of class (5/2). Each exam will consist of three essay prompts; write 500–750 word essays in response to two prompts of your choice. You will be graded on how accurately and thoroughly you respond to each part of the prompts you select.

Project on IQ in the news (20%)

A project on media discussion of IQ will be due on 3/7. Locate a story in a major media source that cites at least one scientific study concerning IQ, and then read the original scientific journal article that presents that study. Then write a four-paragraph essay evaluating the portrayal of intelligence in the media.

- 1) First paragraph: explain the relevant finding(s) in your own words.
- 2) Second paragraph: assess the accuracy of the media portrayal of the science.
- 3) Third paragraph: explain how the scientific research bears on the IQ controversy.
- 4) Fourth paragraph: assess how the media deals (or could deal) with the controversy.

Philosophical paper (draft: 10%; final: 20%)

A 1,000–2,000 word draft of a philosophical paper will be due on 4/11. This paper may address either the question “What is intelligence?” or another topic chosen in consultation with me. Expectations will be discussed during a writing workshop on 3/28. I will return comments on your draft by 4/23. Your revised final paper will be due on 5/8.

Policies

Participation

Daily class participation will be the determining factor if you end up on the borderline between two grades (e.g. B+/A-). Some tips: come to each class having read—and, if necessary for comprehension, reread—the assigned readings. Ask questions. Contribute to class discussion when you have something to say. Listen to your peers carefully and respectfully whether or not you have something to say.

Due dates, extensions, and late assignments

Hard copies of assignments are due at the beginning of class. If you need an extension, please ask in writing (a brief email is fine); I will grant a 48-hour grace period, without penalty, no questions asked. If you need more than two extra days, you must meet with me during office hours. Assignments will be penalized one point (1% of your total grade) for each day late.

Plagiarism

Don't do it. Exercise academic integrity, as defined in [*The Scot's Key*](#). Plagiarism (or abetting another student plagiarizing) will result in an automatic zero on the plagiarized assignment, as well as an official report. If you have questions about what constitutes plagiarism, please consult *The Scot's Key* and/or ask me.

Accommodations

If you have good reason to be exempt from (or subject to a modified version of) any policy on this syllabus, please let me know. We'll work something out. Students with diagnosed disabilities should contact Kaylynne Mahone, Assistant Director of the Learning Center (ext. 2595; kmahone@wooster.edu), to secure appropriate accommodations.

Detailed schedule of readings

1/15: What is intelligence?

Reading: Neisser, "Intelligence, Knowns and Unknowns"

1/17: *No class.*

Measuring intelligence

1/22: The intellect in philosophy and faculty psychology

Reading: Gould, "Introduction" (51–61)

1/24: Faculty neurobiology

Reading: Gould, "Samuel George Morton—Empiricist of Polygeny" (82–104)

1/29: Craniometry

Reading: Gould, "Measuring Heads" (105–141)

1/31: Remeasuring heads

Reading: Lewis et al., "The Mismeasure of Science"
Weisberg, "Remeasuring Man"

2/5: Measuring mental age

Reading: Gould, "The Hereditarian Theory of IQ" (176–210)
Lippmann, "The Mental Age of Americans"

2/7: The Lippmann-Terman debate

Reading: Terman, "The Great Conspiracy"
Lippmann, "The Great Confusion"
Terman, Letter to the *New Republic*
Lippman, Letter to the *New Republic*

2/12: Psychometrics and IQ

Reading: Gould, "The Hereditarian Theory of IQ" continued (210–263)

2/14: Factor analysis

Reading: Gould, "The Real Error of Cyril Burt" (264–285)

2/19: *g*

Reading: Gould, "The Real Error of Cyril Burt" continued (286–350)

2/21: Does *g* matter?

Reading: Gould, "A Positive Conclusion" and Epilogue (351–366)

Gottfredson: "Why *g* Matters"

2/26: Do IQ tests measure intelligence?

Reading: Block & Dworkin, "IQ: Heritability and Inequality, Part I" I–VI (331–378)

2/28: If IQ tests don't measure intelligence, what do they measure?

Reading: Block & Dworkin, "IQ: Heritability and Inequality, Part I" VII & VIII (378–407)

3/5: Heritability and inequality

Reading: Block & Dworkin: "IQ: Heritability and Inequality, Part II"

3/7: Are people getting measurably smarter?

Theories of intelligence

3/26: Metatheoretical considerations and the Flynn effect

Reading: Flynn: "The Metatheory of Intelligence"

3/28: Writing workshop

4/2: Culture and intelligence

Reading: Sternberg and Grigorenko: "Intelligence and Culture"

4/4: The theory of multiple intelligences

Reading: Gardner: "Multiple Intelligences in a Nutshell" and "The View After 25 Years"

4/9: Psychological and neuroscientific theories of intelligence

Reading: Flynn: "Scientific Theories of Intelligence"

4/11: Mental chronometry

Reading: Jensen, "The Theory of Intelligence and its Measurement"

4/16: History of neuroimaging studies of intelligence

Reading: Haier, "Peeking Inside the Living Brain"

4/18: Brain networks and intelligence

Reading: Haier, "50 Shades of Gray Matter"

4/23: The parieto-frontal integration theory

Reading: Jung & Haier, "The Parieto-Frontal Integration Theory of Intelligence"

Norgate & Richardson, "On Images from Correlations"

Sternberg, "Right Answer to the Wrong Question"

4/25: General intelligence without a neural *g*

Reading: van der Maas et al., "A Dynamical Model of General Intelligence"

4/30: Intelligent behavior

Reading: Ryle, "Knowing How and Knowing That"

5/2: What is intelligence, again?