Intelligence and Creativity

Psychology 650, section 9 (3 credit hours), CRN 27307
Psychology 450, section 9 (3 credit hours), CRN 27278

Fall 2007, University of New Mexico

Instructor: Geoffrey Miller
Where: Logan Hall B15 (basement level)
When: Wednesdays 10:00 am – 12:30 pm

Overview
This new graduate-level seminar considers human intelligence and creativity, both as human universals and as dimensions of individual variation. We will focus on psychometrically validated models of intelligence and creativity that have proven reliable and predictive in real-world settings.

Topics to be covered include:
The nature of intelligence: the g factor, general cognitive ability, and IQ
The real-life importance of intelligence in education, work, and relationships
The behavioral and molecular genetics of intelligence
Brains and the neural basis of intelligence
General intelligence vs. domain-specific abilities
The evolution and functions of intelligence
Social intelligence in animals and humans
Displaying and judging intelligence
Mating intelligence
Emotional intelligence
Rational vs. adaptive intelligence
The nature of creativity
Cognitive and neural mechanisms of creativity
Creativity, madness, and mating
Creativity and intelligence

Course mechanics
We will meet once a week for two and a half hours. I expect punctuality. There will be a 10-15 minute break about half way through each meeting. If you have to miss a class for any reason, please let me know by email as soon as you know you’ll be absent. Unexplained absences will reduce your grade. The course readings will require about 3 hours per week outside class, and will include selections from the textbook, plus some recent journal papers.

Required textbooks:
Instructors’ contact details:
Dr. Geoffrey Miller, Assistant Professor
Psychology, Logan Hall 160
University of New Mexico, Albuquerque, NM 87131-1161, USA
(505) 277-1967 (office)
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gfmiller@unm.edu
http://www.unm.edu/~psych/faculty/gmiller.html
Office hours: Tuesdays, 11 am to noon, Logan Hall 160
If you can’t attend office hours and you have a question, please call or email.

Grading:
- 40%: class attendance, participation and preparation and presentation of xeroxed comments on the readings. I expect regular attendance, knowledge of assigned readings, active participation, intellectual engagement, and well-prepared presentations concerning the readings. Each week, one student will be assigned to lead the discussion of each reading for the following week. Those students will be expected to write one page of discussion-provoking ideas and issues, and to distribute copies to each student in the class. These one-page commentaries should not review the target article or commentaries. Instead, they should articulate the student’s own thoughts, reactions, and questions in response to the readings.
- 60% of grade: one three-stage term paper, APA format, c. 5,000 words (20 pages double spaced), methodologically oriented, including a critical assessment of a research literature and an outline of a possible study. The term paper is due in three stages:
  - 10% for provisional abstract, outline, and bibliography due Sept. 19
  - 20% for revised abstract, detailed outline, and revised bibliography due Nov. 7
  - 30% for final draft due Dec. 5 (last day of class)

no exams

Reading requirements
Each week we will read and discuss material from the textbooks, journal papers, and/or other book chapters. Please do not take this course if you cannot commit an average of three hours a week to the readings. The course’s educational benefits depend on you completing the readings on time, so you can follow and participate in the class discussion. If you don’t read them, you won’t learn much; if you do read them attentively, you’ll learn a lot. I expect all of each week’s required readings to be completed well before class, so you have time to digest them, think about them, compare and contrast them, and prepare intelligent comments and questions about them. Last-minute reading will not result in good comprehension or good in-class discussion.
Preparing notes on the assigned readings for each class

One week before each reading is due to be discussed, I will ask for student volunteers to prepare a one-page set of notes, comments, and questions concerning each reading. I expect each student to volunteer for several such reading analyses throughout the semester. The quality of these analyses will form a substantial portion of your class participation grade, which is 40% of your final course grade.

When it is your week to present a reading, please bring enough copies of your one-page analysis to distribute to everyone else in the class. Assume that the other students have read the paper thoroughly and attentively, and want to know what you think of it. These analyses will initiate class discussion of that reading.

The one-page analyses should have your name at the top, the date, and the APA-format reference for each reading as the header for your comments on that reading. Use numbered lists to identify your specific notes, comments, and questions under each reading. Please make at least three or four substantive comments on each reading—not simply summarizing the reading’s main points, but offering some sort of critical analysis of the reading’s ideas, or comparison to other readings, etc.

Details on the term paper

This three-step writing assignment determines 60% of your course grade. You can choose any topic related to the course content and course readings. The final paper should be about 4,000 to 6,000 words, plus references. I care more about clarity, insight, research, and the flow of argument than about length per se.

Please plan to submit the final draft in standard APA (American Psychological Association) research paper format. This means computer-printed, double-spaced, single-sided, in 12 point Arial (preferably) or Times Roman font, with a proper title page, abstract, references, and page numbering. Consult the APA Publication Manual (4th Edition) for more details.

To make sure that you are thinking, researching, and writing the paper on a good schedule throughout the semester, I require the following:

1. Sept. 19: Provisional abstract, outline, and bibliography due. A provisional topic statement/abstract (one paragraph), provisional outline of paper (about a page), and provisional bibliography.

   The bibliography should list about 10 to 20 references (not all from the syllabus here!), that you have actually read, with brief notes about their relevance to your paper. In the abstract, just let me know what you think you’ll probably write about. If you change your mind, no problem, just tell me in an email later. But I want you to have some topic in mind by this date. Pick a topic that you feel passionate about—you’ll have to live with it for several months! This topic statement outline will determine 10% of the course grade. Late submissions will be penalized. After I get this provisional abstract, I will write comments and suggestions on it and return it to you as soon as I can.

2. Nov. 7: Revised abstract, detailed outline, and revised, annotated bibliography due.

   This should be a revised abstract that takes into account my feedback concerning your provisional abstract, plus a much more detailed outline of your term
paper, clearly showing its planned structure, and a revised, more complete bibliography. The outline should be a few pages long, and each outline entry should be a clear, detailed, specific statement, not just a short, vague phrase. The flow of your paper’s argument should be apparent. Late submissions will be penalized.

In the annotated bibliography, use standard APA reference format, and please note each reference’s relevance to your topic. A good annotation would be “This critically reviews four recent emotional intelligence measures, emphasizing their weaknesses with respect to test-retest reliability, discriminant validity, and predictive validity.” A bad outline entry would be “Reviews emotional intelligence”.

After I get this outline, I will write comments and suggestions on it and return it to you as soon as I can. This should allow you to submit a really good final draft, and I hope it will help you improve your writing generally.

3. Dec. 5 (last day of class): Final term paper due.
   This should be a highly polished document in correct format with no spelling or grammatical errors. It should represent the culmination of three months of research, thinking, and writing about a topic that passionately interests you. I will try to grade final drafts by the last day of exams.

   Structure of the term paper: The ideal paper would include the following elements:
   - Title page: a decent, descriptive, memorable title, and all other information required for APA format
   - Abstract page: a concise, punchy abstract that interests the reader in your paper
   - Introduction: Start with a bang. Pose the problem that interests you, and how you’ll approach it. Say where you stand, and why the reader should care. Be specific and clear; mix the theoretical and methodological level of discourse with real-life examples and issues; know when to be funny and when to be serious.
   - Body of the paper: depending on what you’re writing about, this could include a literature review, a series of arguments, an overview of relevant ideas and research from a related area or field, a series of methodological analyses, criticism, and suggestions, or anything that advances your points. If you include literature reviews, don’t do generic overviews – review the literature with a purpose, critically, as it pertains to your topic.
   - Research proposal: ideally, towards the end of your paper, you could sketch out a new empirical way to resolve one or more of the issues you’ve raised in your paper. This could be a brief outline of an experiment, an observational method, a meta-analysis or re-analysis of existing data, or any other method you think would be appropriate.
   - Bibliography: Only include things you’ve read. If you haven’t read them and have only seen them cited by others, then use this format: “(name, date; as cited in: name, date)”. If your bibliography includes good, relevant papers and books that I haven’t seen before, I will be impressed.

11. Course Schedule
No assignments before the first class

1: Aug. 22  
**Introduction to the course**

Read: [40 pp total]

2: Aug. 29  
**Introduction to intelligence**

Read: [73 pp total]

3: Sept. 5  
**Real-life importance of intelligence**

Read: [58 pp total]
intelligence. European Journal of Human Genetics, 14, 690-700. [9 pp]


4: Sept. 12

Genetics of intelligence

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Read: [50 pp total]


Term paper abstract due

5: Sept. 19

Brains and intelligence

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Read: [102 pp total]


Prokosch, M., Yeo, R., & Miller, G. F. (2005). Intelligence tests with higher g-loadings show higher correlations with body symmetry: Evidence for a general fitness factor mediated by developmental stability. *Intelligence, 33*, 203-213. [9 pp]

6: Sept. 26  **General intelligence vs. domain-specific abilities**

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Read: [80 pp total]


7: Oct. 3  **Evolution of intelligence**

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(No class Oct. 10: instructor away in Boston)

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Read: [56 pp total]


Personality and Social Psychology, 86(4), 599-614. [14 pp]


8: Oct. 17  **Social intelligence**

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Read: [70 pp total]


9: Oct. 24  **Mating intelligence**

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Read: [54 pp total]


10: Oct. 31

**Emotional intelligence**

Read: [52 pp total]


**Term paper outline due**

11: Nov. 7

**Rational vs. adaptive intelligence**

Read: [56 pp total]


12: Nov. 14

**Introduction to creativity**

Read: [51 pp total]

13: Nov. 21  
**Creativity mechanisms**
(day before Thanksgiving break)

Read: [40 pp total]


14: Nov. 28  
**Creativity, madness, and mating**

Read: [51 pp total]


**Final term paper due**
15: Dec. 5  
*Creativity and intelligence*  
(last day of class)

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(Final exams Dec. 10-14; no exam in this class)

**Appendix: Good movies with intelligence and creativity themes**

**General intelligence**
Gattaca (1997)  
Little Man Tate (1991)  
Real Genius (1985)  
Quiz Show (1994)

**Verbal intelligence**
Lenny (1974)  
Spellbound (2002)  
The Usual Suspects (1995)  
Wordplay (2006)

**Social and emotional intelligence**
12 Angry Men (1957)  
Catch Me if you Can (2002)  
House of Games (1987)  
Six Degrees of Separation (1993)  
The Last King of Scotland (2006)  
The Negotiator (1998)  
The Spanish Prisoner (1997)  
The Talented Mr. Ripley (1999)  
What Women Want (2000)

**Mating Intelligence**
Before Sunset (2004)  
Dangerous Liaisons (1988)  
Groundhog Day (1993)  
Knocked Up (2007)
The Last Seduction (1994)
The Tao of Steve (2000)

**Cognitive disabilities**
Borat (2006)
Fargo (1996)
I Am Sam (2001)
Idiocracy (2006)
Memento (2000)
Mozart and the Whale (2005)
Rain Man (1988)
Sling Blade (1996)
Zoolander (2001)

**Artificial intelligence**
A.I.: Artificial Intelligence (2001)

**Alien intelligence**
Contact (1997)
Dark City (1998)
Solyaris (1972)
Stalker (1979)
Starship Troopers (1997)
The Abyss (1989)

**Specific domains of intelligence and creativity**

**Art & architecture**
Art: 21
Crumb (1994)
Frida (2002)
La Belle Noiseuse (1991)
Max (2002)
My Left Foot (1989)
Pollock (2000)
Rivers and Tides (2001)
The Shape of Things (2003)

**Business, invention**
Cypher (2002)
Enron: The Smartest Guys in the Room (2005)
Glengarry Glen Ross (1992)
Paycheck (2003)
Primer (2004)
Schindler’s List (1993)
The Aviator (2004)
The Insider (1999)
The Triumph of the Nerds (1996)
Wall Street (1987)

Games (e.g. chess)
A Beautiful Mind (2001)
Existenz (1999)
Fail-Safe (1964)
Searching for Bobby Fischer (1993)
The Game (1997)
The Luzhin Defence (1995)

Government, espionage
Spy Game (2001)
The Bourne Identity (2002)
The Fog of War (2003)
The Good Shepherd (2006)
Three Days of the Condor (1975)

Literature
Henry Fool (1997)
Quills (2000)
The Hours (2002)
The Source (1999)

Math
Good Will Hunting (1997)
N is a Number: A Portrait of Paul Erdos (1993)
Pi (1998)
Proof (2004)

Music
Amadeus (1984)
No Direction Home (2005)
Shine (1996)
Three Colors: Blue (1993)
Thirty Two Short Films about Glenn Gould (1993)