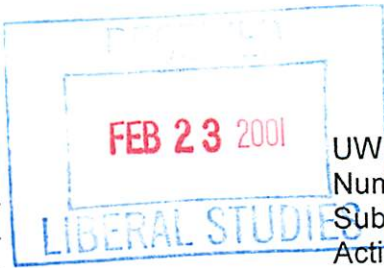


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App 8/28/01
Senate App 10/2/01

CURRICULUM PROPOSAL COVER SHEET
University-Wide Undergraduate Curriculum Committee

I. CONTACT

Contact Person Barkley Butler, Miriam Chaiken or Mary Lou Zanich
Phones Butler 7-2352, Chaiken 7-3932, Zanich 7-2426

Departments Biology, Anthropology, Psychology

II. PROPOSAL TYPE (Check All Appropriate Lines)

____ COURSE _____
Suggested 20 character title

New Course* HNRC 202 - Honors Core: Sciences
Course Number and Full Title

____ Course Revision _____
Course Number and Full Title

Liberal Studies Approval HNRC 202 - Honors Core: Sciences
for new or existing course Course Number and Full Title

____ Course Deletion _____
Course Number and Full Title

____ Number and/or Title Change _____
Old Number and/or Full Old Title

New Number and/or Full New Title

____ Course or Catalog Description Change _____
Course Number and Full Title

II. Program ____ Major ____ Minor ____ Track

____ New Program* _____

____ Program Revision Honors College

III. Approvals (signatures and dates)

Miriam Chaiken
Anthropology Curriculum Committee

Cheryl D. ...
Anthropology Dept. Chair



John A. Hulse
Biology Curriculum Committee

W. Barkley Butler
Biology Dept. Chair

Janet E. Brown
Psychology Curriculum Committee

Mary Jo Gouin
Psychology Dept. Chair

[Signature]
Natural Science & Math Curr. Comm.

John D. Eck
Natural Science & Math Dean

Robert H. Russell
Humanities & Social Sciences Curr. Comm.

[Signature] 1/24/2001
Humanities & Social Sciences Dean

[Signature] 4/19/01
Director of Liberal Studies

J.E. Spindel 2/19/2001
Honors College Committee

[Signature]
Provost

Course Analysis Questionnaire

Section A: Details of the Course

A1 - The proposed course, HNRC 202, does not specifically fit in the curriculum for majors of any of the participating departments, as it is intended to fulfill some Liberal Studies equivalents for students enrolled in the Honor's College. This course will add a fourth semester to the Honors Core Sequence, and will satisfy the requirements of one non-lab science and one social science course for the majority of the students who enroll. It is also expected that the majority of students who take the psychology unit will opt to use it as an equivalent for PSYC 101 except for Psychology Majors who will still be required to complete PSYC 101. There may be instances in which a student will take both units as a non-lab science, or both units to equal two social science courses, but this will only be permitted in unusual circumstances by permission of the instructors and the Director of the Honors College. The new course will be modeled on existing core courses in format and will make the core curriculum more representative of the Liberal Studies program by including natural and social science in addition to the current courses that are heavily representative of the humanities and fine arts.

A2 - HNRC 202 will create a fourth semester of Honor's Core Curriculum, so future students will, ideally, enroll in Honor's Core for two semesters during their freshmen year, one in the sophomore year, and one in the Junior year. Credits for HNRC 202 will be counted towards the required number of honors' credits for graduation in the Honor's College and will satisfy Liberal Studies equivalencies. A separate proposal to amend the Honors College core program to include HNRC 202 will be submitted

A3 - This course has not been offered on a trial basis at IUP.

A4 - This course will not be proposed for dual level credit.

A5 - This course will not be taken for variable credit.

A6 - The model for this course is the core course format for the existing Honor's Core sections at IUP. The overall curriculum drew from models of interdisciplinary and honor's programs throughout the country, but have aspects unique to IUP. Indeed, the curricular approaches of the Honor's Core sequence are arguably a model for other institutions.

A7 - Neither the content of the course nor specific skills the course will attempt to enhance are required by any professional society or accrediting agency, but are consistent with the abilities obtained by a quality liberal arts education.

Section B: Interdisciplinary Implications

B1 - The course will be interdisciplinary in nature. Four faculty will simultaneously teach each unit of the course, viz., two from the social sciences and two from the natural sciences. For the first time the course is offered, two faculty from Biology and one each from Anthropology and Psychology will teach the course, with students taking half the course from a biology professor and half from one of the social science faculty. In future years, other departments may develop proposals for approval and thus subsequent offerings of HNRC 202 may be staffed from different natural and social sciences, though the topical questions that focus the course will remain the same, and there will be a balance with two faculty from the natural sciences and two from the social sciences. Throughout the semester there will be activities that bring the entire group of students together, first to gain a foundation and shared knowledge about the nature of scientific inquiry, and then at successive points later in the semester to synthesize information between unit groups. Most of the semester the students will be in small groups (20 students) with one of the core instructors as the principal professor, and after midterm they will rotate to a different faculty member for the second half of the class. Thus all students will have some interaction with all the faculty involved but will primarily work with two professors in subgroups. The core faculty will cooperate in assigning select common readings and in evaluation of students. It is intended that the students have half of the semester with one of the social science professors and half with one of the natural science professors, so that they are exposed to the different approaches, and to gain credit equivalencies for one social science and one non-lab science. Exceptions to this will only be permitted in unusual circumstances, such as if a student has already completed all required natural science or social science courses before they enroll in HNRC 202, but we anticipate this will be an exception rather than the rule.

B2 - Representatives of the three initial participating departments (Anthropology, Biology, Psychology) have engaged in on-going discussions about the format and content of the course, and have endeavored to ensure that the proposed course represents an appropriate representation of key concepts in their respective disciplines. The course proposal was reviewed by the Director of the Honor's College and a representative of the Honor's College committee to ensure that it was suitable for inclusion in the Honor's Core. In the course of the approval process, the proposal will be reviewed by the curriculum committees of both the College of Humanities and Social Sciences and the College of Natural Sciences and Math. These committees are composed of representatives of all departments in those colleges, and approval by the curriculum committees as well as the Deans of each college will be obtained as part of the curricular approval process. Any other department that wishes to develop a proposal for participation in HNRC 202 in the future will undergo the same review process.

B3 - Seats will not be available for Continuing Education students as enrollment will be limited to students in the Cook Honor's College of sophomore standing, Continuing Education students will have matriculated into a departmental degree program by the latter half of their sophomore year, and potentially gained admission into the Honors College, in which case they would enroll as part of their degree studies.

Section C - Implementation

C1 - As everyone in the university community is aware, the FTE count for both students and faculty have been in flux, and all departments have been challenged to be more effective at managing enrollments. If all three initial departments retain the full complement of faculty, and with the cooperation and support of the Deans of NSM and HSS, the participating departments should be able to staff the new course on an annual basis. All three departments have substantial commitments to offering seats in Liberal Studies classes, as well as having robust rosters of majors (and graduate students for Biology and Psychology), so the department chairs will have to negotiate with the Deans to ensure that all these competing needs will be balanced in curricular offerings. If other departments participate in offering the course in the future, the department chairs of affected programs will have to make comparable assessments as to the feasibility of participation given their current resources.

C2 - The new interdisciplinary course will draw on the same resources that each of the departments are currently utilizing to offer introductory level natural and social science classes.

a. As it is a non-lab science equivalent, no specialized equipment will be needed. The course will be held in a standard classroom, likely within the space available in Whitmyre Hall.

b. No special library resources or materials will be needed in excess of the routine upgrades underway to maintain access to current literature and computer support.

c. The Honor's College budget is sufficient to provide supplies and instructional support materials (e.g. photocopying handouts).

d. No travel funds will be needed for the course implementation.

C3 - An endowment from Robert E. Cook has provided some support for activities to develop this course. Once the course is in the curriculum, no continuing external funding will be required.

C4 - This course is intended to be offered in the spring semester each year.

C5 - This course will be offered in one large section that will be team taught. Although students will all enroll in the single section, each will participate in subgroups of 20 to ensure the quality of instruction. This is consistent with existing HNRC core courses and with a Senate approved policy (1994) that limits enrollment in honors courses.

C6 - The course will accommodate 80 - 100 students per year, the anticipated enrollment in the Honors College.

C7 - Recommended enrollments for this course are not mandated.

Section D: Miscellaneous

Related documents in this proposal packet:

Sample Discipline-Specific Units for HNRC 202

Syllabus of Record for HNRC 202

Honor's College Questionnaire Response

Liberal Studies Questionnaire Response

Liberal Studies Course Approval, Parts 4-6:

IV. Questions

- A. Core faculty will meet prior to offering the course for planning, identification of common objectives, selection of common readings, and construction of syllabi. Core faculty will also plan common meetings for all students to be held at the beginning of each of the two course units. Faculty will continue to meet during the semester to co-ordinate activities and make any required adjustments. At the end of the semester, faculty will collaboratively determine final student grades based on the evaluation criteria stated in the syllabus.
- B. The goal of including the perspectives of ethnic and racial minorities and of women whenever appropriate is one shared by the sciences represented. These issues appear thematically in all units of the course (see Sample Units in Appendix A). Gender, racial, and ethnic differences are addressed from a variety of perspectives (e.g. biological, cultural) and in a variety of contexts (e.g., gender, race, class, and ethnic differences in intelligence, gender inequality). The relationship of scientific understandings of these issues is also related to social and public policy. Additionally, the common book assigned to all sections of the course, S. J. Gould's *The Mismeasure of Man*, addresses these issues. In fact, the book has been expanded to include a specific set of responses to the controversial ideas advanced in Herrnstein and Murray's *The Bell Curve*, which examines racial and class differences in intelligence. Additional assigned readings for the individual units also address these topics (e.g., Tavis's *The Mismeasure of Woman*, Hrdy's *The Woman Who Never Evolved*.). Finally, a number of the required readings are written by women or minorities (e.g., Goodall, Guthrie).
- C. One of the objectives of the course, i.e., familiarizing students with the ways in which scientific research is done will be furthered by having students read primary source material. This is most often accomplished by reading scientific journal articles. However, the common reading for all students taking the course is a complete book, viz., S. J. Gould's *The Mismeasure of Man*. In addition, books of substantial length are included in the discipline-specific unit reading lists (See Appendix A). Included here would be: Sternberg's *Handbook of Intelligence* and Goodall's *Through a Window: My Thirty Years with the Chimpanzees of Gombe*.
- D. This course is designed to introduce honors students to the natural and social sciences. The course is intrinsically different from that provided for beginning majors. Additionally, within each unit, the focus is on developing an understanding of how the sciences approach the acquisition of knowledge about being human rather than being exclusively about the knowledge so acquired. Finally, the individual units will emphasize a more focused investigation of a limited numbers of topics. As such, the course is different from beginning majors' courses which are designed to provide either a comprehensive survey of the discipline or beginning level technical skills within the discipline.

CHECK LIST -- NATURAL SCIENCES (Non-laboratory)

Knowledge Area Criteria which the course must meet:

- Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.
- Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.
- Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.
- Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Area of Liberal Studies.

Natural Science Criteria which the course must meet:

- Examine a body of knowledge of natural science that will contribute to an understanding of the natural world.
- Provide an understanding of the development of natural science theories and their modification.
- Teach students to formulate and test hypotheses.
- Provide an understanding of some of the "great moments" in the history of natural science and the individuals, including women and minorities, responsible for them.

Additional Natural Science Criteria which the course should meet:

- Encourage an appreciation of the complex interrelationship of natural science with the life of the individual.
- Develop in students the abilities necessary to cope with the consequences of natural science in the modern world.
- Develop an inquiring attitude consistent with the tenets of natural science, an attitude that is willing to expose fallacy on the basis of reason, that demands evidence for scientific assertions and yet is tolerant of hypotheses in the absence of contradictory evidence.

CHECK LIST -- SOCIAL SCIENCES

Knowledge Area Criteria which the course must meet:

- Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.
- Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.
- Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.
- Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Areas of Liberal Studies.

Social Science Criteria which the course must meet:

- Explore the critical thinking and analytical skills employed by the discipline to offer meaningful explanations of social and individual behavior.
- Acquaint students with the various approaches, perspectives and methodologies used to examine the intellectual questions and problems of the discipline(s).
- Include, where appropriate, discussion of other cultures and subcultures, including minorities and the roles of women.

Additional Social Science Criteria which the course should meet:

- Illustrate how a discipline shares common theories and methods with other disciplines in the social sciences.
- Promote an understanding of individuals, groups and their physical and social environment by exploring and analyzing concepts developed in the discipline(s).

HONORS COLLEGE COURSE PROPOSAL QUESTIONS

1. Upon what definition of an honors student is this course description built?

Honors students should be persons of wide curiosity about the world and how it works. They should be open to appreciating the interrelatedness of various disciplines and eager to apply their knowledge to real world problems. Having already had two semesters of Honors Core they should be familiar with the general format of the course and used to reading complex material and identifying key points and themes in it. Their writing and discussion skills should also be well advanced over those of entering freshmen, though they may still be weak in following and formulating arguments based on objective data and evidence rather than unsupported opinion.

2. How is this course different from a regular (non-honors) section of this course? Explain how the differences meet the criteria of being qualitatively different from a normal undergraduate course rather than just covering quantitatively more material.

This is a new course and is being designed explicitly as an honors course.

3. How does this course demonstrate a commitment to the development of critical thinking skills as a primary objective? Give specific examples. Are there ways in which there could be more emphasis on critical thinking? If so, what are the impediments to a greater emphasis on critical thinking in the proposed course description?

In many ways this is a course in critical thinking of the sort used by the sciences. Readings will include writings by scientists, including primary research papers, that will model the sort of logical formulation of an argument based on objective data and evidence common to the sciences. Grading will be based almost entirely on student writing addressed to the core questions and will require that students clearly state propositions and defend them with data, not just unsupported opinions.

4. Demonstrate how the pedagogy of this course is interactive and student-centered. Explain the ways in which your method of instruction creates a classroom environment which is truly open to discovery by students. (As opposed to being one in which the professor plans to lead the students -- however interactively -- to predefined conclusions.)

Students will be encouraged and helped to obtain the basic content information of the course from their reading. They will also be collaborating on their consensus papers and poster presentations and will engage in peer editing of each other's papers. The majority of class time will be devoted to discussion of the readings, their content and how they relate to the core questions. Students will be encouraged to do as much as possible to help each other understand the content of readings. The instructors will be there to guide the discussion and explain or clarify ideas as necessary but to lecture as little as possible.

5. Explain how this course reflects high expectations for self-initiated student learning. In what ways does this course provide a foundation which teaches students HOW TO be self-initiated learners rather than just assuming they will be?

This is not a lecture-centered course. The expectation is that students will get most of their basic information from the readings on their own or with help from each other and only rely on the instructors to clarify or explain when they are confused. This should free us to spend the majority of class time applying the knowledge learned from the readings to the core questions, not simply repeating it.

6. Describe how this course meets the criteria of providing an integrative or synthetic approach to knowledge. How could this feature be enhanced? Describe the impediments to a more enhanced synthetic approach.

The core questions for this course, “What does it mean to be human?” and “Why does science matter?” are both integrative by their nature. They will be addressed from the perspectives of both the biological and social sciences and thus the course is integrative in its basic design. The common readings and the mix of instructors will further insure and model the integrative approach to knowledge.

7. Give evidence that this course moves at a pace appropriate for honors students while recognizing that, though honors students may be very bright, they do not necessarily come with pre-existing academic skills.

Both the level and volume of reading will be beyond what would be expected of the general student population. The course will move during the semester, from a greater dependence on the instructor to highlight and explain the ideas presented to a greater dependence on the students to draw information from the readings independently. We will check periodically, particularly the first few times the course is taught, to determine whether the rate and level are appropriate to push the students without overwhelming them.

8. How does this course demonstrate concern for students' affective and moral/ethical as well as cognitive growth? Do you have suggestions for strengthening the affective and/or moral/ethical focus? Describe the impediments to strengthening this aspect of the course.

As stated above, students will move from greater to less dependence on the instructor as they learn to read scientific writing and take from it the main themes. The second question in particular, “Why Does Science Matter?” will help students learn to relate science to the world of moral and ethical choices in which they live.

9. How does this course provide opportunities for students to enhance written and oral communication skills? Is there evidence that the methods of evaluation demonstrate a commitment to the interactive pedagogy with at least 33% of the final grade based on projects, presentations, writing and/or performance?

Sixty percent of the grade in this course will be based on journal entries and individual papers which together will provide ample opportunity for students to practice writing in an analytic style. Both the group reports and the class discussions will serve to enhance the oral communication skills of the students.

10. Describe your likely response to a group of students from the proposed honors class coming to you and indicating that this class is not being taught in an appropriate manner for an honors course.

We have always solicited feedback from students about courses we have taught, particularly small courses. We try to listen to any and all comments and criticisms. In this case, we would ask them to discuss with us the Honors College Course Proposal Questions listed above and, if we agreed that the course was not appropriate in some area, solicit suggestions for improving it.

SYLLABUS OF RECORD -- HNRC 202 HONORS CORE: SCIENCES

1. Catalog Description

HNRC 202 Honors Core: Sciences

4 lecture hours
0 lab hours
4 credits
(4c-0l-4sh)

Prerequisites: HNRC 101, HNRC 102, sophomore standing, admission to Honors College

HNRC 202 is concerned with science as a way of knowing about the world. It focuses on what scientists have learned about what it means to be human, how humans have been shaped by and, in turn, have influenced their environment, and on what use might be made of scientific knowledge. These themes will be explored from disciplines in the natural and social sciences.

II. Course Objectives

A. Cognitive/General Objectives

1. Develop an understanding of the underlying assumptions/foundational beliefs of science.
2. Develop an understanding of the scientific approach to human knowledge including:
 - a. the ability to formulate an argument based on objective data and evidence rather than opinion;
 - b. an awareness of the common biases in human thinking;
 - c. an understanding of the difference between science and pseudoscience;
 - d. an understanding of the nature of theory and scientific "truth";
 - e. an understanding of the difference between correlation and causality;
 - f. an understanding of the limits of scientific knowledge;
 - g. an awareness of the differences between scientific and humanistic beliefs and values.
3. Develop an understanding of the ethical and values issues involved in, and raised by, scientific research.
4. Develop an understanding of the role of science in modern society.

B. Performance Objectives - Reading, writing, and attitudinal

1. Develop a familiarity with the basic format of the scientific paper and the ability to critically read and evaluate scientific literature.
2. Develop the ability to formulate and state testable hypotheses and the evidence which supports or refutes them.
3. Develop the ability to write in an analytic style.
4. Develop the ability to be critical consumers of publicly available scientific information.
5. Continue to develop and enhance critical thinking and reasoning skills from HNRC 101 and HNRC 102 [e.g., those skills presented in *Asking the right questions: A guide to Critical thinking (4e)*.]
6. Develop an appreciation for the utility and value of scientific inquiry.

C. Common Content Objectives

1. Gain an understanding of some of the ideas of modern science which can be used to explain human nature and the interactions of humans with both the physical and social environment.
2. Gain an understanding of the place of humans in the natural world and the evolutionary forces which shaped all contemporary species including::
 - a. an understanding of the modern theory of evolution especially as it applies to human evolution;
 - b. a familiarity with the concept of co-evolution and of the dynamic nature of the interactions of human beings and the living world.
3. Gain an understanding of the interaction of nature and nurture in the living world, especially as it applies to human beings, and of the concept of the heritability of human behavior.
4. Gain an understanding of the ways in which humans are similar to/different from one another and other animals.

III. Course Outline

This course is organized around two core questions. Meeting as one group, students will be exposed to a one-week introduction to science as a way of knowing. Each of the two specific questions will take approximately six weeks with a day of introduction and conclusion for each question. For each unit/question, students choose among the discipline-specific groups in anthropology, biology/natural science, and psychology so that over the course of the semester they are exposed to two of the three disciplines. (See Appendix for discipline-specific examples.)

Introduction: What is science and how do scientists ask and answer questions? (1 week)

- A. Introduction to science as a way of knowing.
 - Discussion of "What does it mean to be human?"
 - Student-generated list of approaches to the question.
 - Identification of which approaches are scientific and why.
 - Identification of the limits of the scientific approach.
- B. Approaches to understanding what it means to be human
 - Video on non-human primates.
 - Discussion of readings from the three disciplines that address the question.
- C. Introduction to the scientific study of human nature.
 - Interactive presentations by faculty from the three disciplines.
 - Further revision of list of approaches and needed information.

Unit I - What does it mean to be human?

1. Discipline-specific groups of approx. 20 students and one faculty member address the first core question. (5 weeks)

2. Exchange of information and conclusions among disciplinary groups and peer editing of papers. (.5 week)
3. Revisions, evaluations and conferences on student writing for the core question. (.5 week)

Unit II - Why does science matter?

1. Introduction to the second core question (1 week)
2. Discipline-specific groups of approx. 20 students and one faculty member address the second core question. (5 weeks)
3. Exchange of information and conclusions among disciplinary groups and peer editing of papers. (.5 week)
4. Revisions, evaluations and conferences on student writing for the core question. (.5 week + Exam day)

IV. Evaluation Methods

The final grade for the course will be determined by the following:

40% - Two papers/one per unit - 20% each

10% - Two consensus papers/poster presentations/one per unit - 5% each

30% - Journal entries/Reaction papers/15% per unit

10% - Peer editing grade/5% per unit

10% - Class participation/5% per unit

Grading Scale: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%

Attendance: As in all Honors Core courses, the success of this course depends on student's active involvement and participation. Students are expected to be in class promptly and fully prepared each day. More than two unexcused absences (one per unit) will result in an F grade for the course (and consequently in your dismissal from the Honors College). It is understood that excused absences are only for emergencies and illness. Authority to grant excused absences is solely the province of the instructor. Tardiness is not tolerated. Two incidents of tardiness count as one absence.

V. Required textbooks, supplemental books, and readings

A. A Common readings@ required of all students in the course

Text: Gould, S. J. (1981/1996). *The mismeasure of man*. New York: W. W. Norton.

Text: Gould, S. J. (1981/1996). *The mismeasure of man*. New York: W. W. Norton.

Source Packet: Selection of chapters and/or journal articles. Representative selections might include:

Bacon, F. (1994/1620). *Novum organum*. [P. Urbach & J. Gibson, Eds. And Trans.] Open Court Publishers. (Book One: Aphorisms.)

Barash, D. (1979). *The whisperings within: Evolution and the origins of human Nature*. New York: Penguin. (Chapters 1, 7, and 8: Hottentot gods and the strange case of the plucked ocelot, Toward an evolutionary biology of mind/notes on biology and culture, Politics:A tangled bank.)

Conant, J. B. (1951). *Science and common sense*. Yale. (Chapters 1, 2, and 3: Science and the American Citizen, What is science?, Concerning the Alleged Scientific Method.)

Curd, M. & Cover, J. A. (1998). *The philosophy of science: The central issues*. New York: W. W. Norton. (Section 1: Science and Pseudoscience.)

Darwin, C. (1998/1859). *The origin of species*. New York: Oxford. (Chapters 1 and 9.)

Eldredge, N. (1998). Cornets and consilience. *Civilization*, 84-86.

Gould, S. J. (1998). In gratuitous battle. *Civilization*, 86-88.

Hrdy, S. B. (1999/1981). *The woman that never evolved*. Cambridge, MA: Harvard. (Chapter 1: Some women that never evolved.)

Trefil, J. (1997). *Are we unique?* New York: John Wiley.

Wilson, E. O. (1998, March). Back from chaos. *Atlantic Monthly*, 41-62.

Wilson, E. O. (1998, April). The biological basis of morality. *Atlantic Monthly*, 53-70.

B. Additional readings will be assigned as determined by the discipline-specific unit studies proposed by faculty. (See Appendix for examples.)

VI. Special resource requirements:

Students will be required to have access to the *New York Times'* weekly Science section (Tuesday edition).

VII. Bibliography

Supplementary bibliographies vary depending on the case studies selected for discipline-specific units. A set of examples are provided in the Appendix.

APPENDIX**SAMPLE UNITS: Anthropology, Biology, Psychology**

Sample Social Science (Anthropology) Unit 1. What does it mean to be human?

A. Introduction - One Week in Large Group Format (as specified in Course Proposal)

B. What does it mean to be human? - Five Weeks

We will examine this question from several points of view, each representing a synthesis of biological and cultural perspectives.

1. What behaviors and traits do we derive from the primate legacy, or even the mammalian legacy? What are the genetic similarities between humans and non-human primates? How do attributes such as sexual dimorphism, cooperation, family structure, food sharing, and parental investment vary between humans and other mammals?
2. What is the evidence of human evolution, and how do bones and stones tell of both physical traits and behavioral adaptations that have shaped humans? Was bipedalism formative in shaping the nature of humans (from skeletal structure, to increased neoteny, to selection for learning vs. innate behaviors), or are our large brains more significant in distinguishing us from other primates?
3. How do humans vary both biologically and culturally? We will examine the concepts of race vs. clinal distribution of physical traits, the nature of adaptation to niche among humans, and the universals that are shared between humans regardless of their cultural background.

The objective for the unit is for students to derive a sense of the place of humans in the biological world, an awareness of the evidence for human evolution, and an appreciation for the ways in which contemporary people share a "human nature."

C. Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

Sample Assigned Readings For Students (In Addition To Common Readings):

Goodall, Jane 1990. *Through a Window: My Thirty Years with the Chimpanzees of Gombe*. Houghton Mifflin

a collection of articles and chapters including excerpts from:

Brown, Donald E. 1991 *Human Universals*. McGraw-Hill

Grandin, Temple 1996. *Thinking In Pictures and Other Reports from my Life with Autism*. Vintage Books

Hrdy, Sarah Blaffer 1999. *The Woman that Never Evolved*. Harvard University Press

Hrdy, Sarah Blaffer 2000. *Mother Nature. A History of Mothers, Infants, and Natural Selection*. Pantheon Press

Sacks, Oliver 1998 *The Island of the Color Blind*. Vintage Books

Sacks, Oliver 1998. *The Man Who Mistook his Wife for a Hat and other Clinical Tales*. Touchstone Books

Symons, Donald 1981. *Evolution of Human Sexuality*. Oxford University Press

Sample Social Science Unit 2 - Why does science matter?

D. Introduction - one week in large group format

E. How can we use this knowledge of our species to understand contemporary issues, and chart the course of the future of humans? - Five Weeks

1. We will examine some ultimate questions about the nature of human interactions in the present and future. Will competition or cooperation be more important for our survival as a species? In this context we will examine the extent and foundations of social, economic, and gender based inequality and investigate whether violence is inevitable in human behavior. We will examine the presence of altruism, gender-based inequality, competition, and population pressure as factors that influence human societies.

2. We will explore the question of whether we are likely to drive ourselves to extinction, or whether our cultures will adapt to new possibilities and limitations. In this discussion we will explore resource use and sustainability and the consequences of population growth. Environmental and economic models of resource utilization will be explored.

F. Synthesis and Exchange with other unit groups - One Week + Final Exam Period

Each discipline specific group will prepare either a position paper or a poster presentation to outline the key issues they have explored. Each student will simultaneously prepare their individual paper for the unit. The last class during this week will be devoted to sharing information between different discipline based groups.

Sample Assigned Readings For The Students (in addition to the common readings):

A collection of essays and chapters from works such as the following:

Bodley, John H. 1990. *Victims of Progress*. Mayfield Press.

Brown, D.E. 1991. *Cultural Universals*. McGraw-Hill.

- Chagnon, Napoleon 1983 *Yanomamo: The Fierce People*. Holt, Rinehart, Winston.
- Dawkins, Richard 1981. *The Selfish Gene*. Oxford University Press.
- Ehrlich, Paul 1997. *The Population Bomb*. Buccaneer Books.
- Franke, Richard W. and Barbara H. Chasin 1994. *Kerala: Radical Reform as Development in an Indian State*. Food First Books.
- Hrdy, Sarah Blaffer 1999. *The Woman that Never Evolved*. Harvard University Press.
- Johnson, Barbara Rose 1997. *Life and Death Matters: Human Rights and the Environment at the End of the Millenium*. Altamira Press.
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- and the weekly Science Section from the Tuesday *New York Times*

Supplemental Bibliography:

- Alexander, Richard. 1987. *The Biology of Moral Systems*. Aldine de Gruyter.
- Blackmore, Susan. 1999. *The Meme Machine*. Oxford University Press.
- Bodley, John H. 1990. *Victims of Progress*. Mayfield Press.
- Bonvillain, Nancy 1998. *Women and Men: Cultural Constructs of Gender*. Prentice Hall.
- Boserup, Esther 1992. *Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*. Earthscan Books.
- Boserup, Esther 1989. *Women's Role in Economic Development*. Earthscan Books.
- Brothers, Leslie 1997. *Friday's Footprint: How Society Shapes the Human Mind*. Oxford University Press.
- Brown, D.E. 1991. *Cultural Universals*. McGraw-Hill.
- Buss, David M. 1999 *Evolutionary Psychology: The new Science of the Mind*. Allyn & Bacon.
- Chagnon, Napoleon 1983 *Yanomamo: The Fierce People*. Holt, Rinehart, Winston.
- Dawkins, Richard 1981. *The Selfish Gene*. Oxford University Press.

Diamond, Jared *"The Worst Mistake in Human History"*

Durham, William 1992 *Coevolution: Genes, Culture & Human Diversity*. Stanford University Press.

Ehrlich, Paul 1997. *The Population Bomb*. Buccaneer Books.

Erasmus, Charles 1977. *In Search of the Common Good: Utopian Experiments in Past and Future*. The Free Press.

Evans, Dylan and Oscar Zarate 1999. *Introducing Evolutionary Psychology*. Totem Books.

Feder, Kenneth L. 1998. *Frauds, Myths, and Mysteries: Science & Pseudoscience in Archaeology*. Mayfield Press.

Fossey, Dian 1988. *Gorillas in the Mist* Houghton Mifflin.

Fouts, Roger 1997. *Next of Kin: My conversations with Chimpanzees*. Bard Books.

Franke, Richard W. and Barbara H. Chasin 1994. *Kerala: Radical Reform as Development in an Indian State*. Food First Books.

Goodall, Jane 1990. *Through a Window: My Thirty Years with the Chimpanzees of Gombe*. Houghton Mifflin.

Grandin, Temple 1996. *Thinking in Pictures*. Vintage Books.

Greer, Germaine 1984. *Sex and Destiny*. Harper Colophon Books.

Hewlett, Barry 1992. *Intimate Fathers: The Nature and Context of Aka Pygmy Paternal Infant Care*. University of Michigan Press.

Hochschild, Arlie 1990. *The Second Shift*. Avon Books.

Hrdy, Sarah Blaffer 1980 *The Langurs of Abu, Female and Male Strategies of Reproduction*. Harvard University Press.

Hrdy, Sarah Blaffer 1999. *The Woman that Never Evolved*. Harvard University Press.

Johanson, Donald, and James Shreeve 1989. *Lucy's Child: The Discovery of a Human Ancestor* Avon Books.

Johnson, Barbara Rose 1997. *Life and Death Matters: Human Rights and the Environment at the End of the Millenium*. Altamira Press.

- Levine, Nancy 1988. *The Dynamics of Polyandry: Kinship, Domesticity, and Population on the Tibetan Border*. University of Chicago Press.
- McDowell, Christopher 1996 *Understanding Impoverishment: The Consequences of Development Induced Displacement*. Berghan Books.
- Patterson, Francine, and Eugene Linden 1981 *The Education of Koko*. Holt, Rinehart, Winston.
- Pinker, Steven. 1999. *Words & Rules: The Ingredients of Language*. Basic Books.
- Richard, Alison F. 1985. *Primates in Nature*. W. F. Freeman & Co.
- Ridley, Matt 1993. *The Red Queen: Sex and the Evolution of Human Nature*. Penguin Press.
- Schumacher, E. G. 1973 *Small is Beautiful: Economics as if People Mattered*. Perennial Library.
- Smith, John Maynard and Eors Szathmary 1999. *The Origins of Life: From the Birth of Life to the Origin of Language*. Oxford University Press.
- Spiro, Melford E. 1970. *Kibbutz: Venture in Utopia*. Schocken Books.
- Strum, Shirley and George B. Schaller 1990. *Almost Human: A Journey into the World of Baboons*. W.W. Norton & Co.
- Symons, Donald 1981. *The Evolution of Human Sexuality*. Oxford University Press.
- Wilson, E.O. 1978. *On Human Nature*. Harvard University Press.
- Zihlman, Adrienne 1982. *The Human Evolution Coloring Book*. Barnes & Noble.

SAMPLE BIOLOGY UNIT A: What Does It Mean To Be Human?

APPROACH: FROM DARWIN THROUGH GENES TO SOCIOBIOLOGY: OUR ATTEMPT TO UNDERSTAND OURSELVES AS PRODUCTS OF EVOLUTION

The modern attempt to understand what it means to be human may be said to have its origins in 1859 with the publication of Darwin's "The Origin of Species". Near the end of his concluding chapter Darwin wrote;

"In the future I see open fields for far more important researches. Psychology will be securely based on the foundation already well laid by Mr. Herbert Spencer, that of the necessary acquirement of each mental power and capacity by gradation. Much light will be thrown on the origin of man and his history."

Mendel's discovery of the basic laws of genetics, reported in 1865 and their rediscovery by Hugo de Vries and Carl Correns in 1900 paved the way for the exponential growth, during the 20th century, in our understanding of how genetic information is passed on, stored and used. The work of embryologists throughout the 19th century started biologists on the still ongoing study of how complex organisms develop from single cells. The discovery by Watson and Crick in 1952 of the structure of DNA led to an explosion of knowledge in the field of molecular biology, how life works at the molecular level, culminating in the human genome project which has now, at the start of the 21st century, given us the complete "text" of our genes. But the question still remains, "What does it mean to be human?" Gould describes the misuse of science, or perhaps more accurately, the use of "pseudoscience" to try to defend old prejudices about race and gender, providing evidence that scientists are first of all human and their search for "truth" is not as free and impartial as they might wish or claim. Allman in "Evolving Brains" describes the evolution of our most distinguishing feature. Wilson with "Sociobiology; The New Synthesis", "On Human Nature" and finally in "Consilience" argues strongly that we can better understand all aspects of what it means to be human including our arts, ethics and religions if we cast the light of evolutionary theory on them. His critics, including Lewontin in "The Triple Helix: Gene, Organism, and Environment" respond sharply and the "nature/nurture" debate continues.

UNIT SCHEDULE:

Week 1 A. Introduction - One Week in Large Group Format (as specified in Course Proposal)

Weeks 2-6 Discipline-Specific Groups address first core question

General Format For Each Sub-Question

- Discussion of introductory readings for topic
- Mini-lecture(s) on topic and discussion of further readings
- Discussion of paper from primary literature and other readings

How did we evolve?

1. Readings on evolution in general (Darwin and others)
2. Readings on human evolution in particular

How is genetic information passed on?

1. Readings on classical genetics
2. Readings on modern molecular biology

How do we develop?

1. Readings on embryonic development in general
2. Readings on human development including non-genetic influences such as thalidomide, fetal alcohol syndrome, etc.

Are we unique?

1. Wilson on Sociobiology and Consilience
2. Gould and Lewontin - critics of Sociobiology
3. Minnesota Twin Studies

Week 7 Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

HNRC 202 COMMON READINGS:

Common Source Packet

Gould, S.J. (1981/1996). *The mismeasure of man*. New York: W.W. Norton.

ASSIGNED UNIT A TEXTS FOR STUDENTS (in addition to the HNRC 202 common readings):

Allman, J.M. (2000). *Evolving brains*. New York: Scientific American Library.

Lewontin, R.C. (2000). *The triple helix: Gene, organism, and environment*. Cambridge: Harvard Univ. Press.

Wilson, E.O. (1978). *On human nature*. Cambridge: Harvard Univ. Press.

Source Packet of additional chapters and articles including some of the following:
(Some of these may be included in the Common Source Packet for the entire course.)

Conant, J.B. (1951). *Science and common sense*. New Haven: Yale University Press. (Chapters 1-3 on the nature of science)

Darwin, C. (1859). *The origin of species*. (Introduction and concluding chapter)

Wilson, E.O. (1998). *Back from chaos*. The Atlantic Monthly, March 1998.

Wilson, E.O. (1998). *The biological basis of morality*. The Atlantic Monthly, April 1998.

Eldredge, N. (1998). *Cornets & consilience*. Civilization, October/November 1998.

Gould, S.J. (1998). *In gratuitous battle*. Civilization, October/November 1998.

Popper, K. (1974). *Heroic science*. From *Replies to my critics*. In *Galileo's commandment: 2,500 years of great science writing*, Bolles, E.B., Ed. (1999) New York: W.H. Freeman.

Bacon, F. (1620). *Idols of the tribe*. From *Novum organum*. In *Galileo's commandment: 2,500*

years of great science writing., Bolles, E.B., Ed. (1999) New York: W.H. Freeman.

The New York Times (Tuesday Science Section)

Selected papers from the secondary literature such as Scientific American, etc.

Selected papers from the primary literature

SAMPLE BIOLOGY UNIT B (HC 201). Why Does Science matter?

APPROACH: FROM LOS ALAMOS THROUGH “SILENT SPRING” TO THE HUMAN GENOME PROJECT: DO WE KNOW WHAT WE’RE DOING?

The use of the atomic bomb during World War II alarmed some of the physicists who had worked to develop it and caused them to rethink the relationship between their science and their ethics. The publication in 1962 of “Silent Spring”, by Rachel Carson marked the beginning of public awareness that our science and technology might be having an adverse effect on the natural world and helped make “ecology” part of our common language. The debates over endangered species, the ozone layer and global warming are extensions of this concern. The steady exponential increase in the human population of the earth raises questions about how many humans the earth can support. Genetically engineered plants are a source of controversy, particularly in Europe where their use is frequently banned. Finally, the rapid discovery of altered genes linked to increased risk of specific diseases and the completion of the human genome project raise new and serious questions about how the scientific knowledge of our species might and should be used.

UNIT SCHEDULE:

Week 7 - Introduction - Large Group Format (as specified in Course Proposal)

Weeks 8-13 Discipline-Specific Groups address second core question

General Format For Each Sub-Question

Discussion of introductory readings for topic

Mini-lecture(s) on topic and discussion of further readings

Discussion of paper from primary literature and other readings

How many humans can the earth support?

1. Readings on ecology in general
2. Readings on carrying capacity for humans in particular

How are we altering the environment and does it matter?

1. Readings on topics including global warming, ozone depletion, destruction of ecosystems, etc.
2. Selections from “Silent Spring”

Do we need other species?

1. Readings on biodiversity
2. Readings on species extinction, historic and modern

Are we shaping our own evolution?

1. Readings on the human genome project and its uses
2. Readings on genetic engineering and its uses

Week 14 + Exam Day - Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

HNRC 202 COMMON READINGS:

See list for Unit A.

ASSIGNED UNIT B TEXTS FOR STUDENTS: (in addition to the HNRC 202 common readings):

Maddox, J. (1998). *What remains to be discovered: Mapping the secrets of the universe, the origins of life, and the future of the human race*. New York: Touchstone.

Carson, R. L. (1962). *Silent Spring*. Reprint edition. Boston: Houghton Mifflin Co.

Source Packet of additional chapters and articles including:

Papers from the primary literature, reviews and articles dealing with issues such as global warming, destruction of habitat, human population growth and the carrying capacity of the earth for humans, genetic engineering, the human genome project and sociobiology.

Case Studies in Science and Society (NSF Short Course - 2000)

1. Global warming
2. Biotechnology and Genetic Engineering
3. The Human Genome Project

Case Studies from Botkin, Daniel. 1990. "Discordant Harmonies: A New Ecology for the 21st Century", Oxford Press

The Tuesday New York Times Science Section

SUPPLEMENTARY BIBLIOGRAPHY FOR SCIENCE UNITS A AND B:

Bolles, Edmund Blair, ed. *Galileo's Commandment: 2,500 Years of Great Science Writing*. New York: W.H. Freeman, 1997. (PB, 476 pp.)

Campbell, *Biology*, 4th edition. Menlo Park: Benjamin/Cummings, 1996.

Carey, John, ed., *Eyewitness to Science*. Cambridge: Harvard University Press, 1995 (PB, 516 pp.)

Cohen, I. Bernard, *Science and the Founding Fathers: Science in the Political Thought of Jefferson, Franklin, Adams, and Madison*. New York: W.W. Norton & Company, 1995. (HC, 313 pp.)

Diamond, Jared, *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton & Company, 1997. (HC, 425 pp.)

Gould, Stephen Jay, *Rocks of Ages: Science and Religion in the Fullness of Life*. New York: The Ballantine Publishing Group, 1999. (Small HC, 222 pp.)

Gross, Paul R., Levitt, Norman and Lewis, Martin W., eds., *The Flight from Science to Reason*. Baltimore: The Johns Hopkins University Press, 1997. (PB, 572 pp.)

Hazen, Robert M., with Singer, Maxine, *Why Aren't Black Holes Black?: The Unanswered Questions at the Frontiers of Science*. New York: Anchor Books, 1997. (PB, 297 pp.)

Holland, John H., *Emergence: From Chaos to Order*. Reading: Perseus Books, 1998. (PB, 248 pp.)

Kuhn, Thomas S., *The Structure of Scientific Revolutions*. 3rd ed. Chicago: The University of Chicago Press, 1996 (PB, 210 pp.)

Lumsden, Charles J., and Wilson, Edward O., *Promethean Fire: Reflections on the Origin of Mind*. Cambridge: Harvard University Press, 1983. (PB, 184 pp.)

Moore, John A., *Science as a Way of Knowing: The Foundations of Modern Biology*. Cambridge: Harvard University Press. (PB, 504 pp.)

Ross, Andrew, Ed., *Science Wars*. Durham: Duke University Press, 1996. (PB, 319 pp.)

Wilson, Edward O., *Biophilia*. Cambridge: Harvard University Press, 1984. (PB, 145 pp.)

Wilson, Edward O., *On Human Nature*. Cambridge: Harvard University Press, 1978. (PB, 209 pp.)

Wilson, *Sociobiology*. Cambridge: Belknap Press, 1975.

Taylor, Barbara Brown, *The Luminous Web: Essays on Science and Religion*. Boston: Cowley Publications, 2000. (PB - 100 pp.)

Trefil, James, and Hazen, Robert M., *The Sciences: An Integrated Approach*. 2nd edition. New York: John Wiley & Sons, 1998. (Large PB Text, 614 pp.)

Sample Psychology Unit A: What does it mean to be human?

Approach: Intelligence; Intelligence Testing (19th and 20th Centuries)

The French poet Paul Valery said: "The purpose of psychology is to give us a completely different understanding of the things we know best." How is it that a discipline which studies what we each individually seem to know the most about, viz., ourselves, could significantly alter the way we understand what we are about? The answer to this question may lie in the evolution of psychology as a discipline of inquiry.

Psychology, like most other sciences, has its roots in philosophy. However, in the late 19th century, psychology established itself as an independent discipline when it adopted an empirical methodology to attempt to answer long-standing questions about the mind and behavior. Thus, the science called psychology was born. In addition to this methodological shift, English/American psychology was profoundly influenced by Darwin's theory of evolution which addressed both physical and mental evolution. Questions were raised about the evolution of the mind and thus about the relationship between humans and other animals. Darwin's theory also led inevitably to questions about variation within the human species and about the adaptive significance of psychological processes and behavior. The question of human adaptation soon focused on the notion of intelligence – a topic debated as intensely now as it was then.

Week 1 - Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

Weeks 2 -6

1. The Darwinian influence: Herbert Spencer - the inheritance of acquired associations; mental evolution; comparative psychology and animal cognition; the instinct vs. intelligence debate.
2. Early approaches to the measurement of intelligence: Indirect (Galton) vs. Direct approaches (Binet); the early testing movement; eugenics.
3. The nature of intelligence: Single ("g") vs. multiple factors; nature vs. nurture; the development of intelligence; demographics of intelligence; individual differences and variation.
4. Contemporary approaches to the definition and the nature of intelligence; the question of artificial intelligence.
5. Intelligence and public and social policy

Weeks 7 - Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

ASSIGNED TEXTS FOR STUDENTS:

Gould, S. J. (1981/1996). *The mismeasure of man*. New York: W. W. Norton. (Common Reading.)

Sternberg, R. J. (2000). *Handbook of intelligence*. Cambridge University.

Additional chapters and articles including:

Curd, M. & Cover, J.A. (1998). *Philosophy of science: The central issues*. New York: W. W.

Norton. (Section 1: Science and pseudoscience)

Gardner, H., Kornhaber, M. L., & Wake, W. K. (1996). *Intelligence: Multiple perspectives*. Fort Worth: Holt. (Excerpts.)

Guthrie, R. V. (1998). *Even the rat was white: A historical view of psychology* (2e.). Boston: Allyn & Bacon. (Chapters 3 and 4).

Herrnstein, R. J. & Murray, C. (1996). *The bell curve: Intelligence and class structure in American life*. New York: The Free Press. (Excerpts.)

Trefil, J. (1997). *Are we unique?* New York: John Wiley. (Chapters 1, 2, 7, 9)

Sample Psychology Unit B: Why does science matter?

Approach: Pseudoscience, "Pop" Psychology, and Contemporary Problems

In his writings about the scientific approach to knowledge, Francis Bacon also spoke about the utilitarian nature of science, viz., power over nature in the service of man[kind]. Scientific knowledge affords us an understanding of the worlds in which we live (e.g., physical, sociocultural, psychological, etc.); this understanding can give us the power to predict and control some aspects of those worlds. The need for such understanding has been articulated by Cole (1982) in this fashion: "... students come to us with a mass of misinformation about human behavior. What for us is hypothesis they take as fact. What is fable they have learned as truth. Much of this misinformation has been learned informally, at parent's knee, from the pulpit, from popular media, from their friends, all melded by their own needs for a sense of understanding and control of their world. Moreover they come to us painfully lacking in criteria by which to sort out the probable validities of assertions about human behavior, or in insight as to how to proceed to ask questions in a way so as to increase the likelihood of obtaining useful information.... Undergraduate psychology can, and I believe should, seek to liberate the student from ignorance, but also from the arrogance of believing we know more about ourselves than we really do, and from standing helpless before extravagant pseudo-scientific assertions about human behavior."

Given the rapid explosion of information technologies which publicly disseminate "claims" about human behavior, it becomes increasingly important that such information be examined for its reliability and validity. Accordingly, the question of why scientific knowledge about human behavior is more than just common sense will be addressed directly. Further, in an attempt to demonstrate the applicability of "real" scientific knowledge, we will examine popular conceptions about human behavior and how those claims are supported or refuted by psychological research. Lastly, we will examine how knowledge derived from psychological research can be used to address contemporary problems.

Week 7 - Introduction - Large Group Format (as specified in Course Proposal)

Weeks 8 - 13

1. The difference between behaviorally-related pseudopsychologies, folk psychology, and scientific psychology: the nature of media claims, the often counterintuitive nature of scientific psychology, Francis Bacon's "idols" and other biases, etc.

2. The brain and its relationship to behavior: neurotransmitters and their effects, learning and memory, normal vs. abnormal behavior; exogenous drugs; biorhythms vs. biological rhythms, etc.
3. Individual differences and “demographic” variables, e.g., gender, race, and culture; sociobiology

Week 14 and Exam Period - Synthesis and Exchange with other unit groups/conferences (as specified in Course Proposal)

ASSIGNED TEXTS FOR STUDENTS (in addition to common readings)

Cyrus, V. (Ed.) (2000). *Experiencing race, class, and gender in the United States (3e.)*. Mountain View, CA: Mayfield.

Radner, D. (1982). *Science and unreason*.

Tavris, C. (1999). *The mismeasure of woman*.

Additional chapters and articles including:

Blaine, B. (2000). *The psychology of diversity: Perceiving and experiencing social difference*. Mountain View, CA: Mayfield.

Buss, D. M. (1999). *Evolutionary psychology: The new science of the mind*. Boston: Allyn & Bacon

Curd, M. & Cover, J.A. (1998). *Philosophy of science: The central issues*. New York: W. W. Norton. (Section 1: Science and pseudoscience)

Kalat, J. (2001). *Biological psychology (2e)*. Belmont, CA: Wadsworth./Thomson.

Neisser, U. & Hyman, I. E. (199). *Memory observed: Remembering in natural contexts*. Worth.

Sagan, C. (1995). *The demon-haunted world: Science as a candle in the dark*. New York: Random House.

Shermer, M. (1997). *Why people believe weird things: Pseudoscience, superstition, and other confusions of our time*. New York: W. H. Freeman.

Stanovich, K. E. (1998). *How to think straight about psychology (5ed.)* New York: Longman.

Tavris, C. (1995). *Psychobabble and biobunk: Using psychology to think critically about issues in the news*. New York: HarperCollins.

SUPPLEMENTAL BIBLIOGRAPHY

Budiansky, S. (1998). *If a lion could talk: Animal intelligence and the evolution of consciousness*. New York: The Free Press.

- Burnham, J.C. (1985). *How superstition won and science lost: Popularizing science and health in the United States*. New Brunswick, NJ: Rutgers.
- Cummins, D.D. & Allen, C. (1998). *The evolution of mind*. New York: Oxford.
- Fletcher, G. (1995). *The scientific credibility of folk psychology*. Mahwah, NJ: Erlbaum.
- Goodchild, J. (1991). *Psychological perspectives on human diversity in America*. Washington, DC: American Psychological Association.
- Hauser, M. D. (2000). *Wild minds: What animals really think*. New York: Henry Holt.
- Hellman, H. (1998). *Great feuds in science: Ten of the liveliest disputes ever*. New York: Wiley.
- Lemann, N. (1999). *The big test: The secret history of the American meritocracy*. New York: Farrar, Straus and Giroux.
- Nairne, J. S. (2000). *Psychology: The adaptive mind*. Belmont, CA: Wadsworth/Thomson.
- Pinker, S. (1995). *The language instinct*. Harper.
- Savage-Rumbaugh, S., Shanker, S. G. & Taylor, T.J. (1998). *Apes, language and the human mind*. New York: Oxford.
- Shattuck, R. (1996). *Forbidden knowledge*. New York: St. Martin's Press.
- Slife, B.D. (Ed.) (2000). *Taking sides: Clashing views on controversial psychological issues*. Guilford, CT: Dushkin/McGraw-Hill.
- Slife, B.D. & Williams, R.N. (1998). *What's behind the research: Discovering hidden assumptions in the behavioral sciences*. Thousand Oaks, CA: Sage.
- Tavris, C. & Wade, C. (1997). *Psychology in perspective (2e)*. New York: Addison-Wesley
- Vauclair, J. (1996). *Animal cognition: An introduction to modern comparative psychology*. Cambridge, MA: Harvard.
- Vyse, S. A. (1997). *Believing in magic: The psychology of superstition*. New York: Oxford.