

History of Science 2103.6, sec. 1 / Spring 2007
Physical Sciences 212
TuTh 12:00-1:15

Prof. Katherine Pandora
Office Hours: Tues / Thurs 9:15-10:15,
Tues 1:30-2:30, *and by appt.*
Office: Physical Sciences 619
Phone/Voicemail: 325.3427
email: kpandora@ou.edu



**The Origins and Development of Modern Science:
Science in its Social Context, 1600 to the Present**

scientific ideas and the history of childhood

For History of Science 2103.6, we select topics that will help us understand the development of science and its social context, and we have chosen the topic of “scientific ideas and the history of childhood” to explore this concept. In this semester of hsci 2103, we will look at how scientific studies of children affected the larger social world, and in turn how the concerns of the larger social world in terms of children and childhood interacted with the development of the human sciences. Students will write take-home reflective essays on the assigned reading, do a comparative book project on Victorian science books for children, and have the opportunity to design an individual project on a topic of their choosing in consultation with the professor.

We will examine the intertwining of scientific ideas and the history of childhood, from three historical vantage points: 1) we will look at how curiosity about the nature of childhood affected scientific ideas about the question of human nature during the Enlightenment and Romantic eras, particularly in the study of “wild children”; 2) how, as science developed over the 19th and 20th centuries, researchers developed theories about childhood and adolescence – especially within the social sciences of anthropology, psychology, and sociology – and the debates these theories caused inside of science and outside in the wider society; and 3) the changing nature of debates about how best to teach science to children, from the Victorian period to the Cold War era.

Sample topics for the Individual Projects would include the topic of “feral” children and how they have been studied; the controversies over different historical periods about the gender differences between boys and girls in regard to math and science; the history of adoption science; the history of the creation of the scientific categories of “child prodigies” or “the gifted child”; eugenics and childhood; the history of educational scientific media for children, whether for classroom use or commercial markets; the history of psychological theories of infancy, childhood, or adolescence, as a general matter or in relation to gender categories; and the history of sociological theories of delinquency and “the boy problem.”

In tracing out some of the dynamics of these scientific worlds of childhood we will be studying changing ideas about childhood itself, but also about the nature of scientific authority, scientific identities, the concept of what belongs to “nature” and what to “society”, and the intersection of the public and the private in the creation and use of scientific knowledge.

Required texts:

- Children and Childhood in Western Society since 1500*, 2nd ed. (Longman, 2005) / Hugh Cunningham
The Forbidden Experiment: The Story of the Wild Boy of Aveyron (Kodansha Globe, 1994, reprint) / Roger Shattuck
Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilization (Harper Perennial Classics, 2001; originally published in 1928) / Margaret Mead
Perfect Motherhood: Science and Childrearing in America (Rutgers U Pr, 2006) / Rima Apple
The Philosophy of Childhood (Harvard U Pr, 1996) / Gareth B. Matthews
The Water-Babies: A Fairy-Tale for a Land-Baby (Dover, 2006; originally published in 1863) / Charles Kingsley
Scientists in the Classroom: The Cold War Reconstruction of American Science Education (Palgrave Macmillan, 2002) / John Rudolph

University of Oklahoma ConocoPhillips Writing Center

If you would like help with your pre-writing, organizing, documenting sources, or other aspects of writing assignments, make an appointment at the Writing Center – **325-2936**. The Writing Center is located in Bizzell Library, Lower Level 227. They are open Mon-Wed 9:00 - 8:00 and on Thurs-Fri from 9:00-5:00. Information is also available at their website:

<http://www.ou.edu/writingcenter/index.htm>

Schedule

Week 1

1/16 Introduction: Where We're Starting From, Where We're Going, and How We'll Get There

1/18 Overview of the three key themes: 1) The image of the child and the power of Enlightenment science; 2) The rise of the social science disciplines, and the creation of child science; and 3) Making children scientific: debates in the post-professionalization era over the place of science in the life of the child

► **Pass Out First Reflection Question**

Reading Cunningham, *Children and Childhood in Western Society* (chapters 1-2, 8)

Part 1: Enlightenment Science: Discovering the Child and Rediscovering the Nature of Man / late 17th through the early 19th centuries

Week 2

1/23 Brown Bag Presentation by Rima Apple, author of *Perfect Motherhood* / History of Science Collections, 5th Floor of Bizzell Library

1/25 What was it like to be a child before the modern era? Snapshots from the Middle Ages, the Renaissance, and the Age of Revolution

► **Pass Out Book Project Instructions**

Reading Cunningham, *Children and Childhood in Western Society* (chapters 3-5)

Week 3

1/30 From "The Tabula Rasa" to "The Natural Man"

2/1 "Wild" Children and Experiments in Human Nature

Reading Excerpts: John Locke, *Some Thoughts Concerning Education* (1693); Jean-Jacques Rousseau, *Emile, or On Education* (1762) ; Johann Heinrich Pestalozzi, *How Gertrude Teaches Her Children* (1801)

Shattuck, *The Forbidden Experiment* (chapters 1-3)

Excerpt from Julia Douthwaite, *The Wild Girl, the Natural Man, and the Monster: Dangerous Experiments in the Age of Enlightenment* (U of Chicago Pr, 2002)

Week 4

2/6 Film: *The Wild Child (L'enfant sauvage)* / Francois Truffaut (1970)
▶ Reflection Question on Cunningham, *Children and Childhood*, Due

2/8 Discussion of children and scientific studies in the Enlightenment
▶ **Pass Out Reflection Question on Part 1**

Reading Shattuck, *The Forbidden Experiment* (chapters 4-5)

Cunningham, *Children and Childhood in Western Society* (Chapter 6)

Part 2: The Social Sciences and the Birth of Child Science

/late 19th century-through the 20th century

Week 5

2/13 Victorian Childhood and the Scientific Observer

2/15 Social Science and Social Reform in the Progressive Era

Reading Charles Darwin, "A biographical sketch of an infant" (1877); excerpts from G. Stanley Hall, *Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion and Education* (1904); Jane Addams, *The Spirit of Youth and the City Streets* (1909); Clifford Shaw, *The Jack-Roller: A Delinquent Boy's Own Story* (1930).

Mead, *Coming of Age in Samoa* (chapters 1-10)

Week 6

2/20 The Invention of Adolescence
▶ **Reflection Question on Part 1 Due**

2/22 *Coming of Age in Samoa: And Coming of Age in America*
▶ **Pass Out Reflection Question on Part 2**

Reading Mead, *Coming of Age in Samoa* (chapters 11-14)

Apple, *Perfect Motherhood* (chapters 1-3)

Week 7

2/27 Coming of Age in Britain / **Film:** *28 Up*, Michael Apted (1985)

3/1 Discussion of Observational Methods, and Discussion of Debates about Youth and Public Policy

Reading Apple, *Perfect Motherhood* (chapters 4-6)

Excerpts from Hamilton Cravens, *Before Head Start: The Iowa Station and America's Children* (chapter 3); Lewis Terman, *Genetic Studies of Genius* (1925); Lois Barclay Murphy, *Social Behavior and Child Personality* (1937)

Week 8

3/6 What the Doctor Prescribes: The Rise of Pediatric Advice

3/8 Being a "Scientific" Mother: Early to Mid-Twentieth Century
► **Reflection Question on Part 2 Due**

Reading Excerpts from A.B. Hollingshead, *Elmtown's Youth* (1949); Kenneth B. Clark, *Prejudice and Your Child* (1955); Roger Barker and Herbert Wright, *Midwest and Its Children: The Psychological Ecology of an American Town* (1955)

Begin Kingsley, *The Water-Babies*

Week 9

3/13 No Class – Spring Break

3/15 No Class – Spring Break

Part 3: Making Children Scientific: Nature, Science, and Children's Hearts and Minds /late 19th century-through the 20th century

Week 10

3/20 Children's Science Literature in the 19th century

3/22 Science Education in the 19th century: why girls received more than boys, and what happened to change this fact

Reading Finish Kingsley, *The Water-Babies*

Finish Second Children's Science Book (from Collections or ILL)

Week 11

3/27 Discussion of 19th-century children's science books project
► **Book Project Due**

3/29 The Nature-Study Movement and its challenge to general science education

Reading Excerpts from Mabel Osgood Wright and Elliott Coues, *Citizen Bird: Sciences from Bird Life in Plain English for Beginners* (1897); Liberty Hyde Bailey, *The Nature-Study Idea* (1903); Luther Burbank, *The Training of the Human Plant* (1907); Anna Botsford Comstock, *The Handbook of Nature Study* (1911)

Week 12

4/3 The High School Curriculum and the Debate over Science Education in the 1920s and 1930s

► **Pass Out Reflection Question on Part 3**

4/5 Adolescent and Scientific Life in the 1950s: Margaret Mead and Rhoda Metraux, "The Image of the Scientist among High-School Students," *Science*, 1957, 126:384-390.

Reading Matthews, *Philosophy of Childhood*

Rudolph, *Scientists in the Classroom* (chapter 1)

Week 13

4/10 1942: The Westinghouse Science Talent Search Begins

4/12 The crisis of science education in Cold War America

Reading Rudolph, *Scientists in the Classroom* (chapters 2-4)

Week 14

4/17 Are children small scientists? The Piagetian Turn

4/19 Evolution in the classroom: 1950s through the 1970s

Reading Rudolph, *Scientists in the Classroom* (chapters 5-7, conclusion)

Excerpt from Marianne Besser, *Growing Up with Science* (1960)

Part 4: Conclusions

Week 15

4/24 Natural History Museum Visit: Informal Science Education, circa 2006

4/26 Summing Up

► **Reflection Question on Part 3 Due**

Reading Cunningham, *Children and Childhood in Western Society* (chapters 7-8)

Week 16

5/1 Project Consultations

5/3 Project Consultations

**Individual Project Due Monday, May 7th,
1:30-3:30 p.m. (the final exam time for this class), in PHSC 212**

Overview of Course Assignments and Examinations

- 1) Reflection Question on Introductory Text – Cunningham, *Children and Childhood in Western Society* (Due Week 4, on 2/6): 3 pp. (approx. 700-800 words) / 10%
- 2) Reflection Question on Part 1, “The Image of the Child in Enlightenment Science” (Due Week 6 on 2/20): 4-5 pp. (Approx. 1000-3500 words) / 15%
- 3) Reflection Question on Part 2, “The Social Sciences and the Birth of Child Science” (Due Week 8 on 3/8): 4-5 pp. (approx. 1000-1350 words) / 15%
- 4) Victorian Science Books for Children Project (compares the text, *The Water-Babies*, with another book selected earlier from the History of Science Collections, the professor’s collection, or interlibrary loan) / Due Week 11 on 3/27: 4-5 pp. (approx. 1000-1350 words) / 15%
- 5) Reflection Question on Part 3, “Making Children Scientific” (Due Week 15 on 4/26): 4-5 pp. (approx. 1000-1350 words) / 15%
- 6) Individual Project (Due Monday, May 7th, at 1:30-3:30 p.m., the Final Exam time for this class, in PHSC 212). The Individual Project is worth 30% (7-8 pp., approx. 1800-2400 words).

Rules of the Road

Attendance: Attendance is required. Four unexcused absences are allowed; missed classes beyond this will result in your grade being lowered by 5% increments. If you need to miss class for an illness serious enough to merit a trip to the doctor, a family emergency, etc., please be sure to contact the instructor.

Academic Misconduct: **Cheating will not be tolerated.** Cheating includes, but is not limited to, copying the work of another student, using the written work of another author without attribution, or any conduct that seeks to compromise the examination process. *Such conduct will result in an automatic F on that examination and the student can be referred to the Dean for disciplinary action.*

Due Dates: Exams **will not be accepted if turned in late**, and will be graded F. (This requirement will be waived only in the case of a medical or family emergency. To the extent possible, permission should be sought before the due date.)

Religious Holidays: It is the policy of the University to excuse the absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. Please see me in advance.

Students with Disabilities: Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me as soon as possible, so we can discuss accommodations necessary to ensure your full participation and to facilitate your educational opportunities.

Grading Scale: The letter grades for this course conform to a 4 point scale, as follows:

4.0-3.5 = A (A=4.0, A- = 3.7, A-/B+=3.5)

3.49-2.5 = B (B+ = 3.3, B = 3.0, B- = 2.7, B-/C+=2.5)

2.49-1.5 = C (C+ = 2.3, C = 2.0, C- = 1.7, C-/D+=1.5)

1.49-0.5 = D (D+ = 1.3, D= 1.0, D- = 0.7)

0.5 and below = F