

Nuclear Fictions

Daniel Traister

English 393.601

Instructor: Daniel Traister

University of Pennsylvania, Spring 2000

Wednesday 5:30-8:10 P.M.

Location: Lea Library, 6th floor, Van Pelt-Dietrich Library

EPIGRAPH: The Newtonian conception of physics, for example, has been completely upset by Einstein, first, and then by the quantum theory. Nor will this be the end. Of one thing only can we be sure: What is today accepted as truth will tomorrow prove to be only amusing.

Many different kinds of stories concern the building, development, and effects of nuclear weapons in 1945. Some claim to be autobiographies or biographies. Others claim to be histories. Still others call themselves fictions. Some seem to be poetry or plays. These stories, and the varied ways in which they construct our understanding of "the" story, are the subject of this course. We will look at how that part of the history of twentieth-century physics conventionally summed up as "the Manhattan Project" has been presented (represented; re-presented) in a variety of verbal and visual media.

SOME WORDS OF ADVICE

1. You do not have to be a physicist to take this course. The instructor teaches literature, not physics.

2. The instructor urges students to read the following books, or as much of them as possible, before the start of the course (or during its first two to three weeks). (NOTE: The instructor has just used the word "urges." This word is NOT equivalent to "requires.") These books are readable. Unfortunately, several are also long. They are worth your time because they provide background, that is, contexts for thinking about some of the issues raised by the works to be read as "foreground," during the semester.

1. Richard Rhodes, *The Making of the Atomic Bomb* (Touchstone paperback) is without any doubt **THE MOST IMPORTANT** of these background books. **TRY TO READ IT.**

2. **IF** you have time, energy, and interest, you could do worse than **ALSO** to read Daniel J. Kevles, *The Physicists* (Harvard paperback), a discussion of how twentieth-century American physicists became professionalized; how their profession eventually obtained an important and organized public role.

3. In addition, you might, if you have very little background in physics, benefit from George Gamow, *Mr. Tompkins in Paperback* (Cambridge Canto paperback)

OR

the much more mathematically sophisticated Abraham Pais, *Inward Bound* (Oxford paperback)

OR

any similar introduction for non-technically trained readers to twentieth-century nuclear physics. Such books are not necessary for students taking this course; but they might very well prove helpful.

COURSE MECHANICS

Students will be asked to prepare several responses to readings during the course. Note that the syllabus calls for a brief response from every member of the class due at the third class meeting. The syllabus for other weeks suggests a variety of response topics.

In addition, every member of the class must write and submit by May 10th a FINAL PAPER of some 15-20 pages in length. (There is no final examination. The instructor reserves the right to give unannounced quizzes during the semester -- and he will do so if he gets the impression that people are not doing the reading.) Your final essay should consider some materials not otherwise read in this class and use primary materials of some sort in doing so. **DO NOT CHOOSE A TOPIC FOR OR WRITE THIS PAPER WITHOUT FIRST DISCUSSING IT WITH THE INSTRUCTOR.** Please follow MLA or Chicago format rules in the preparation of this paper.

This class will work through discussion rather than lectures. Your attendance will make a difference in its success -- and your attendance and participation in your grade. Ground rules: talk; interrupt; open your mouths. Be polite; do not let politeness get in the way of making your points. NOTE: If you can get an early start on Mosley's *Hopeful Monsters*, you will be glad you did so.

COURSE BOOKS

Required books

Raymond Briggs, *When the Wind Blows* (Schocken pb) -- bulkpack

Friedrich Durrenmatt, *The Physicists* (Grove pb)

Richard P. Feynman, "Surely You're Joking, Mr. Feynman!" *Adventures of a Curious Character* (Bantam Classics Spectra pb)

Michael Frayn, *Copenhagen* (Methuen pb) -- bulkpack

John Hersey, *Hiroshima*, rev. ed. 1986 (Bantam pb)

Masuji Ibuse, *Black Rain* (Bantam or Kodansha pb)

Russell McCormach, *Night Thoughts of a Classical Physicist* (Harvard pb)

Richard H. Minner, ed., *Hiroshima: Three Witnesses* (Princeton pb)

Nicholas Mosley, *Hopeful Monsters* (Vintage pb) -- out-of-print; we may have to find other means of obtaining copies of this title

Richard Rhodes, *The Making of the Atomic Bomb* (Touchstone pb)

C. P. Snow, *The Two Cultures* (Cambridge Canto pb)

Recommended books

Otto Frisch, *What Little I Remember* (Cambridge Canto pb)

George Gamow, *Mr. Tompkins in Paperback* (Cambridge Canto)

James Gleick, *Genius: The Life and Science of Richard Feynman* (Vintage pb)

Daniel J. Kevles, *The Physicists* (Harvard pb)

Martin Cruz Smith, *Stallion Gate* (Ballantine pb)

-----SCHEDULE

Week 1 -- 19 January: Introduction to the course

Readings: Raymond Briggs, *When the Wind Blows* -- BULKPACK

Week 2 -- 26 January: Being a physicist, or some other sort of academic person

Readings: Jeremy Bernstein, *The Life It Brings* -- BULKPACK

Terry Caesar, *Conspiring With Forms: Life In Academic Texts* (Georgia), chaps. 4 ("Croaking About Comp"), 5 ("Drifting Through the MLA"), and 8 ("On Teaching at a Second-Rate University") -- BULKPACK

You should by now be well into, if you have not already finished reading, Richard Rhodes, *The Making of the Atomic Bomb*.

Week 3 -- 2 February: One way of defining the subject of this class:
over the bomb

Readings: John Hersey, *Hiroshima*

Paul Fussell, "Thank God for the Atom Bomb," in *Thank God for the Atom Bomb and other essays* (Summit), pp. 13-44 -- BULKPACK

Richard Rhodes, *The Making of the Atomic Bomb*, chap. 19 ("Tongues of Fire")

Response topic: This is a writing assignment -- ungraded, as you will recall -- for everyone in the class (2-3 pages in length):

-- What is the effect of Hersey's tone on the reader of his essay? It might help you to compare the effect of Fussell's very different tone as you try to gauge how a writer's tone affects the ways in which readers approach texts of these kinds.

Week 4 -- 9 February: Another way of defining the subject of this class:
under the bomb

Readings: Masuji Ibuse, *Black Rain*

Richard Minear, *Hiroshima: Three Witnesses*

Response topic: Compare and contrast the treatments of "the Hiroshima experience" [sic!] provided by Hersey, Ibuse, and any one of the writers included in Minear.

Week 5 -- 16 February: A third way of defining the subject of this class:
contemplating the bomb from a distance

Readings: Friedrich Durrenmatt, *The Physicists*

Response topic: This is a play not only about physicists and moral responsibility but also about espionage. Are these topics related?

Week 6 -- 23 February: The Manhattan Project variously viewed

Readings: Most of the material for week 6 will be provided in your BULKPACK.

Although the instructor has assigned only specific chapters or sections of larger works, he urges you, in a utopian mood, to read as much of the rest of these books as you can. All of them are misrepresented by being sampled instead of read.

Leslie R. Groves, *Now It Can Be Told: The Story of the Manhattan Project* (Harper and Row), selections

Laura Fermi, *Atoms in the Family: My Life with Enrico Fermi* (Chicago), chaps. 17-23

Otto Frisch, *What Little I Remember*, complete if you can manage it, or as much as you can if you can't actually finish it

Richard P. Feynman, "Surely You're Joking, Mr. Feynman!" complete if you can manage it (this is a very easy and very enjoyable book to read), but minimally part 3 ("Feynman, the Bomb, and the Military")

James Gleick, *Genius: The Life and Science of Richard Feynman*, chap. 4 ("Los Alamos")

Daniel J. Kevles, *The Physicists*, chaps. 19-20

Response topic: You've read selections from a few of the many memoirs and descriptions written by and about the people engaged in building the first nuclear weapons.

Recognizing the difficulties of this question (the instructor hopes you will think it worthwhile to think about these difficulties "out loud" while also trying to answer the question), some of which are a function of the limited size of the sample alone, can you begin to characterize these people in any "generalizable" ways at all? Whether your answer is "yes, and in this or these specific way(s)" or "no," why do you come up with the answer you come up with? More difficult still, what impression(s) of these people and this project do you come away from these memoirs with?

Week 7 -- 1 March: Oppenheimer

United States Atomic Energy Commission, *In the Matter of J. Robert Oppenheimer: Transcript of Hearing Before Personnel Security Board and Texts of Principal Documents and Letters* (MIT) -- BULKPACK selections

Heinar Kipphardt, *In the Matter of J. Robert Oppenheimer* (Hill and Wang) -- BULKPACK

Response topics: Do you read him as "Oppenheimer heroic"? Why? -- or why not?

Week 8 -- 8 March: A voice from the past

Readings: Russell McCormmach, *Night Thoughts of a Classical Physicist*

Response topic: Is McCormmach writing as "a historian of science" or "a novelist" in this book? What might such a distinction mean? In any event, why would anyone care about

the world of an "unreconstructed" classical physicist in the second decade of the twentieth century?

Week 9 -- 15 March: -- SPRING VACATION -- NO CLASS

Week 10 -- 22 March: Einstein

NOTE: By now, you should at least have begun to read the LONG novel by Nicholas Mosley, *Hopeful Monsters*. You will be sorry if you do not start it sooner rather than later.

Readings: Alan J. Friedman and Carol C. Donley, *Einstein as Myth and Muse* (Cambridge), chaps. 1, 4, and 6 minimally -- BULKPACK

William Carlos Williams, "St. Francis Einstein of the Daffodils" -- BULKPACK

Archibald Macleish, *Einstein (Paris: Black Sun, 1929)* -- BULKPACK

IF members of the class can locate sufficient numbers of copies of Todd Gitlin, *The Murder of Albert Einstein* (now out-of-print), you may want to add this short and very interesting book to the reading for this week.

Response topics: How does "Einstein" function in Williams? or Macleish? or Gitlin?

Week 11 -- 29 March: An English perspective

Reading: C. P. Snow, *The New Men* (Scribner's) -- BULKPACK (unless you can find a used copy; the book is out of print)

C. P. Snow, *The Two Cultures*

F. R. Leavis, "Two Cultures? The Significance of C. P. Snow" -- BULKPACK

John Halperin, *C. P. Snow: An Oral Biography* (St. Martin's), pp. 79-99, 126-139, 161-168 -- BULKPACK

Response topics: Snow or Leavis? (E.g., "Snow not only hasn't in him the beginnings of a novelist, he is utterly without a glimmer of what creative literature is, or why it matters." -- F. R. Leavis. Comment.)

Or, instead, what historical situation did Snow address, and out of what intellectual context? In what sense do these factors also affect a reader's response to *The New Men*?

CINEMATIC INTERLUDES If we can arrange it, this week we will see a few films. For people with access to a VCR, the instructor strongly recommends seeing, on your own, such classics as Alain Resnais, *Hiroshima, Mon Amour* (you can also read the screenplay, written by Marguerite Duras, and available in English translation), Stanley Kubrick, *Dr. Strangelove*, or *How I Learned to Stop Worrying and Love the Bomb*, and John Frankenheimer, *Fail-Safe*.

In addition, keep on reading Nicholas Mosley's *Hopeful Monsters*.

Films:

* David Wolper, *Ten Seconds that Shook the World*

* Joseph Sargent, *Day One*

Week 12 -- 5 April: Another English perspective

Reading: Nicholas Mosley, *Hopeful Monsters*

Response topics: NOTE: no response topics have been assigned for this week. Here are some suggestions for ways to think about this long and complicated novel. See also David N. Menton's "The Hopeful Monsters of Evolution" (*St. Louis MetroVoice*, June 1994, Vol. 4, No. 6).

Week 13 -- 12 April: Mosley, continued

Response topic: While he cannot be blamed for the sins of his ancestors, nonetheless the author has a curious family relationship to some of the worst excesses of the World War II era. Do you see any signs that this relationship influences the depiction he provides of people engaged in the Manhattan Project in this novel?

Week 14 -- 19 April: American melodramatists

Readings: Thomas McMahon, *Principles of American Nuclear Chemistry* [published in the UK as *A Random State*] -- BULKPACK

OPTIONAL: Martin Cruz Smith, *Stallion Gate*

OPTIONAL: Alan Lightman, *Einstein's Dreams*

Response topics: Reading McMahon's novel, believe it or not, is what started the instructor gathering materials in various literary, non-literary, and sub-literary forms for a course on this topic. Is the book worth his interest, or is it merely melodrama?

Week 15 -- April 26: Coda

Readings: Michael Frayn, *Copenhagen* -- BULKPACK (if still necessary; the play has not yet been published in the United States); and see both this article on the play from *The New York Times* and this discussion of the play by John Lukacs

If McMahon's novel is what got the instructor started on this topic, Frayn's play is what the University assigned to its incoming first-year students before their arrival in September of 1999. Was it right to do so? What issues does Frayn summarize here?

Believably? Convincingly? And with anything like a "summary" effect for our purposes?