HON 201, Three Plays
Fall 2011
F 1-1:50, BH B21

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Office hours F 10-11, or by appointment

Seminar outline This seminar will involve the reading and discussion of three plays which revolve around scientists and scientific issues. The first play is the classic "Galileo" by Bertold Brecht, where the issue is whether a scientist should follow his or her conscience if the consequence is punishment, an issue prevalent even today. The second play is "Copenhagen" by Michael Frayn, set in the time of World War II, raising the issue of nuclear power which is currently under debate after the accident in Japan. The third play is "Breaking the Code" by Hugh Whitemore about Alan Turing who did fundamental work in mathematical logic and conceived the modern computer.

At the end of reading each play there will be an assignment of writing a short essay summarizing the work done in class. The essays will be corrected and returned the following week. At the end of the semester the three corrected plays will be put together as a final assessment. The essays are meant for your own benefit, because putting your thoughts on paper contributes to better understanding of the plays, and they will be graded with this idea in mind. The main goal of the seminar is to enjoy the readings and discussions.

Texts Bertold Brecht, Life of Galileo, Penguin Classics

Michael Frayn, Copenhagen, Anchor Books

Hugh Whitemore, Breaking the Code, Samuel French, Inc

First Play During the first three or four weeks of the course we will study and discuss the play "Life of Galileo".

Second play The play "Copenhagen" raises several issues about the way physicists work, and the moral dilemmas regarding the use of their work in lethal

weapons. The play centers around a visit by Heisenberg to Copenhagen in 1941, during the Second World War. He and Bohr have a discussion, and no one else knows what this was about. We know that Heisenberg was directing the Nazi atomic research program. So what did he tell Bohr?

Some of the past history is as follows. Bohr and Heisenberg worked together in Copenhagen in the 1920's. They formulate the famous "Copenhagen Interpretation" of quantum mechanics. In 1927 Heisenberg becomes famous for his "Principle of Uncertainty", and is made a full professor at Leipzig. War breaks out in 1939, and Bohr and Heisenberg are on opposite sides. The Germans occupy Denmark. Heisenberg visits Copenhagen in 1941 to give a lecture, and meets Bohr. In 1943 Bohr escapes to Sweden. Meanwhile the atomic bomb is developed in America, and Hiroshima and Nagasaki are bombed in 1945. It turns out that the Germans never built an atomic bomb.

Third play The third play deals with the career and personal problems of the British mathematician Alan Turing. The story of his life is found in an article in the New Yorker; see below.

A link: http://www.gap-system.org/ history/Biographies/Galileo.html

An article on Turing is available at

http://www.math.uic.edu/ srinivas/codebreaker.pdf

8/26/11: Scene 1

9/2/11: Scene 3

Homework for 9/9/11: Read Scenes 4,5,6 and write a short summary of about a page.

9/9/11: Scene 7

9/16/11 We will continue with Scenes 8 and 9.

9/23/11 Read Scene 12, p.89: The Pope: After all .... to the end. Read all of Scene 13. Read Galileo's speech on p.103-104, Scene 14, then the end of Scene 15.

9/30/11 Read Copenhagen, p.3-32. In detail: p.3-20, then p.31-33. Special mention: Play on "Uncertainty" , p.24, Particles at different states at the same time, Schrodinger's Cat experiment, p.25.

10/7/11-10/28/11 Read Copenhagen, p.33-54, p.71 (Bohr's speech), p.81-94

11/4/11 Breaking the code, Act I, Scenes 1-5

11/11/11: Act I, Scenes 6,7,8 and Act II, Scenes 2,4,6

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Essay due 9/30/11: Write 3 pages as follows:

I the story of the play

II Galileo's character: his strengths and weaknesses (see the review of the Berkeley Rep production, www.culturevulture.net/Theater/Galileo.htm)

III The Church: reluctance to abandon the old view (the little monk's speech, Scene 8)

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For your second essay of 2-3 pages, due 11/4/11, address the following questions. Give page references when possible.

1. What did Heisenberg tell (or attempt to tell) Bohr on his visit to Copenhagen?

Some possible scenarios:

(1) p.36 (2) p.40-44 (3) p.86 on

2. Why did Heisenberg not complete the research which would have led to a German atomic bomb?

p.80 on. See also p.89.

3. Are there analogies with Galileo? Note Frayn used the word "compromise" in the video.

4. How does Frayn use the concept of uncertainty in the play? Frayn talked about this in the video. See p.99 of the postscript.

Use the following notes made in the class of 10/28/11 for Question 1: Choose from I,II or III.

I Heisenberg asks Bohr whether physicists have a moral right to work on the practical exploitation of atomic energy (p.36 and p.88).

This is related to Heisenberg saying he is working on a reactor and not on a bomb.

II Heisenberg wants to find out from Bohr whether the Allies are working on a bomb. He says the decision will be in their hands (p.40-41)

(III) (Thought Experiment) A play on "uncertainty". Bohr says Heisenberg hasn't done the calculation because he "hadn't consciously realized there was a calculation to be made". (p. 89, see also "To leave him misunderstood")

Here is a link to Frayn's remarks on the DVD. There are five parts.

http://www.pbs.org/hollywoodpresents/copenhagen/id/

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For the third essay of 2-3 pages, address the following questions. Give page references from the play or from the article "The Code Breaker" when possible.

(1) The story of the play

(2) What is your perception of the personality of Alan Turing? You might mention how he relates to

- his mother (Act I, Scene 2; Act II, Scene 3)
- his colleague Knox (Act I, p.26-35; Act II, p.68-72)
- his friend Ron (Act I, Scene 6)
- the policeman, Ross (Act I, Scene 1; Act II, p.82-84)

(3) Does his personality fit in with his alleged suicide? (See Act II, Scene 8 for Sara's opinion)

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An event of note: Lecture in the Works of the Mind Series, University of Chicago (free)

Sunday,October 9, 2011, 1 pm, Chicago Cultural Center, Michigan and Randolph The Trial of Galileo Rocky Kolb, Arthur Holly Compton Distinguished Service Professor of Astronomy & Astrophysics and the College, the University of Chicago; Member, Enrico Fermi Institute, and the Kavli Institute for Cosmological Physics

The 1633 trial of Galileo Galilei before the Roman Inquisition is one of the most famous chapters in the struggle between authority and the freedom of expression. Based on the actual trial depositions from the Vatican Archives, The Trial of Galileo will examine the issues that led Galileo to be tried for heresy. They are both more complicated, and simpler, than you might think.
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Please note the following policy adopted by the Honors College:

Students are expected to participate fully in honors seminars. Participation includes attending class, taking part in discussion, displaying intellectual curiosity and zest for intellectual challenge, and completing seminar assignments–reading, writing (e.g., paper, report, problems, exam), oral reports, group projects. Students are reminded that failure to participate fully will result in a grade of unsatisfactory.