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### Copenhagen: the Merging of Theater and Physics

As junior year comes to an end, I have been presented with the request of starting to think of an idea for a senior thesis project. However, being both a physics and theater arts major, I found myself in an interesting spot with the unique opportunity to merge my two very different academic backgrounds. My proposed senior project is to create an audience guide that explores both physical and dramatic ideas on the production *Copenhagen* by Michael Fryan.

In compiling this audience guide I hope to explain both the scientific and dramatic ideas with in the play so that they can be easily understood by an everyday theater go-er. In many theaters, the company will provide some background information for the audience to read before seeing the play. Often times this will include history at the time of the play, background on characters (specifically if they are modeled on real people), and any important concepts that the audience should be able to understand to get the most from the production.

Since *Copenhagen* does have several scientific concepts that are essential to the plot, an audience guide is especially appropriate. For the physical ideas, I would be sure to go over atomic structure, fission and fusion, and the atomic bomb. For the dramatic portion I would attempt to approach it similar to a dossier, being sure to examine the production history, character analysis, thematic ideas in the play, and Frayn's motivation for writing such a production. I also feel that this project will allow me to branch beyond the dramatic and physical

ideas and allow me to explore the interesting moral questions that are raised over the course of the play. I also intend on looking into the biases of memory in the human mind. Memories are far from absolute, and since the difficulty in recalling just what happened at the meeting with Bohr and Heisenberg in 1941 is the main plot point of the production, it seems appropriate to examine the tendencies of the human mind.

Fryan's work in *Copenhagen* is extremely relevant to the modern day world. We as a society, still see ourselves struggling with the various moral conflicts of nuclear weapons and their devastating side effects. The idea of memory, how it is created and stored in the brain, had long been an interest of many scientists. Likewise, the interesting choices Fryan implores while displaying his story, also provide a thought-provoking plot for the audience to enjoy.

In working on my thesis, I intend to adhere to the following timeline:

- Read Copenhagen, Thomas Powers' Heisenberg's War and Robert Jungk's Brighter Than a Thousand Suns –Spring 2012
- Research physical themes and any previous analysis that has been done on the play- Summer/Fall 2012
- Begin writing individual sections of the paper-Late Fall 2012/ Spring 2013
- First draft and editing process-Spring 2013
- Final draft- Late Spring 2013
- Thesis presentation- Late Spring 2013

References\*\*:

""Copenhagen" Play Portrays Bohr and Heisenberg." *The American Institute of Physics*. Web. 25 Mar. 2012. <<http://www.aip.org/history/newsletter/spring2000/copenhagen.htm>>.

Copenhagen (play)." *Wikipedia*. Wikimedia Foundation, 21 Mar. 2012. Web. 25 Mar. 2012. <[http://en.wikipedia.org/wiki/Copenhagen\\_\(play\)](http://en.wikipedia.org/wiki/Copenhagen_(play))>.

"Copenhagen": Uncertainty in Life and in Science." *Institute for Historical Review*. Mar.-Apr. 2002. Web. 25 Mar. 2012. <[http://www.ihr.org/jhr/v21/v21n2p35\\_frayn.html](http://www.ihr.org/jhr/v21/v21n2p35_frayn.html)>.

\*\*Plus various articles that I have collected from Dr. Eric Hill