

First Writing Assignment

PHY101 emergence in Nature 2011

Handed out September 26th, 2011, due on Monday October 17th, 2011, at the start of class.

Choose one of the following topics

[1] Find and discuss some critical reviews of *Deep Simplicity, bringing order to chaos and complexity*, by John Gribbin. Write **your own** critical review of the book, speaking as a scientific layperson. Rate the book compared to other similar books you have read recently, and discuss what you learned (or did not learn) from the book.

[2] Write a brief account of the history of ideas in cosmology from the beginning of the 20th century to today. What part did astronomical observation play? What part did theoretical ideas play? Discuss Einstein's role in the story. Conclude with a short discussion of some of the recent satellite missions, and what they have discovered about the evolution of the Universe. What do **you** think about this enterprise? Is it worth the taxpayers money to launch these missions?

[3] Consider the coverage of “physics” in the press. Look at the newspaper stories from the past two years that covered experiments or theoretical ideas from the world of Physics (and not just the recent story about faster than light neutrinos). Analyze and discuss what types of stories about physics are considered newsworthy. What other kinds of stories does the word “physics” get mentioned in? Why? What do **you** think the word means to the average newspaper reader?

[4] Discuss the life story and achievements of someone who has won the Nobel Prize for Physics since 1961 (*i.e.* in the last 50 years). Where does their work fit on the “great chain of being” that we have been discussing in class? Do you think that the Nobel prizes accurately reflect the importance of the work of the winners? Discuss some of the criticisms that people sometimes make about the process of awarding Nobel prizes. What do **you** think the Nobel Prize in Physics means to the average person?

[5] **Special topic for especially creative people.** Write a poem, a song or narrate an illustrated story about some subject we have talked about in this class. Then make a YouTube video of yourself reciting/singing it. You may attempt humour, but only if its not mere slapstick. Do not attempt anything physically dangerous or personally embarrassing. Analyze the response you get *via* YouTube comments. Also hand in an outline of the work (script, lyrics, musical score *etc.*). You may hand in the piece on disk if YouTube exposure is not to your taste.

General Instructions

You must hand in **both** a paper and an electronic copy of your paper. You should hand the paper copy in **at the start of class** on October 17th, and **e-mail** the electronic copy **to your seminar TA** the same day. Your paper is not handed in until both parts are in. TA e-mails are linked from the bottom of the course homepage.

Late papers will be accepted up to one week after the due date. Ask your TA for the location of the late drop box. A mark penalty of 15% per day (including weekends) will be applied to late papers.

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Your paper should be about 1500 words long, and certainly not more than 2000. This probably corresponds to about 5 or 6 pages. Topic 5 is obviously more flexible, but keep it a reasonable length, please! Your paper will be marked by your seminar TA, except topic 5, which will be marked by a committee of all the TAs and the professor.

We are interested in your *own* thoughts and ideas, not a rehash of someone else's opinions or ideas. We understand that you are not an expert at science. Presenting someone else's words as your own (including copying verbatim from web pages) constitutes **plagiarism**, and is a serious academic offense.

The simple solution is to properly **cite your sources**, including online sources. We will not be too fussy about the exact format of the citations, just that they be honest, complete and fair. Use whatever format you are most comfortable with. Your paper need not conform to the highest standards of formality; use a style that suits *you*.

See <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize> for good advice on how to avoid plagiarism.

In physics, we usually use the Numbered Note citation system described on <http://www.writing.utoronto.ca/advice/using-sources/documentation?start=3>

For how to properly cite online sources, see <http://www.writing.utoronto.ca/advice/using-sources/documentation?start=4>

You should of course be careful to check that sources, especially online sources, are reliable and describe mainstream ideas. Many web pages about physics and cosmology are written by cranks or people with their own personal agendas and theories of the universe.

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