

Problem set 3—due Monday, September 20

1) (15 min) There are several kinds of causality. Strict causality, “A causes B,” implies that A is both necessary and sufficient to cause B. Provide examples from everyday life to illustrate the following cases:

- a) A is necessary and sufficient to cause B
- b) A is necessary, but not sufficient, to cause B
- c) A is sufficient, but not necessary, to cause B
- d) A is neither necessary nor sufficient to cause B

2)(~4 hr) Dr. Pro and Dr. Anti have agreed to a debate on the following question:

Resolved: According to the best scientific evidence at this time, the current global rate of increase in emission of greenhouse gases (equivalent to a growth rate of CO₂ emission of ~1% per year) will cause an increase in the global mean temperature of at least 2°C by the year 2050.

The “pro” side of the debate is represented in your textbook (pp 105-132). The basic “pro” scientific consensus is presented at the web sites of the Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/pub/sarsum1.htm>). Specific responses to common “anti” arguments are given by the Greenpeace Skeptics site at <http://www.greenpeace.org/~climate/industry/reports/sceptics.html> The “anti” side of the debate is ably presented by Dr. Richard Lindzen, a meteorologist at MIT, at the Cato Foundation’s web site (<http://www.cato.org/pubs/regulation/reg15n2g.html>), and common “pro” arguments are challenged in a Heritage Foundation web site at <http://www.heritage.org/library/categories/enviro/bg896.html>

Your task is to write the dialog for both sides of the debate. This will require at least 3 pages (typewritten, please) of text + figures, in which

- a) Each debater develops his or her three strongest arguments, supporting each argument with quantitative data and/or graphs. Remember to include citations where appropriate!
- b) Each debater must also rebut the three arguments presented by her opponent.

For this assignment, please do not include economic arguments—the focus should be on the scientific evidence and modeling of global warming.

3) (20 min) List the other lobbyists who are scheduled to testify at your Senate hearing, and give a brief summary (a couple of sentences is fine) describing their position on the issue. It is OK to confer with them!