Opinion Essay/Editorial 3

Due in class on Wednesday, 10 Nov 2010

For each opinion essay, you will be answering a question I pose (below). Your essay should be **no more than 2 pages long[1], 1.5 spaced**. If you can make your points in less space, even better. The goal of the essay is not to pick the *right* answer, but to explain why you prefer your answer.

A good essay should start by posing the question (and maybe explaining why it's interesting) and giving your answer. The rest of the essay should give reasons for your view, making sure to wrap up with a sentence or two at the end. The best arguments use quantitative reasoning (use actual numbers and avoid weasel words like "many") and also acknowledge their own weaknesses.

A change this time: I'm going to break away from the grading rubric and grade you on a 20-point scale. I'll still be looking for the same things as in the rubric, just not as rigidly. I am particularly interested in how you arrived at your answer. Spelling and grammar will count as part of clarity, but minor errors will not cost you points. The goal of these essays is for you to learn how to make a good argument based on observations, data, and well-tested theories. This skill is valuable not only in the sciences, but also in many areas of life and is (if I may editorialize a bit) generally lacking in many aspects of our public discourses. Hopefully, you can help change that!

What makes a good essay?

- Start with facts, not opinion — An argument based entirely on opinion (while valid in many contexts) leaves little room for people to be persuaded. Either they agree with you or they do not. So build a case starting with verified information that everyone can agree and then show your logic going from there to your conclusion. Even if people don't agree with your result, they can appreciate your reasons.
- Be quantitative — Wherever possible, look up numbers to back up your claims. You don't have to find all of the relevant numbers (some might not even exist), but if you can even find a proxy value that often helps. Just be sure to note when you're estimating or using a "close, but not quite" value. Also: avoid "weasel-words" like "many", "most", "lots", and "a few". These words have their place, but if you can easily find numbers to replace them, it strengthens your case. (Conversely, overuse of weasel-words can make you look ill-informed and/or deceitful.)
- State your thesis (in this case, the action you're arguing for) as early as you can — As a reader, I always find it very helpful to know what the writer is trying to say early on. This lets me evaluate the entire piece in context. Be kind and help the reader out.
- Consider your audience — In this case, pretend you're writing for a newspaper, trying to convince your fellow citizens (not necessarily scientists) of your view.

---

[1] You may extend into page 3 for endnotes or full citations. If you desire, you may also include one figure on page 3.

Question #3:

NASA has asked *you* for help selecting the destination for their next "flagship" mission to somewhere within the solar system. Flagships are launched at most once a decade and cost a few billion dollars each. (Past examples include Cassini and Galileo.) The missions tend to very large and to contain a wide array of instruments designed to look at a variety of parts of a system. These missions are also *robotic*, so no manned missions anywhere. (That's a different office.)

Some things to ponder:

- Nearer planets are cheaper and faster to visit. (Or, conversely, you can get more instruments and fuel on board for the same price.)
- More distant planets are generally less explored, so each new mission does more for science overall.
- Time to arrive and execute is a factor since funding and human attention-spans/lifespans are not guaranteed.
- Congress tends to favor missions that have a practical connection to Earth: eg, understanding our climate or our interaction with the Sun.
- There's also much to be said for missions that will produce exciting science (not just academically valuable science) and neat pictures that will capture public attention.
- The technology to do many missions may not exist right now or may be very expensive. (So even if we could do it for a few-billion-dollar price tag, we might not be able to do anything else in the mission other than one experiment.)

For this essay, you'll be using a lot more "common knowledge" than the last. You'll need to worry less about copious citations since you won't be saying controversial things as often, but citations are still a good idea on anything that's not easily looked up. (For example, the distance to Pluto is "common knowledge" in that it's easily verified with around 10 seconds' Google time. Recent findings — which might not yet be generally accepted! — are probably not.) When in doubt: cite. On particular case to watch out for: if you cite someone's *theory*, make sure to attribute it. (eg, "According to Joe Doe's theory of the formation of Neptune, we should find...") Also you should go beyond the textbook's material. Also, quality of sources matters. (Wikipedia isn't considered reliable, although many of its references are.)

One final requirement: you will need to take a half-sheet peer assessment form and have your paper critiqued by a classmate. (As we did on the 1st.) Staple the form to the front of your paper before turning it in.

Papers are due *in class*. Do not turn in papers to the homework mailbox.