Tips for Writing Papers

1. **Being prepared.** You must know what you are talking about, and you must demonstrate that you have read and understood all of the relevant articles. For example, a paper that discusses face perception but does not mention the Diamond & Carey paper will not receive a good mark. In other classes, it might be possible to read only a portion of the assigned material and then do fairly well on a multiple-choice test. But that is not possible in 133. If you are unfamiliar with some of the material, that will be evident in an essay, leading to a low grade. In addition, more than half of the material in this class is presented in class sessions, so if you miss some class sessions and omit that information from an essay, that will again be evident, leading to a low grade. So the first two steps to doing well on essays are to read all assignments carefully and to attend all the class sessions.

2. **Large scale essay structure.** Any piece of good writing is well structured. Early paragraphs should introduce your topic and explicitly state your main idea or claim. Middle paragraphs should provide evidence in support of your claim and should anticipate any counter-arguments. The final paragraphs should summarize the evidence supporting your main idea.

3. **Review versus analysis.** One of the principal pitfalls in undergraduate writing is to just repeat the material that has been introduced in the course. Such a paper might describe Biederman’s theory, describe the experiments that Biederman did, and then describe the experiments that Tarr and colleagues did. To sum up, the student might state that there “is a lot of conflicting evidence and the truth probably lies somewhere in the middle.” This is not good writing. First of all, you are writing to an audience that has already read all the papers, so extensive description of the experiments is just not necessary. But most importantly, the essay needs to be organized around your own ideas. You need to take a position early in the paper, and then support that position with specific evidence. The fact that you have read all the papers will be perfectly evident from the strength of your ideas and the evidence used to support them.

4. **An argument that goes all the way through.** Make sure all the necessary steps in the argument are present. For example, just stating that RBC predicts view-invariance is not sufficient; one needs to explain why the theory leads to this prediction. In addition, experimental results need to be tied back to predictions and hypotheses that generated them. One needs to explain why an experimental result supports or fails to support a particular hypothesis.

5. **Paragraph structure.** Each paragraph should have a theme or a central idea. You may recall from High School the suggestion that each paragraph have a topic sentence plus 3-4 sentences supporting the idea in the topic sentence. Of course, one need not follow this sort of rule blindly (in fact, an essay that followed this rule in every single paragraph would probably be yawningly dull). But the basic idea is valid: Each paragraph should hold together as a set of ideas.

6. **No padding!** I have seen many sentences (and sometimes even whole paragraphs) that do not contain any ideas or information. These sections seem to be constructed to produce the illusion of understanding. Here’s the sort of section I’m referring to (I made this one up): “There have been a large number of experiments conducted to understand this very interesting issue of how the brain recognizes objects in the world. These experiments have done lots of manipulations to find out how objects are recognized…” This is all so general and so vague as to be of no use whatsoever. Instead, jump right in to discussing the actual experiments and their manipulations.
The fact that there are lots of experiments will be perfectly clear once you are done. And you can leave it up to the reader to decide if they are interesting.

7. **No paraphrasing.** Another pitfall is to write about a particular idea by taking a passage from, say, a textbook, and then changing the words around a bit. This can be pretty effective at creating the illusion of understanding. All the appropriate ideas and terms are there. But it is also a form of plagiarism, and it is pretty easy to spot, especially if the other sections of the paper (that cannot be produced through paraphrase) are not as strong. I know you have understood the material if you can put it into your own words. So read the original source, put it aside for a while so that you no longer remember the exact words, and then write the section in your own words. If you have difficulty writing it in your own words, then you have probably not understood it entirely. In that case, go back and reread the section, paying attention to the ideas you had difficulty expressing. If the problem persists, seek other ways to understand the issue, such as raising a question in class or attending office hours.

Small points:

1. No contractions, please (“do not” instead of “don’t”)

2. Experiments and results should be described in the past tense.

3. There is no need to provide the title of papers in the text. “Diamond and Carey (1986) provided further evidence that faces are not special…” is all you need.

4. Please have a title for each of your essays.

5. Please do not use a thesaurus to insert big words unless you take the time to look the word up in the dictionary and learn how it is used.

6. There has been some confusion over the following terms: theory, hypothesis, and prediction. A theory is a large-scale set of claims about how system is organized. So, Biederman’s RBC could be considered a theory based on its scale and generality. A hypothesis is a more specific claim. For example, the claim that objects are represented in a viewpoint-invariant manner is a hypothesis (one of many that make up Biederman’s theory). A prediction is a claim about the outcome of a specific experiment based on a hypothesis. So, Biederman’s theory includes the hypothesis that objects are represented in a viewpoint-invariant manner. This hypothesis predicts that the time necessary to recognize an object should be independent of viewpoint.

7. Related to #6, I have seen a number of papers that use the following sort of language: Biederman predicts that objects are represented in a viewpoint-invariant manner. Instead, use one of the following terms instead: Biederman claims/asserts/maintains/declares/hypothesizes/posits/states/holds that objects….

8. Avoid “I think,” “I believe,” “It appears to me,” etc.