Tips on Reading Research Articles Critically
… and writing your Critical Response Papers

Here are some tips on what to look for when reading research articles critically and writing your responses.

The questions below are ones you can consider and discuss whether you answer each one affirmatively (i.e. you feel the authors did this successfully) or negatively (i.e. you feel this aspect was lacking/ problematic in their paper); the important part is that you articulate why you feel this way when writing your review.

****

First paragraph (no more than ½ page): summarize what question the authors were trying to answer, and describe what they did (i.e. the design)

The rest: criticism/review part....

you can approach this in sort of a logical order, as follows:

1. Do the authors convince you that the research question is an important one? What's the hypothesis they're testing?

2. Does the design of the experiment allow for a good logical fit between the question & the task?

- What prediction does their hypothesis make? Does that seem sensible?
- Can you think of other predictions their hypothesis makes (i.e. about how kids ought to perform on this task, assuming their hypothesis is true?... or assuming some competing hypothesis is true/false?)

3. Does the dependent measure they used make sense? Are there other measures (given the task they were using) that you wish they'd reported, or are just plain curious about? Any confounds?

- does passing their task necessarily indicate what they take it to indicate? (think, eg.: are there other ways the children could pass the task?)
- does failing the task necessarily indicate what they take it to indicate? (think, eg.: are there other ways kids could fail? Were there other task demands-- things that were unrelated to what the task was designed to measure-- that might have made it hard for kids to demonstrate existing competence, for example was the task inappropriately verbal? Were test questions worded in a confusing or ambiguous way? Did the training phase introduce some sort of bias?, etc.)

4. Did they control for everything they needed to in order to plausibly make their case [note: they don't need to control for absolutely everything, but they do need to control for any factors that plausibly could influence performance or interfere with interpretation]?

- Are there other controls you can think of that should be run?

- If you were doing this experiment, are there things you would do differently—if so, why?

5. Did their interpretation of subjects' performance make sense? Did they address all of their findings (including both what was similar between subjects and what was different; or what was similar between conditions/trials and what was different?) Did their explanations make sense?

6. *Can you think of alternative explanations for their findings [this is a very important one!!]

7. Throughout the paper, do they substantiate all of the claims they make (with empirical evidence, and not just theory, logic, or intuition)?

- are their findings consistent with related studies in the field (based on what you know about the literature and those the authors discuss)? If they are inconsistent, do the authors discuss this convincingly/appropriately?

8. By the end of the paper, have the authors addressed everything they said they would (in their intro)?

9. What do you think about their "big picture" conclusions (typically, at the end of the discussion section)? Are there additional follow-up experiments or questions you think would be relevant and interesting for future investigations?

****

So here's the idea for the criticism part: treat each of these as independent entities. That is, it's best to take on the first question there [is the research question important?], discuss it, and then put your views on it aside before moving on to #2, saying to yourself "Okay, *given* that that's their research question, how do I feel about question #2 there [on the relation b/w the question & the experimental design/task used]?" Then after you address that, set your views aside and say, "Okay, *given* that that's the task they decided to use, how do I feel about question #3 [their dependent measure(s)]?", and so on, as you proceed through the list.

You need not address each and every question 1-9 above—particularly, if you are facing a page/length limit. Addressing a subset of them thoughtfully is better than addressing all of them superficially.

The bullet points are some things to look for, but they may or may not be relevant for the particular paper you review; I just figured I'd include them to get you started and suggest what kinds of things you want to keep in mind.

Even really excellent studies that are worthy of publication often come back from reviewers with various criticisms or suggestions (see, for example the sample "good" review that's up on stellar), so don't be shy about critiquing each of these aspects of your chosen article. As an intellectual/academic exercise, for this class, it's better to err on the over-critical side than the under-critical side, and you certainly shouldn't feel hesitant, or question your right to do so (eg. "Well, these smart folks from a lab at Stanford did it this way, and I'm sure they know better than I would about how to do this stuff," etc).

It is the authors' responsibility to lay out their research question, methodology, predictions, findings, and interpretation in a way that makes sense to the reader; if you have doubts or confusion about any aspects, the important thing is to cogently explain why.

9.85 Infant and Early Childhood Cognition

Fall 2012