How to Read Academic Papers and Chapters

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Life is not long enough

There is simply too much literature, whatever your subject is. You cannot read it all word-for-word. You really *must* read some of it word-for-word, though:

- pieces regarded by most scholars as seminal or otherwise important (whether or not you believe they deserve that reputation);
- papers on related topics written by your collaborators;
- papers written by "competitors;"
- most of what your advisor wrote;
- material that presents valid critique of your work;
- good, well-written stuff.

But the vast majority of pieces you will come across in your sojourn through the Temples of Knowledge and Learning that constitute The Literature will not fall into the above categories, and, while they may be entirely excellent, meritorious work, they do not deserve your time for a thorough reading. Throughout most of the rest of this document I explain a system of reading that has worked well for me; I hope it helps you!

About fifteen minutes

Do not throw yourself at books and papers, expecting to continuously ingest them in a linear cover-to-cover fashion. That method is bound to fail, because it's full of boredom, exhaustion, frustration at one's presumed inadequacies regarding mental stamina, and tears. Instead, read papers and chapters strategically, and with an *overview-then-details approach*.

Do the following, *in this order*:

1. Read the abstract in full.
2. Look at all the figures, if any.
3. Go back and read the figure captions, if any.
4. Read the Introduction section (if any) in full.
5. Optionally, read the Conclusions section (if any).
6. Read the first two, and last single, sentence in each paragraph.

The process laid out above should take you no longer than fifteen minutes per paper. Sometimes you can manage it in ten. It will take some practice if you're new to this sort of strategic reading to get it done that quickly, but eventually it will become relatively second nature. If you are pressed for time, skip the full readings of the Introduction and Conclusions section. Always keep a dictionary handy, and look up any words you don't recognize as needed.

With five or ten more minutes *immediately* after reading, while the material is fresh in your mind, you:

- Record the full bibliographic citation of the piece.
- Make a précis for yourself.

Finally and as necessary to find more material on the topic, whether immediately or lifetimes later:

- Mine the citations for earlier pieces.
- Search "cited by" listings online for pieces written after this one.

There's method to this madness. Recall from English class what you know about rhetoric: generally speaking, an author makes a single point with each piece, called the *thesis*, supporting it with *arguments*. She may also have an attendant *discussion* section where she notes connections to other ideas, or refutes anticipated criticism. The piece is prepared for human consumption by organizing the author's ideas into this overview-and-

details, claim-and-convince, package-and-contents structure. The thesis of the piece is paramount, and the rest serves to establish or embellish it, continually circling around it and returning to it, and ritually reinstating it. That structuring in academic papers keeps the reader focused on the point being made, and is meant to be formulaic—that formalism is what we're going to take advantage of in order to speedily get a good grasp of what the author has to say.

We use the structure of the academic paper to our advantage. It's not like a fictional story or novel, which is usually structured as a linear-through-time progression of setting, character development, and a sequence of plot events culminating in climax and ending in a resolution. That's more like a nice dinner: an *aperitif*, an *entrée*, perhaps an *amuse-bouche* sent from the Chef as a gesture of goodwill, or an *intermezzo* of delicate sorbet, marching proudly toward *le plat principal*, after which one retires to the parlor and takes *dessert*, or perhaps a *digestif*. While this sequence and its self-evident abilities to nourish the soul are things you should regularly avail yourself of, they are not usually part of scientific scholarship. Nay, for science happens in natural counterpoint to this, Yin to Yang, not in the parlor but in the study, the library, the laboratory, or the field, where Order is the joyful and laborious servant of Logic and Reason.

We read in the sequence outlined above in order to circumnavigate the paper and understand its territory in broad strokes before we allow it to populate the landscape with finer points. If the author is any good, and is being a good citizen of contemporary Academia by writing in close keeping to the rhetorical progression mentioned, the present method will lay the contents of the piece out quite plainly and in short order.

The Abstract

The abstract of a paper is supposed to give the paper away—curses upon authors who use it to describe what they're going to talk about but don't declare their point! We read it to get a sense of what this paper is saying, and as a quick acquisition of material upon which to decide whether we should read the paper further. Reading it should immediately give you a good grasp of what this piece is saying and how it argues it. Alas, its not very common that this step alone achieves that, so we carry on.

Figures

Many fields involve a great deal of visualization, or at least benefit from visual thinking or communication. If the author has used figures well, his graphics should help clarify what his abstract said in words. Spend a few seconds looking at each, but don't read the captions until after you've tried to determine their meanings for yourself for a moment. After that, the captions should help either corroborate or correct your interpretations—often some of both.

The Introduction And Conclusion

The Introduction of a paper, when well-written, is the place to situate the present work in the field. You may or may not need that situating for your own reading, depending on how familiar you are with the field. The Introduction is also where the author makes the case for her work being important, relevant, and worth having been done. Again, you may already feel the work to be worth your attention because of your existing expertise, or you may appreciate her overtures in getting you to see the ideas presented in a light you hadn't shone on them.

A good Conclusion is mostly a reiteration of the thesis, and for this reason it's the least critical part of a paper to read. It's very bad practice to include new ideas in one's Conclusion section. Authors sometimes also use this section to prognosticate and suggest where their work will fit into the bright and glorious future of Academia that awaits us all. They may also make a point of letting you know how they plan to use the present work in future projects. All very well, but not critical to your understanding of this paper.

Strategic reading

Next we come reasonably close to a full read of the paper. Again, recall from English class that good paragraph structure makes a point early on and elaborates on it, making paragraphs miniature essays, in essence. We read the first two sentences, because that's where the idea being discussed in this paragraph should be, and we skip most of the rest in the interest of speed. Ideally, the paragraph's point should be clear by end of the first sentence, and the second one will give us just a little elaboration as a bonus, but sometimes authors spend too much ink connecting the present paragraph to the one
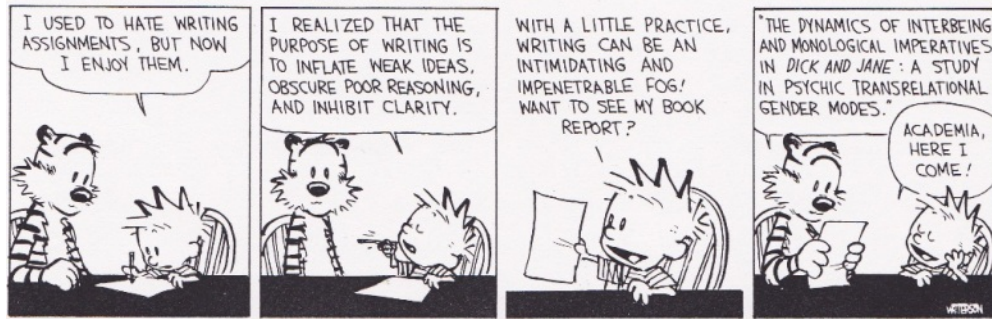
Calvin and Hobbes, by Bill Watterson.

preceding it. A graceful hand-off to the next set of ideas is what the last sentence in a paragraph should achieve, without needing the first sentence of the next paragraph to correct its fumble. We read the last sentence because it helps to weave the author's narrative together coherently.

This step is important. It should take you across at least one statement of the thesis, and allow you to collect the identities of the various arguments the author makes to support it. Don't "skim" or "speed read." Read those few sentences carefully.

While you're reading, look for:

- statements of the thesis;
- claims made;
- evidence;
- methods used;
- strengths and benefits;
- weaknesses and drawbacks.

What to do with the time left

If the steps above have not given you a firm (if imperfect) grasp of a modern scientific paper or chapter, the author *sucks*. Sometimes authors suck for lack of skill or inspiration (forgivable on occasion), others because they're self-serving, disingenuous, or obfuscating things with complex or random structure and esoteric, multisyllabic terminology in order to convince you (or themselves) they've got something worthy of attention. You'll soon recognize a spectrum of writers in terms of skill and intellectual integrity, and be able to make appraisals regarding these qualities for yourself—an ability that will serve you and others well when you review the work of your peers.

If the paper you've just read is important to your work, you have a little more to do.

Use your citation manager

If you are not yet using a citation manager software package, start using one, now. It's a topic unto itself that I won't cover here, but get the hang of using your citation manager to scrape bibliographic information from publisher webpages, as well as entering that information into your database of citations manually. Store and back-up that database. My own recommendation is for Zotero, a free and open-source citation manager that generally works very well and dovetails with lots of ways of writing papers, including all the major word processors, and LaTeX.

Use that citation manager at this point to record the full bibliographic citation for the paper you just read—unless you were proactive and did that when you first acquired a copy of the paper. Doing this sometime later on, like while you're writing your own work and thinking "oh yeah, what was that Smith *et al.* paper I read?" is a fine way to increase your stress levels.

Write a précis

This step is invaluable. Summarize the paper concisely for yourself, in one page, or *absolutely no more than three pages*. As years go by, the collection of précis you build will prove to be a rich asset: rather than go back and spend time re-reading papers, you'll simply dig up your old précis and read that in about five minutes.

Write précis with a word processor of your choice, and do it according to a formula. My own formula is as follows:

- The top of the page always contains the full APA-style citation to the published paper, which my handy citation manager furnishes for me to copy-paste.
- Next item is always a sentence or two that states, in my own words, the author's thesis.
- The rest of the document is a bulleted list of notes in my own words on the paper. These can be anything of relevance, though they're usually the arguments the author is making to support the thesis and interesting details pertaining to them. When it seems relevant, each point is followed immediately by the page number(s) in parentheses. Sometimes they're direct quotes, with " " marks around them, and

page numbers given. Sometimes I copy figures from the paper and paste them in, also with page numbers cited. Other times these are notes or commentary to myself, written inside square brackets.

They're relatively uniform in structure, just like academic papers are, on purpose: to help me get the information I'm looking for efficiently and clearly. The distinction between notes in my own words, quotations, and comments to self is important: I can directly copy notes (my words) or quotes (their words, cited) this way, as well as suggest things to my future-self through comments.

Your précis are only useful to you if you can find them later. I store copies of all papers and précis together in one big digital library, backed-up to a cloud service on the Internet. Importantly, I use the following naming conventions:

- Smith 2001 A few words describing the paper.pdf
- Smith & Choudhry 2025 A few words again.pdf
- Smith et al 2001 You get the point.pdf

In the same folder, I store my précis *with exactly the same name*, only a different file extension for being a word processor file:

- Smith 2001 A few words describing the paper.odt (or .doc, .txt, .md, etc.)

Using that naming strategy allows me to easily find couplets of the original paper (PDF) and my notes on it (ODT) using a standard search on my computer through my library folder. I can read my own précis for a fast refresher on the paper, and I can go back to the original as desired. I typically keep to open-source formats such as the Open Document Text Format (.odt, which both LibreOffice and Word can read and write) in the interest of being able to read it years into the future without the format going obsolete or out of style. I keep this file editable (i.e., rather than another PDF) so that I can amend or change it as necessary.

Mine for citations

Finally, if you're looking for further reading on the topic, look through the citation list. To search forward through time, use web-based services like CiteSeer, Google Scholar, and Microsoft Academic, which can help you find papers that have cited the one you've just read. Again, use your citation manager as you come across these to keep a database.

The end

Even for papers that you do read in their entirety, make use of their structure in the same way explained. A *really* good read of a paper includes all the previously-described steps for structure and general points, *and then* a word-for-word reading for all the minutiae.

I hope at least some of the preceding will be helpful to you! Take what works, modify as you see fit. I hope also that this gives you some insight into how to write your own pieces: realize that most people will *not* read your papers word-for-word, even when they're excellent. Write clearly and directly, with structure, to allow others to use this and similar methods to discern what you have to say and learn from you quickly.