## Doing research and writing: A personal guide

Claes Bäckman

## Writing is like...

## Learning how to ride a bike

No exact science Lots of implicit knowledge

Learning by doing instead of theorizing



## Using a flashlight

You decide what to shine the light on



## Writing is very difficult!

You need to put in effort

## Franz Kafka, journal entries in Winter of 1915 January 20, 1915: The end of writing. When will it take me up again?

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## Being a writer is very different from taking exams

Being a writer and researcher is about communicating your ideas clearly

- Finding new ideas is different from solving problem sets
- Cleaning data is not the same as getting a dataset to analyze
- Knowing there is solution to a problem vs not knowing

My contention is that most of these skills are not taught in normal classes

- Writing takes time and effort and practice
- Organizing a research project takes effort and skill

### But they are possible to learn!

## Today's agenda

What will we go through today?

- Writing tips
- Referee reports
- Some very practical tips
- How to find ideas and search for literature
- Graphs and Tables
- Presenting

Throughout we will try to see how using AI can help and hurt At the end are some further resources you can

usee

## ChatGPT is a transformer, not a search engine

Many people use ChatGPT as a search engine

- Results are based on historical training data, not a search
- ChatGPT does not access a database
- Training data can easily reflect biases or inaccuracies

Hallucinations are common in Large Language models

- ChatGPT will make up paper, make up code, etc
- It will sound very reasonable, because that is what it is optimizing

For more, see Ingar Haaland – Integrating ChatGPT Into Your Research

## Josh Goodman on Twitter

I'll note one other major concern I had. I was not familiar with one of your citations, so I dug deeper and found that at least four of your references cited in the paper and listed in the bibliography do not exist. Though I have no way of knowing for sure how that happened, my best guess is that part of the writing process involved AI such as ChatGPT, which famously hallucinates citations (i.e. generates plausible but nonexistent works). Though I suspect the problem is limited to the literature review, seeing such references listed lowers my confidence in the paper as a whole. I would strongly recommend addressing that problem before resubmitting elsewhere, as well as conducting more careful literature reviews in future papers.

## Roadmap

Writing tips

General tips

How to get started?

The importance of editing

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Good academic writing is clear and to the point

## Good academic writing is clear and to the point

### Fuck Nuance

Sociological Theory 2017, Vol. 35(2) 118-127 © American Sociological Association 2017 DOI: 10.1177/0735275117709046 st.sagepub.com

(\$)SAGE

Kieran Healy<sup>1</sup>

**Abstract** 

Nuance is not a virtue of good sociological theory. Although often demanded and superficially attractive, nuance inhibits the abstraction on which good theory depends. I describe three "nuance traps" common in sociology and show why they should be avoided on grounds of principle, aesthetics, and strategy. The argument is made without prejudice to the substantive heterogeneity of the discipline.

### Keywords

theory, nuance, models, fuck

## Starting from the beginning

### Figure out one central and novel contribution

- Make it concrete
- This is painful you will have to throw out many interesting things

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### An example:

We use survey questions about spending in hypothetical scenarios to investigate features of propensities to consume that are useful for distinguishing between consumption theories (Fuster et al., 2021)



...

This paper makes 7 contributions. First, it redefines the meaning of the word "contribution."

1:33 PM · Jun 26, 2019 · Twitter Web Client

You find something really interesting in the data, but it's not related to the research question. Should you write about it?

## More simple advice

Your writing should be in a newspaper style

- Start with a summary of the most important bits, then go deeper into the details
- One idea per paragraph
- Academic writing is not a mystery novel

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Your readers are busy – make it easy for them

We want to know the research question, the method and the outcome very quickly

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• We want to know the research question, the method and the outcome very quickly

Your sentences should be short and to the point.

- Use active voice ("I estimated the model")
- Avoid overly dramatic language ("the results are mind-blowingly good and interesting")

"Your sentences are too simple – you are not giving enough credit to the complexity of law"

Comment to a friend of mine, writing Swedish sentences in German

## Some advice for non-native speakers

Academic writing in English is different from (academic writing in) your native language

- Swedish sentences are often in passive voice
- Russian (and German?) sentences are often very long, with lots of commas

Be aware that there are differences in sentence structure across languages

- Use simple sentences
- Use active voice

## Just get started!



## More on how to get started

The first sentence and paragraph are the hardest!

- The first paragraph in a paper usually sets up the problem and why it is important and what the research question is
- Do not start with philosophy

A tip: you do not have to start at the beginning

- Writing the data section first gets you going
- Write a short placeholder paragraph for the intro, and then come back to it later

## The introduction formula

Motivate with a puzzle or a problem (1-2 paragraphs)

• The most important paragraph

Clearly state your research question and central contribution

One central contribution and briefly what it means

### The rest is details:

 Empirical approach/theoretical approach + detailed results, value added to rest of literature, robustness checks

## An exercise

Pick one of the papers you like and only look at the first page/first two paragraphs

- 1. What is the motivation or puzzle?
- 2. What is the research question?
- 3. What is the central contribution?

# On a scale of 1-10, how important do you think editing is?

"[...] the single best predictor of getting a paper accepted, would be clear and accessible writing, including an explanation of where the paper breaks down, instead of putting the onus of this discovery on the reader"

Amitabh Chandra, the Editor of the Review of Economics and Statistics

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But you will not write clearly and accessibly on the first try - you need to work

## No one is great at writing at first

This is why it is important to edit our writing

- Every word counts, and if you write to many words, it is easy to get lost as a reader, especially if you also want to add another point, like the importance of being precise in your writing
- Do not repeat things
- You don't have to say things twice, in different words.
- Repetition is a really bad idea
- Simple is better, because you want to be able to convey your results in a way people understand

# No one is great at writing at first

This is why we edit

- Keep it short
- Do not repeat things
- Simple is better

Be hard on the writing, not on yourself

# But you need something to work with

Introducing the concept of Shitty first drafts:

Just put something down on paper

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Introducing the concept of Shitty first drafts:

Just put something down on paper

"Now, practically even better news than that of short assignments is the idea of shitty first drafts. All good writers write them. This is how they end up with good second drafts and terrific third draft."

Anne Lamott from Bird by Bird (Link)

# Can ChatGPT help?

#### Prompt from Ingar Haaland

You are now my copy editor. I am writing an academic paper in the field of economics.

I will give you a few paragraphs from the paper. I want you to point out each sentence that includes clear examples of unclear writing or awkward phrasing.

Specifically, for sentences with unclear writing or awkward phrasing, create a bullet list for each sentence that you identify with a suggestion for how to improve the sentence. I also want a brief justification for the change. Each suggestion based on a sentence should thus follow the following format: Old sentence, new sentence, and justification.

I also want you to create a separate bullet list of all grammatical errors that you find in the paragraphs.

Let me know if these instructions are clear. Only start copy editing when I actually give you a paragraph

#### Exercise time

Take 5-10 minutes to write something. Start on an assignment, write the beginning of your thesis, whatever you want

One simple rule: No erasing text

- No changing the spelling
- No going backwards
- (You do not have to show it to anyone if you do not want)

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When you are done, tell ChatGPT what the goal was and use the prompt above to edit

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#### Some very practical tips

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# Writing programs, pros and cons

LaTeX (TexStudio, Overleaf, Markdown)

- Pros: Easy to handle references, looks nice, automatic updating of graphs and tables
- Cons: You need to learn how it works, not widely used out side of academia

#### Word:

- Pros: Easy to use, valuable to learn
- Cons: Annoying to handle references, tables and figures are not automatically updated

# Use Zotero or Mendeley to handle references

Zotero collects all information on your papers in one program, along with the PDF

- Very useful for organizing yourself
- Allows you to search for papers later

You can download a Chrome plugin to automatically get references and PDfs into Zotero

# References can be automated in LaTeX, Word (e.g., through Zotero), or Markdown

For you own sake, set this up so that it works

#### Click on "Cite"

#### Housing wealth effects: The long view

AM Guren, A McKay, E Nakamura... - The Review of ..., 2021 - academic.oup.com

... housing wealth effect back to the 1980s. We use three identification strategies: ordinary least squares with a rich set of controls, the Saiz housing ... exposure to regional house price cycles...

☆ Save 55 Cite Cited by 263 Related articles All 26 versions ♦

## Click on BibTeX at the bottom

×	Cite
MLA	Guren, Adam M., et al. "Housing wealth effects: The long view." <i>The Review of Economic Studies</i> 88.2 (2021): 669-707.
APA	Guren, A. M., McKay, A., Nakamura, E., & Steinsson, J. (2021). Housing wealth effects: The long view. <i>The Review of Economic Studies</i> , 88(2), 669-707.
Chicago	Guren, Adam M., Alisdair McKay, Emi Nakamura, and Jón Steinsson. "Housing wealth effects: The long view." <i>The Review of Economic Studies</i> 88, no. 2 (2021): 669-707.
Harvard	Guren, A.M., McKay, A., Nakamura, E. and Steinsson, J., 2021. Housing wealth effects: The long view. <i>The Review of Economic Studies</i> , 88(2), pp.669-707.
Vancouver	Guren AM, McKay A, Nakamura E, Steinsson J. Housing wealth effects: The long view. The Review of Economic Studies. 2021 Mar 1;88(2):669-707.
	BibTeX <u>EndNote</u> RefMan RefWorks

## Et voilá, you can save the reference in a bib-file

```
@article{guren2021housing,
   title={Housing wealth effects: The long view},
   author={Guren, Adam M and McKay, Alisdair and Nakamura, Emi and Steinsson, J{\'o}n},
   journal={The Review of Economic Studies},
   volume={88},
   number={2},
   pages={669—707},
   year={2021},
   publisher={Oxford University Press}}
}
```

If you write in LaTeX, you can use " $citet{guren2021housing}$ " or " $citep{guren2021housing}$ " to get the reference

- $\citep{guren2021housing} \rightarrow (Guren et al., 2021)$
- \citet{guren2021housing}  $\rightarrow$  Guren et al. (2021)

You can also use LLM

BibTeX Converter from Ingar Haaland

# Being productive means finding a way to focus

Work hard to avoid things that will break your concentration

- Close down Facebook, Twitter, emails, put your phone on do not disturb and put it away
- It takes me about 20 minutes to get into a flow

Figure out when you are productive, and then protect that time

- Is it after lunch? In the morning?
- Schedule time for administrative tasks or emails when you are not productice

I highly recommend Deep Work by Cal Newport

"I only write when inspiration strikes.

Fortunately it strikes at nine every morning."

Herman Wouk, quoting William Faulkner

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# How to critically evaluate research papers?

#### General structure:

- 1. A summary
- 2. Main comments
- 3. Minor comments

Feedback can be both positive and negative!

## The summary

Read the paper once at first, and then more carefully

Mark down important sentences where you have questions

Summarize the key parts of the paper, as you see it, without value-judgments

- What is the main question?
- What is the contribution?
- What methods do they use?
- What are the key findings?

# How does the paper fit into the literature?

They should tell you what papers they are most related to

- Look at those papers and figure out the differences
- But there is likely a broader/older literature as well

#### Think of differences in:

- Research questions
- Methods
- Data (countries, unit of observations, time period, etc)
- Results (if they are different, think of why)

## Some things you can comment on

#### What do we learn from the empirics?

- If it is an empirical paper with no theory, you can always say that they need theory
- Discuss how the empirics relate to theory, provide suggestions on how to incorporate theory, discuss how the
  results are in line with some theory

Are we sure about the identifying assumption in the empirics/the main assumptions in the theory?

- This is the key for all papers do the authors provide a good reason to believe their results?
- Can you think of some tests that would further validate their approach?

#### Comment on the setting

- Can we make general statement based on this setting?
- Do you think there would be general equilibrium effects in this setting?
- Do you think the results would "survive" in the real world when implemented at scale?

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# Finding good ideas is really hard!

Good research ideas involves finding connections between things (a good guide by Paul Niehaus)

- Huge heterogeneity in how people come up with ideas
- What works for me may not work for you

A lot of ideas are worth spending some time on (Master students: 1-2 days, PhD students: two weeks), but few are worth spending a long time on

Try to fail quickly

1. Write down your best 20 ideas on a piece of paper

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- 2. Rank the ideas from best to worst

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- 1. Write down your best 20 ideas on a piece of paper
- 2. Rank the ideas from best to worst
- 3. Pick the 1-2 best ideas
- 4. Burn the rest and never ever think about them again

# Finding papers: The literature is out there

You can often work backwards or forwards from a paper you are interested in

- They will cite the most important papers
- Other papers will cite the paper you are looking at (use Google Scholars "cited by" function)

Google Scholar is helpful

It is more helpful if you know what paper you are looking at

Al tools such as Elicit could be useful

# Sample many ideas!

#### Good ideas involve complex interactions between

- The literature on the topic
- What is happening in the world
- What data is available

#### Some tips? (Mostly trivial and abstract things)

- Read papers on topics you are interested in
- Read the news
- Try to be curious about the world

Be hard to research ideas, not to yourself. Self-worth is established, it is not at stake here.

# Using LLMs to get an overview of the literature

You can use them to get an overview of the literature (Beware hallucinations)

## Prompt:

I am planning a research project on XXX. Can you provide a quick literature review where you summarize the key insights from the five most relevant papers in economics and finance?

Using LLMs to come up with ideas (All below inspired by Ingar Haaland)

#### Prompt:

I need some ideas based on the papers you listed above. I still want to study how housing returns differ across the wealth distribution. Make sure that the idea is novel and ambitious enough to be published in a good economics journal.

Can you help me brainstorm about potential projects? I would especially like to have some concrete suggestions for data sources that I can use to study this topic.

#### Make it concrete

#### Prompt:

I like your fourth idea of "Climate Risk and Housing Returns Across the Wealth Distribution". To get started on this idea, could you please sketch an outline of what kind of data I need to collect and what regressions I should run? Are there any endogeneity concerns I should worry about?

# Aspirational abstract

#### Prompt:

Thanks for these excellent suggestions. Now assume I have collected the data and need to write up an abstract to send to a top economics journal. I want to get a feeling for how the final paper could look like. Make up some plausible results and write the abstract. Also suggest a good title.

#### Critical evaluation

## Prompt:

Assume we have the finished paper written up. Make a list of strengths and weaknesses of the paper that referees are likely to point out.

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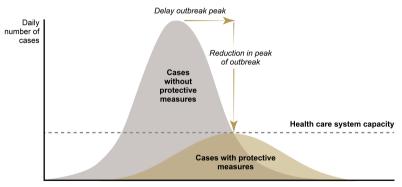
#### Graphs and tables

Presenting

Conclusions and further resource

## A graph can communicate complex ideas

#### **FLATTENING THE CURVE**



Time since first case

Source: CDC

## Use figures to communicate your main results

A figure is the best way to get your points across

• A well-designed figure can be very convincing

Think carefully about the type of figures you want to include

- Spend time making them look nice
- Spend time thinking about their purpose

Figures are a great way to learn

- Plot the raw data to learn about the relationship between variables
- Outliers, problems with the data? You can see them in figures, not in regressions

# Spend time automating graphs and tables and make them look nice

You can use R/Stata/Python + LaTeX/Markdown to automate graphs/tables in a paper

Very useful thing to do!

Use clear and informative labeling

• Do not use the same name as the variable in the data

Nice guides: Data Visualization by Kieran Healy and take a look at the course on data visualization by Andrew Heiss

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# Your presentation need to convince the audience to listen to you

You have 1-2 slides to convince the audience to pay attention

Tell the audience very quickly what your research question is

Get to the central contribution early

• It's not a mystery novel – get the central contribution in early!

## Getting too many irrelevant questions?

You can influence questions and comments by being clear

- ullet Research question on slide  $1 o \mathsf{Q}\mathsf{uestions}$  related to your topic
- ullet Research question on slide 5 o Questions about whatever the audience thinks the research question is
- ullet No research question o Random questions on whatever the audience thinks is important

## More tips

Every slide should have a purpose and you should go through it

Make sure you have enough time to go through all your material

Nicely formatted graphs and tables that are actually readable are a must

• Update your font sizes and labels to fit a presentation

Prepare well and know your paper

- Practice, practice, practice
- Make sure you can go through all the slides even with questions
- 20 minute presentation prepare slides for 15 minutes

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You are not what you write.

Be hard on the writing, not yourself

## Key takeaways

You need to work in a structured way on writing and findings ideas

- Try to be clear on what your goal is, and work towards that goal
- Learn how to focus! Focus on working, and focus on one central contribution of your work
- You can find lots of resources here

Try to go from "OMG it's all terrible" to "OMG it's all terrible, now let's make it better"

## Resources for writing

- 1. John Cochrane Writing Tips for Ph. D. Students
- 2. Jesse M. Shapiro Four Steps to an Applied Micro Paper
- 3. Plamen Nikolov Writing Tips For Economics Research Papers
- 4. Keith Head The Introduction Formula
- Florian M. Hollenbach Academic Writing: Exercises and Guides on Writing (Lots of links to writing resources)

## Resources for presenting

- 1. Jon Schwabish Better Presentations (book) and website for making better presentations.
- 2. Rachael Meager Public Speaking for Academic Economists
- 3. Jesse M. Shapiro How to give an applied micro talk
- 4. Paul Goldsmith-Pinkham Beamer Tips
- 5. Carmine Gallo How to Rehearse for an Important Presentation
- 6. Marc F. Bellemare 22 Tips for Conference and Seminar Presentations

## Finding new ideas

- 1. Deep Work by Cal Newport (see also his blog, Study Hacks)
- 2. Steve Pavlina 7 Rules for Maximizing Your Creative Output
- 3. Ben Olken My Epic Failures
- 4. For new ideas: See this Twitter-thread started by Ivan Werning.
- 5. 5 steps toward a paper by Frank Schilbach

In general, you will hear lots of advice and some of it will contradict other advice. Find the thing that works for you!

## Links for Tables and Graphs

- Luke Stein's tips for generating Stata output that can be outputted directly to LaTeX (Don't miss the working examples with code).
- 2. Stata Cheat Sheets
- 3. Jörg Weber Automated Table generation in Stata and integration into LaTeX
- 4. Alessandro Martinello How to export tables from Stata to LaTeX
- 5. Nicholas T. Davis A 2019 New Year's Resolution for Stata users: Make cleaner, prettier graphs
- 6. Paul Goldsmith-Pinkham Best Figure Page (good inspiration!)
- 7. Chiu Yu Ko TikZ guide (Code for drawing graphs in LaTeX with so many examples)

## Resources for project management and data

- 1. Coding for economists Ljubica "LJ" Ristovska
- 2. Code and Data for the Social Sciences: A Practitioner's Guide Matthew Gentzkow and Jesse M. Shapiro
- 3. How To Make A Pie: Reproducible Research for Empirical Economics and Econometrics
- 4. Maximilian Kasy Useful Computational Resources (Guides to machine learning, programming in R, Latex)
- 5. Grant McDermott Data science for economists
- 6. Tobias Oetiker Hubert Partl, Irene Hyna and Elisabeth Schlegl The Not So Short Introduction to LATEX
- 7. Hans-Martin von Gaudecker Setting up a Python Environment
- 8. Michael Stepner Coding Style Guide
- 9. Michael Stepner Git vs Dropbox

- 1. Marc F. Bellemare How to Publish in Academic Journals
- 2. Campbell R. Harvey Reflections on Editing the Journal of Finance, 2006-2012
- 3. Jonathan B. Berk, Campbell R. Harvey, and David Hirshleifer How to Write an Effective Referee Report and Improve the Scientific Review Process
- 4. Journal of the European Economic Association Ask the Editor with Juuso Välimäki

#### Resources for dealing with stress

- 1. Chris Woolston Faking it
- 2. Jennifer Walker There's an awful cost to getting a PhD that no one talks about
- 3. Valerie Valdes Smart kids eventually grow up
- 4. Matthew Pearson How to survive your first year of graduate school in economics
- 5. Diana Leonard A woman's guide to doctoral studies
- 6. Maggie Berg The Slow Professor

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