

Tips on Doing Impactful Research

A Collection

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Content

Introduction	2
How to use this document	3
Part 1: Getting started	4
Before you start your research	4
Set up	4
Mindset	4
Support software	5
Finding a high impact research direction	6
Working on an existing research question	6
Coming up with new questions	6
Choosing between research questions	7
Orientation in a new research field	8
Part 2: Research and Thinking Habits	9
Critical thinking	9
Independent thinking	10
Analytical mindset	10
Good judgement	10
Connecting ideas	10
Failing fast	11
Valuing quality and correctness	11
Compare alternatives and compare them with equal rigor	11
Always reach conclusions	12
Writing well	12
Some resources	13
Tips that researchers shared with us	13
Final remarks	14
Further Readings	14
Acknowledgements [incomplete, to be updated in the coming days]	14

Introduction

The impact that a research project has seems to be affected by at least the following changeable factors on the side of researcher:

a) **Direction (What you work on)**

Pursuing the most relevant research directions, i.e. those that could potentially (most) improve the world.

b) **Skills (How you work on and present your research)**

Researchers who think uncreatively, cannot present their thoughts clearly or have a sloppy writing style will have less impact. Proper research skills can function as a multiplier for high-quality thoughts in relevant research domains.

c) **Strategy (How you get your research noticed and shape your career)**

Thirdly, if you want to do impactful research long-term, merely building research skills and focusing on an impactful question might not be enough. Your work still needs to make it out there. It may be smart to make some strategic decisions to foster your career long term (e.g. publishing early on, choice of supervisor...).

This document focuses on b) while also being helpful for a) and c) at some points. It aims to address challenges that students have reported to us and that our coaching is not focused on addressing. Some factors that facilitate high impact research — such as availability of funding, research tools and training — are not within the scope of this document but are covered on our [Resources](#) page. Finding collaborators and co-ordinating with other researchers are also important factors that can influence the impact of your research. Our community of students and experts, which you can join by [applying for our coaching](#), can be a valuable resource for these final factors.

This is the first version of this document. We want to continuously add tips and improve the resource suggestions and general advice it contains. If you have feedback of any kind please reach out to silvana.hultsch@effectivethesis.org or leave it [here](#) anonymously. Everything is welcome!

How to use this document

Often universities do not care much whether students work productively on their theses, develop good writing styles or choose action-relevant research questions that aim to benefit others. We do. And if you are reading this, most likely you do, too. We created this collection of research tips to help you do good research. It has been kept as general as possible in order to be relevant to students in most fields, however we encourage you to consider which aspects are most applicable to you. This document will help you most if you aim to pursue a career in research, however, many parts will also be helpful if you want to leave research after finishing your thesis.

This document consists of two parts. The first part is about getting you started on a research project and giving you some guidance for the beginning of the process, which seems to be the most challenging and also the most important phase of research for most people. So, if you want to start working on your thesis and you do not know where to begin, have a look at part 1.

The second part of this document is a broader collection of habits of thinking and researching which we collected from people who aim to make a difference with their research. Developing these skills requires continuous reflection and time. Therefore, this part is mainly meant to inspire you to develop and refine your skills now and beyond the scope of your thesis.

Generally, you can think about the tips you read in this document as multipliers to the work you are and will be doing. Each of these can make your research a little bit better, a little more valuable and ultimately a little more impactful.

Please keep in mind that what you read here are merely suggestions. This is what has been helpful to other people and has had positive effects on their research. Not everything will be helpful to you, so please take this as inspiration for further experimentation rather than as a prescriptive list. As there is a lot of content to digest if you try to read the whole document at once, we recommend focusing on sections you believe will help you most as a starting point.

Part 1: Getting started

Before you start your research

Set up

A useful set up may include:

- A big clean workspace.
- Multiple large monitors.
- A chair, desk and laptop/computer position that allow for healthy sitting posture.
- Drinking water close by.
- Noise-cancelling headphones or [artificial sounds](#), as these sometimes help with concentration. Spotify has a few “alpha waves” playlists ([random example](#)) that you could try.

Mindset

It's hard and that's okay

Writing a thesis may feel like a big task. You are not alone in this feeling. You do not need to have it all figured out when you start working. No one knows exactly what their work will look like when they start researching. So, it may be helpful to do some expectation-management. You should expect the process to be a bit messy during the first weeks. Anticipate that you will experience set-backs, when an idea or experiment does not work out in the way you thought it would, and that you will make mistakes. All of this is part of doing research.

Productivity

Don't expect to be able to spend 40 hours a week doing cognitively challenging work — for most people 4 hours a day is more realistic. Try to classify the types of tasks your project requires so that you can prioritise the most cognitively demanding work for a few hours a day at a time when you have full focus.

The explorer mindset

Try developing an explorer-mindset: "I am really interested in this topic and I want to find out whether X." This way, you may even have fun with your project, which makes working on it more pleasurable.

Be as comfortable with yourself as possible

Being comfortable with your own personality, emotions, and desires can help you overcome your own biases, helping you accept conclusions you may not like. On some days, mental health issues or other things may get in your way and it might be good to consider taking a break and looking after yourself. It is neither good for you nor for your research to neglect your wellbeing.

Writing anxiety? No problem

[This handout](#) discusses the situational nature of writer's block and other writing anxiety and suggests strategies for feeling more confident and optimistic about yourself as a writer.

Asking for help is a virtue, not a vice

Many universities offer free counseling and assistance for writing – check it out! Also, friends and colleagues are probably happy to help you (at least some of the time). So, if you are stuck, clearly formulate what your problem is and then do not hesitate to reach out to people.

Support software

Citation managers

- Citation managers are software tools that help you keep track of and cite sources more easily throughout your research process.
- [How to choose a citation manager](#)

Note taking

Decide how you will take notes, where to keep and how to order them.

- [Roam research](#) is built for helping you connect information and random thoughts about a single topic easily. It makes some connections obvious, for example, which papers you previously read were from the same author.
- [Workflowy](#) can help you with staying organized.
- You can also make a habit of keeping ideas and notes that are not directly linked to your current research project in a different folder. You may not be focused on writing about X yet, but you can have a blog-draft and other information you have collected on this in your folder of ideas.
- [Taking notes from research reading](#) from the University of Toronto has more useful advice.

Productivity & focus

- [Pomodoro](#) is a work concept where you study in 25min intervals with 5min breaks after each interval and a longer break after every 3 intervals. This is great for more focused work as you are actively scheduling breaks and also helps you to move and drink regularly. There are apps available, but you can also use a regular timer. During the work time, try to put your phone away and close other open tabs on your laptop for full focus.
- [Toggl](#) is useful for time tracking. Time tracking helps you to get an overview of how much time you need for projects and what you have accomplished.
- [Complice](#) or [Focusmate](#) are options for online co-working sessions. From the Focusmate website: You choose a time to work, and Focusmate pairs you with an accountability partner for a live, virtual coworking session that will keep you on task. Research in psychology and behavioral science shows that regular human connection reduces the likelihood that a worker will procrastinate or become distracted. Focusmate offers three weekly sessions free so it's easy to check out whether it makes you more productive.

Writing support

- [Grammarly](#) can help you with grammar.
- [DeepL](#) is especially helpful if you are non-native in English. It does a great job at translating from your mother tongue to English and the other way around.

Finding a high impact research direction

Research begins with a choice on what you want to make progress on. Each research direction usually centers around a few crucial problems that are yet to be solved. The first step for you is to choose a potentially high impact research direction. We offer guidance on how to do this on our [website](#). Effective Thesis also offers coaching to support you in the process of choosing a direction and a question for your thesis, as well as connecting you to students and researchers working on similar issues who can give you feedback on your ideas. Nevertheless, you will have to put in the thinking yourself, so here are some tips on finding existing research questions, coming up with new research questions and choosing between them.

Working on an existing research question

To find many promising research questions that you can work on, see:

- [Effective Thesis' research direction profiles](#) and our [collection of research agendas](#).
- [Research questions that could have a big social impact organized by discipline](#) by [80,000 Hours](#).
- [A central directory for open research questions](#) from an EA Forum post.

Many papers also end with saying "Further research on x is needed." These statements may be useful, however we suggest you don't place much weight on them unless you have additional reasons for thinking a given research direction could be highly impactful.

Coming up with new questions

Research as a Stochastic Decision Process

[This](#) is an interesting approach to increase your productivity and deal with uncertainty in research.

Explain your ideas and make them explicit

You can quickly generate new questions by explaining your existing ideas to someone, writing a blog post about them or participating in discussions. Explaining your ideas to someone else ([it does not even need to be another human](#)) requires being very clear in what you aim to convey, and the simple task of having to do that can often help with identifying crucial uncertainties that you need to explore further.

Finding low-hanging fruit

- Try making hopefully-comprehensive taxonomies that one can work through in full to avoid selection biases, e.g. look through all the sectors of the economy (as opposed to e.g., just the one you find most interesting), or all the major categories of philanthropy (e.g. instead of the ones you know), or all the major academic fields or think tanks and look for research gaps.
- Don't dismiss ideas as unthinkable: things that people are afraid of thinking about (because it might make them look bad, might imply bad news, or is unpopular) have an elevated chance of offering low-hanging fruit for further exploration.

Consider current and future trends

Science is slow and to get ahead you should focus on trends that will become relevant in about 15 years when you've already collected expertise in the problem - to get perspective look at how the field looked like 15 years ago. Publications also take a while. Look at blog posts, whitepapers, or research agendas to get a picture of the research happening today.

Look for action-relevant questions

[This forum post](#) by Ronja Lutz explains the key points and includes an exercise. In short:

- A brief working definition for action-relevant research might be "research producing an output that is likely to influence further action in a meaningful way". In other words: "Is answering this research question actually going to change anything I care about?" This doesn't mean you need to have concrete applications and see the output.
- **If you're in the early stages of finding a topic:** Write down the broad areas you're interested in. Write down questions associated with these areas. Ask yourself: "If I imagine a world in which I have answered this question, what will look different?" (or another prompt for action-relevance that works for you). Trying to stay in this mindset, tweak your existing questions or come up with new questions.
- **If you already have a research proposal:** Read through it. Check: Is the project's overall question action-relevant? For any sub-questions that you are asking as part of the project, are they action-relevant for further work? Then, ask yourself: What are your motivations in doing this research? Note down research-related and personal motives for doing this research. Check to what extent your research question is guided by action-relevance, and to

what extent it is by other motives.

Design your research to affect decision making

[This article by Karolina Sarek](#) on “How to do research that matters” explains how that works. Roughly:

- Build a theory of change
- Involve stakeholders (decision-makers)

This does not mean that every e.g. bachelor thesis will need a theory of change and needs to be put into practice. Still, we encourage you to consider this practice to ask relevant questions and make it a habit when doing research in the future.

Choosing between research questions

Especially if you plan to do more research projects in the future you should consider the following

a) having a document with all your research ideas in general, which is updated regularly, whenever a new idea crosses your mind.

b) having a document with a handful of research questions which you can pursue next (e.g. ideas for a master’s thesis), which you can share with a few people with more expertise and get their input. This can help you decide on which question you want to pursue. Here is a great forum post about this: [How to generate research proposals](#) by Jaime Sevilla. The post also names criteria you can use for choosing between research questions:

- *Impact* - The question is important for the world
- *Tractability* - I can devise a good methodology to answer the question
- *Neglectedness* - I do not expect others to independently work on it
- *Learning value* - I expect to learn useful things from working on it
- *Actionability* - The research has a clear audience and can inform action (called action-relevance below)
- *Respectability* - The output signals my research competence
- *Personal fit* - I can provide a differential value for the question (In [the GovAI research agenda](#), Allan Dafoe calls this having interest and some comparative advantage in working on this question)
- *Organization fit* – [insert your institution] is a good environment to work on this question

A similar methodology has been used by some FHI Summer Research Fellows when thinking about which research question to pursue:

- *Insight*
Inside view building: Will this project help with building my own model of how something important works (as opposed to relying on the views of others)?
Question generation: Will this project help me to refine a nebulous sense of confusion/uncertainty/curiosity into a crisp, important question?
- *Impact*
Answer generation: Will this project generate genuinely new findings/data that are useful from some relevant point of view?

Translational value: Will this project help to translate/communicate important ideas that need a signal boost?

- *Career Capital*

Credentials: Will the project reflect well on me, and will it be shareable with others (or could it be developed into something shareable)?

Connections: Will this project allow me to interface/build relationships with people whom it will be helpful to know going forward?

Skills: Will this project teach me useful skills/habits/knowledge?

Exploration value: Will this project help me decide what to do next?

Now, these are lots of criteria. You do not need to take this too far. It is not necessary to make a big chart and add up the numbers (but feel free to do so if this is helpful to you). The main job of this methodology is to have these questions in the back of your mind so as not to neglect an important dimension during your choice of direction. What weight these criteria carry in your decision depends on their importance to you in this specific research project. For an undergraduate thesis, learning value might be of greater importance than later in your career, while signaling competence becomes relevant when you want to be hired as a researcher.

Orientation in a new research field

Having to understand what a specific research field is all about is something you will do repeatedly if you stay in academia or other research dominated fields.

- This blog post gives some tips on how to use existing work to grasp the important points of a field more efficiently. [“Scholarship: How to do it efficiently”](#).
- How to roughly start, from [“The Neglected Virtue of Scholarship”](#): Every time you're tempted to tackle a serious question in a subject on which you're not already an expert, ask yourself: "Whose giant shoulders can I stand on, here?" Usually, you can answer the question by doing the following:
 1. Read the Wikipedia article on the subject, and glance over the references.
 2. Read the article on the subject in a field-specific encyclopedia. For example if you're probing a philosophical concept, find the relevant essay(s) in [The Routledge Encyclopedia of Philosophy](#) or the [Internet Encyclopedia of Philosophy](#) or the [Stanford Encyclopedia of Philosophy](#). Often, the encyclopedia you want is at your local library or can be browsed at [Google Books](#).
 3. Read or skim-read an entry-level university textbook on the subject.
- [Connected Papers](#) is a great tool if you want to get an visual overview of a new academic field, make sure you haven't missed an important paper, create the bibliography to your thesis, or discover the most relevant prior and derivative works

Part 2: Research and Thinking Habits

Critical thinking

Critical thinking means not taking everything you read or hear at face value but evaluating and questioning the arguments on your own. How can you do that?

- Question your assumptions.
- Frequently imagine what someone you respect would say if they thought your argument was wrong, or try to make the best argument against what you are currently thinking.
- Write down your views and check against your old views to see when you were wrong and when you were right. This can give you a feeling for when you were too confident in your views and the other way around.
- Listen to yourself if something seems troubling, and try articulating, exploring, and steel-manning that intuition in multiple ways until it makes sense in a way that can be integrated with other knowledge (with whatever updates/revisions follow) or goes away.
- Be aware that anyone, including people within communities you have some affiliation with, may do sloppy reasoning/research sometimes. Is the argument supported at every point by evidence? Do all the pieces of evidence build on each other to produce a sound conclusion?
- Pay attention to the use of contradictory epistemic standards and premises on different arguments/patterns. Reconcile them or adjust your confidence in them.
- Look for implicit assumptions and make them explicit.
- For all arguments you want to make, either develop each argument until it makes sense and fits into what you aim to achieve or leave it out for now. Vague connections will only distract the reader.

Independent thinking

In every field there will be accepted methods and things everyone does. Most of the time these are common for a reason. However, sometimes we all think in similar directions without any good reason. Be curious and explore your ideas even if they do not conform with what most people think.

- Reading broadly using multiple separate quality filters, that are independent, at least partially so, to escape systematic biases of one or the other.
- Try to get datasets (Wikipedia lists, World Bank info, USDA, etc.) as a primary step in thinking about a question (as opposed to being influenced directly by another author's view).
- Diversify people you ask for feedback and authors whose opinion you consider. We tend to be surrounded and talk to people who share our views. This can be a problem because it makes our views more rigid and us less likely to change them.

Analytical mindset

Being analytical helps with avoiding biases and using information in a systematic way.

- Apply Bayesian thinking where possible (here's a [quick intro](#)). Generally, all evidence is just an update to your prior beliefs. If you read a new paper, even if it is convincing, do not discard your initial beliefs. Think about how you want to adapt your views having read it. Making likelihoods and likelihood ratios explicit can help you with how much you should update in a new direction.
- If possible in your research field, use statistics frequently and briefly as part of thinking rather than as occasional or separate exercises.
- Try to convert qualitative claims into quantitative [Fermi estimates](#) whenever possible. Fermi calculations with quick inputs from internet search go far, and developing your estimation skills seems very useful.

Good judgement

Pointing to 80,000hours' article "[Notes on good judgement and how to develop it](#)".

Connecting ideas

This is the general idea behind Roam, which was mentioned above: connecting your new ideas and thoughts (ideally) while having them. What can be helpful is to set up a [Zettelkasten](#), an external brain, that lets you enter new thoughts fast and frictionlessly and which embeds them in an existing knowledge graph. Regularly take strolls through your external brain and be surprised by connections.

Good idea and knowledge organization and management, whether you use the tools mentioned above or not, is crucial in research. The earlier you start thinking about how you want to approach it, the easier it will be to make it a habit.

Failing fast

- [Fail fast](#) is a philosophy that values extensive testing and incremental development to determine whether an idea has value.
- Think about how your idea/research may fail in order to detect weaknesses.
 - Failing not only fast but considering all failure modes might help to avoid pitfalls: Murphyjitsu is the practice of strengthening plans by repeatedly envisioning and defending against failure modes until you would be *shocked* to see it fail. [This](#) post in the LessWrong Forum gives some guidance on how to use it productively.
- Get feedback early on, even if it would mean e.g. choosing a different research method. Discuss your ideas with friends, and write your ideas up in emails or blog posts to get feedback from people.

- o If you reach out to people directly, try to make it especially easy for them to give feedback by stating your question clearly and saying what they can do quickly that would be useful to you, for example by saying “X is probably wrong, what do you think?” or asking “have I explained X clearly?”
- It is important to get feedback early because it will be more demotivating to receive negative feedback and much harder to incorporate feedback or change direction if you have spent a month or more working on something. If you have spent 1.5 weeks researching and writing something, it’s probably worth sharing with someone.

Valuing quality and correctness

- Make a habit of checking factual claims that you hear with a short Google search, and/or Wikipedia.
- Avoid [strawmanning](#) other authors. You strawman someone if you misrepresent their argument (on purpose or accidentally) in order to attack it more easily. To avoid that, read twice, ask other people/the authors themselves if you are not sure whether you understand their position fully. You want to avoid wasting your time with refuting another author’s argument/point and later it turns out that what you refuted was not their position and now your work is based on a misunderstanding.
- Always cite the original source when you talk about the original content. Otherwise you cite someone's understanding or interpretation of the original content.

Compare alternatives and compare them with equal rigor

- [More details by Karolina Sarek here](#). Use a spreadsheet to compare options. The full process is explained in [Peter Hurford’s blog post](#). How to apply equal rigor:
 1. Formulate coherent epistemology and transparent strategies for how to combine different evidence.
 2. Have clearly defined criteria to evaluate options.
 3. Decide how many hours you are going to put into researching each of the questions and apply that time equally.
- Another tip for comparing options neutrally: “[A]s a matter of human nature, it helps to make a belief less uncomfortable, *before* you try to evaluate the evidence for it” “The hope is that it takes less courage to visualize an uncomfortable state of affairs *as a thought experiment*, than to consider *how likely* it is to be true. But then after you do the former, it becomes easier to do the latter.” ([Less-Wrong Post](#))

Keep reflecting on the research process

- From a workshop by Alex Lintz: Research processes develop in the dark; we rarely learn about how other people do research. Make space for that! Bring a group of people together

and ask them about their methodologies and research processes, such as how they conduct literature reviews. In [this post](#) Alex also discusses practicing research methods with others to refine techniques and learn from others.

- It can also be useful to spend time at the end of each day thinking and possibly journaling about what went well that day, what you want to adjust and what you want to tackle tomorrow.

Always reach conclusions

- Remember that the main goal of research is to find answers and, to do that, we must reach conclusions we can work with further.
- How to avoid drawing no, wrong, or misleading conclusions? Add some or a few of the following to your conclusion:
 - o Distinguish between what is subjective and objective and be transparent about how you combine it in your final judgment. This way, people can understand how you got there.
 - o State your confidence and epistemic status (How sure are you about your results/conclusion? How much time have you put in? What else should people know to not place too much/too little weight on your work?)
 - o State in which direction you have updated.
 - o Present a range of plausible conclusions and list crucial considerations. [More details by Karolina Sarek](#)
- Research we want to avoid is the kind comparable to an art project: maybe difficult to create and therefore impressive, but ultimately not solution-oriented and at most “interesting”. A rule of thumb would be to keep the aim of your research in mind when looking for research questions. You don’t need to know what precise conclusions you will draw, but you should have a rough idea of the kind of conclusion you want to end up with, e.g. “this policy is sufficient or not for reaching goal X”, “Extinction scenario X is less/more likely than most researchers seem to believe”. Getting feedback from people who share the student’s impact oriented approach can help here.

Writing well

Focusing on making valuable contributions in relevant research directions seems far more important than working on your writing if you are time constrained (if you can already communicate your research understandably). We include this here because too often writing is not a part of students’ training. However, even if your program does not provide training in writing by default, often universities offer support in the form of voluntary workshops or seminars. Writing well is important. Here are some of the benefits to high-quality, simple writing that clearly communicates your research:

- “Increases the chances of **acceptance** for publication
- Increases the **impact** of a manuscript in the research community
- Accelerates **understanding and acceptance** of the research
- Increases the faith of readers in the **quality** of the research

Poorly written and complicated manuscripts annoy readers, peer reviewers, and journal editors, and hinder their understanding of complicated scientific concepts.” ([Springer](#))

Some resources

- The book “[On Writing Well](#)” by William Zinsser has been recommended to us many times.
- If you are looking for free online resources: [Improving your scientific writing: a short guide](#), by Frederic D. Bushman, professor of microbiology at the University of Pennsylvania. Bushman composed his advice from three classics on writing which you can also look into directly:
 - o “Politics and the English Language” by George Orwell
 - o “The Elements of Style” by Strunk and White
 - o And “On Writing Well” by William Zinsser again.
- [An Introduction to Philosophical Writing](#) by A.P. Martinich is a classic to start with for all disciplines where well-structured argumentation matters.
- We have further online resources and tools [listed on our website](#).

Tips that researchers have shared with us

- Try imagining a “train of thought” plowing through your text. The train runs from sentence to sentence and derails every time when there is no connection between one sentence and the next one. What you want to avoid is another train accident.
- Think of an interesting story to guide the reader to your conclusion. Decide on the story and outline it before you start writing the paper. If you start writing and only then start to think about the story you will end up with a convoluted mess which every researcher will highly recommend you avoid. Re-structuring parts of your work after having formulated them is a tedious task to do.
- It is quite worthwhile to make your paper as readable as possible (as long as you do not compromise too much on accuracy). People do not like to read boring papers with sentences that stretch over several paragraphs. It does not matter how brilliant your paper is if nobody wants to read it.
- Do not overload your work with content. A paper/thesis should answer the reader one, maybe two open questions in that field and give a good introduction and supporting arguments/evidence around that. Students working on their first academic papers tend to want to do too much. Focus and seek quality over quantity of insights.
- There are templates (e.g. Word, Pages) that have sections of your paper outlined and pre-filled with the section’s relevant questions. This works better for fields with more rigid paper-structures.

- If you aim to publish, you can save some time by checking the target-journal's style guidelines in advance and see whether they have LaTeX or Word templates they want you to write in.
- Separate your writing and editing process. Just write a first draft (with your story), then iterate several times revising. For example, you could iterate first for structure (e.g. reorder paragraphs), then revise for style (e.g. shorten sentences, replace synonyms with one expression, and more), and then for grammar and format.

Final remarks

It can often be a good strategy to work closely with an experienced researcher who is good at relevant skills. Working with such people will give you a more useful, specific, and practical version of this document. Especially for early-career researchers, training/upskilling in relevant research skills is often more important than direct impact.

Further Readings

- Advice for novice social science researchers (especially when doing qualitative work): [Salsa Dancing into the Social Sciences](#), Kristin Luker. Helpful for defining a research question and searching literature
- “During my PhD I read '[Becoming a successful scientist](#)' - this presented a strategic approach to scientific discovery and problem selection (Section 3.1) that I haven't really seen elsewhere. It focused on science, but the ideas of looking for contradictions, paradoxes, new viewpoints or different scales may also be helpful for generating research questions in philosophy/economics.” ([gavintaylor](#))
- [Thinking, Fast and Slow](#) by Daniel Kahneman on rationality, intuition, biases and more.
- [Deep Work: Rules for Focused Success in a Distracted World](#) by Cal Newport on the ability to focus without distraction on a cognitively demanding task.
- [Superforecasting: The Art and Science of Prediction](#) by Philip E. Tetlock
- [Probability Theory](#) by E.T. Jaynes, “Aimed at readers already familiar with applied mathematics at an advanced undergraduate level or higher, it is of interest to scientists concerned with inference from incomplete information.”

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