

# Best Practices for Supervision of Bachelor's and Master's Students

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# About myself

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Selection of research interests

- Uncertainty quantification
- Prior specification
- Model comparison
- Simulation-based inference
- Amortized Bayesian inference
- Machine-assisted workflows

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Goals of this workshop:

- To help you become a better supervisor
- To help you better understand supervisors

This is based on my own experience and own style of supervision

There will be lots of room for questions after my initial talk

but please ask questions also during the talk already

## First year of PhD



## Last year of PhD



# You will need to practice

Practice is not just doing it!

Practice involves:

- caring about how well it goes
- evaluating how well it went
- finding ways to do better next time

Also: You will fail sometimes and that's okay!

Before starting the project

# Understand the student's expectations

**Q:** What expectations do students have about their thesis project?

# Understand the student's expectations

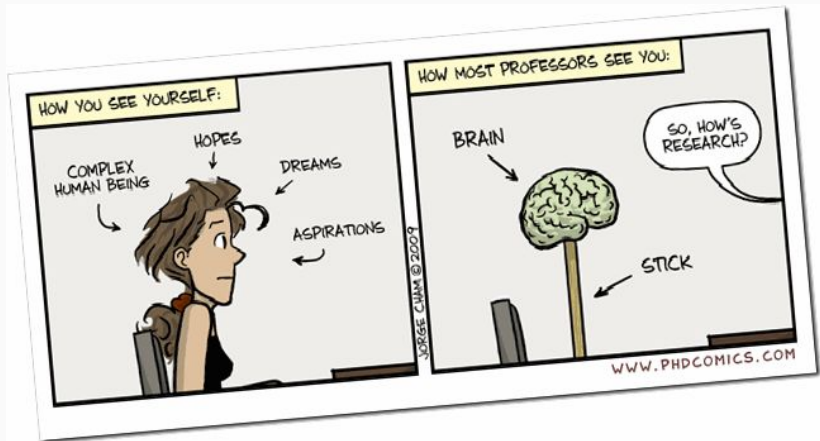
“I want to do my thesis with you / in this topic, because ...”

- the research is exciting to me
- I participated in your course and like your teaching
- your supervisor delegated me to you
- the topic was available and I don't really care

“I want a supervisor who ...”

- helps me structure my work
- has regular meetings with me
- let's me do my own thing





# What makes a good student?

**Q:** What makes a good student for you?

# What makes a good student for me

- smart (general intelligence helps with most things)
- self-motivated (intrinsically or extrinsically)
- goal-oriented
- provides own thoughts and ideas
- sticks to agreed timelines if sensible
- willing to follow your guidance (or tells you why they don't)
- willing to learn

# Understand and communicate your expectations

**Q:** What are your expectations going into thesis projects?

# Understand the topic yourself

- Or communicate that you don't and what you can offer still
- If in doubt, could you do it yourself?
- Does my own expertise match the expectation of the student in terms of supervision?

# Structure the project

Think about how you would approach the project

- Empower students to own their project
- Guide the student's work efforts
- Enable them to contribute own ideas
- Help students in decision making
- Bring them back to the important aspects

Try to balance exploration and concrete progress

What is a realistic timeline for the project?

- Is the current project even realistic for the timeline of a thesis?

What does the thesis need to be finished?

- Hard deadlines?
- Soft deadlines?

During the project



# Have regular meetings

- Removes the need for constantly renewed meeting planning
- Ensures continuous exchange and helps with course corrections

Don't *only* say something like “Just ask if you have questions!”

**Q:** Why do you think that could be problematic?

## Listen actively and clarify if needed

- Try to understand what the student is trying to tell you
- Make sure to establish and maintain mutual understanding

Examples: “Do I understand correctly that. . .”

- “You want to focus more on A than on B?”
- “You think that C won’t work out well?”
- “You would like some more time to figure it out yourself?”

No need to be a psychologist but be sure you understand what the other means.

When I try to engage  
with my supervisor about  
my research problem...



- Ask students to take notes of the meetings
- But also take notes yourself
- Or perhaps better: have a shared space for note taking
- Add clear “next steps” in the notes to you to come back to in the next meeting



# Provide actionable feedback

**Q:** What kind of feedback your perceive as actionable?

# Provide actionable feedback

## Examples:

- “Your code contains a lot of copy and pasted snippets, which all need to be changed whenever you are making a tiny edit to the general pipeline. I suggest you to write a function for this analysis part such that you only need to change your code in one place. Shall I give you an example of how I would do this in the current case?”
- “The writing in your methods section makes it a bit hard to follow. Try to better connect your sentences to guide the reader through your text. Shall I illustrate this on a concrete example in your text?”
- “I have the feeling that you struggle getting started with writing. What do you think hinders you right now? One thing that often helps me is to start writing the parts that I feel most motivated for. Could be somewhere in the middle, doesn't matter. It's more important *that* you start than *where* you start or *how well* your first draft reads”.

# Be supportive and motivational

(A lot of supervisors struggle with this)

- Also say things that are going well
- Ask how the student wants to be supported
- Be empathetic about the student's situation

Examples:

- "I think your analysis of A was really well done. Good job."
- "I understand that writing a thesis is hard sometimes, but you are on the right track. And remember, you are not alone."

Such statements should be authentic.



General thoughts I didn't know where to put

# Ask students for feedback

How well did they feel supervised?

- Minimally at the end of the thesis
- **Q:** Would you ask before and/or after grading?

# Ask for advice and help

Many situations require a lot of experience to resolve well

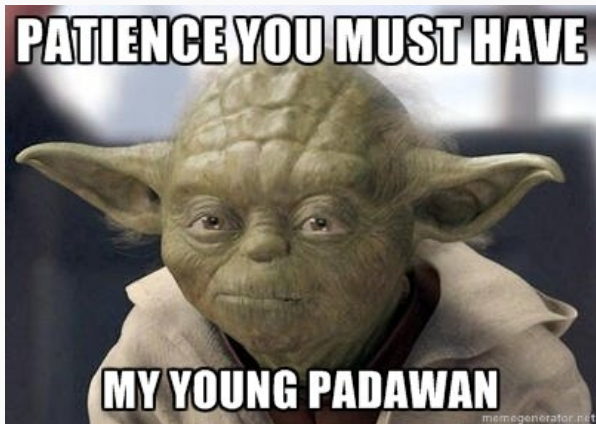
Don't hesitate asking for advice!

- Your supervisor
- Your peers
- People you trust

It's okay to be unsure and to not knowing everything

# Understand your own working style

- Know yourself and your style of working with others
- Don't do too much for the student but also don't do too little
- Allow students to follow their own working style if sensible
- How good is good enough? For you? For the student?



## Understand your ego (an adventure into self-reflection)

(I am using ego as a metaphor not as a scientific concept)

Example: A student repeatedly ignores your suggestions during a meeting.

**Q:** How do you react? How do you want to react?

Example: A student who so far has performed mediocre and whom you have helped a lot already tells you: “You are not helping me enough. I just cannot make progress if you are leaving me completely alone”.

**Q:** How do you react? How do you want to react?

# Understand your ego (an adventure into self-reflection)

Your ego

- tries to protect your identity
- appears in the stories you tell about yourself
- is trying to keep you safe by sticking to the predictable
- is activated by any form of disagreement or criticism

For the ego things that happen are personal

Try to remain curious even if you are triggered

Lack of ego may also be problematic

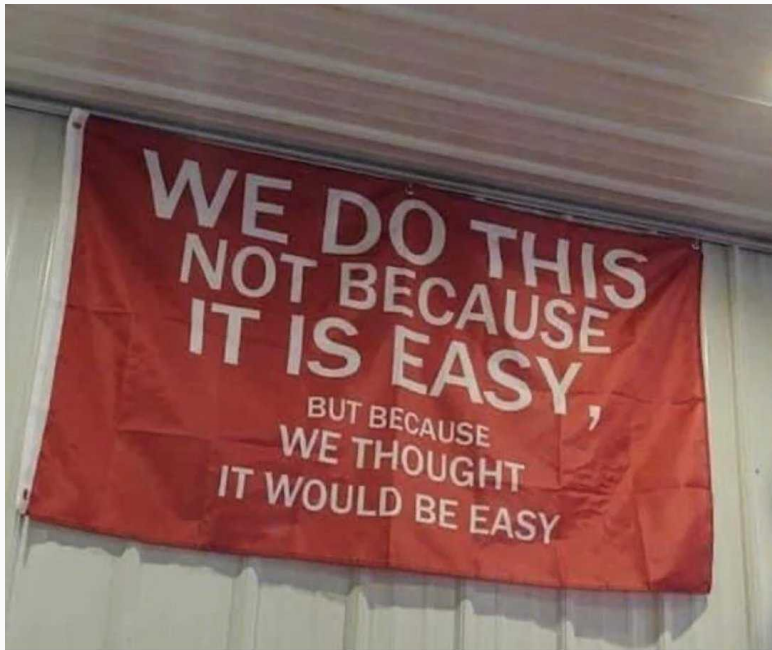
Remember: Your student also has an ego (or lack thereof)

# Be adaptive

- People are different
- Situations change
- Projects work out differently than planned

That's okay! Be adaptive in your supervision within the bounds of your ability and common sense.





# Summary

- You need practice
- Understand and manage expectations
- Establish and maintain a timeline
- Have regular meetings and take notes
- Provide feedback
- Be supportive
- Ask for feedback and help if needed
- Understand yourself
- Be adaptive