

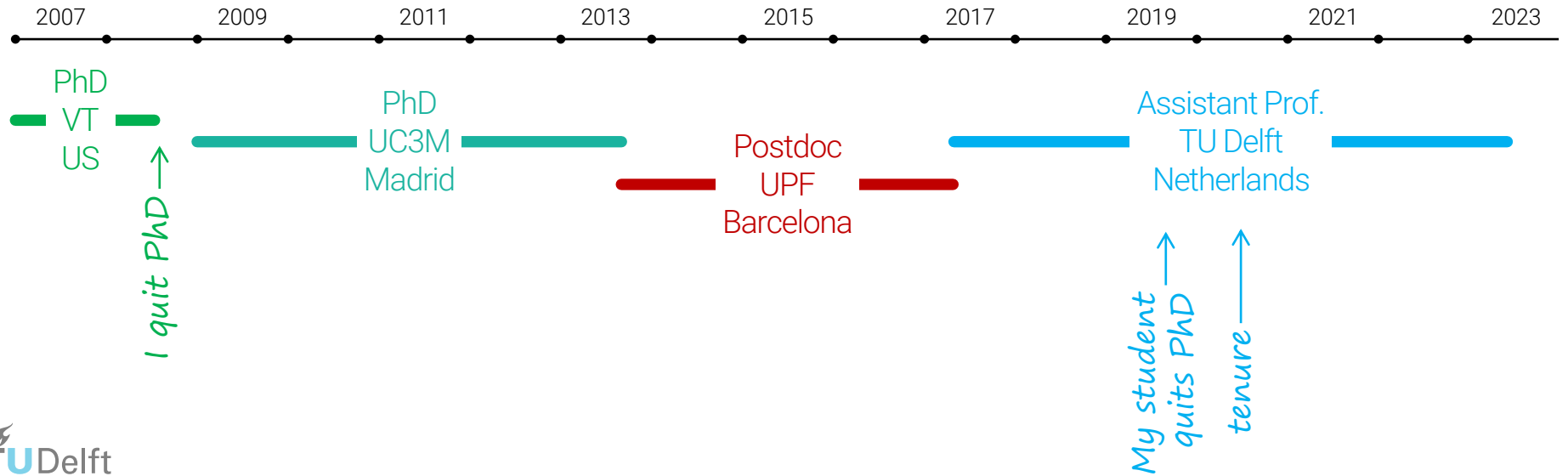
# Your PhD & You



Picture by RobinHiggins

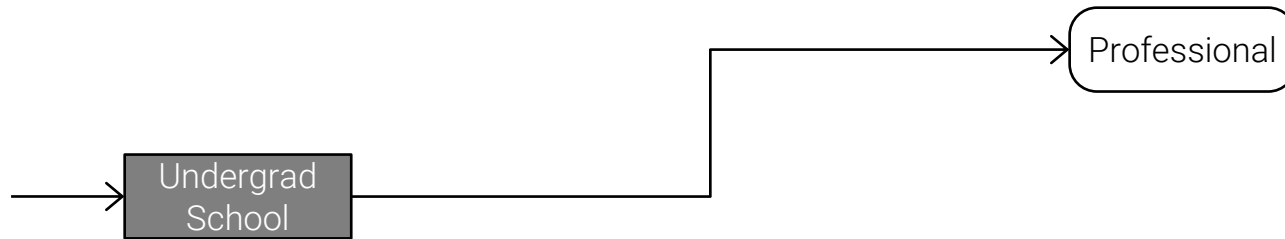
# Me

- Julián Urbano
- Assistant Professor @ TU Delft, Netherlands
- Information Retrieval (Evaluation)



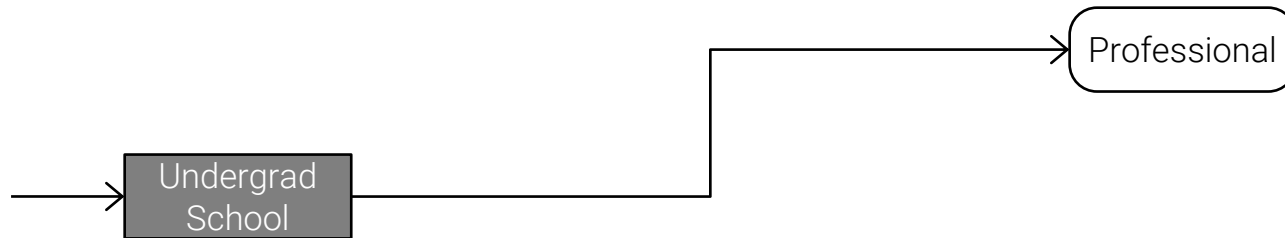
EDUCATION

- College is where we go to become professionals
- We acquire the necessary knowledge to perform as such



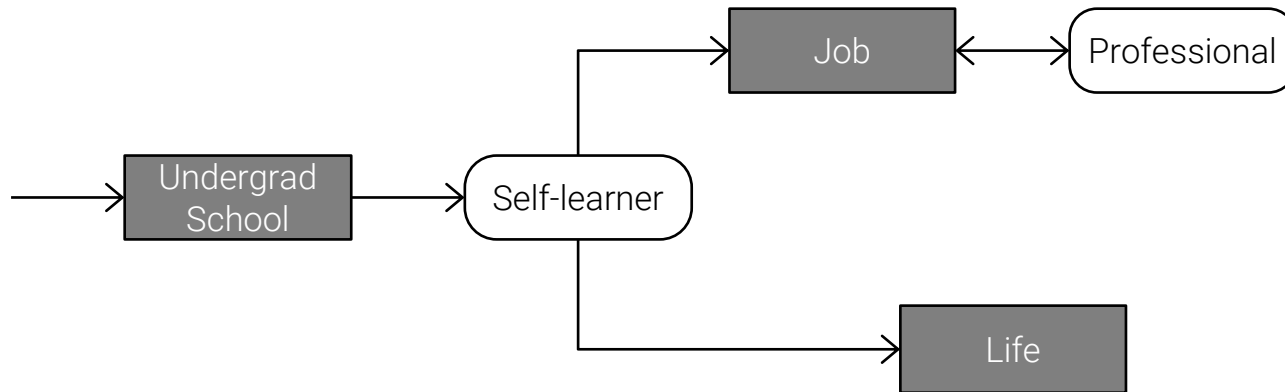
*“You will not be an engineer when you graduate.  
You will just have the necessary vocabulary  
to understand what the real engineers talk about”*

—Some Professor from Córdoba

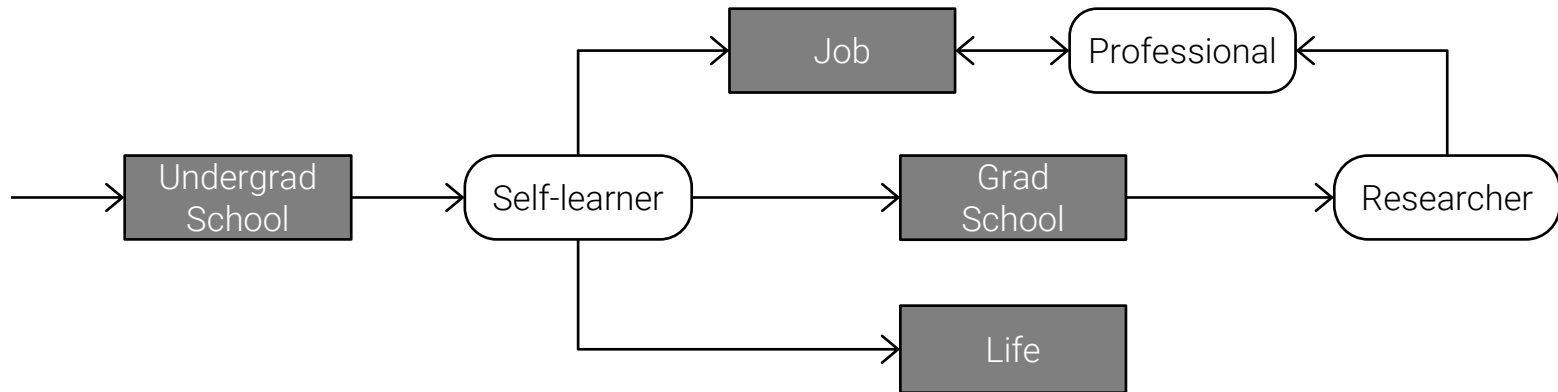


- But then I went to college...

- The world is much bigger, more complex, and yet more beautiful than I thought
- Becoming a professional is a life-long process
- College gives the fundamentals and the tools to be self-sufficient



- ...and then I went to Grad School (twice)
  - Produce research, new knowledge



# Sad Times

- We live in the times of the alternative truths, where
  - we have loads of information around us
  - people don't care about the truth, only about what support their beliefs
  - the media doesn't give information but opinions
  - everyone knows about everything
  - clicking the ads is more important than the truth
  - people don't want to learn, but to be entertained
  - we're not allowed to disagree on certain topics
  - scientific facts can be disputed with mere opinions
  - politicians are unconstrained by the facts



# Your PhD

- It's not about the papers
- It's not about the citations
- It's not about the awards
- It's not about the thesis
- It's not about the title
- It's not about choosing "Dr." when you book an airplane ticket
- It's not about your research

It's about you

# You

*“Learned Doctor,*

*You now have the right to use the title of doctor.*

*Your doctorate means that society can rely on your judgment, that you will act transparently and communicate independently about your results and the societal relevance of your work. In other words, your doctorate implies that you will uphold scientific integrity.*

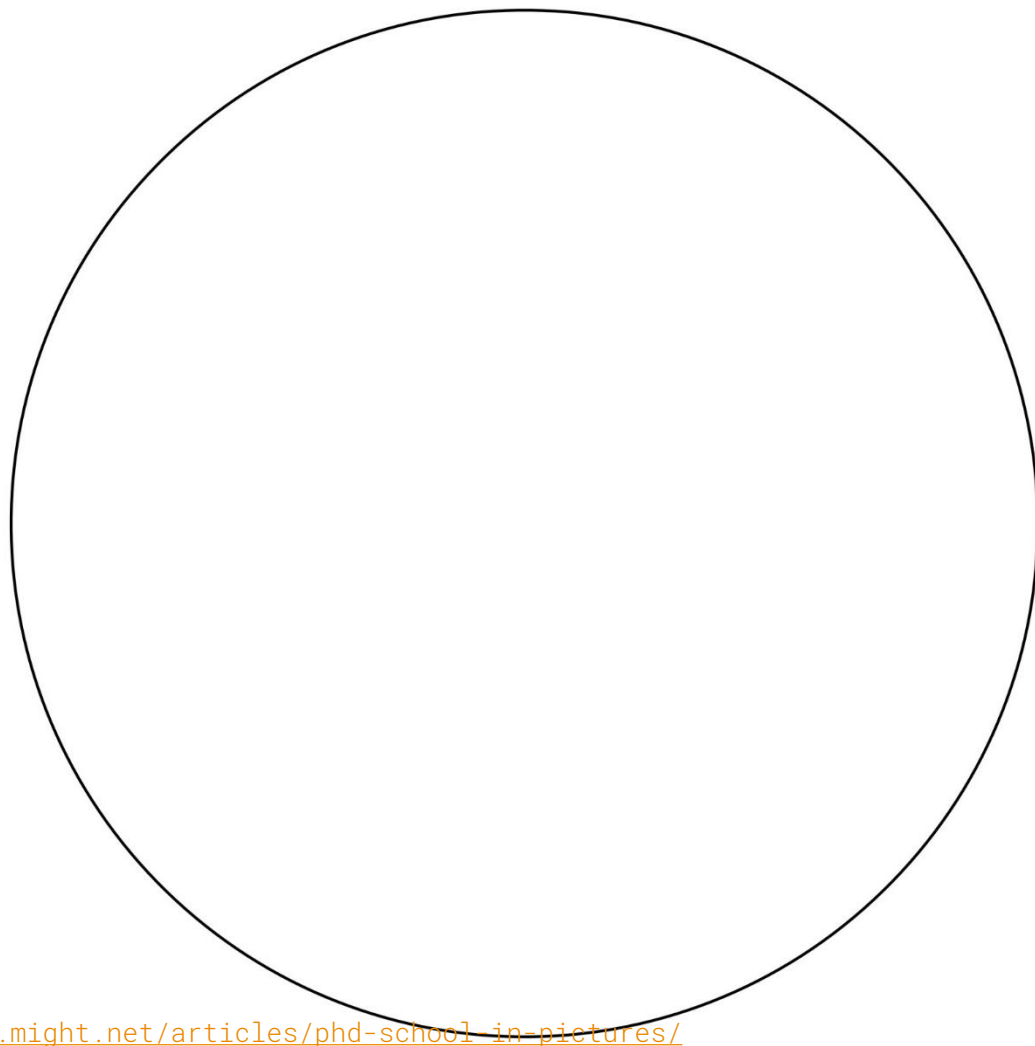
*[...]”*

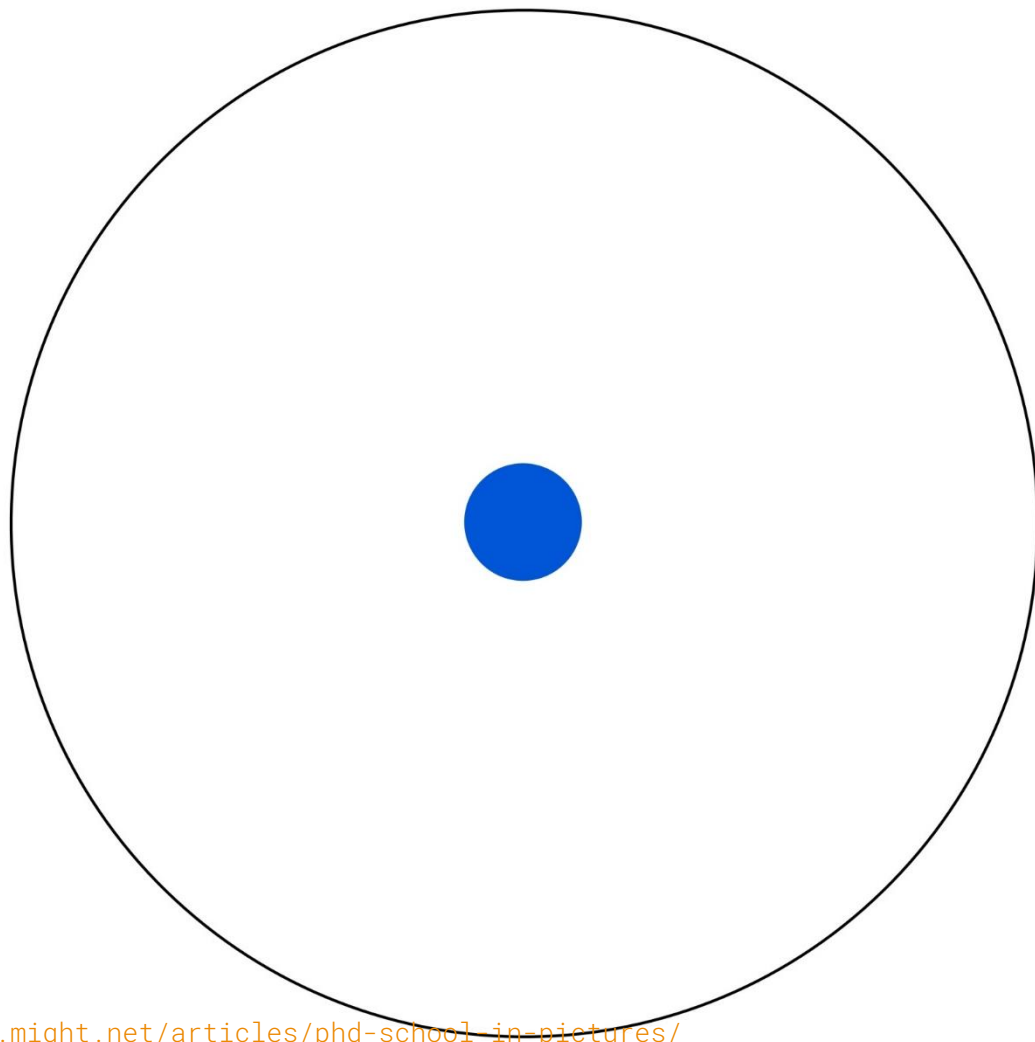


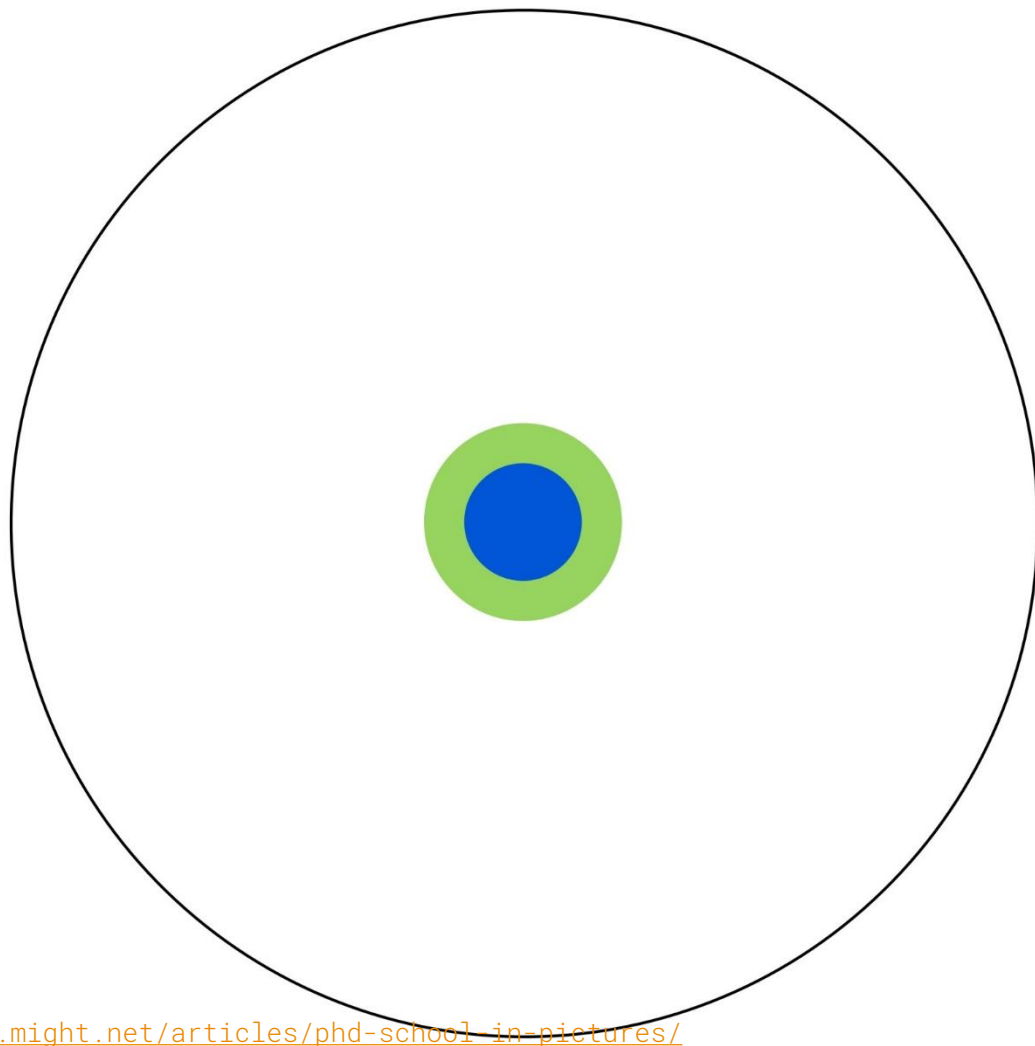
# What really matters (part I)

- The papers, and even your research, are secondary
- Your CV makes only a tiny contribution to being hired
  
- Design and analysis of experiments
- Project and team management
- Communication, especially to non-tech audiences
- Leadership and vision

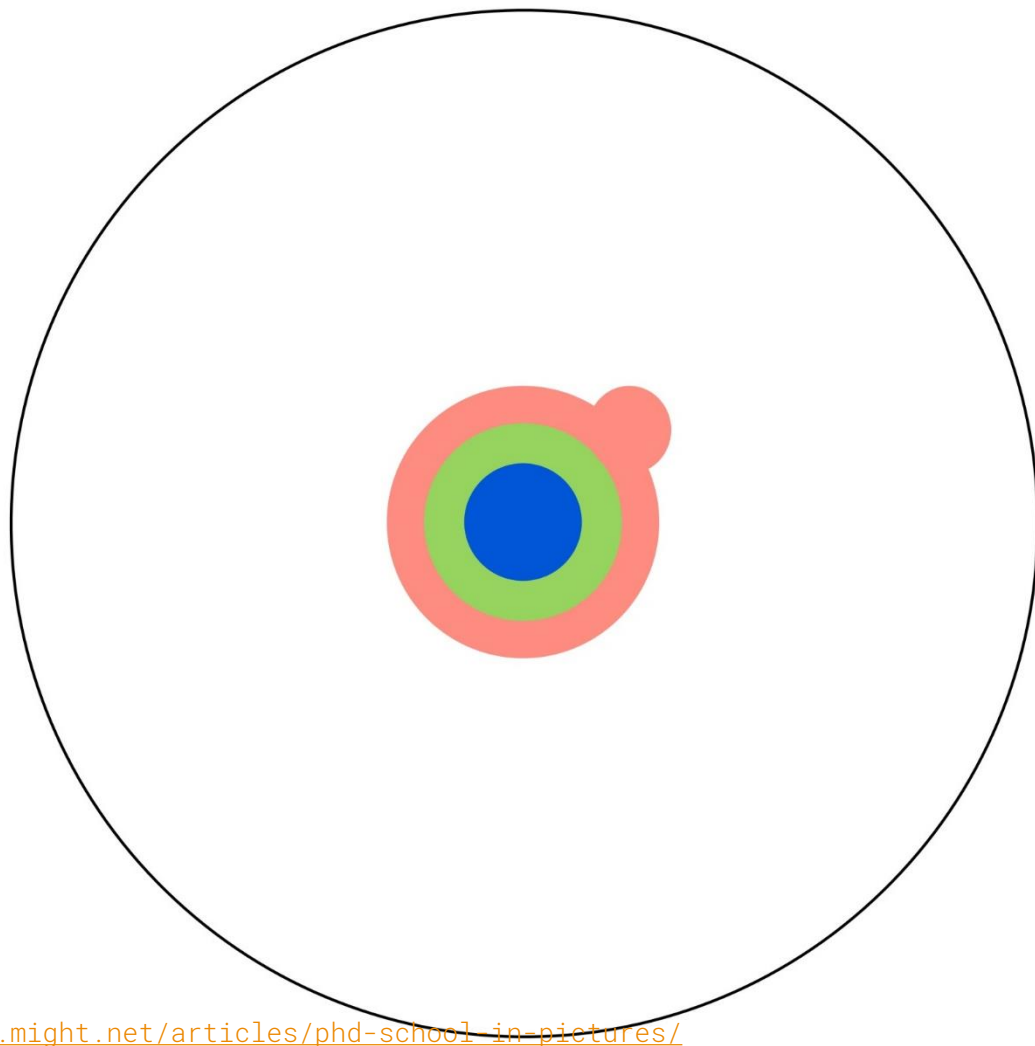
# THE OTHERS

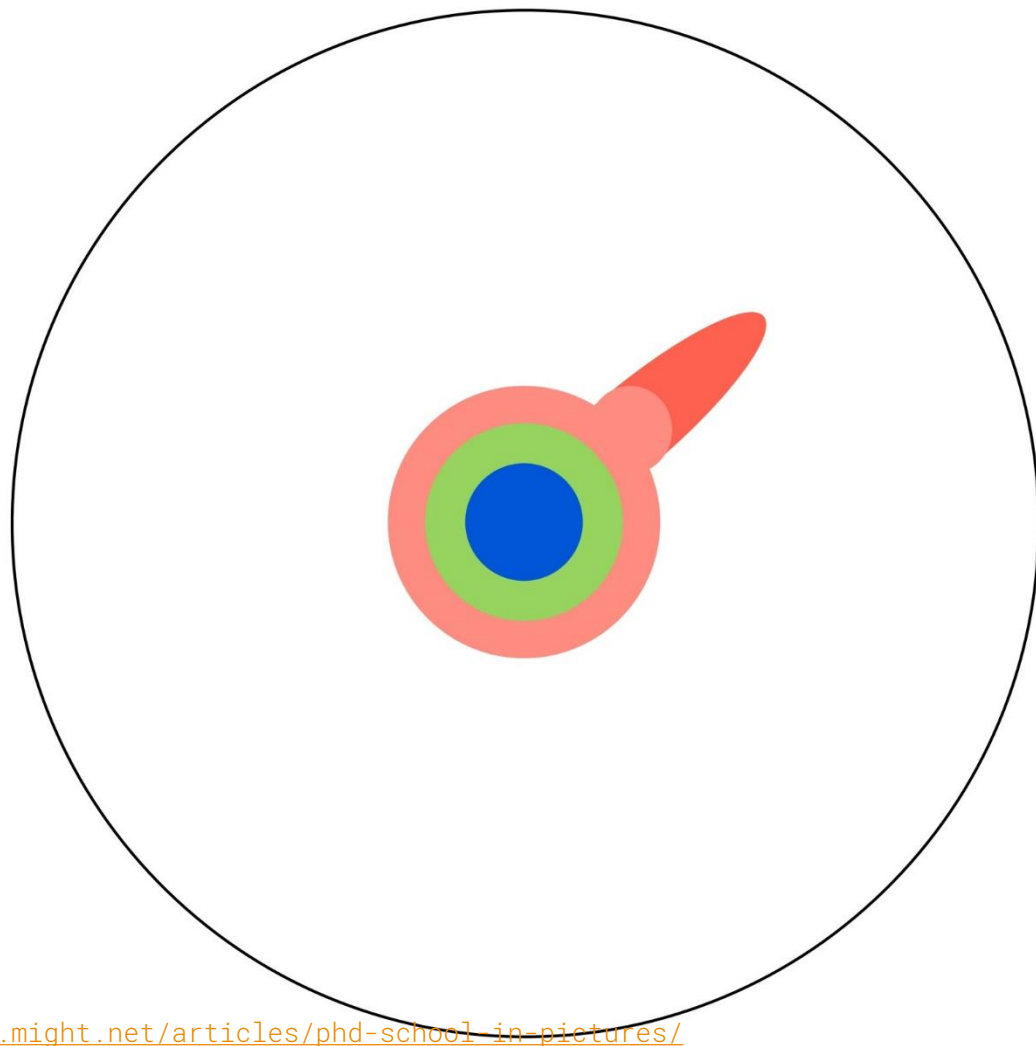


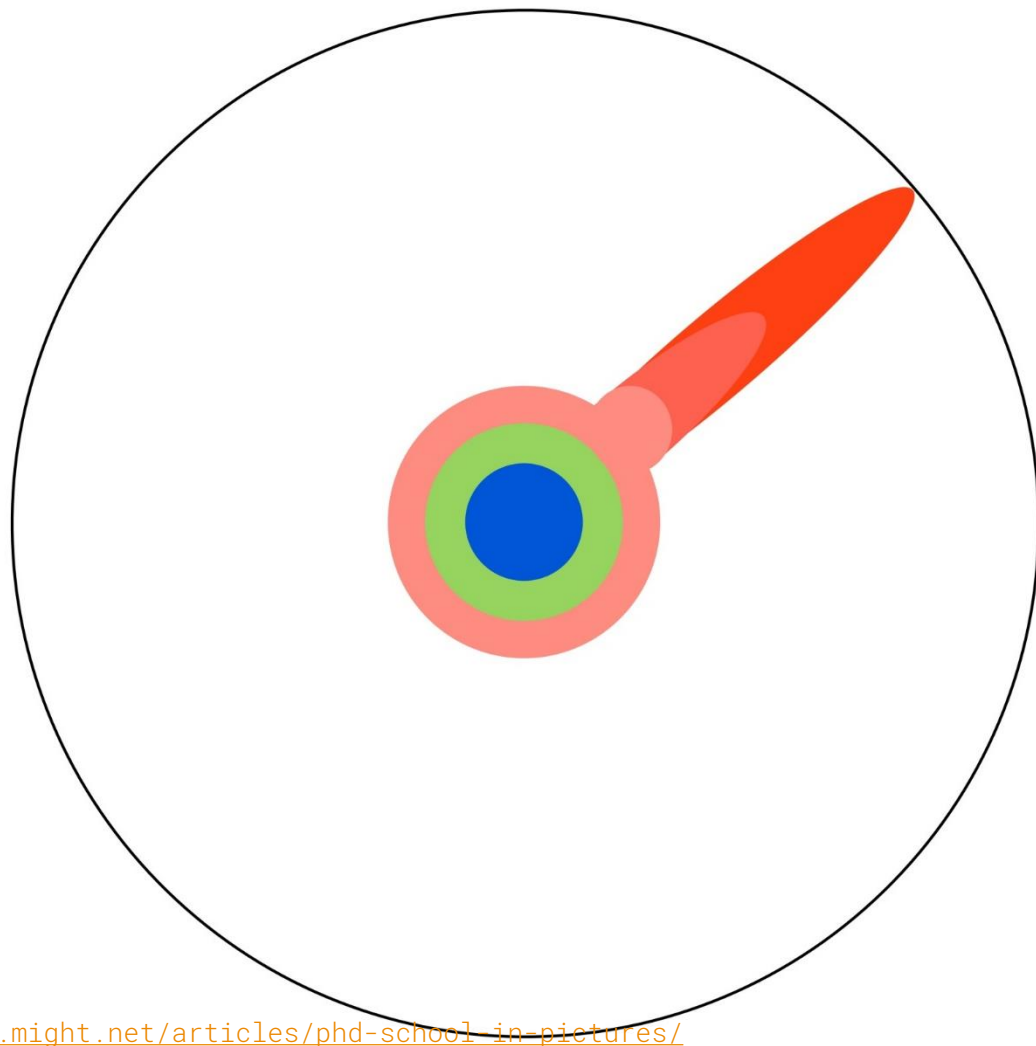


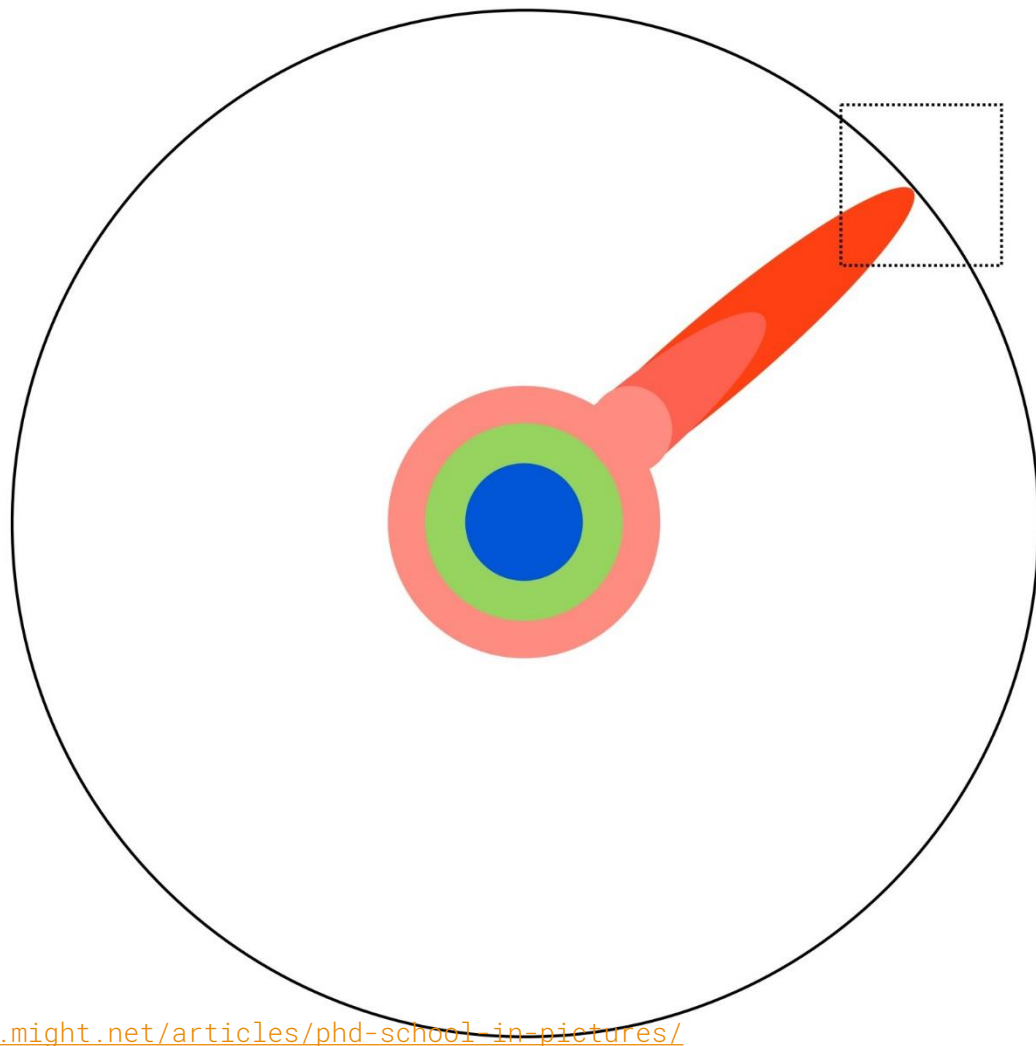


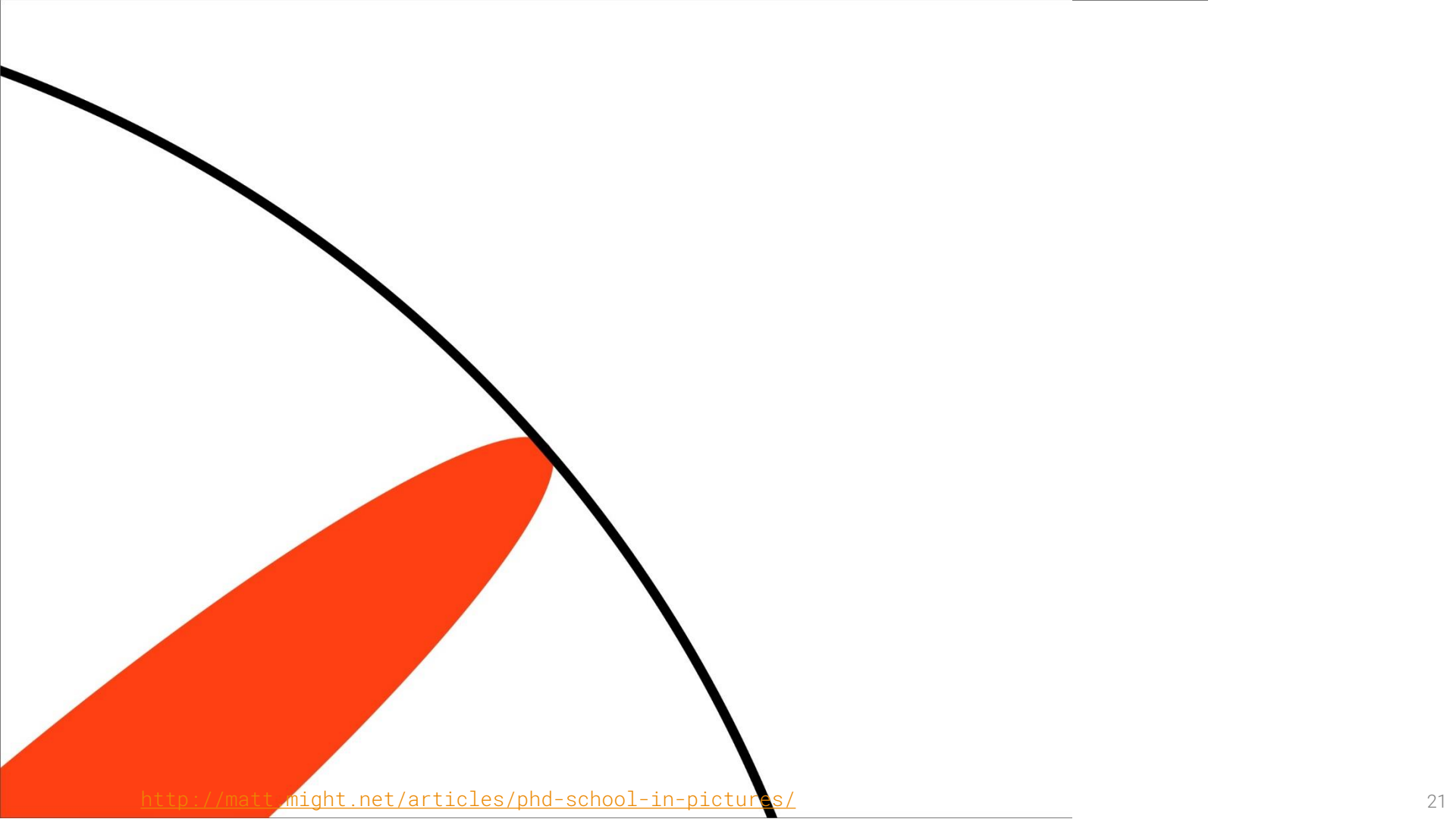


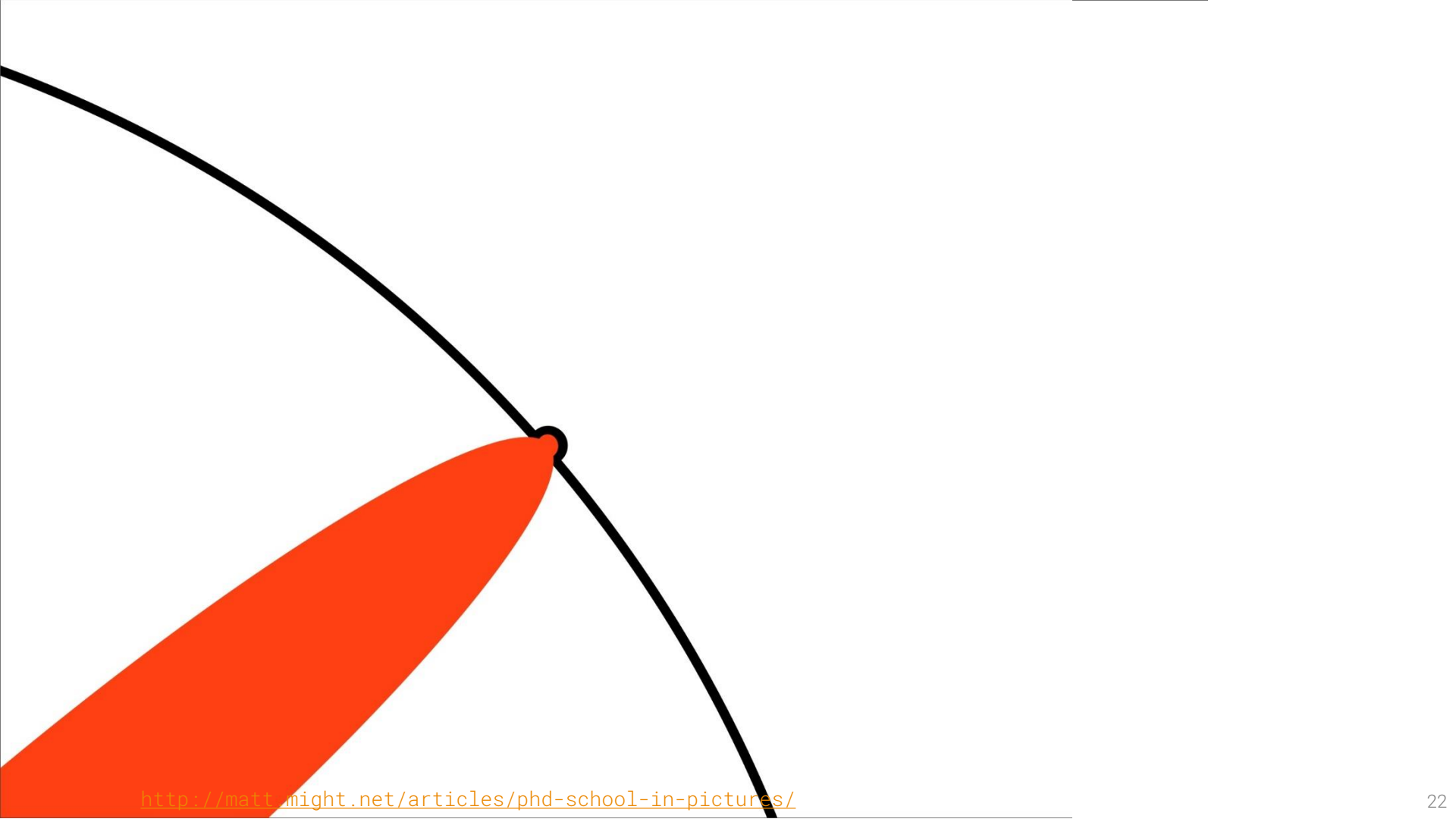


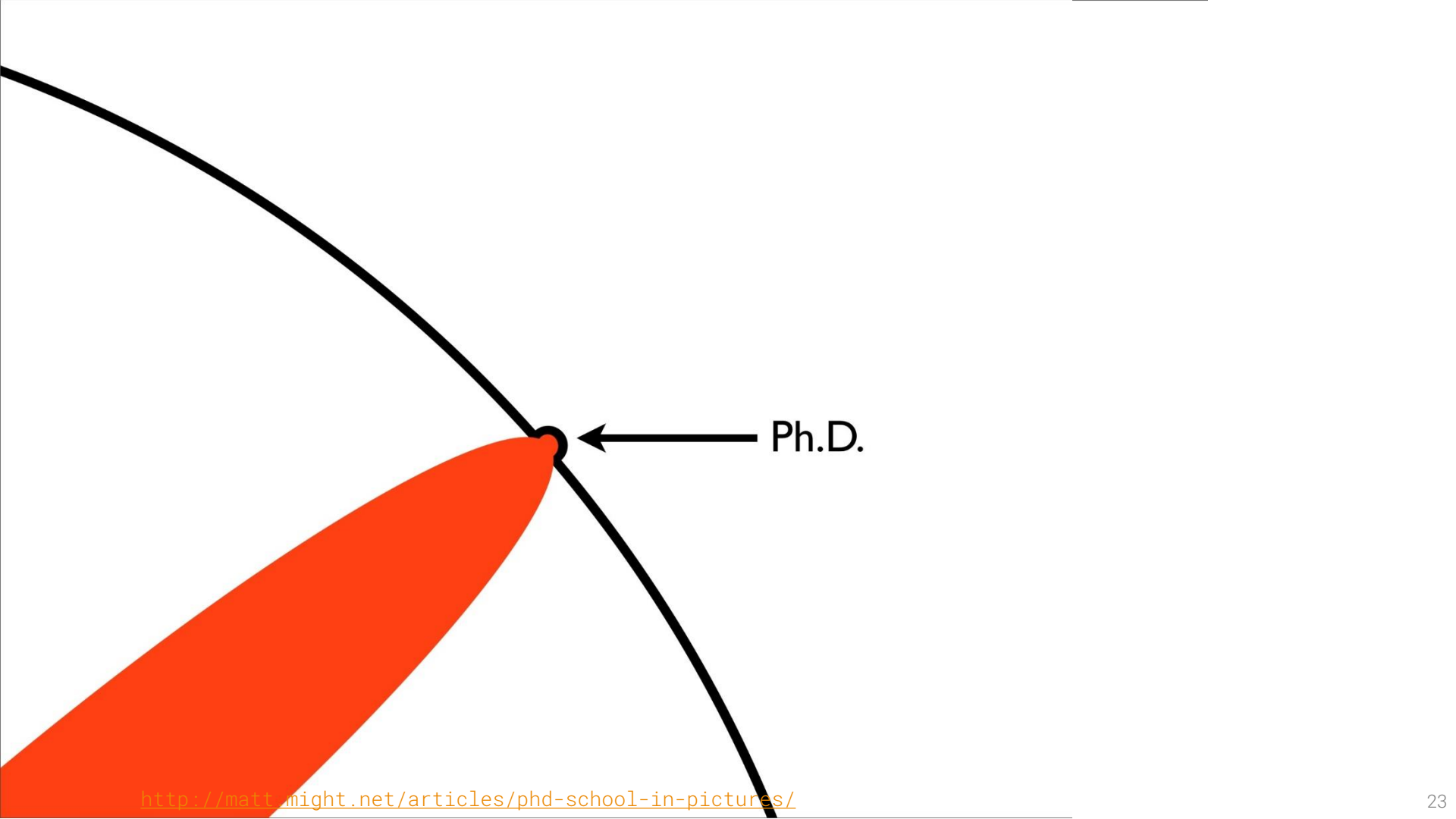




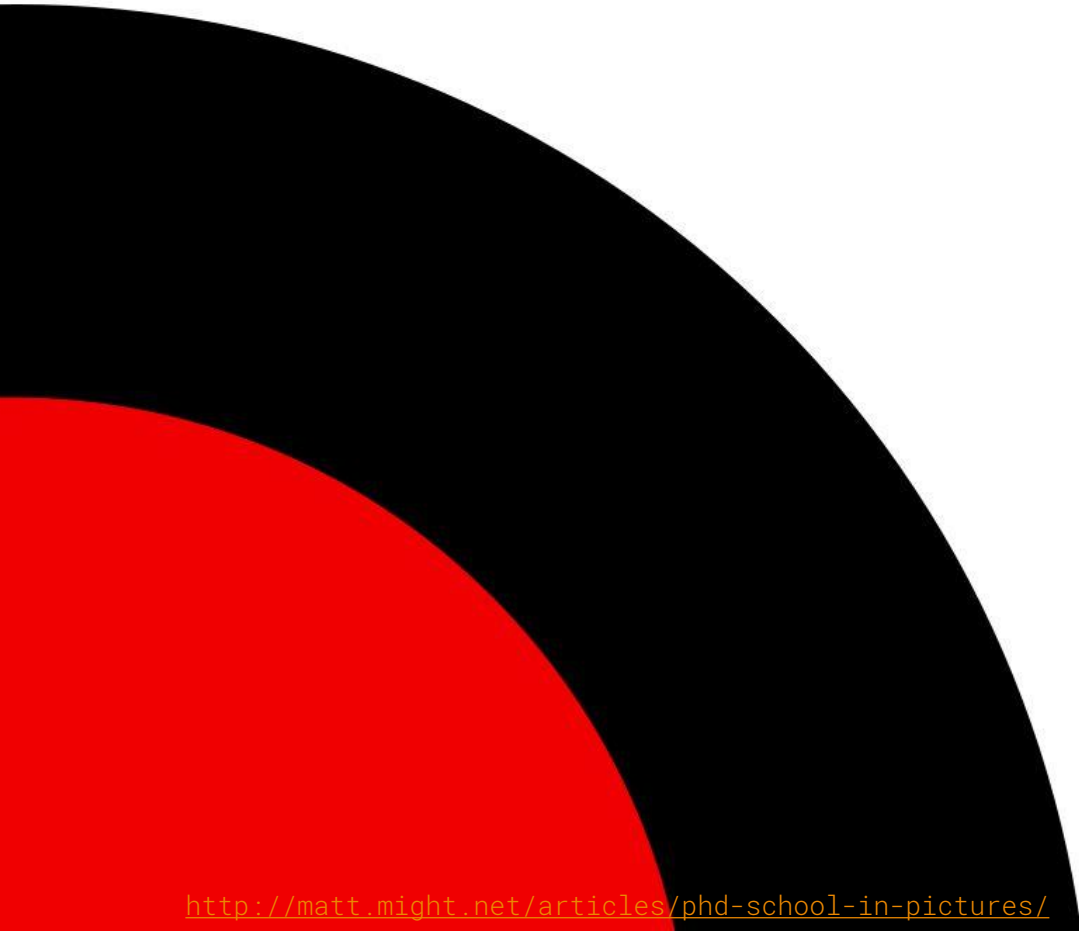




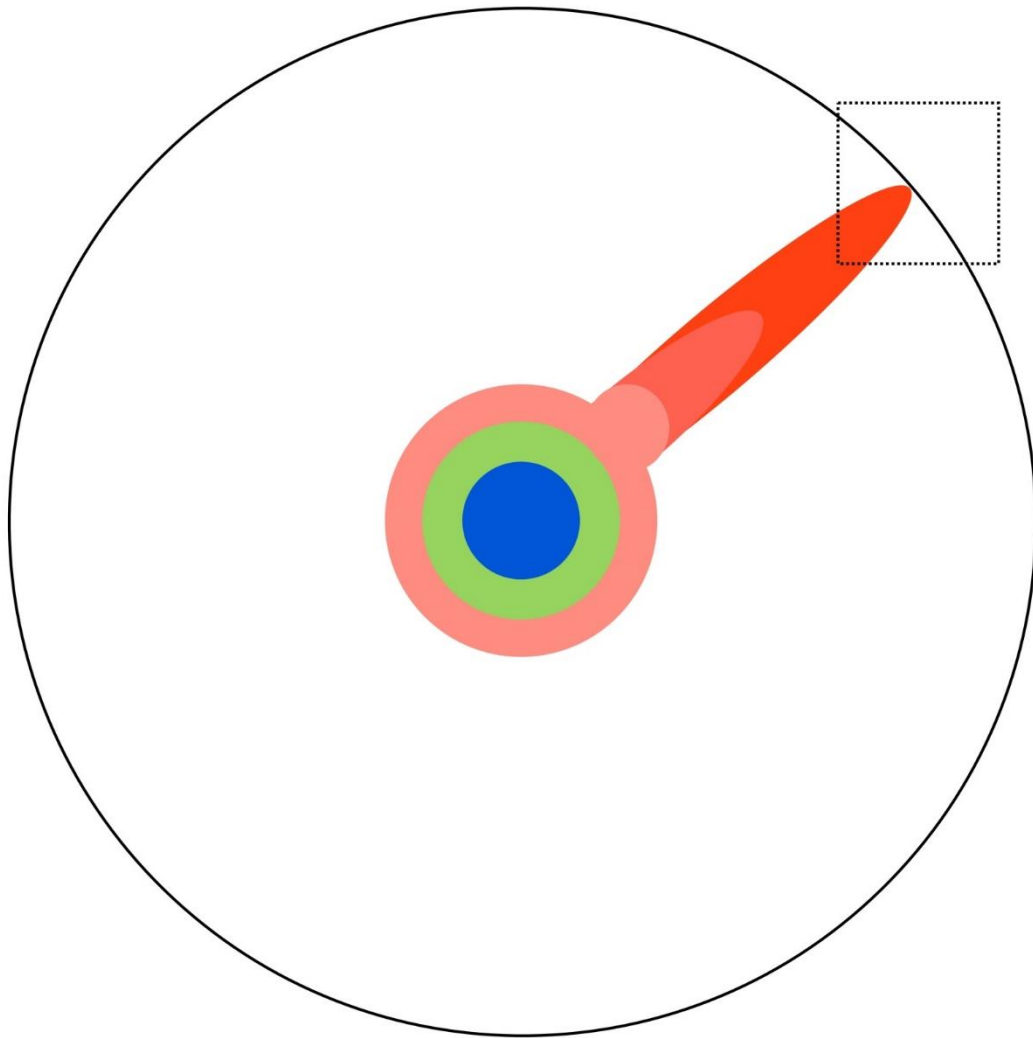




Ph.D.







# The community

- Research doesn't happen in a vacuum
- Know the community, the people. Especially those in power
  - You want them to remember you when the time comes
- **Make friends**, even before you meet them (e.g. Twitter)
- Be active and positive. Don't just complain
- Show interest in the work of others. Acknowledge them
- Learn to smell the bullshitters, the charlatans
- Join debates. Avoid wars. Learn from both

# The community

- Person  $\neq$  Idea
- Burn no bridges
  
- Surround yourself by people who complement you
- Work with others and learn from them
  
- Explore other communities and other fields
  - Realize that STEM > nothing

# Your advisor

- It's **your PhD**; you're on your own
- Advisors are just feedback machines: the more you put in, the more you get out
  - What matters is what kind of questions you ask, and what you do with the feedback
- **Be proactive, always ask for feedback**
  - Take silence as positive feedback (I know...we're sorry)
  - Ask for hypercritical feedback
- **Careful with never-ending feedback: *"it's never good enough!"***
  - If your work is good enough but you still get feedback, that's normal
  - We're not there to give you a grade, but to help you **move forward**
  - How much farther is something you two need to talk about, so be open about it

# Your advisor

- Advisors are not trained to be psychologists or coaches
  - You probably want someone else when in need of help
- Advisors are not trained to be mentors
  - You probably want to ask others when looking for direction
- Advisors are not trained to be managers
  - They'll probably just advice whatever worked for them
- **Every student is different. Advisors are also learning throughout**
  - Don't blame yourself. Don't blame them. **Work it out together**

# Family and friends

- *“Life is that thing that happens while doing your PhD”*
- **Don't take family and friends for granted**
- They'll still be there for you, but it won't be the same
- You'll miss many things, and you'll regret it
- Yes, you can put the laptop away and go see other people
- **Don't be afraid to talk about your work.** Teach whenever you can!
- **Exercise.** You'll feel accomplished regardless of how your work goes

You

# What's going on?

- You've always been... top of the class, positive attitude, enjoyed what you did
- But suddenly... think you're not good enough, become negative and suffer from what you do?
  
- So let's talk about...
  - Stupidity
  - Dunning-Kruger effect
  - Impostor syndrome
  - The valley of shit
  - The pit of despair



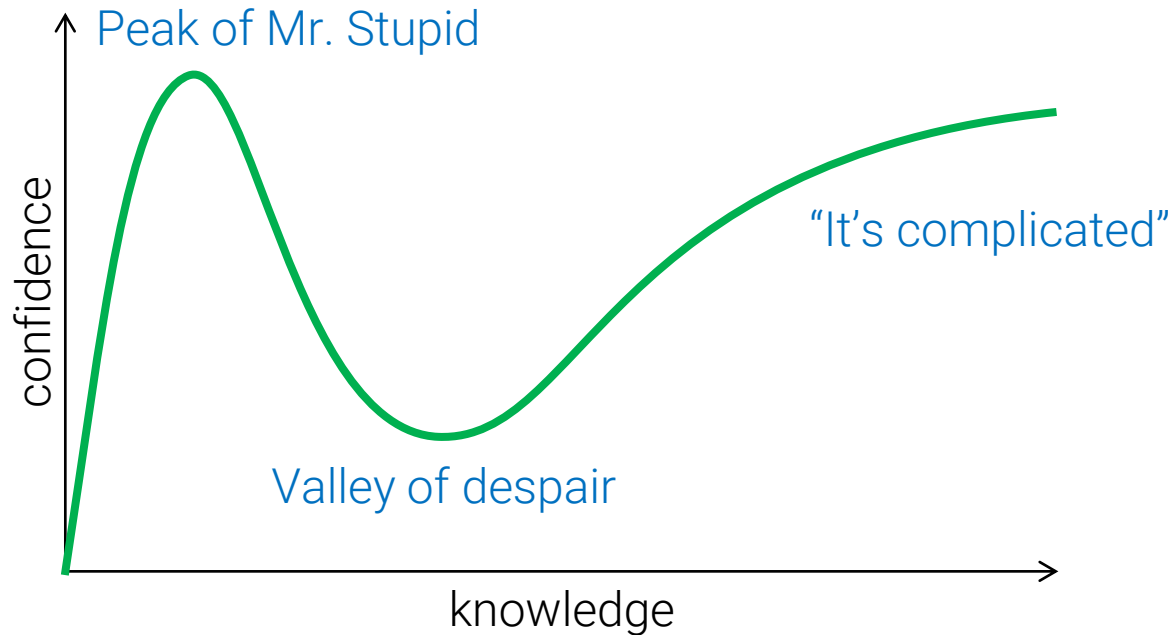
You're not qualified  
to judge the value  
of your own work

# Stupidity

- So far you've been evaluated based on your answers to questions, but in research nobody knows the answers
- **So why should you?**
- The amount of things you don't know is, for all purposes, infinite
- **This shouldn't discourage you. It's liberating!**
- If you don't feel stupid, you're doing it wrong
- You won't always succeed, be comfortable with the mistakes and take them as opportunities to learn

# Dunning-Kruger Effect

- The incompetent believe they know it all. The wise doubt they know anything.



# Dunning-Kruger Effect

- Keep learning and practicing
  - The more you know about something,  
the more you'll recognize how much there is still to learn
- Measure progress in units of learning, not units of solving
- Ask others how you're doing
- Question what you know and what you do

# Impostor Syndrome

- Do you doubt of your accomplishments and fear to be exposed as a fraud?
- *After an accepted paper: "I was just lucky, I didn't deserve it"*
  - Result: you always put extra effort because otherwise you'll fail
- *After they tell you you're good: "They don't know what they're talking about"*
  - Result: you ignore absolutely all forms of positive feedback
- The value of your work does not define your value as a person

# Impostor Syndrome

- It happens to everyone. **You're just normal**
- Successful people feel like impostors too
  - They don't question themselves
  - They question their ideas and their knowledge
  - They don't freeze when the time comes
  - They ask for advice, learn, and improve

# The Valley of Shit

- It suddenly feels like you can't manage
  - You lose perspective, confidence, and start second-guessing: will I be able?
  - Everyone thinks you're fine and will make it, but how do they *really* know?
- It can feel endless, but it does have an end: the brown stuff blocks your view
- **You're alone in it, but there's no need to be lonely.** Talk about it
- May happen once or multiple times, for long or short periods, but it'll happen
- **Keep walking. It's just a valley**

# The Pit of Despair

- *Nothing* seems to go right, it's all slow, difficult: what am I doing here?
- The smell turns into constant depression and anxiety for no reason, don't care about anything and are incapable of enjoying your work
- Then you're not walking the valley anymore. You're digging a pit.
- Take time off, get help and get well. Be kind to yourself, allow you to stand up
- You'll start caring again, even if just to hate everything, but that's the first
- It's ok to quit, but don't do it because *you* think you're not capable
  - Almost every happy person doesn't have a PhD



let's be honest...

It happens to all of us

...and well beyond

our PhD

# Procrastination

- Try to learn why you do it and fix that if possible
  - Fear of failure, fear of success
  - Fear of attachment, fear of separation
- Make it work for your own advantage
  - Accept that you'll do it last minute anyway, so do those other things in between
- **It's all about *when* you feel the pressure**
  - Work in 45m time slots and get rewards for it
  - Schedule time for yourself
  - Use a time tracker, **the pressure of yourself**
  - Set deadlines with your collaborators; **the pressure of others**

# I think, therefore I'm biased

- Cognitive biases are shortcuts that help us overcome certain problems
  - Too much information, not enough meaning, need to act fast, what to remember
- They will mostly fail us and make us be wrong
- They are everywhere. Once you know about them, you'll see them all around





# Biases in Academia

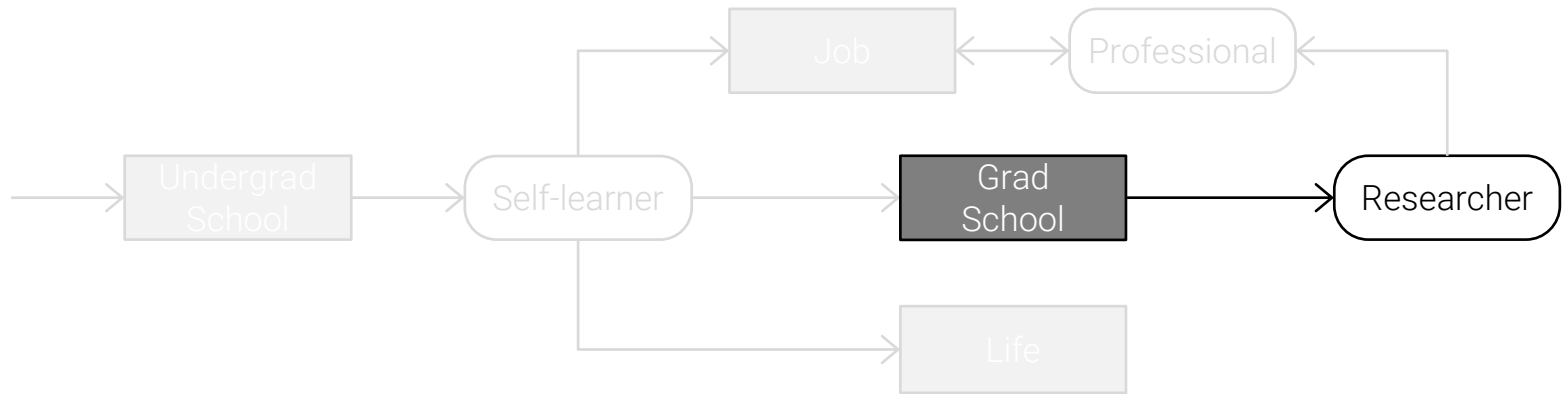
- **Confirmation bias:** only see the 20% of results that agree with our expectations
- **Survivorship bias:** only see other people's successes, not their failures
- **Anchoring bias:** tend to overrate the first papers we read
- **Authority bias:** tend to attribute more value to statements by popular authors
- **Hindsight bias:** everything is obvious once we know the answer
- **Self-service bias:** success is thanks to us, failure is because of others
- **Self-handicapping bias:** not giving ourselves enough time is a win-win situation.  
Success: *"and I only spent 1 day!"* Failure: *"well, I only spent 1 day...."*
- **Backfire effect:** all reviewers are wrong, and we hate them

# You're biased too, and that's great

- We may easily fall for the blind spot bias
  - Tendency to see ourselves as less biased than others
- Don't kid yourself. We are all biased. Accept it
- Acknowledge that there's room for improvement
- **Confirmation bias will actually help us identify our own biases, everywhere**
- Will ultimately help us understand ourselves better, how we think, and how to become better at it

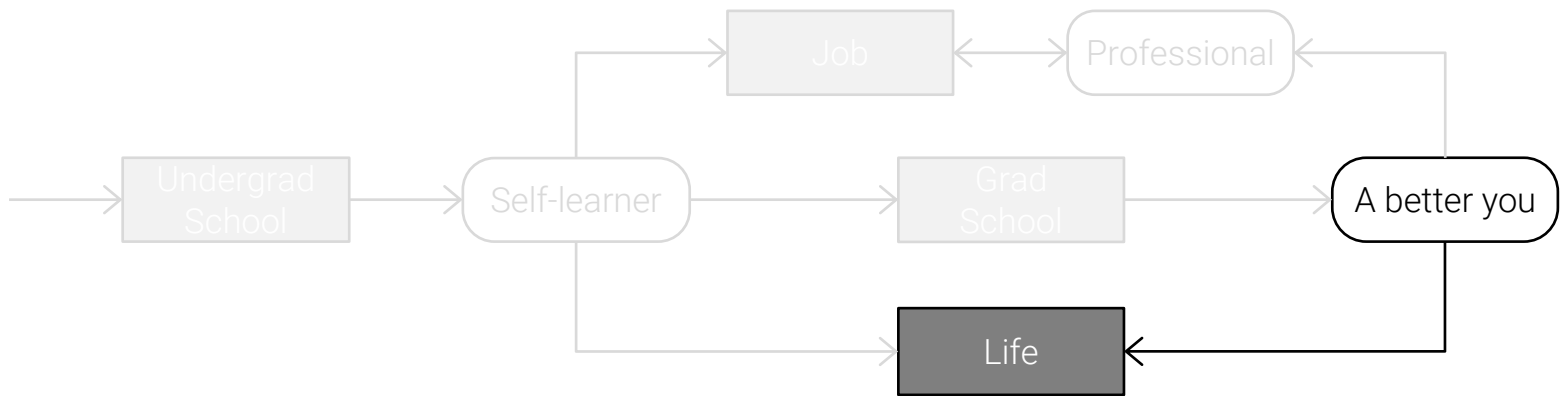
# TAKE HOME MESSAGE





# What really matters (part II)

- Dedication
- Emotional Intelligence
- Knowing when to shup up
- Listening more than talking
- Saying “no”
- Asking for help
- Staying humble
- Learning about yourself



- A PhD is a wonderful, life-transforming thing
- There will be ups and downs. It happens to everyone. Talk about it
- Remember why you're doing it. Enjoy it, and grow as a human being

It's all about

You