

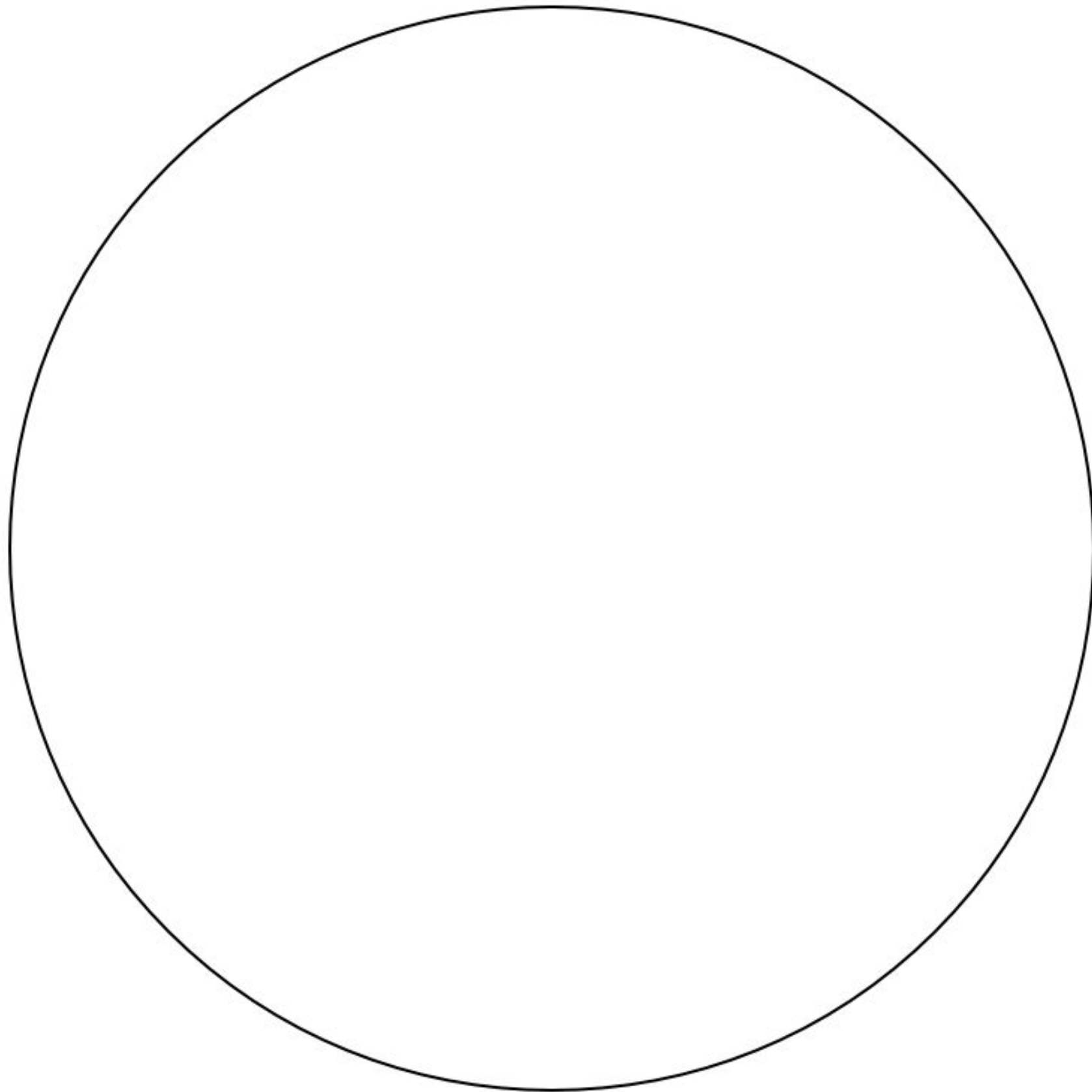
The PhD Journey

A supervisor's view

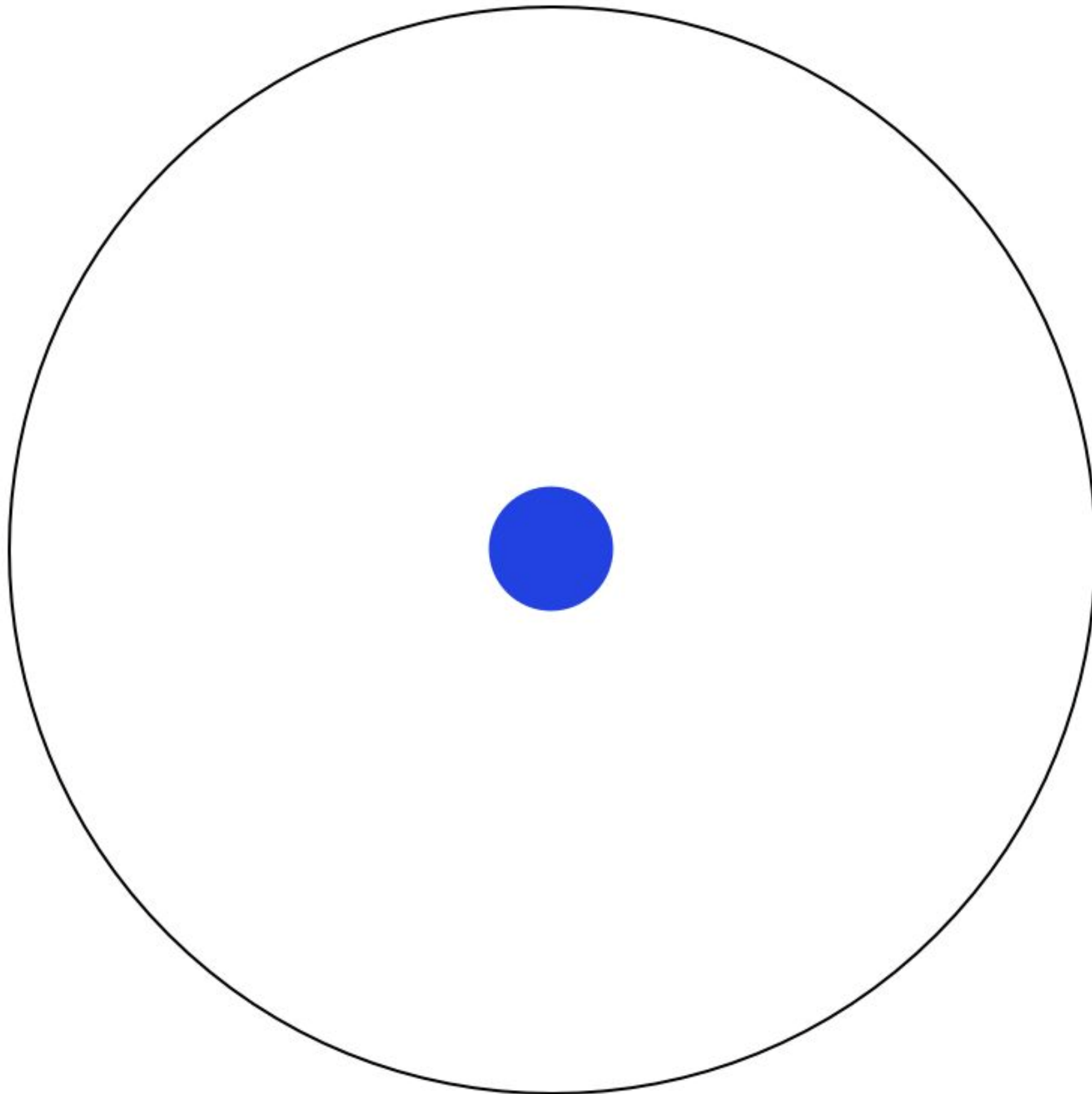
Philip Wadler
University of Edinburgh
Tuesday 4 October 2022

Matt Might's Illustrated Guide to a PhD

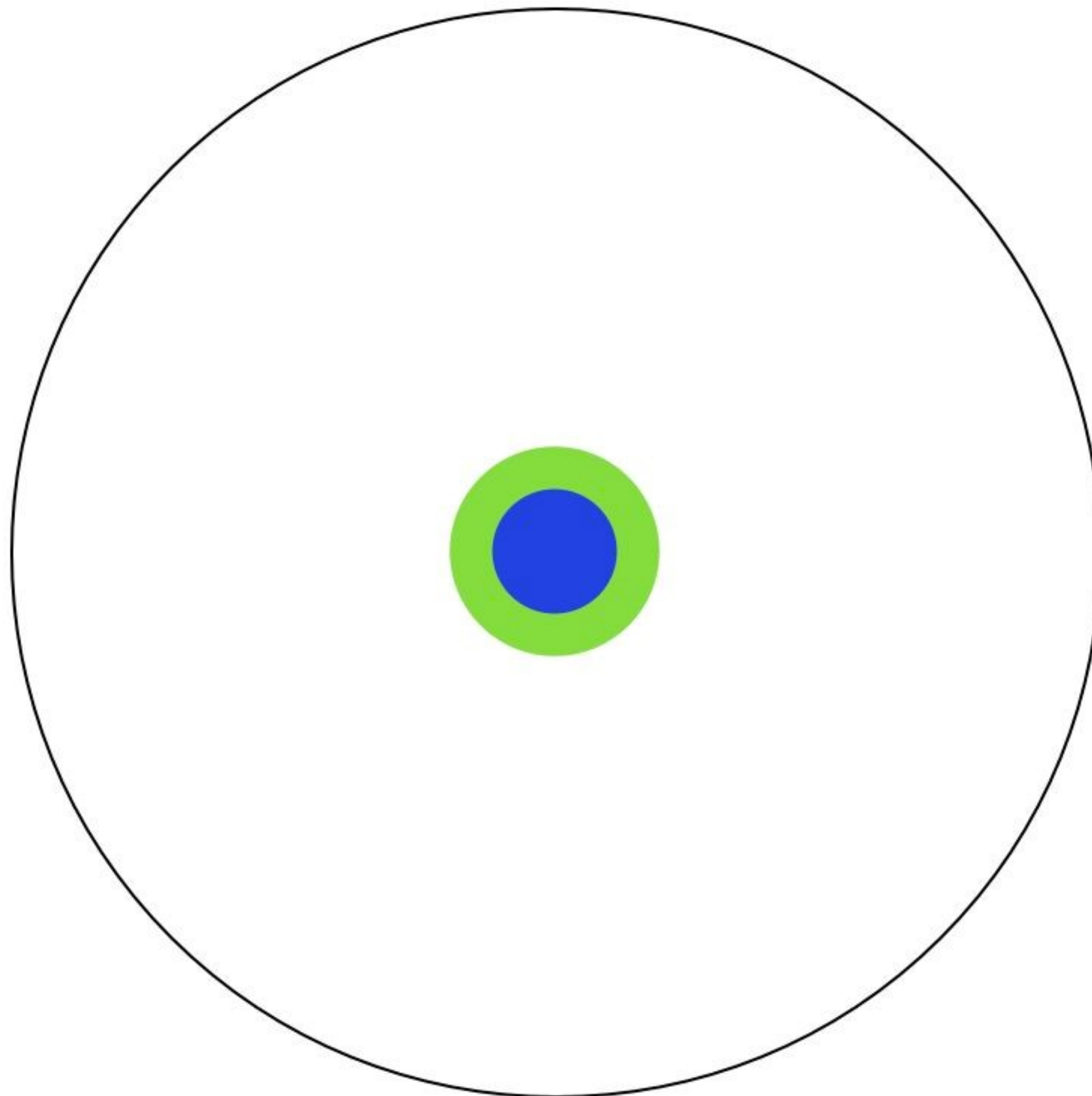
Imagine a circle that contains all of human knowledge:



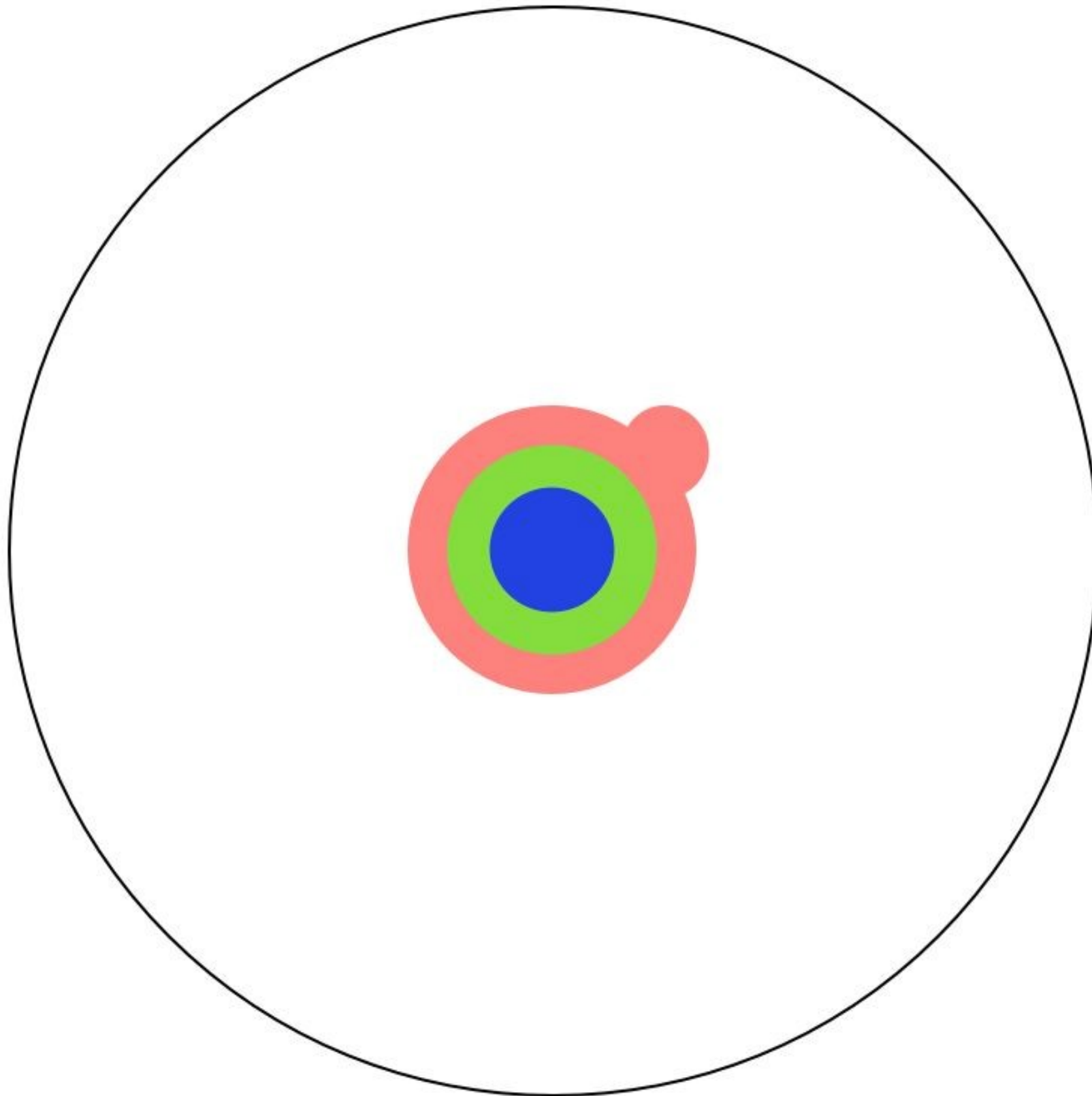
By the time you finish elementary school, you know a little:



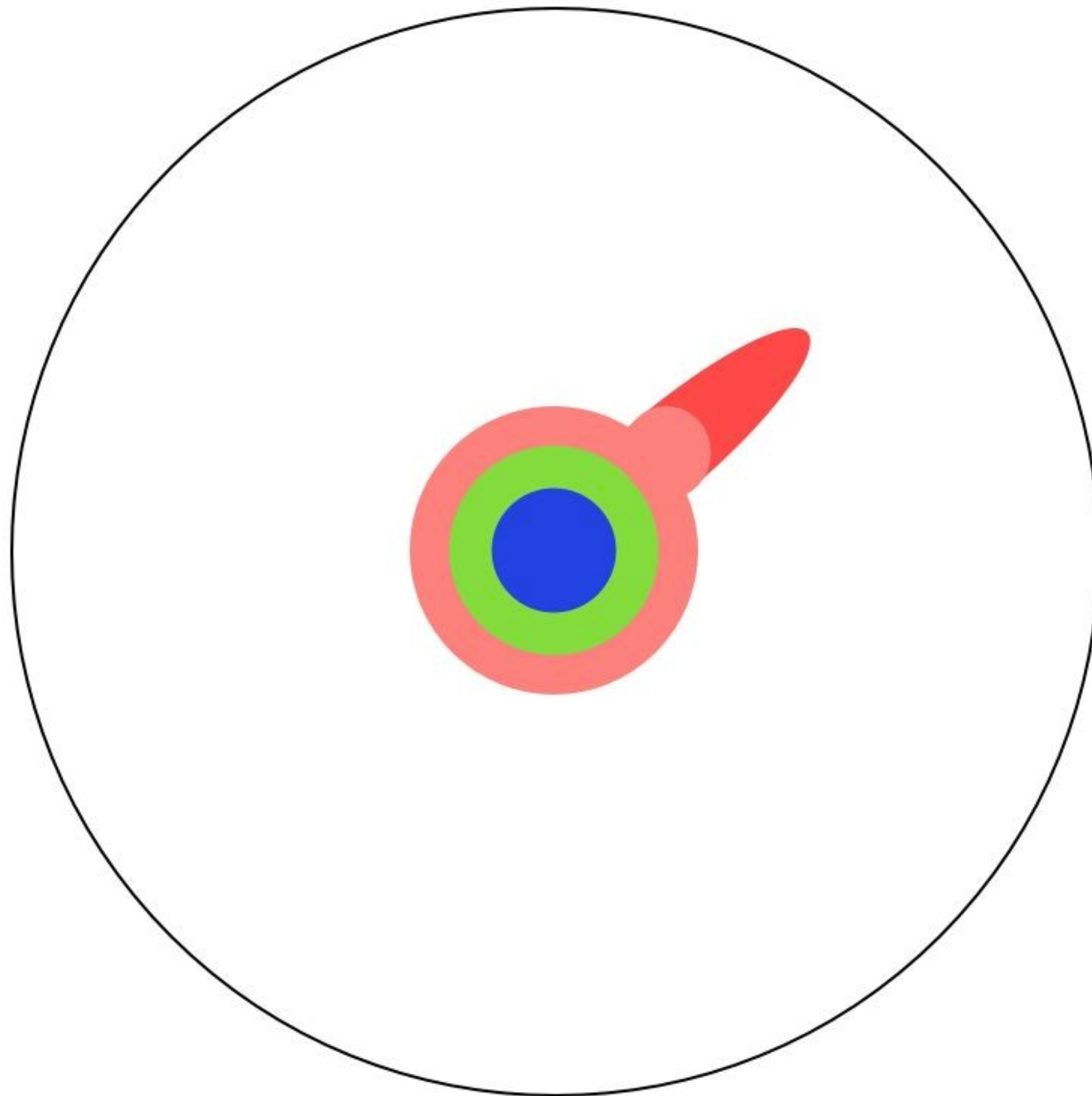
By the time you finish high school, you know a bit more:



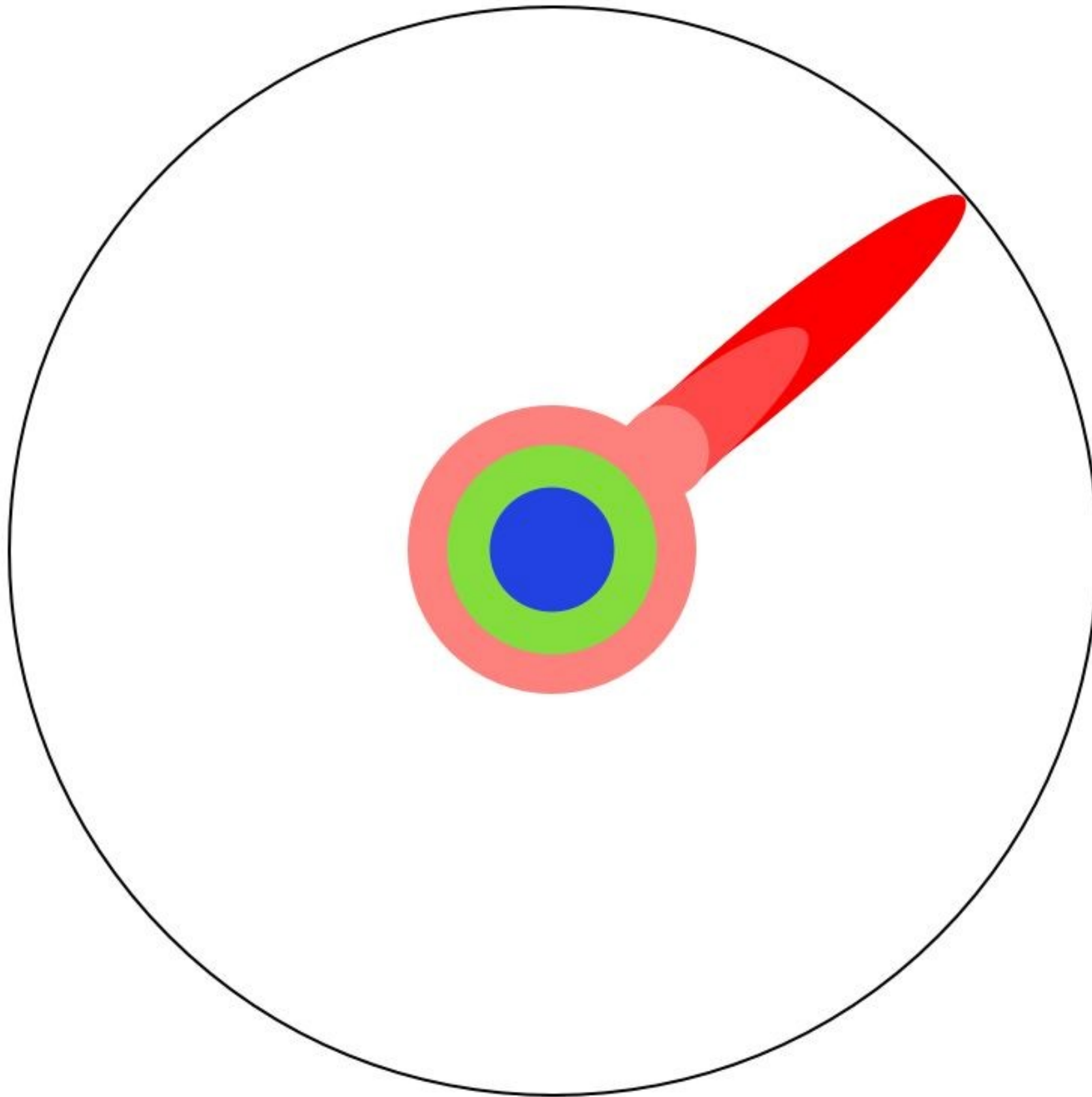
With a bachelor's degree, you gain a specialty:



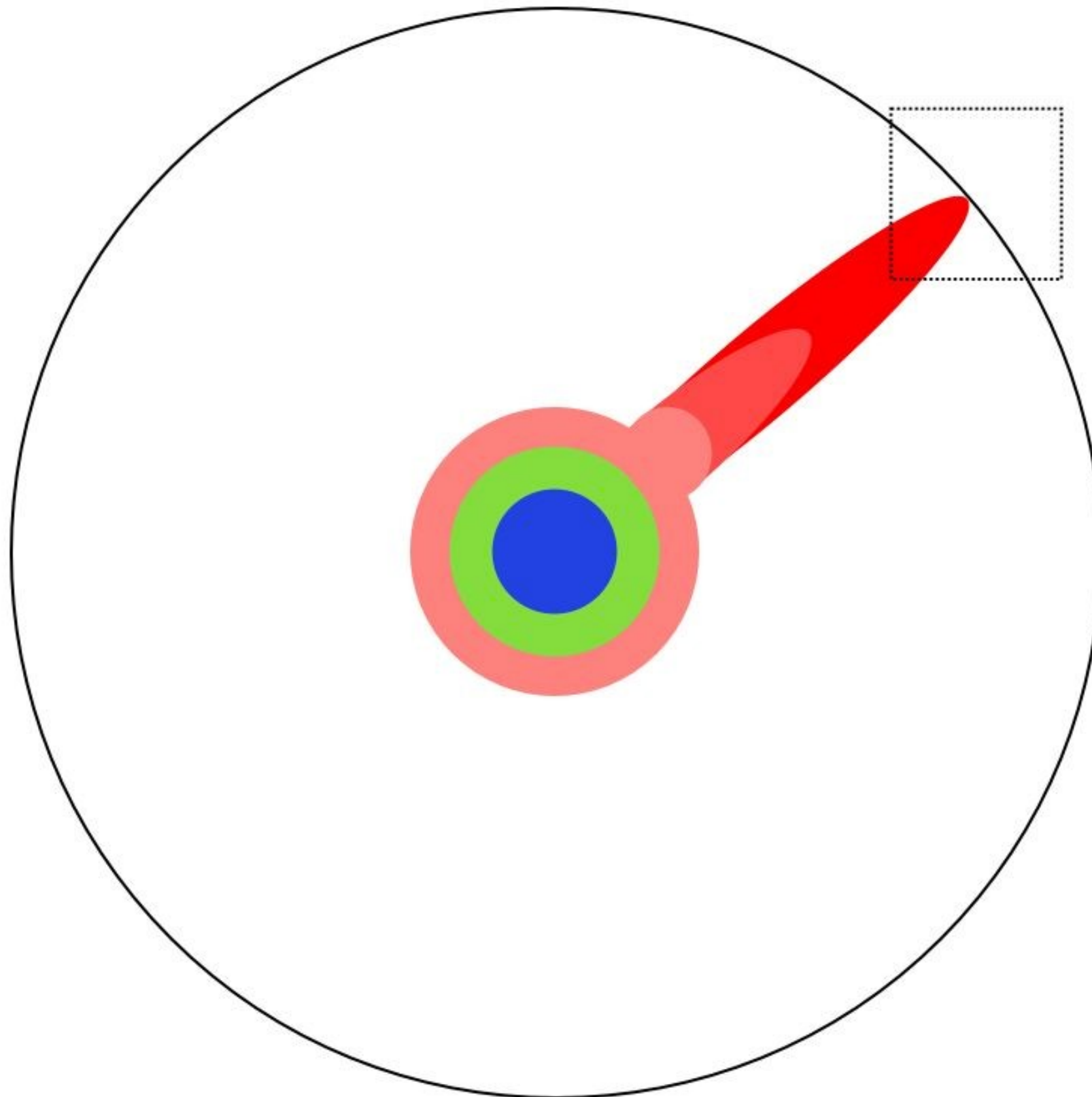
A master's degree deepens that specialty:



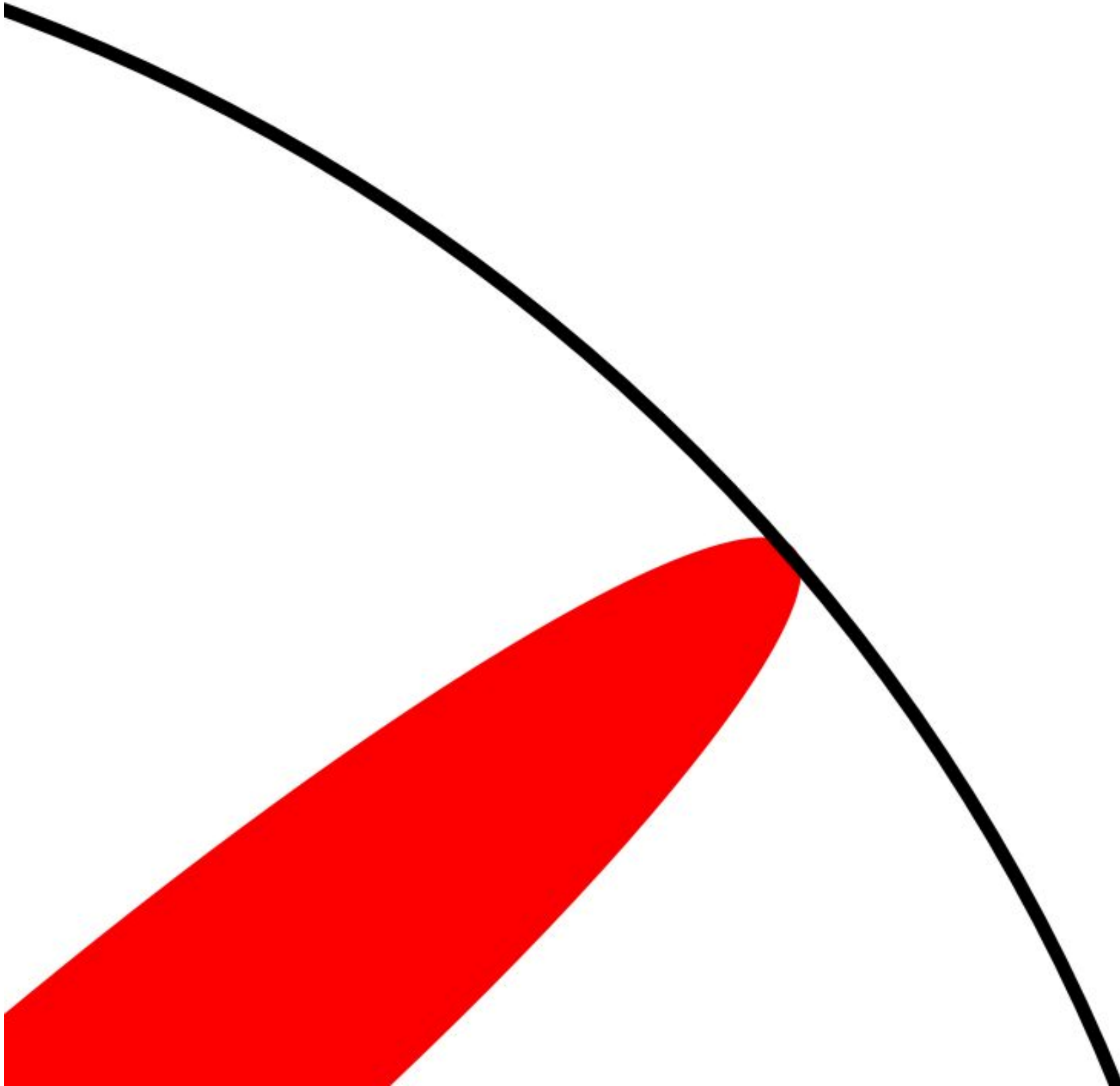
Reading research papers takes you to the edge of human knowledge:



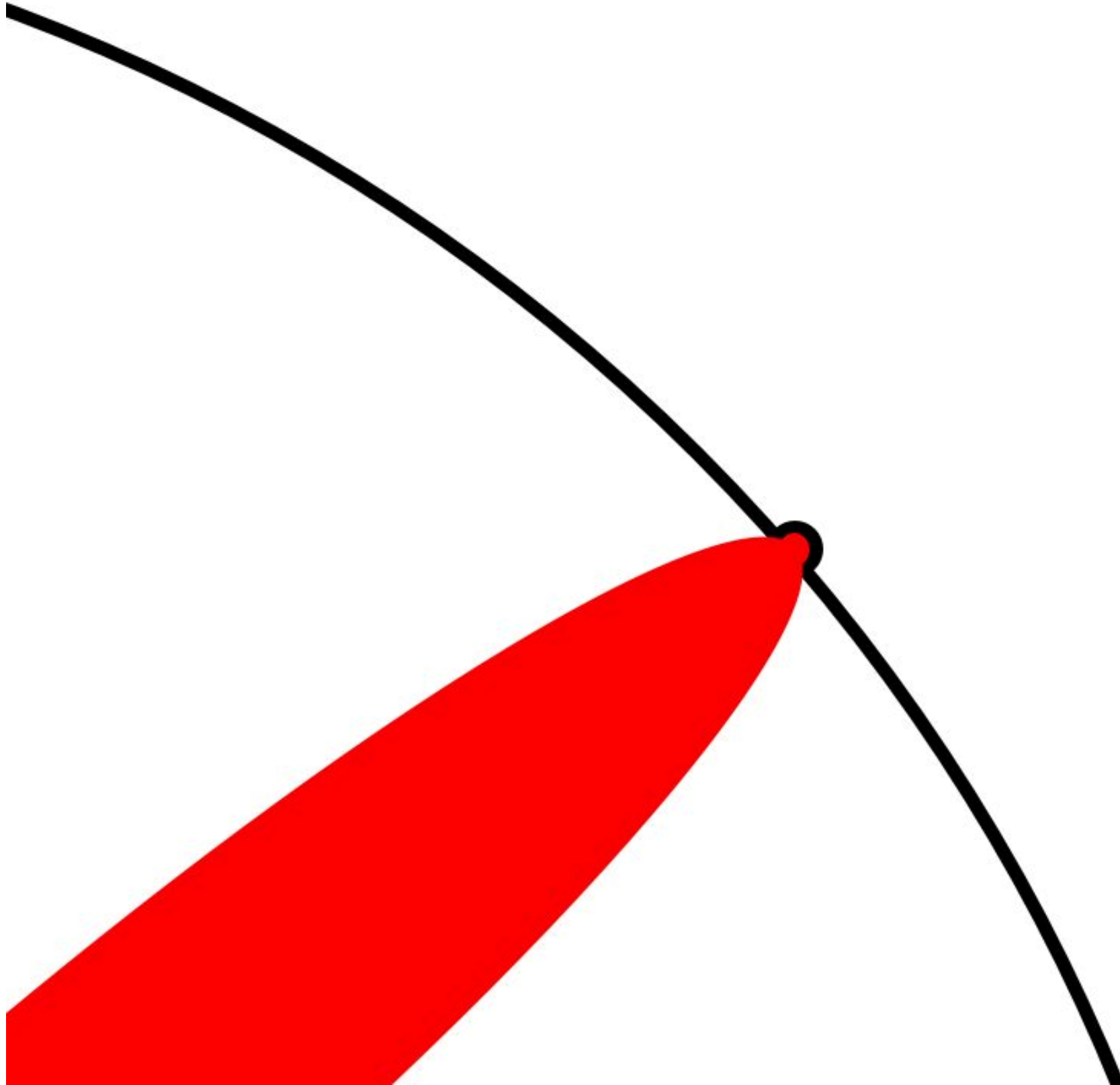
Once you're at the boundary, you focus:



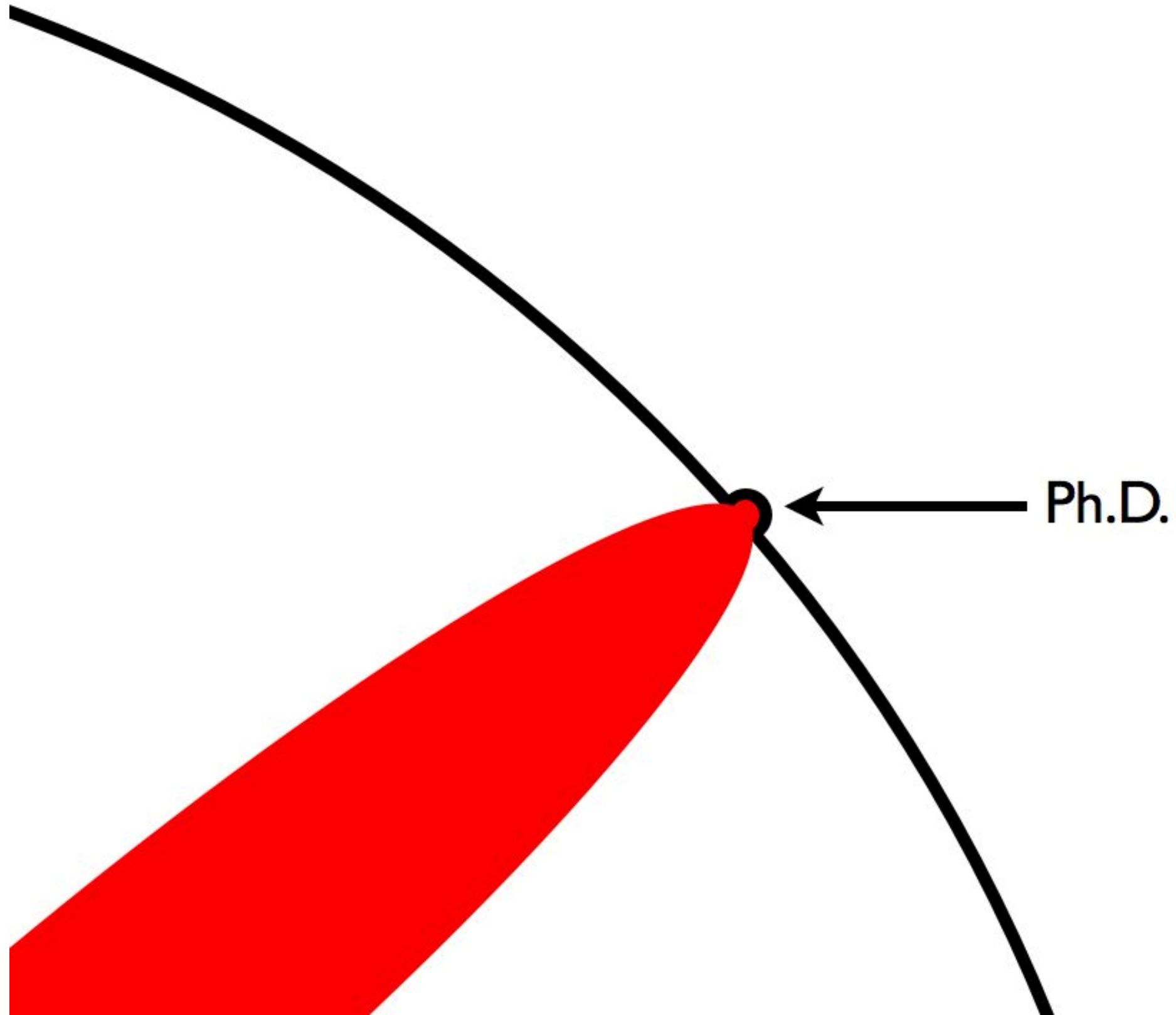
You push at the boundary for a few years:



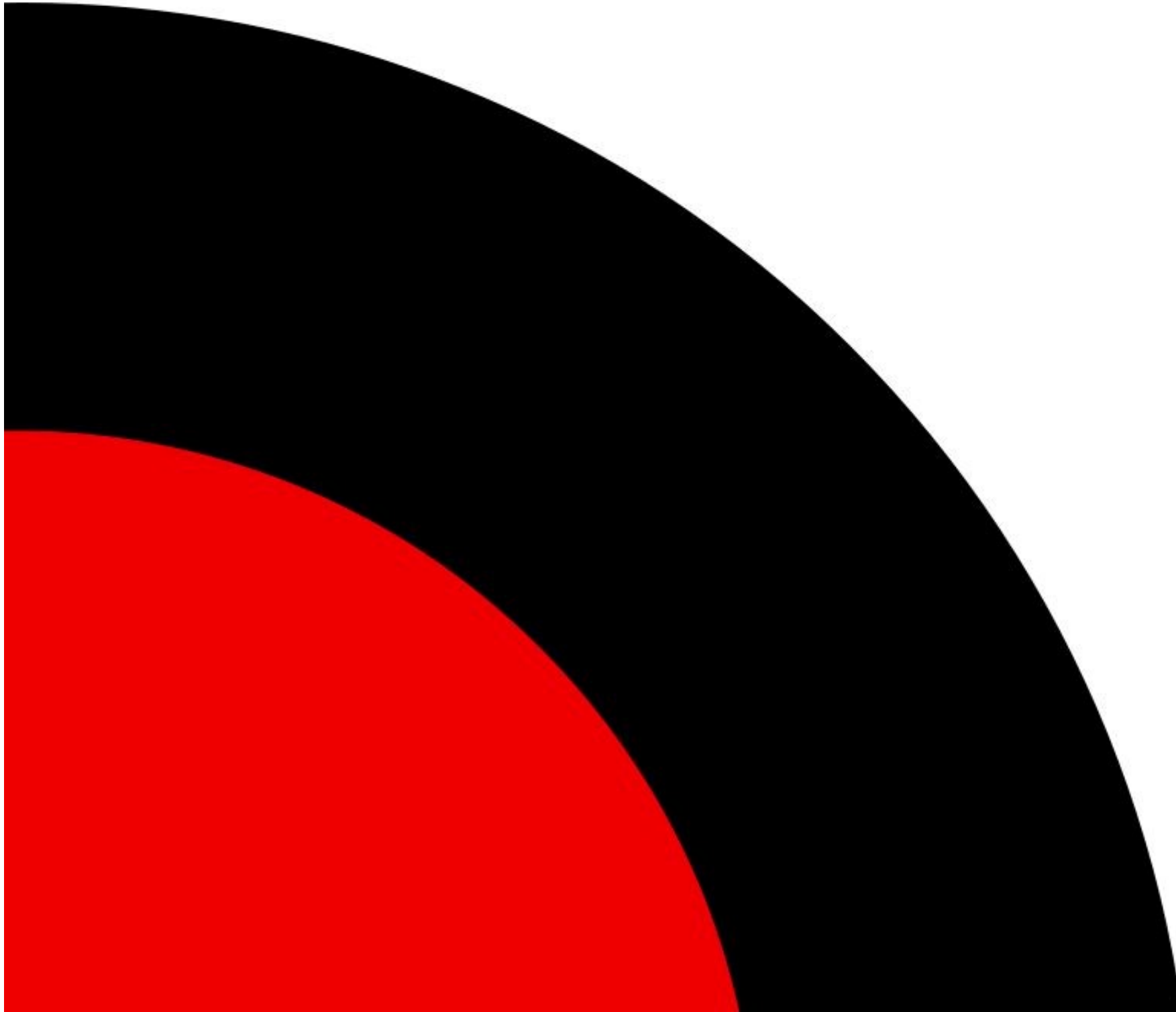
Until one day the boundary gives way:



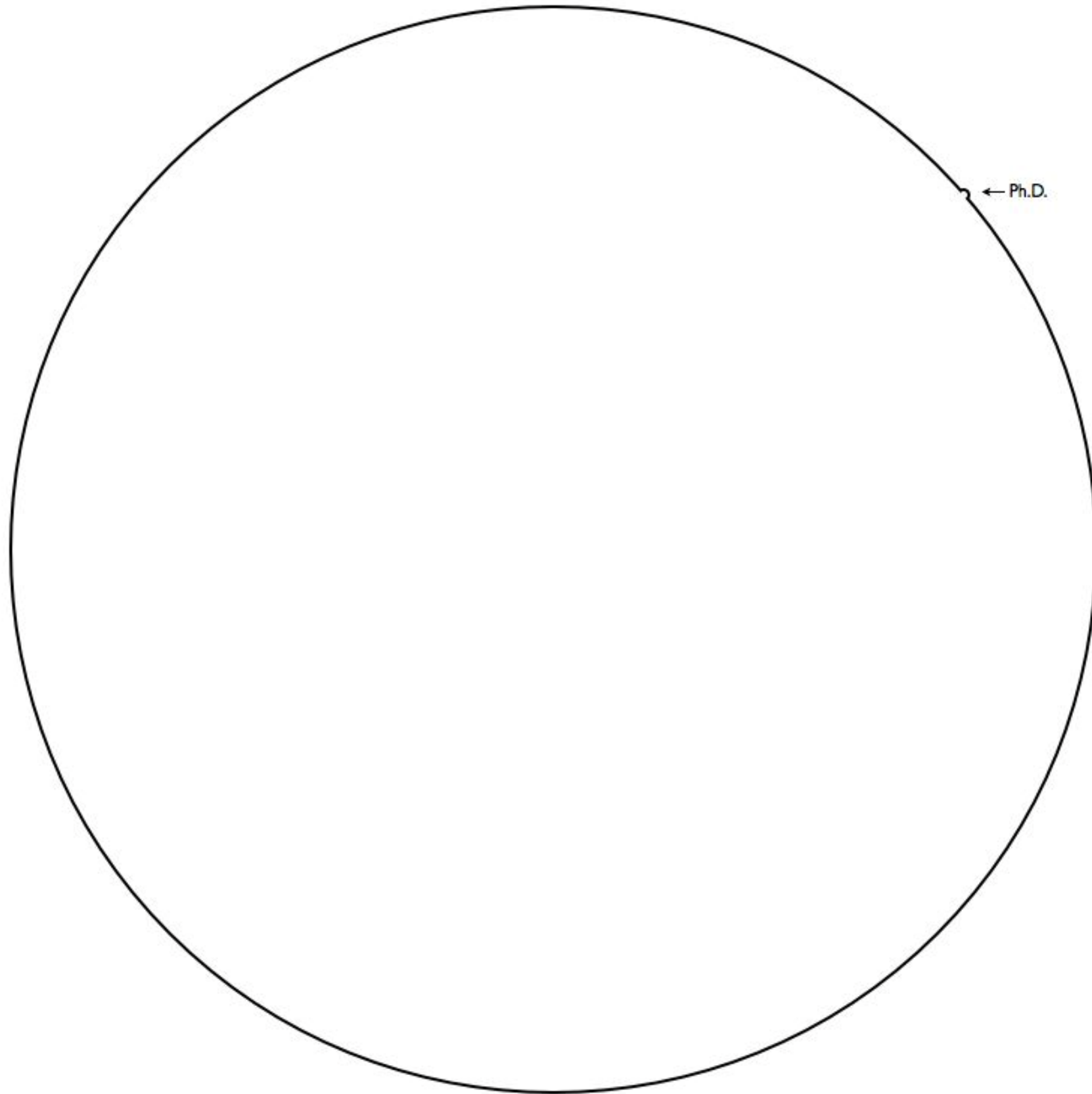
And that dent you've made is called a PhD:



Of course, the world looks different to you now:



So don't forget the bigger picture:



Keep pushing.

<http://matt.might.net/articles/phd-school-in-pictures/>

How to Train your Supervisor

It's a partnership



Agree Expectations

Supervisor Expectations Questionnaire

Read each of the statements below and decide on your position for each. For example if you believe strongly that it is the responsibility of the supervisor circle '1', if you believe strongly that it is the responsibility of the student circle '5'. If you believe it is a joint responsibility circle '3'.

1. It is the responsibility of the supervisor/s to select a research topic.	1 2 3 4 5	The student is responsible for selecting her/his own topic.
2. It is the supervisor/s who decide which theoretical framework and/or methodology is most appropriate.	1 2 3 4 5	Students should decide theoretical framework and/or methodology they wish to use.
3. The supervisor/s should develop an appropriate program and timetable of research and study for the student.	1 2 3 4 5	The supervisor/s should leave the development of the program and timetable of research and study to the student.
4. The supervisor/s are responsible for ensuring that the student has access to the appropriate services and facilities at the University.	1 2 3 4 5	It is the student's responsibility to ensure that she/he has located and accessed all relevant services and facilities for the research.
5. The supervisor is responsible for providing emotional support and encouragement to the student.	1 2 3 4 5	Personal counselling and support are not the responsibility of the supervisor – students should look elsewhere.
6. The supervisor/s should insist on regular meetings with the student.	1 2 3 4 5	The student should decide when she/he wants to meet with the supervisor/s.
7. The supervisor/s should ensure that the thesis is finished by the maximum submission date.	1 2 3 4 5	As long as a student works steadily she/he can take as long as she/he needs to finish the work.
8. Supervisor/s should insist on seeing all drafts of work to ensure that the student is on the right track.	1 2 3 4 5	Students should submit drafts of work only when they want constructive criticism from the Supervisor/s.
9. Supervisor/s should assist in the writing of the thesis if necessary and should ensure that the presentation is flawless.	1 2 3 4 5	The writing of the thesis should only ever be the student's own work and the student must take full responsibility for presentation of the thesis.

Meet Regularly

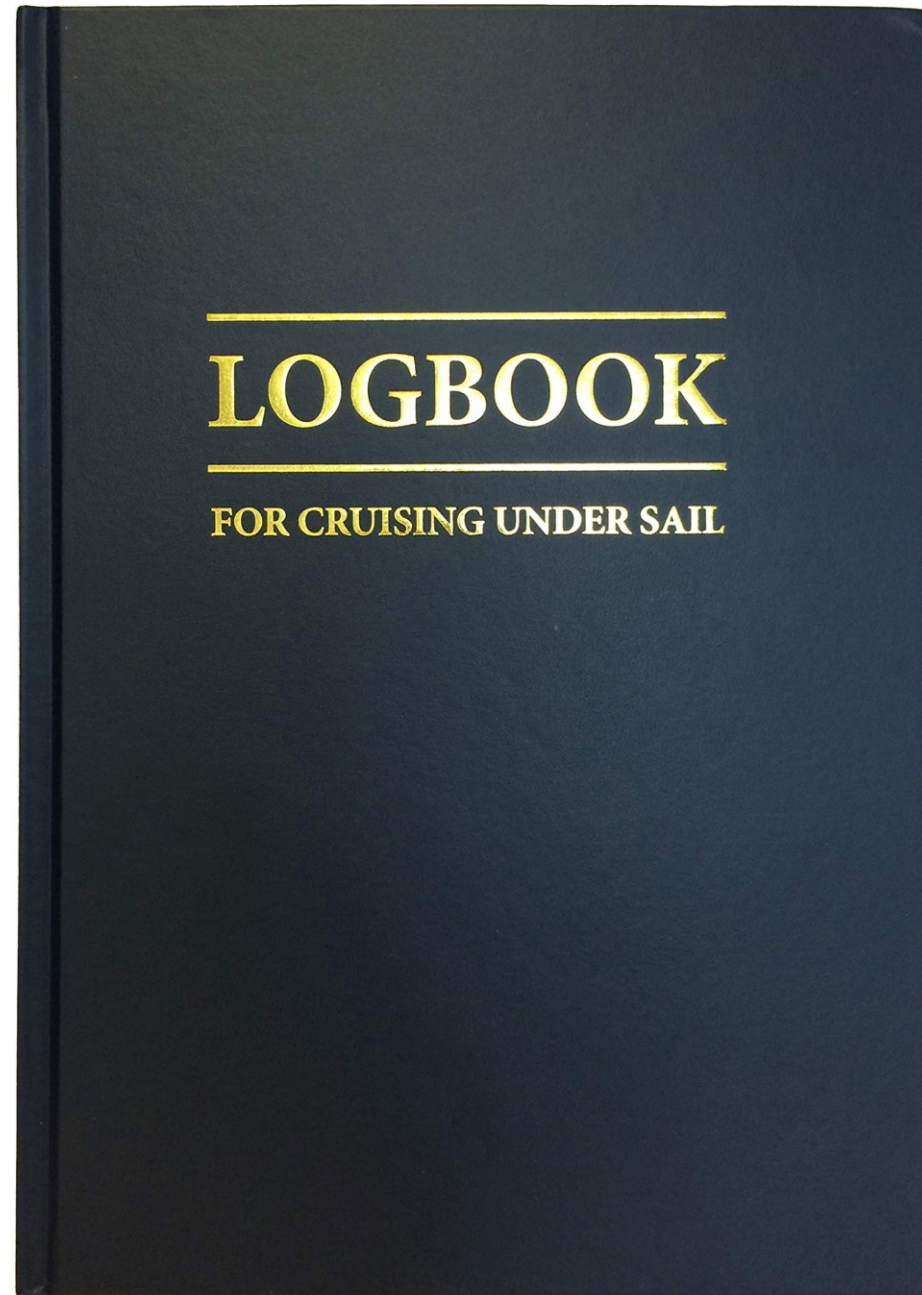
January 2022

Wk	Sun	Mon	Tue	Wed	Thu	Fri	Sat
52							1 New Year's Day
1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15
3	16	17 Martin Luther King Jr. Day	18	19	20	21	22
4	23	24	25	26	27	28	29
5	30	31					

wheniscalendars.com

Don't wait if you have a question

Keep a Log



Build Your Community



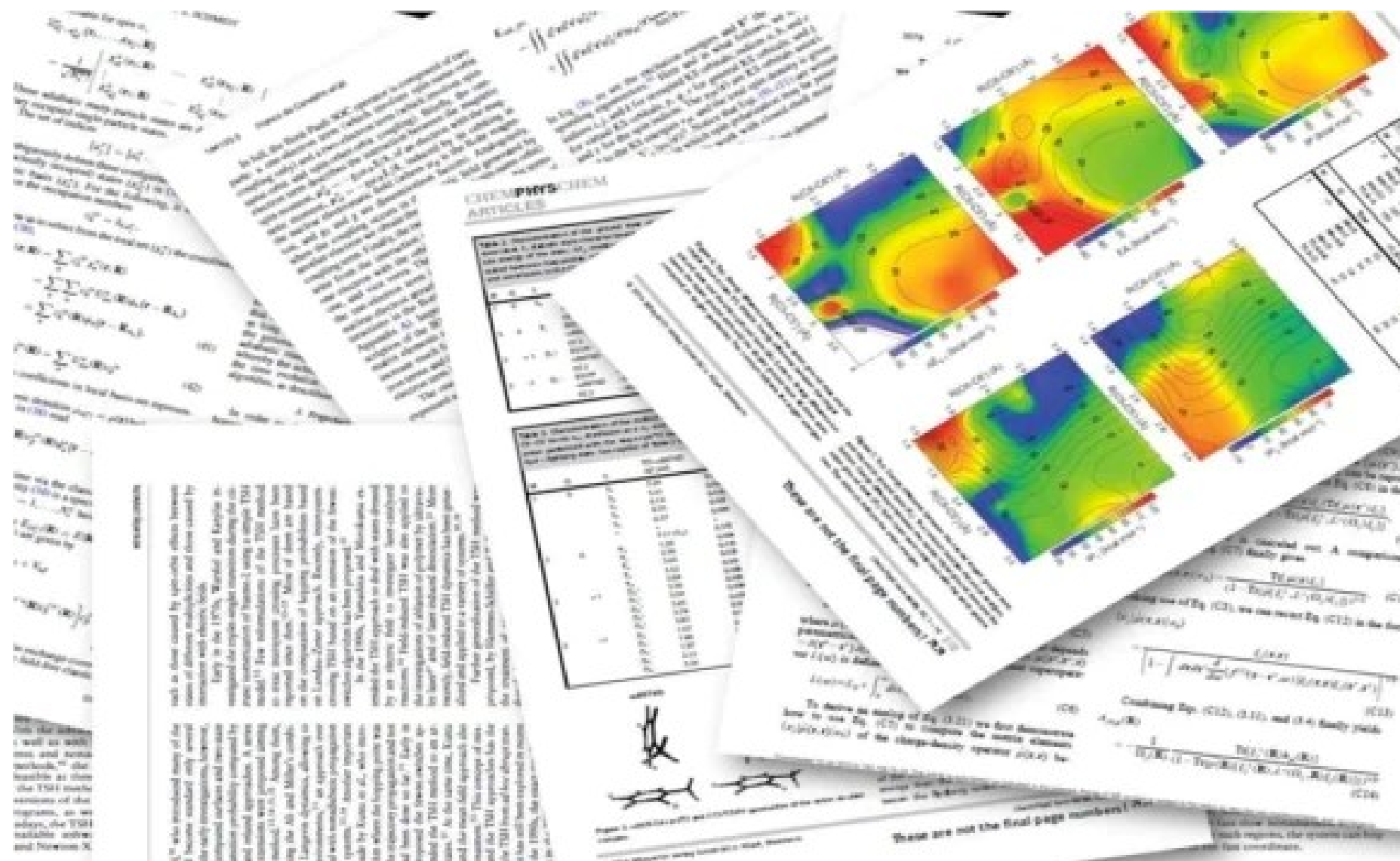
Second Supervisor

Yearly review —
meet with someone not on
your team



If it doesn't work out,
you can change
supervisor

Aim for a Paper a Year



Finish!

“Writing a book is a horrible, exhausting struggle, like a long bout of some painful illness. One would never undertake such a thing if one were not driven on by some demon whom one can neither resist nor understand.”

GEORGE ORWELL



WRITER'S DIGEST

Hone Your Skills

Time Management

Getting Things Done

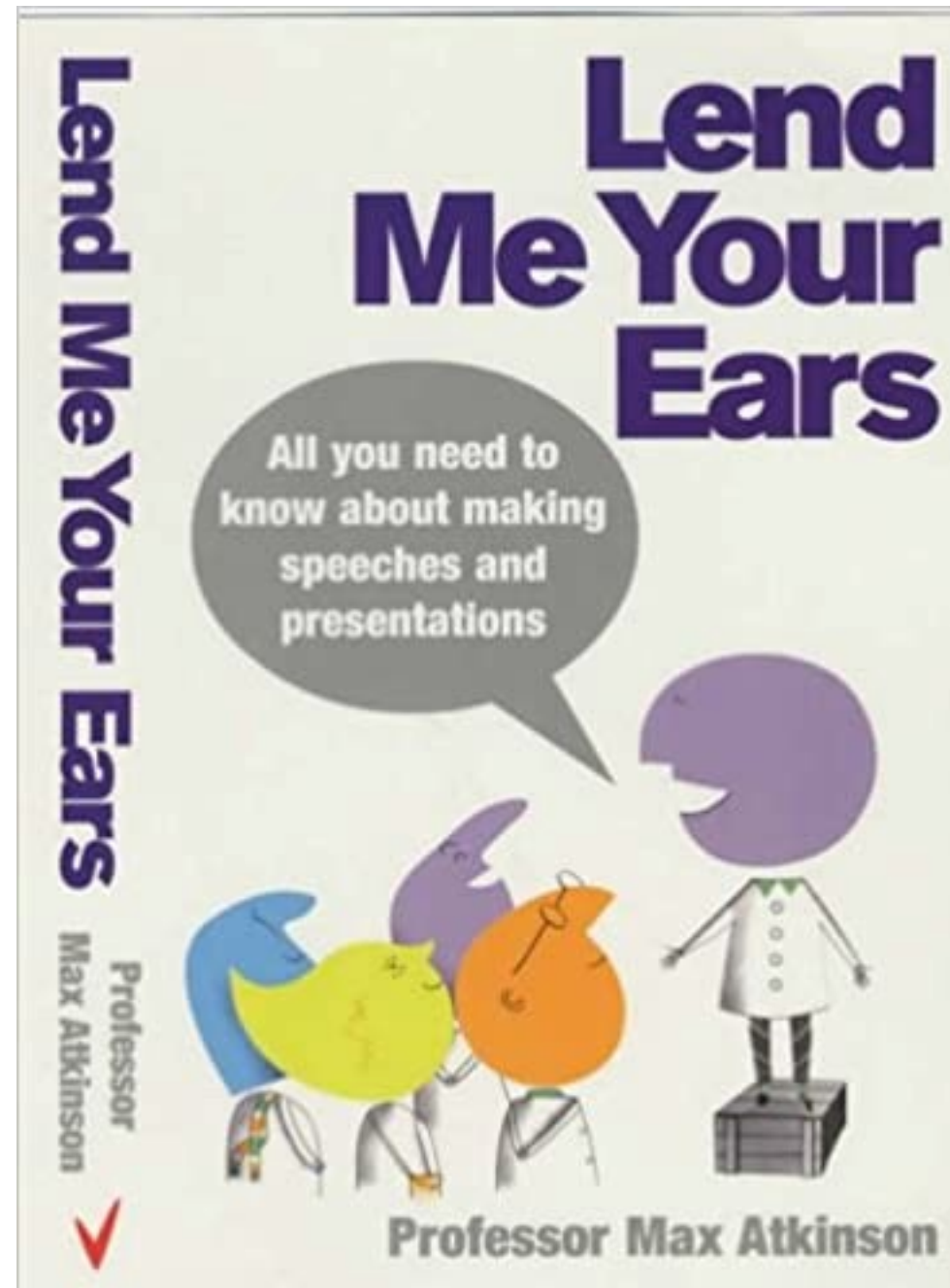
the art of stress-free
productivity

from the New York Times bestselling author

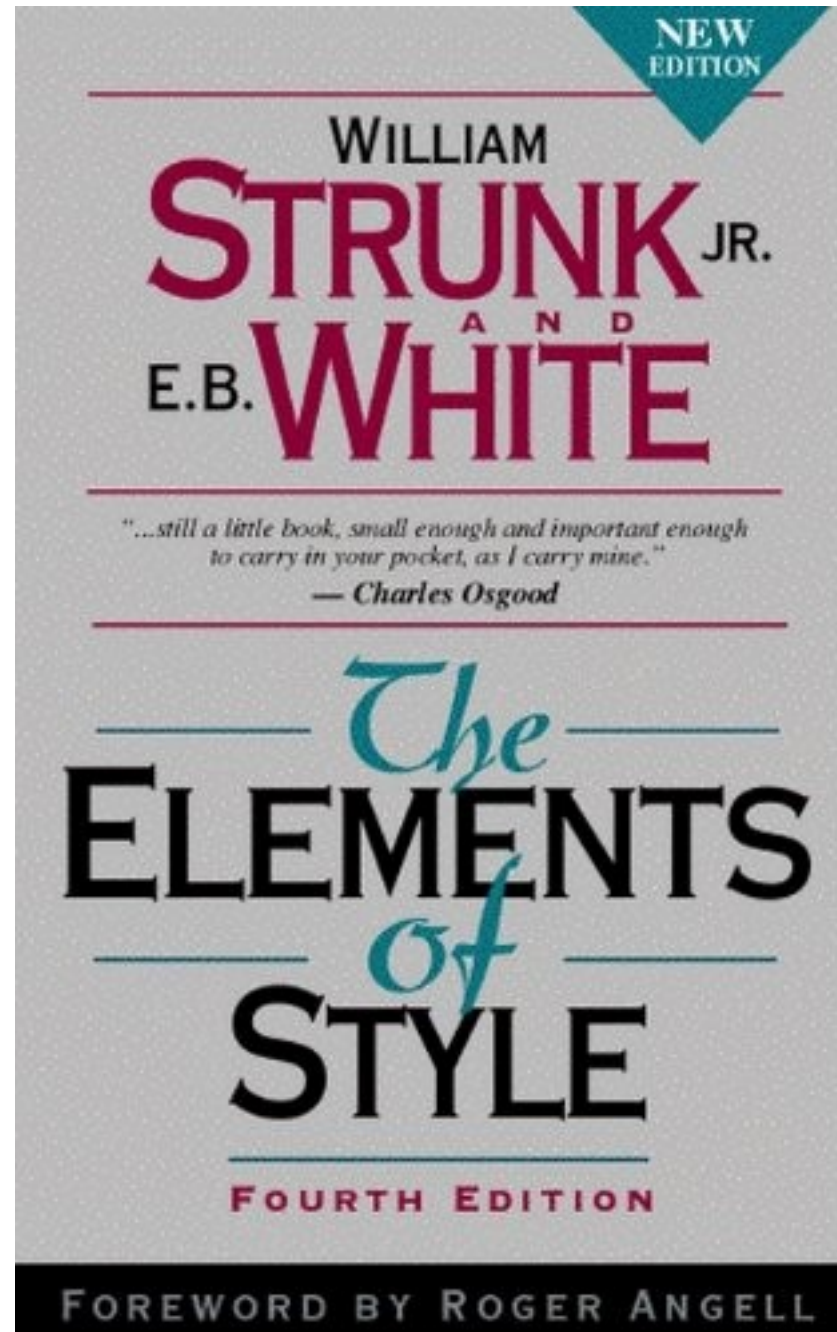
David Allen



Speaking



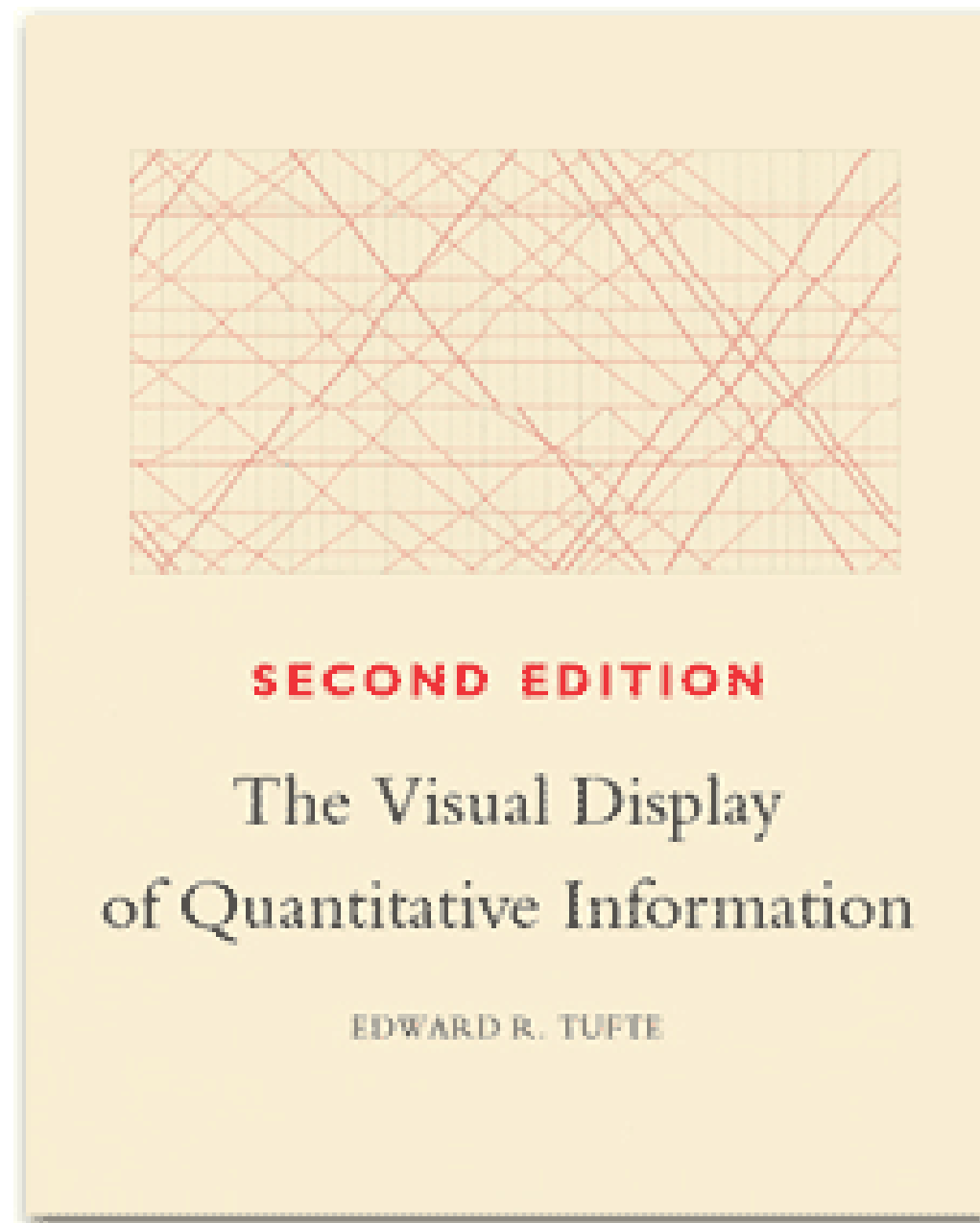
Writing



Writing (2)



Graphics

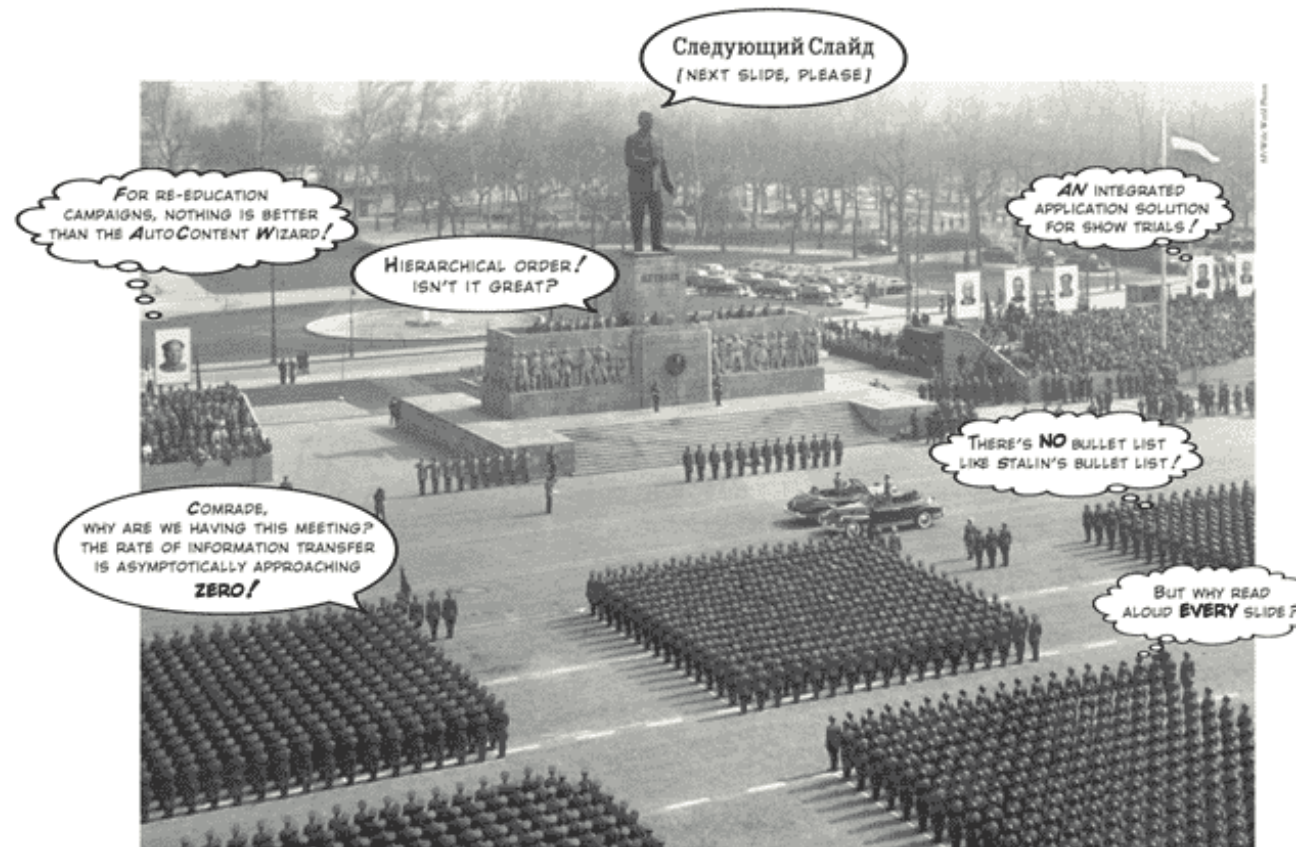


Graphics (2)

Edward R. Tufte

*The Cognitive Style of PowerPoint:
Pitching Out Corrupts Within*

SECOND EDITION

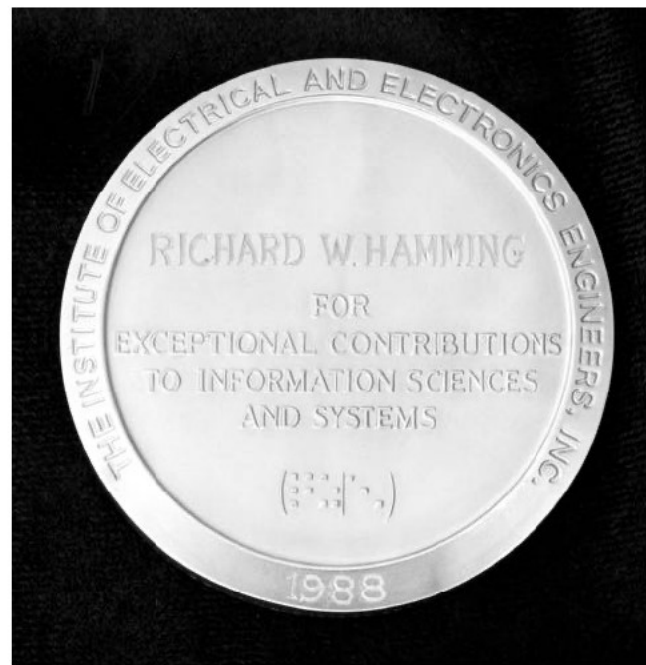


Military parade, Stalin Square, Budapest, April 4, 1956.

You and Your Research

Richard W. Hamming, 1915–1998

- Los Alamos, 1945.
- Bell Labs, 1946–1976.
- Naval Postgraduate School, 1976–1998.
- Turing Award, 1968. (Third time given.)
- IEEE Hamming Medal, 1987.



It's not luck, it's not brains, it's courage

Say to yourself, 'Yes, I would like to do first-class work.' Our society frowns on people who set out to do really good work. You're not supposed to; luck is supposed to descend on you and you do great things by chance. Well, that's a kind of dumb thing to say.

...

How about having lots of 'brains?' It sounds good. Most of you in this room probably have more than enough brains to do first-class work. But great work is something else than mere brains.

...

One of the characteristics of successful scientists is having courage. Once you get your courage up and believe that you can do important problems, then you can. If you think you can't, almost surely you are not going to.

— Richard Hamming, *You and Your Research*

What are the important problems?

[Hamming started to eat at the Chemistry table.]

I started asking, ‘What are the important problems of your field?’ And after a week or so, ‘What important problems are you working on?’ And after some more time I came in one day and said, ‘If what you are doing is not important, why are you working on it?’ I wasn’t welcomed after that.

— Richard Hamming, *You and Your Research*

Develop reusable solutions

How do I obey Newton's rule? He said, 'If I have seen further than others, it is because I've stood on the shoulders of giants.' These days we stand on each other's feet!

Now if you are much of a mathematician you know that the effort to generalize often means that the solution is simple.

I suggest that by altering the problem, by looking at the thing differently, you can make a great deal of difference in your final productivity because you can either do it in such a fashion that people can indeed build on what you've done, or you can do it in such a fashion that the next person has to essentially duplicate again what you've done.

— Richard Hamming, *You and Your Research*

Sell your work

I have now come down to a topic which is very distasteful; it is not sufficient to do a job, you have to sell it. ‘Selling’ to a scientist is an awkward thing to do. It’s very ugly; you shouldn’t have to do it. The world is supposed to be waiting, and when you do something great, they should rush out and welcome it. But the fact is everyone is busy with their own work. You must present it so well that they will set aside what they are doing, look at what you’ve done, read it, and come back and say, ‘Yes, that was good.’ If they don’t stop and read it, you won’t get credit.

— Richard Hamming, *You and Your Research*

You don't need luck, but you are lucky!

The computer age is barely half a century old.

Computing has yet to find its Galileo, Kepler, or Newton.

It could be you!