Advice for Finishing that Damn Ph.D.

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*** = Current Affiliations.**

My Qualifications to Give Advice

I myself got a Ph.D., and I remember it well! Oy!

I watched my ex-wife get a Ph.D. Oy!

I have graduated 19 Ph.D.s in 26 years.

I have been guest co-advisor for 3 Ph.D.s.

My Qualifications, Cont’d

Only 2 of my Ph.D. students have failed to finish.

Neither could get his s--t together!

My Operating Principle as Advisor

I say to my students:

I will give you all the feedback you ask for. However, I will leave you to set your own pace and to your own devices. I have all the degrees I need, so it’s your problem if you don’t finish, not mine. So do not expect me to rescue you or even press you. You see, if you cannot get your own s--t together, you are not going to make it as a research leader.

Ph.D. Dissertation Requirements

Kevin Ryan offers these requirements for a good Ph.D. dissertation, and for that matter, a good paper.

You need:

1. **a worthwhile topic,**
2. **a correct structure, and**
3. **a good method.**

Worthwhile Topic

Discovery or selection of a worthwhile topic is a potential killer.

It is certainly the most anxiety generating step.

If you cannot find such a topic, you are not suited for a Ph.D. career, because your future research depends on finding good topics.

Finding Topic

Unfortunately or fortunately, depending on your success, luck plays a part too.

Many attend graduate classes and seminars to get ideas.

Reading the literature shows you what needs to be solved.

Finding Topic, Cont’d

The topic must be

- **real,**
- **unsolved,**
- **solvable enough to finish, but**
- **hard enough to solve that it is interesting.**

Correct Dissertation Structure

According to Kevin Ryan:

1. **Frame the problem — real and unsolved**
   - **Context**
   - **Scope**
   - **Testable objectives**
2. **Related to previous work — read widely**
3. **Approach**
4. **Solution**
5. **Show evidence that problem is solved**
6. **What was achieved**

Another Good Structure

- **Statement of the problem**
- **Why problem is difficult**
- **Past attempts at solution**
- **Why past attempts failed to solve problem**
- **New approach to solve problem**
- **Why believe that new approach will solve problem or at least will not fail**
- **Plan for demonstration of effectiveness of new approach**

Another Good Structure, Cont'd

- **Do it!**
- **Report success or failure to demonstrate effectiveness**
  - **If success, lay out future work**
  - **If failure, analyze why and lay out suggestions for future attempts at a solution**

It is still acceptable if...

In a true scientific discipline, failure to prove hypothesis is acceptable, and a dissertation reporting the reasons for the failure is acceptable. Without the analysis, the dissertation is not acceptable.

It is also acceptable for the solution not to be entirely technical, even to be non-technical, *if* the problem is genuine and that's where the solution went.

Methodological Advice

(* means from Kevin Ryan)

***Don't try to solve all the world's problems.**

Scope the work to something doable in 1 calendar year.

***Measure your progress.**

***Stay focussed.**

Methodological Advice, Cont'd

A dissertation is the equivalent of from one to three journal papers, depending on paper sizes, the journal, and the university. Therefore, it does not have to be a life's work. It's only your first of many, many papers (that is, if you go into academia).

Methodological Advice, Cont'd

All dissertations require four months of uninterrupted work.

- **The last month of work takes .5 calendar month.**
- **The second last month takes 1.5 calendar months.**
- **The first two months can take years, and usually does, ...**

Methodological Advice, Cont'd

but you can get it down to 4 calendar months. (How do I know? I had one Ph.D. student who did the entire dissertation from conception through to filing in 6 months. Of course, the fellow is very motivated and he is into his second successful start up already.)

Methodological Advice, Cont’d

*Be skeptical; don’t believe everything you read.

*Be skeptical; don’t believe everything you are told, even by your advisor.

*Expose your ideas regularly.

Methodological Advice, Cont’d

*Shut up and write!

Don’t talk with your advisor, send e-mail; this way you have written what you said and you may have even written a section of your dissertation.

*Write early and often.

Publish!

Don’t be afraid of rejection; you’ll live!!

Methodological Advice, Cont’d

Go for journals, not conferences, to publish your results. Journals are a lot easier and count more in hiring and promotions. Conferences are very hard, because the committee has to reject 80% of the submissions by a short deadline. The slightest problem with the paper leads to its rejection. In a journal, the same problem would lead to the referee saying, “Accept the paper pending certain revisions.”

Methodological Advice, Cont’d

Of course, you may need to have a paper accepted to a conference to get the funds to attend the conference.

When your paper is rejected, treat all the ignorant remarks from the stupid referees as indications that *you* did not write clearly enough that even *they* would get your point.

Methodological Advice, Cont'd

Don't take criticism personally; it's criticizing your work, not you. It's criticizing the work, even if they say "*You* made a MISTAKE! Nya Nya!"

Methodological Advice, Cont'd

Actually, some critics may *be* personal; there are lots of people with low self-esteem around, who have to put down others. However, *you* have the choice not to take it personally. You *know* that you're smart but human, and thus you make occasional mistakes that do not detract from your basic smartness.

Methodological Advice, Cont'd

Believe in yourself.

Have confidence in your results.

Beware of university deadlines.

Know when you're done.

Methodological Advice, Cont'd

Tell your advisor that you are done when you are done; don't wait to be told when you are done.

If you cannot tell when you are done, you do not deserve the Ph.D. because you will not be able to know when to stop your future research to publish.

Methodological Advice, Cont’d

If I am not for myself, who will be?
If I am only for myself, what am I?
If not now, when?
—The Ethics of the Fathers

You gotta really really want to get this Ph.D. because there’s so much s--t work involved that it’s not worth it otherwise.

It is as much a tale of perseverance as it is of creativity, knowledge, and work.

Methodological Advice, Cont’d

For advisees in North America: Act as your advisor’s equal, including telling him or her that he or she is wrong. Your advisor will appreciate the chutzpah, unless he or she is not from North America.

For advisees elsewhere: Act as your advisor’s assistant, but you still must inform the advisor when he or she is wrong, but very gently! Your advisor will appreciate the respect, unless he or she is from North America.

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