How to start research and how to present it?

Peter Kondor

Budapest, CEU, 2010
Introduction

- What is research?
- How to start?
- How to present it?
- How to make it a paper?
• The main purpose of workshop to provide help to learn the answers
• Most of the ”rules”
  • will seem obvious now
  • still many of you will fail to follow when present
  • because it is not easy...
There are many popular how-to-s about research/ writing papers/presenting of unequal quality


- all available from Attila
What is research?

- figuring out stories, mechanisms about the economy which should be
  - original
    - prove by relation to existing structure
  - logically precise
    - any logically consistent story can be mathematically formulated: role of assumptions, chain of logic
  - consistent with data
- papers → peer review process (several revisions) → best papers into best journals → some gets forgotten, some gets challenged by other papers → if idea survives: textbooks
- process can take 5-10 years or decades
- each (surviving) paper is a brick in the structure
Introduction

What is research?

How to start?

How to present?

How to turn it to a paper?

Conclusion
An illustrated guide to a PhD (by Matt Might)

Figure: Imagine a circle that contains all of human knowledge
Figure: By the time you finish elementary school, you know a little
An illustrated guide to a PhD (by Matt Might)

Figure: By the time you finish high school, you know a bit more
Figure: With a bachelor’s degree, you gain a specialty
An illustrated guide to a PhD (by Matt Might)

Figure: A master’s degree deepens that specialty
An illustrated guide to a PhD (by Matt Might)

Figure: Reading research papers takes you to the edge of human knowledge.
An illustrated guide to a PhD (by Matt Might)

Figure: Once you’re at the boundary, you focus
An illustrated guide to a PhD (by Matt Might)

Figure: You push at the boundary for a few years
Figure: Until one day, the boundary gives way
Figure: And, that dent you’ve made is called a Ph.D.
An illustrated guide to a PhD (by Matt Might)

Figure: Of course, the world looks different to you now
An illustrated guide to a PhD (by Matt Might)

Figure: So, don’t forget the bigger picture
How to start?

1. Find your topic
2. Iterate: read, think & work, throw away, read, think & work, present, read, think, throw away, read
3. When your results are sound, you write up the paper
How to find your topic?

- Do not wait for the "Big idea" (It will not come.)
- Do not expect your advisor/professors to give you one (Might, but most probably won’t.)
- Do not try to solve the broad questions ("we need models unifying finance and macro/without rational expectations" is not a topic)
- If it is in the area of one of the resident faculty: an advantage
• At the end you want to find something
  • which (at least) you are really excited about
  • which surprises you/others (”pushes their priors”)
  • which gives you convincing answers to the two questions you will be always asked:
    • ”Why should we care?”
    • ”Is it new?”
  • which you think ”If it proceeds well, I could hope to have it accepted at a top journal”
    • Most probably, it will not be, but if there is no hope at the start, why to bother
    • Summers’ Law: ”it takes just as much time to write an unimportant paper as an important one.”
• Check what the young starts (untenured and just-tenured faculty in top 10 US schools) are doing
• Follow the citations
• use "Google scholar"
  • to find who cites a given paper
  • to find out what has been done
• of published work, focus on new papers in top journals (AER, JPE, QJE, ReStud, Econ, JME, JF, JET, etc), they probably give you a nice review of the state of the art
• go to seminars!
• if you have a tiny idea:
  • start to work on it
  • play with a model/ play with the data
  • talk to people about it (advisor, fellow students, visitors etc.)
  • try to nail it down in the simplest possible way
  • do not try to make it "realistic", you can add stuff later
  • when you stuck, read some more
• You might not realize, but you have very little time
  • typical PhDs in the world finish 3 (-4) years after(!) finishing course work
  • they do not do anything else (except of little TA,RA)
• so start to work on it as soon as you can
• when you have your first results: time to present...
• First: what is the purpose of this Workshop?
  1. Feedback
  2. helps you to understand better what you are doing
  3. deadline: makes you work
  4. learn how the profession works

• Why to attend even if it is not your area?
  • best ideas comes from other areas
  • you are a researcher: learning is fun
  • you provide a service which you will get back when you present

• Be aware: if the audience leaves unhappy, you have a problem
  • If they do not understand, it is your fault
  • they have to think ”I have
How to present? (following D. Cox)

- The most important part of the seminar (and the paper) is the beginning
- Follow the "Big Five"
  1. Tell people your research question immediately.
  2. Justify its importance.
  3. Spell out the deficiencies in previous work.
  4. Explain what you are doing that’s better.
  5. Summarize your results right up front.
- +1: do it all in not more than 5-8 minutes (max 1 slide each)
- around the 3rd slide we should exactly know what you are up to
1. what is the question?

- 25 words or less
- should have a ? at the end (rules out “questions” like “The relationship between rational expectations, behavioral economics, and New Keynesian macro”)
- do not start to explain complicated stuff before you told why we have to understand it
"My paper addresses the following question: Why do real-business-cycle models do such a bad job of fitting the data? Could part of the reason have to do with their assumptions about the labor market? Most of these models require that the labor market be governed by supply and demand that adjusts instantly, but in the real world has lots of labor contracts, which don’t react so fast. I want to see if these contracts are important."
2. Why should we care?

- Why it is an important question? Perhaps:
  - A stylized fact not explained by models
  - the data was bad
  - there are important consequences to other areas
  - it implies that economic policy should be the opposite than what it is
  - etc...
3. What do the others did (or what they didn’t do)?

- 1 slide max! We do not care that much about others’ work, we want to hear about yours.
- You do not have to explain all the details, just tell us what they missed.
- Show the gap!
- Say it in a way we can understand at this point. Spare the details. (You can come back to it later)
“Most real business cycle models treat the labor market like the market for winter wheat – a frictionless spot market that always clears. Unfortunately, these models ignore the fact that the labor market is often characterized by long-term contracts that adjust very slowly. Further, these models often make the unrealistic assumption that people can easily borrow against their future income. But we know that many people have difficulty doing this. These assumptions can prove to be quite restrictive and can lead to odd predictions, like dramatically fluctuating real wages.”
4. How you do it instead? Why is it cool?

- 1 slide max! We do not care that much about others’ work, we want to hear about yours.
- You do not have to explain all the details, just tell us what they missed.
- Say it in a way we can understand at this point. Spare the details. (You can come back to it later.)
"I’m building a real business cycle model that explicitly recognizes the existence of long-term labor contracts.”
5. What is the result? (take away)

- There should be 1 main result
  - 1 simple sentence
- There might be some more extra results
- Draft out how you do it
- at this point we should exactly now what we will see (No surprises!) and why it will be good for us
“Incorporating labor contracts into a standard business cycle dramatically improves the match between the model’s simulations and actual data, especially for labor market indicators. Simulated wages and hours of work oscillate at about exactly the right magnitude and direction. But the model’s not perfect. In particular, it doesn’t do a very good job at predicting profits, and I am currently exploring ways to fix this problem.”
How to turn it to a paper?

- Most of the (early stages of) research is writing many-many pages of notes
  - results
  - regressions
  - explanations
- Writing is the last step
- If you had presented and it went well, slides are a good start
- Rules are similar: make people understand your stuff with the least effort possible
- More on this another time...
Conclusion

- This workshop is for you
- Research and presenting research is learning-by-doing
- 10 % inspiration 90 % perspiration
- hope you will have fun