

Helping Graduate Students to Realize their Potential in Research

Student Advisor Match, Path to a Successful
Career

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The Technology

Student's surplus (thesis, career) is

$$y_s = f(C_s, E_s, C_m, E_m, \text{Topic}, \text{Luck}) - E_s;$$

C_s, C_m = Student, Mentor characteristics;

E_s, E_m = Student, Mentor effort.

Mentor surplus is

$$y_m = G[f(C_s, E_s, C_m, E_m, \text{Topic}, \text{Luck})] - E_m.$$

Two stages

- Stage I: Here, student and mentor match and topic is chosen. Often, there are really two sub-stages here: first there is matching and only then is the topic chosen. In reality, students will be drawn to a mentor by likely topic or technique
- Stage II: Then efforts are made. Getting stage I right can be critical to ensure efficient (be it high or low, but likely high) efforts, surpluses

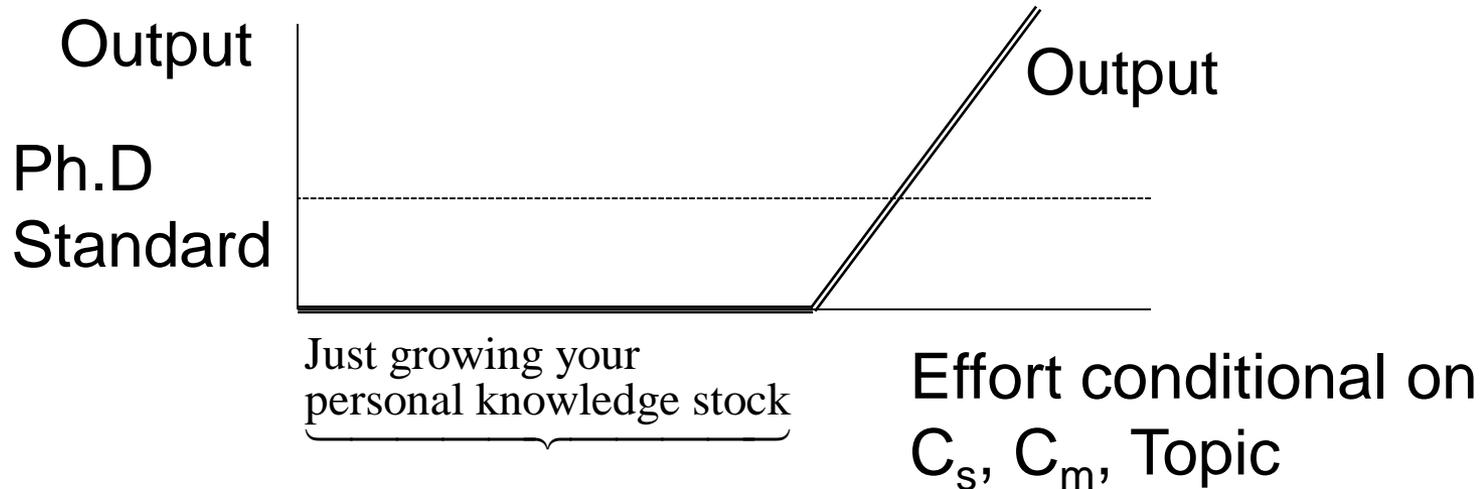
Stage II

- Stage I is the charge of this presentation, but that is preparation for making sure stage II goes right. So comments are in order about Stage II
- Mentor needs to provide
 - Candid feedback,
 - Positive insights on how to overcome roadblocks
- Suggestions should be
 - conditioned on C_s and thesis history
 - given openly, encouraging discussion/ feedback
- Luck is best managed by 2-way communication

How Stages Interact

- Not always true that high effort will be the ex-ante expected surplus maximizing solution. But the set-up is generally such that a student had better work hard and have an engaged mentor
- Failure to achieve Ph.D can mean limited recognition for 3-6 years work
- Evaluation of Ph.D work is on contribution to humanity's knowledge, not effort or accumulation of personal knowledge

How Stages Interact, Cont'd



- Whether E_s and E_m likely complement isn't easy to ascertain
- Realistically, mentors are more likely to be motivated to get a student near Ph.D standard up to it, or one well above it into print

Matching, Consequences for Stage II

- Students not reaching for standard are a time sink
- Those well above it may need little help
- Like old soldiers, Ph.D candidates often fade away. They get signals or know themselves they are not ready to defend and become discouraged
- That is often because E_s and E_m interact in downward spiral given C_s , C_m , and topic
- Matching and topic can make the difference
 - between ‘didn’t finish’ and ‘squeeze by,’ and
 - between ‘squeeze by’ and ‘excel’

Getting the Match Right

- What should a student look for in a mentor?
Depends on preferences/goals. Student needs to take stock of C_s and motives. Is motivation due to
 - topic
 - methods
 - gearing up for a specific career, what?
 - learning how to add to knowledge stock
 - likely source of funds
- Probably some of all. Topics, methods, and money come and go. Rigor and sense for what is important endure

Generalization about Specialization

- Specializing in a method or topic can be very rewarding. Tenure criteria demand candidate has attained or will likely attain international prominence
- But it is risky. Need to adapt as interesting issues are satisfactorily addressed. Good to have technical base and professional growth perspective to adapt
- Look for Ph.D program, tools and mentors that establish base for later adaptation and growth. Within limits, a mentor should encourage method acquisition to underpin sustainable academic career

Caution on Methods

- Methods are for applying to arrive at insights
- Someone strong on methods but weak on what to do with them can be an excellent committee member, but may not be a good mentor
- BUT,
- Someone dated in methods may not know what tools are most appropriate or may have you waste precious time using poorly chosen tools

Rounding or Specialization

- Do you think you need a mentor that will help solidify weaknesses, or grow your strengths?
- Post-graduation, teams can shore up weaknesses BUT
- Teams can be transactions costly, and you may be unlucky in teaming up with the wrong person
- Premium placed on some solo work early in academic career

Teams

- Lazear (May AER, 2004) sees
 - entrepreneur and team manager income as determined by least ability over a task set, technical, finance, personnel etc.
 - But team member income is determined by the highest ability over a task set
 - MBA entrepreneurs take a very different set of classes than those seeking to be team members
- Do you like collaborating?
- Do you want to be self-contained entrepreneur, team manager, or specialist team member?

Test run

- Talk to senior or past graduate students. Listen not just to up-down opinion but to professor's approach. What suits one student may not suit another
- If you feel up to it, go for 'demanding' over 'very nice'
- Having seen a possible match, what to do? See how it might work. Take a class with potential mentor? Complete a summer project?
- When time is right, meet with professor
- If professor shows no more than a passing interest in learning about your interests, goals, aptitudes, then RUN AWAY

Importance of Mentor Interest Signal

- Mentors need to get to know perhaps uncharted aspects of a student's characteristics to see what student might be good at
- And later: worthwhile research is hard. Studying distilled, packaged wisdom is comparatively easy
- Things will go wrong, leads will turn up empty, data will be too noisy, and so on. The mentor will need to sense what is wrong and what this student can bring to the table to bring forth insight

Opportunity to Grow

- Thesis stage is intended as opportunity to learn how to realize your potential as an independent thinker
- Beware 'mentors' who
 - Dictate
 - do not expect student to think hard about a problem
 - do not explain line of reasoning
 - do not manifest independence and personal curiosity, or foster these traits

Specific Issues

- Importance of advisor choice? Often very, often not at all. But there is self-selection so correlations may have been there to start with
- Network issues and bias: Undeniably networks matter. Academics is full of subjectivity, even in hard sciences. Also full of good and bad luck. With luck things may sort out in 10 years, if you stick it that long. Institutions intent on improving seek to root subjectivity out. Wish I could be more positive
- Access to resources at better schools: It's true and it matters. No coincidence that better institutions tend to be more meritocratic

Sum Up

- Take stock of own characteristics and interests
- No one magic formula in jobs involving creativity. Each must find own way, and take intellectual risks along the way. Mentors have limited influence here
- Seek mentors who listen and are interested in helping growth
- There is a partial substitute for direct mentoring, YOU
 - Listen, reflect, adapt
 - Take bad luck as it comes, study but don't dwell on it
 - Look around, remember economists are the 'worldly philosophers .' That's where fun and value added is