

A Traveller's Guide to the PhD

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ICDAR 2015 Doctoral Consortium

Nancy, France
August 23, 2015

“The Name of the Game”

... or: *What does “PhD” actually stand for?*

- ▶ Academic degree: “doctorate”
- ▶ “PhD” or “Ph.D.” $\hat{=}$ Doctor of Philosophy
(lat. *philosophiae doctor*)
[most academic fields traditionally known as “philosophy”]
- ▶ On a business card: “John Smith, PhD”
In a letter: ” Dr. John Smith”
- ▶ In Germany: “Dr. Max Mustermann” or, more specifically,
“Dr. rer. nat. Max Mustermann”, “Dr. jur. ...”, “Dr. phil. ...”, ...
“Dr.-Ing. Gernot A. Fink”

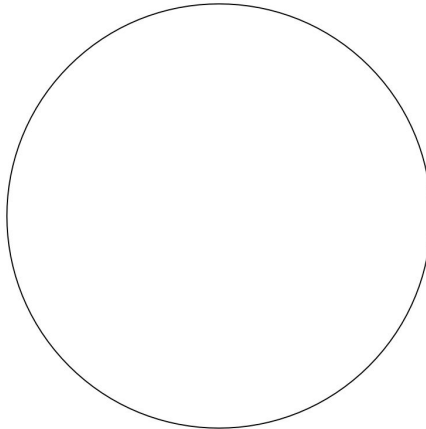


Scope

(from Matt Might's "The illustrated Guide to a Ph.D.")

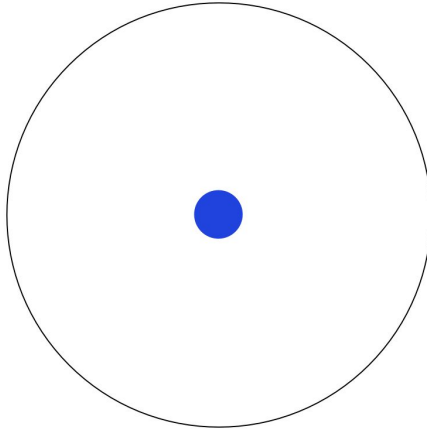
Scope

“Imagine a circle that contains all of human knowledge:”



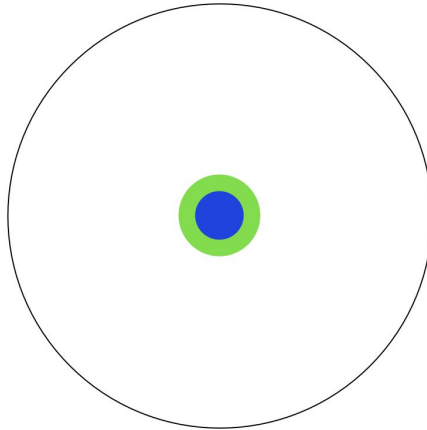
Scope

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



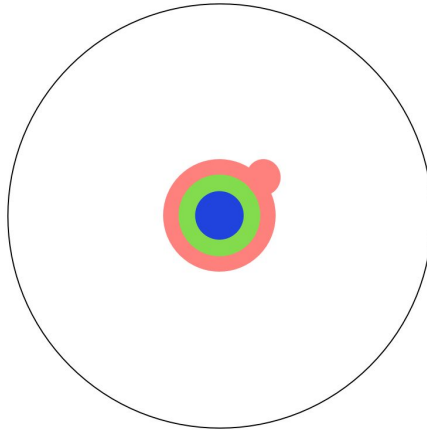
Scope

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



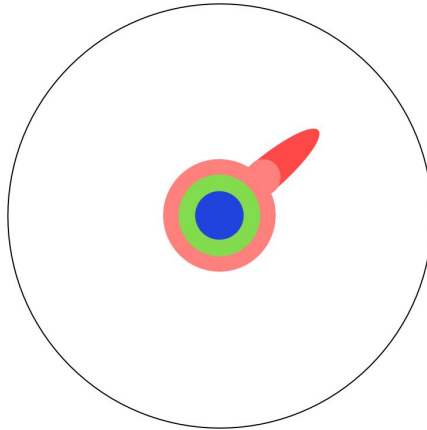
Scope

“With a bachelor’s degree, you gain a specialty:”



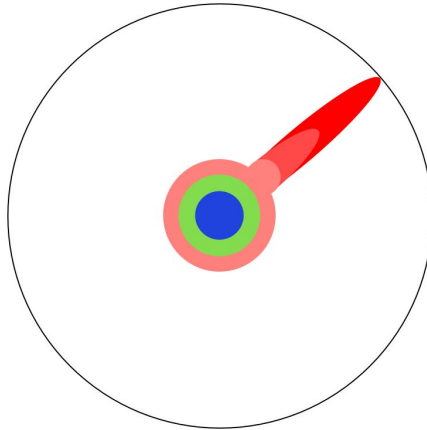
Scope

“A master’s degree deepens that specialty:”



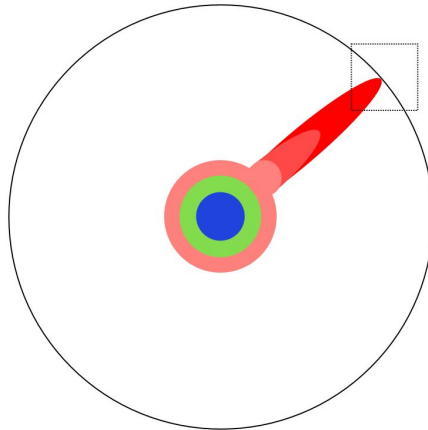
Scope

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



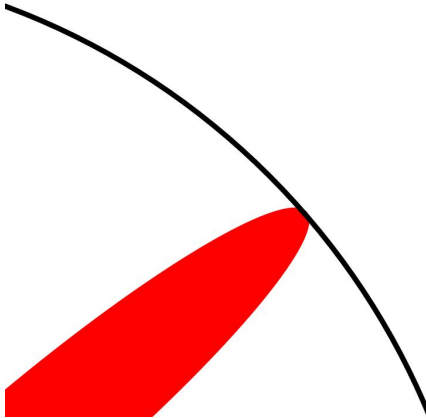
Scope

“Once you’re at the boundary, you focus:”



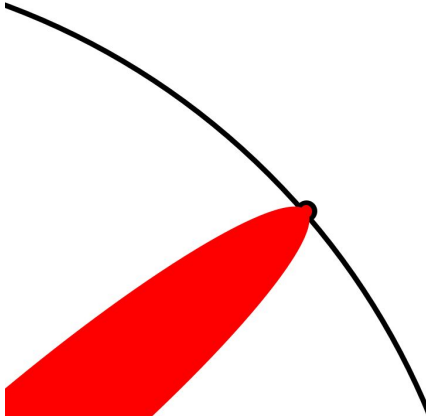
Scope

"You push at the boundary for a few years:"



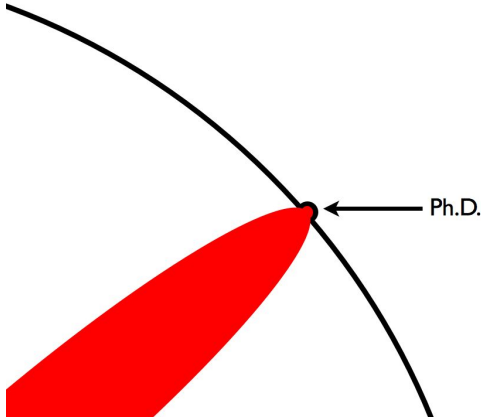
Scope

“Until one day, the boundary gives way:”



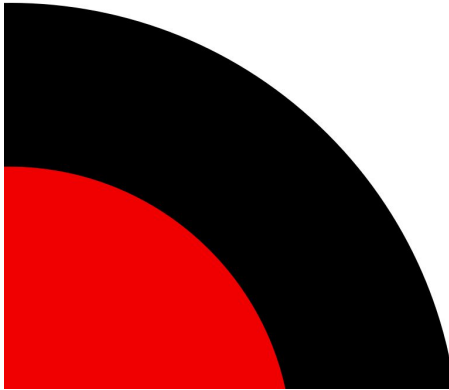
Scope

“And, that dent you’ve made is called a Ph.D.:”



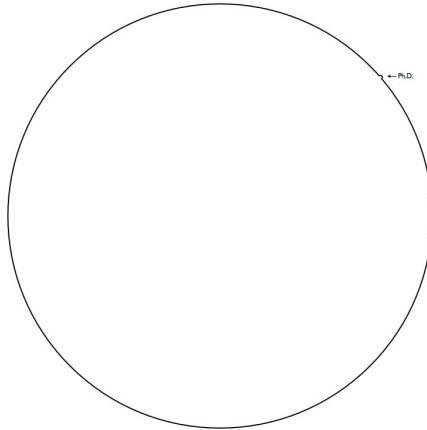
Scope

“Of course, the world looks different to you now:”



Scope

“So, don’t forget the bigger picture:”



Scope: Recommendations

- ▶ Know the state-of-the-art!
- ▶ Define your field in relation to the current research lines pursued in the broader research community!
- ▶ Others should be able to learn something from your dissertation!

“The world does not need mediocre dissertations that sit on a shelf gathering dust.”

Daniel P. Lopresti

- ▶ A good dissertation should propose **new ideas** or **methods**!
- ⇒ Avoid just tweaking existing solutions!
... which might happen in the context of projects

Note: *Your supervisor can help you with all of this!*

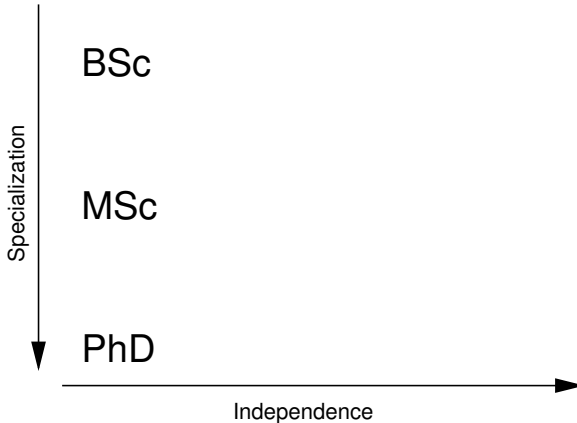
Level of Independence

... or the German "Doktor-Ingenieur" (Dr.-Ing.) versus
the Anglo-American PhD



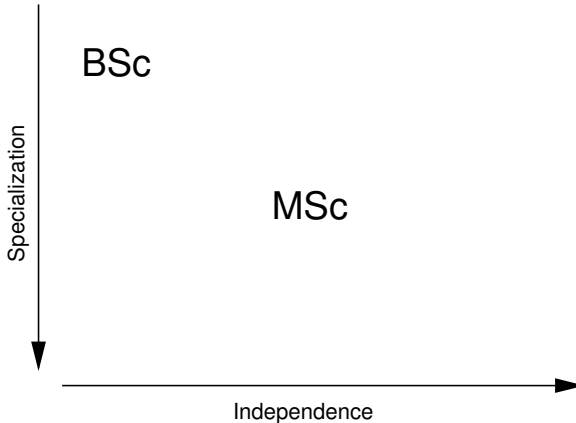
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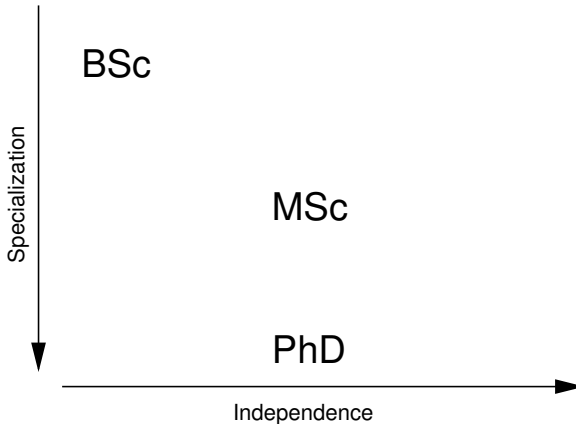
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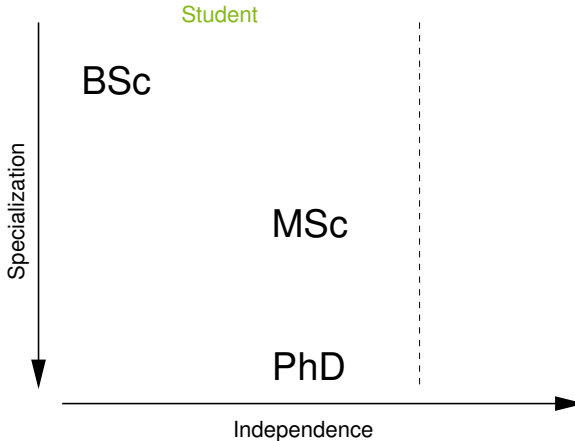
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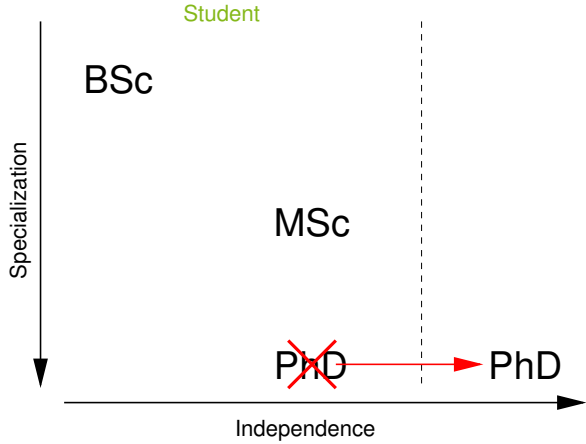
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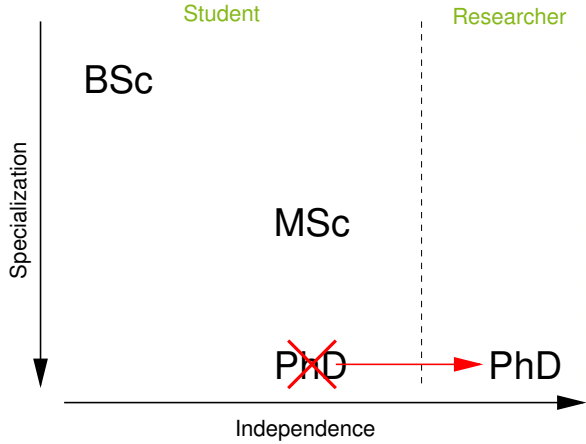
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Some Remarks on Publishing

Your publication(s):

- ▶ Your PhD thesis has to be published - but ...
 - ▶ You should publish (on conferences / in journals) before!
 - ▶ Recognition of your publications will (hopefully) tell you something about how the community values your work.
- ▶ The number of publications should not be primary optimization criterion!
- ▶ Avoid defining “least publishable units”!
- ▶ Incremental publishing is ok if increments are “noticeable”.

Some Remarks on Publishing II

Where to publish?

- ▶ A viable (and accepted!) publication strategy:
 - ▶ Start on workshops!
 - ▶ Continue with conferences!
 - ▶ Submit mature / extended manuscripts to journals!
- ▶ Avoid "conference hopping" – you won't get in touch with the community!
- ▶ Don't pick conferences based on acceptance probability or availability of beaches etc.!
- ▶ Accept review processes as random experiments - a single outcome might tell you almost nothing!

Some Remarks on Publishing III

Your publication(s) related to others':

- ▶ Give credit!
(i.e., acknowledge the work / achievements of others)
- ▶ Authorship comes with responsibility: Be honest wrt. contributions of your (potential) co-authors!
- ▶ Join forces with your colleagues in the lab, in order to:
 - ▶ Discuss your ideas / problems
 - ▶ Share methods and tools
 - ▶ Write joint publications

Note: *In technical fields it's mostly about team work!*

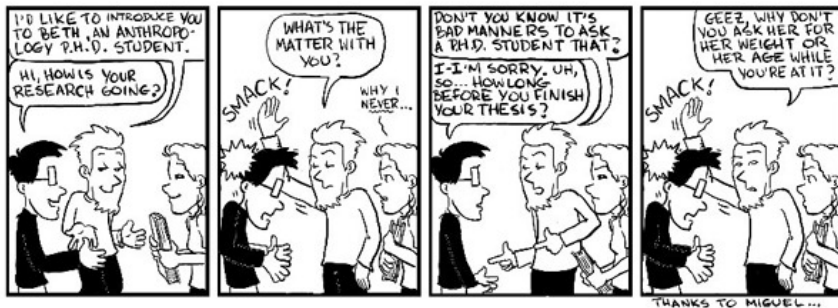
Results Matter!

- ▶ Use well recognized benchmarks (if possible)!
Alternative: Publish your data / benchmark (e.g. via TC-11)!
- ▶ Use hard benchmarks!
Note: *When error rates vanish (e.g. for MNIST), benchmarks become useless!*
- ▶ Your results should be reproducible by others!
 - ⇒ Clearly describe your method(s) *on the technical level!*
 - 🛑 Don't obscure important aspects of your approach!
(e.g., critical meta-parameters or design decisions)
- ▶ **Never ever falsify data!**

Life Beyond the PhD

- ▶ There is **professional** life *after* the PhD ...
 - ▶ In academia: The PhD will be your “admission ticket”.
 - ▶ In industry:
 - ▶ Don't expect *direct* monetary “reward” for your PhD!
 - ▶ Don't expect to continue working in the field of your PhD!
- ⇒ **Clarify early which option is right for you!**
 - ... with your supervisor / colleagues / mentors
- ▶ There is **private** life *in parallel* to the PhD!
 - ▶ Don't forget about your family, spouse, friends, ...

In Case You Need Some Cheering-up:



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All the Best for Your PhD Research!