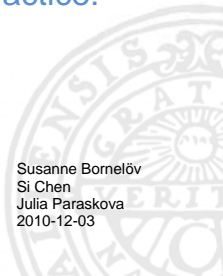




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## Good research practice: What is it?

Susanne Bornelöv  
Si Chen  
Julia Paraskova  
2010-12-03



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## What is research?

- The value of research
  - As an *instrument* to solve a problem
  - Research *has its own right*
  - The *process* may be of value in itself
- Different types of research
  - Create of test hypotheses
  - Describe, analyse of interpret data
  - Quantitative or qualitative studies
  - Single-handed or in groups



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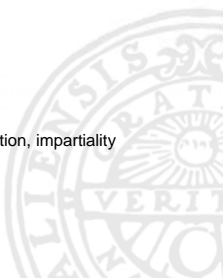
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## Moral norms in research

- The CUDOS norms
  - Formulated by Robert Merton in 1940s
  - A moral consensus in science
- Communism/communalism
- Universalism
- Disinterestedness
- Organized Scepticism
- The authors suggest a set of keywords
  - Honesty, openness, orderliness, consideration, impartiality



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## Planning research

A researcher should:

- Believe in what he or she is doing
- Be able to switch or even end research on ethical grounds
- May not end a project because he or she "feels like it"
- Describe the project in advance



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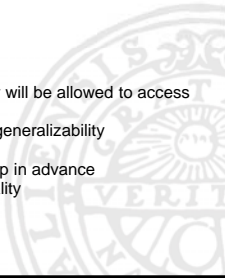
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## Problems in research

- Choice of methods
  - Minimize the harm
  - Scientific value and benefits weighted against harm
- Different methods
  - Method-driven research groups
- Data handling
  - Storage
  - Availability
    - Never promise that no other researcher will be allowed to access the data
- Perform a fair estimation of error source and generalizability
- Collaboration
  - Discuss division of work and first authorship in advance
  - Make changes to the plan according to reality



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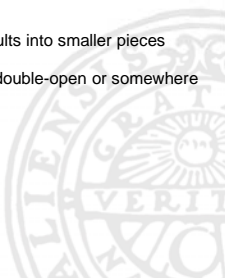
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## Publishing research

- Results should be published
- Give credits to the right people (funding, ideas)
- Clearly describe the methods and statistics
- Handle the media correctly
- Avoid duplicate publishing and/or dividing results into smaller pieces
- Co-authorship for the right persons
- Review process: should it be double-blind or double-open or somewhere in between?



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## Research misconduct

- Theft of other ideas
- Falsification, manipulation
- Plagiarism
- Examples of research misconduct
  - Lying to funding bodies
  - Exaggeration of qualifications
  - Duplicate publications
  - Sexual harassment
  - Sabotage of colleagues' work




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## Research misconduct

- Deviations from good research practice
  - Carelessness
  - Incompetence
  - Rushed work
  - Poor work
- Prevention
  - Other criteria for merits
    - Ten best publications instead of all
  - Involve external experts in recruitment and allocation of grants
  - Course in research ethics
  - Responsibility of supervisor
  - Avoid putting more press on researchers




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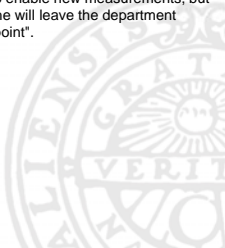


## Example of problem

- One interesting example from the book, modified:

A PhD student involved in a collaborative project with you. He is to defend his thesis in 6 months, when the funding for his project is finished. You discover that in order to finish in time, he needs to publish his last article (an article in which you noticed a serious error). You offer the student a further year on a research grant to enable new measurements, but he insists on completing his PhD as planned. Otherwise he will leave the department without a doctorate, depriving the department of a "PhD point".

How do you handle the problem?




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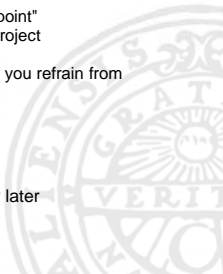
## Suggestion for solution

A situation with a no win outcome (or partial loss)

- You finish the project yourself
  - + the article gets published
  - the department loses money and the "PhD point"
- You let the student finish with an error in the project
  - + the department gets the "PhD point"
  - you are ashamed to publish bad results, so you refrain from publication

A good solution?

- convince the student to correct the error
- publish good results
- get the "PhD point" and the money one year later



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