What a PhD is/is not ++

All models are wrong.
Some are useful!

George Box (1979)

Brian Fitzgerald
Frederick A Krehbiel II Chair in Innovation in Global Business & Technology
Lero – Irish Software Engineering Research Centre
University of Limerick, IRELAND

What a PhD Thesis is

- A Contribution to Knowledge

- Identification of 'relevant' research topic

- Investigation and integration of literature

- Identification of 'gap'

- Selection of valid research method

- Analysis and presentation of results

- 'Justifiable' conclusions

- NB: Contribution can be in the process as well as the findings

A Useful Analogy?

- George Kelly's description of play-writing

- Act I – I get my man up a tree

- Act II – I throw stones at him

- Act III – I get him down again

What a PhD Thesis is also

- A Fake!

- Retrofitted account

- Yes, but that's OK
  - Couldn't read it otherwise

- Don't break the rules until you've learned them

- And if you do break the rules, be prepared to justify

What a PhD Thesis is Not…

- …one's life's work – start of academic career (generally)

- …ever completed – just abandoned

- …a major advance in knowledge - not credible (stand on shoulders of others, not their feet)

- …journalism

$$\text{Number of great new ideas} = \frac{100}{\text{page count}}$$

The Thesis Proposal

- Rigorously defensible statement of research issue

- Structure: questions it should answer

- **What** is to be done: research topic/objective

- **Why** should it be done: 'relevance' of research

- **What else** has been done: prior research & lit. review

- **How** is it to be done: research approach

- **What is it likely to lead to**: potential contribution

- **When**: plan of research with priorities, milestones etc.

- Reuse: may be incorporated into actual thesis

Reading Strategy

- Identify research topic & bound it

- Papers generally finish with identification of further research

- Reading necessary but not sufficient: must analyse/classify

- Must own area--bibliography not a shopping list

- Should know more specific detail than supervisor in 6 months

Reading Strategy

- How much is sufficient?

- Too little reading causes problems
  - Hang ideas on an inadequate framework

- But if we want to learn anything, we mustn't try to learn everything
  - 'Inch-deep, mile-wide' phenomenon
  - AAD (Article Acquisition Deadlock)

- Enough to achieve closure - recognise most references

- Can spot misinterpretations in 'bad' papers

Reading Strategy

- Some caveats

- Photocopying/downloading is **not** synonymous with reading
  - Osmosis only happens in biology!

- Save bibliographic reference details: nuggets without source are inadmissible

Writing Strategy

- Inextricably linked to reading – *rem tene, verba sequentur*

- Thesis has to look 'professional'
  - Table-of-Contents generation, Figure/Table creation, Widow/Orphan control, Hanging margins, Style templates
  - Grammar, punctuation, clarity of expression taken for granted and don't distract from focus on content

Writing Strategy

- Avoid sensationalism--no emotive expressions

  "The struggle between the blood-sucking Bill Gates and his well evil Micro$oft Empire ruthlessly trying to strangle Linus Torvalds and Linux is reminiscent of the biblical David v. Goliath (and we all know how that finished). Go Linus. Nice one!"

Writing Strategy

- Terminology – 'jargon' unavoidable

  - *Anyone who calls a spade a spade should be forced to use one (Oscar Wilde)*

- Dictionary definition not usually enough--triangulate to get meaning in context

Research Method

- Unexpectedly difficult section often

- Show that you've considered this carefully given the literature gap and research objective

- *Research is about answering questions, not following styles"* (Dainty, 1983)

The Research Dilemma

- Often seeking to simultaneously maximise:

- Generalisability of evidence over populations of *actors* (A)

- Precise measurement & control of *behaviour* of variables (B)

- Realism of relevant *context* (C)

- Impossible!
  - Increasing B (e.g. lab experiment) intrudes on situation and reduces C
  - Increasing C reduces B and also reduces A

PhD as a collection of papers

- Very useful model –
  - Who reads a monograph?
  - Some peer review validation before *viva voce* defence

- But danger of perception that publications now exhausted!

- Cover chapter(s) very important
  - background to topic selection
  - research method justification
  - overall findings and conclusions

Industry-Based PhD Candidates

- Will become more common

- Advantages
    - Cultural insider – plausibility filter
    - Great access to research context (usually)
    - Familiar with project management
    - Unique contribution to organisation

- Disadvantages:
    - Isolation
    - Balancing with everyday work and family demands

Industry-Based PhD Candidates

- Possible CSFs
  - Organisation support (time off)
  - Based in own work context
  - Build into personal work plan

General Suggestions

- Manage your supervisor

- Researchers are profoundly egocentric

- Be proactive: make **and keep** appointments

- Identify changes in versions & indicate how you've responded to suggestions

General Suggestions

- Research objective will probably change but should always fit on postcard
  - Indicator of progress

- Help from unlikely quarters: try explaining your research to a lay-person
  - Forces discipline & crystallisation

- Seize the opportunity to present!

Chekhov's Gun v. Fitzgerald's Gnu

- Chekhov's Gun
  A short story has no beginning and no end, but if a gun is hanging on the wall on the first page, then it has to go off before the end

- Fitzgerald's Gnu
  A thesis has a definite structure (research topic, literature review, research method and findings – probably not written in that order), and if a gnu appears in the findings, then it has to be anticipated in the literature review

Further Readings

- Caplan, Paula J. (1993) *Lifting a Ton of Feathers: A Woman's Guide for Surviving in the Academic World.* Toronto; Buffalo: University of Toronto Press.

- Feibelman, Peter J. (1993) *A Ph.D. Is Not Enough! A Guide to Survival in Science.* Reading, Massachusetts: Perseus Books.

- March, S. and Smith, G. (1995). "Design and Natural Science Research on Information Technology." *Decision Support Systems* 15 (1995): 251 - 266.

- Peters, Robert L. (1997) *Getting What You Came For: The Smart Student's Guide to Earning a Master's or a Ph.D,* Farrar Straus & Giroux.

- Sternberg, David Joel (1981) *How to Complete and Survive a Doctoral Dissertation.* New York: St. Martin's Press.

- Toth, Emily (1997) *Ms. Mentor's Impeccable Advice for Women in Academia.* Philadelphia: University of Pennsylvania Press

Discussion Questions

- Based on the Davis paper, identify
  - Your doctoral program assumptions
  - Your motivations for a doctorate
  - Advising styles you face
  - Your needs for advice and supervision

- Can a professor supervise all research topics?

- Attendance at doctoral consortia?

Homework

- Using Fitzgerald's rough guide, prepare a PhD proposal (3 slides max) for your work