

The PhD Psyche and Process: A Guide for Newcomers to Academic Research

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- Part A: The PhD Psyche
 - What is a PhD? (as a degree, as an objective)
 - Why start a PhD?
 - Differences from BSc/MSc studies
 - Common worries of PhD students
 - Psychological Aspects
 - The student-supervisor relationship
 - How to manage your supervisor
 - How NOT to get a PhD

- Part B: The PhD Process
 - Characteristics of Research
 - An Archetypal PhD Thesis Form
 - How to conduct the empirical research
 - Writing up your work
 - Presenting your work
 - Formal matters: entering, while in, exiting
 - Further readings

Part B

The PhD Process

How to do RESEARCH



- What is research?
 - Finding out something we don't know?
- What vs. Why
 - What is the profile of people that react better to the AZT cocktail of anti-HIV drugs?
 - Why do young women that live in Nebraska and their surname starts from 'K' react better?
- Research goes beyond Description
 - It looks for explanations, relationships, predictions, generalizations, theories
- Research is Cautious but Aggressive
 - Careful definition of terms
 - Unbiased collection of information
 - Meticulous Treatment of data
 - Careful Argumentation

Characteristics of good research



- Based on an open system of thought
 - It's not about finding answers; It's about asking right questions
 - Continual testing, review, and criticism for its own sake is a normal way that collective knowledge develops
 - Avoid aphorisms!
- Based on Critical Examination of Data
 - Understanding vs. acting (we're not managers!)
 - Avoid stereotypes!
- Based on Generalizations
 - Data – theory – testing – confidence (or whatever other epistemological stance you want to adopt)
 - Generalizations have limits that **MUST** be stated
 - 'All generalizations are dangerous – including this one' (A. Dumas)

Conducting Empirical Research (1)



- The inductive (Newtonian) vs. the hypothetico-deductive (Popperian) epistemological paradigms
- The myth of the unbiased observation
- Forming a hypothesis
 - *'Hypotheses are imaginative and inspirational in character; they are adventures of the mind' (Medawar 1964)*
 - Hypotheses will dictate the choice of methodologies employed, experiments performed, and observations made
 - Don't worry if you have imagined your hypothesis; worry only if you haven't rigorously tested it

Conducting Empirical Research (2)



- The myth of the scientific method
 - Even in hypothetico-deductivism, the psychological process is very much different from the logical process
 - You may think of the logical process as a method for *writing up* your research, rather than a method of conducting it.
 - Read *The Double Helix*, Watson, 1968!

The Form of a PhD Dissertation (thesis!)



- No doctrines
 - Depends on subject, method, and time
 - However, at a high level of abstraction, certain rules of form do exist
- Background Theory
 - You must demonstrate that you possess it
 - This is done through the 'literature review'
- Focal Theory
 - It takes time to emerge/develop
 - Keep your thesis in focus at all times
- Data Theory
 - Appropriateness, relevance, reliability, and validity of your data sources and theoretical/empirical analyses
 - Unfortunately this is a common PhD failure factor...
- Contribution
 - Significance, limitations, future work openings

- How long should my thesis be?
 - As long as it needs to!
- Basic Storyline
 - Introduction (incl. Aims)
 - Literature Review
 - Method
 - Results
 - Discussion
 - Conclusions

Examples that you may know (1)



- Title:
 - Discrete Event Simulation Model Formulation Using Natural Language Understanding Systems.
- Structure:
 - Ch 1: Simulation Modelling
 - Ch 2: Introduction to Expert Systems
 - Ch 3: Empirical Research and the Expert System Approach
 - Ch 4: Theoretical Background to the First Prototype Simulation NLUS
 - Ch 5: Program Structure of the First Prototype Simulation NLUS
 - Ch 6: SPIF: A Simulation Problem Intelligent Formulator
 - Ch 7: Conclusions and Future Research
- 160 pages (+80 in 7 Appendices), 130 refs
- Doukidis, 1985, LSE

Examples that you may know (2)



- Title:
 - Dynamic Process Modelling for Business Engineering and Information Systems Evaluation
- Structure:
 - Ch 1: Introduction
 - Ch 2: Background Research Material
 - Ch 3: Case Study I: Sectoral EDI Evaluation
 - Ch 4: A Design Theory for IS Evaluation by Simulation
 - Ch 5: Case Study II: Inter-Company EDI Evaluation
 - Ch 6: Theory Evaluation and Extension
 - Ch 7: Summary and Conclusions
- 199 pages (+70 in 4 Appendices), 285 refs
- Giaglis, 1999, Brunel University

Examples that you may know (3)



- Title:
 - Stakeholder Analysis for Interorganisational Systems in Healthcare
- Structure:
 - Ch 1: Interorganisational Systems Research Issues
 - Ch 2: The Stakeholder Concept in the Strategic Management and Information Systems Literature
 - Ch 3: Research Methodology
 - Ch 4: An Interpretive Approach to Identify and Analyse Interorganisational Systems Stakeholders
 - Ch 5: Describing the Drug Use Management Domain From a Stakeholder Perspective
 - Ch 6: Instrumental and Normative Aspects of Interorganisational Information Exchange in Healthcare
 - Ch 7: Conclusions and Further Research Directions
- 248 pages (+28 in 3 Appendices), 305 refs
- Pouloudi, 1998, LSE

Examples that you may know (4)



- Title:
 - A Contingency Approach to Knowledge Acquisition: Critical Factors for Knowledge Based Systems Development.
- Structure:
 - Ch 1: Introduction
 - Ch 2: Knowledge Acquisition: A Review
 - Ch 3: Foundation of the Research
 - Ch 4: Knowledge Acquisition in Context: A Case Study
 - Ch 5: A Survey on Knowledge Acquisition Practices
 - Ch 6: Applying the Contingency Approach
 - Ch 7: Rethinking the Role of Knowledge Acquisition: Four Modalities for Analysis
- 260 pages (+46 in 1 Appendix), 240 refs
- Poylymenakou, 1995, LSE

Examples that you may know (5)



- Title:
 - Programming Paradigms as Object Classes: A Structuring Mechanism for Multiparadigm Programming.
- Structure:
 - Ch 1: Introduction
 - Ch 2: Related Work: Multiparadigm Programming
 - Ch 3: The Approach
 - Ch 4: System Design
 - Ch 5: Implementation
 - Ch 6: Critical Analysis
 - Ch 7: Future Work
 - Ch 8: Conclusions
- 300 pages (+52 in 3 Appendices), 334 refs
- Spinellis, 1994, Imperial College

Examples that you may know (6)



- Title:
 - A Usability Evaluation Technique for Retail Sites.
- Structure:
 - Ch 1: Introduction
 - Ch 2: SMEs and e-commerce: Exploratory Investigation and the Role of a Proposed Usability Evaluation Technique
 - Ch 3: Review of Usability Evaluation Techniques for Web Sites – Selection of a Technique
 - Ch 4: Candidate Usability Attributes
 - Ch 5: Development of Questionnaire for Retail sites
 - Ch 6: Establishing Validity and Reliability of the Questionnaire
 - Ch 7: Contribution and Future Research
- 211 pages (+33 in 4 Appendices), 265 refs
- Vassilopoulou, 2001, UMIST

Examples that you may know (7)



- Title:
 - Virtual Store Atmosphere in Internet Retailing: Measuring Virtual Store Layout Effects on Consumer Buying Behaviour.
- Structure:
 - Ch 1: Introduction
 - Ch 2: Background Research Material
 - Ch 3: Research Methodology
 - Ch 4: Initial Research
 - Ch 5: Developing Alternative Virtual Store Layouts
 - Ch 6: Analysis of the Laboratory Experiment Results
 - Ch 7: Conclusions and Recommendations
- 253 pages (+110 in 4 Appendices), 273 refs
- Vrehopoulos, 2001, Brunel University

- It can be the single most difficult part of your journey
 - Wason (1974) describes the procrastination and incoherence into which many doctoral candidates fall when attempting to present their results in written form
 - Baddeley (1979) has pointed out the difficulties experienced by most supervisors in the training of students' writing skills
 - Lowenthal and Wason (1977) distinguish between 'serialists' and 'holists'. They also document that some of us love it and others find it a painful experience.
- Why is that?
 - 'Written language is the means of discovery of new knowledge' (Olson 1975)
 - Many academics, authors, and poets only think when they write (Murray 1978)
 - Writing makes people think about their work in a very different way
- Solutions
 - Practice (papers, reports)!
 - Start writing from the very beginning!

Writing papers and chapters



- Publication Outlets
 - Journals
 - Conferences
 - Chapters in Edited Books
 - Other publications (e.g. trade magazines)
 - Technical Reports, White Papers
 - (Books)

Presenting your work



- ELTRUN seminars
 - Pros: Informal atmosphere, Good early feedback (even on ideas), no need to be polite!
 - Cons: Limited exposure to the academic community
- Conferences
 - Pros: Peer-reviewed system (in good conferences), opportunities for getting to know the people you cite (if chosen well)
 - Cons: Ideas must be reasonably developed
- Doctoral Symposia
 - Pros: Feedback from seniors and peers, not so formal, good fun
 - Cons: Can be indifferent if not organised well

- Entering the system
 - Position announcements (twice a year – Dec, Jun)
 - Preparing an application (and a research proposal)
 - Being accepted (or not)
 - Induction (responsibility of the host institution)
 - First steps in the work (responsibility of the supervisor)
- While in
 - The supervising committee (3 members)
 - Your responsibilities
- Exiting
 - Submitting
 - The examination committee (7 members)

Further Readings



Phillips, E.M. and Pugh, D.S. (2000) *How to Get a PhD, 3rd Edition*, Open University Press.

Kuhn, T.S. (1970) *The Structure of Scientific Revolutions*, Chicago University Press.

Popper, K. (1972) *The Logic of Scientific Discovery, 3rd Edition*, Hutchinson, London.

Watson, J.D. (1968) *The Double Helix*, Weidenfeld and Nicolson, London.

If all else fails...

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