

Resolving problems with the Foundations of PhD Education: Theoretical Perspectives in Long Thesis PhD Submissions

Dr. Terence Love

Manager
Working for E-Business Research Centre
Edith Cowan University
Joondalup, WA

Citation: Love, T. (2001). *Resolving problems with the Foundations of PhD Education: Theoretical Perspectives in Long Thesis PhD Submissions*. Paper presented at the Teaching and Learning Forum 2001, Curtin University, Perth.

Abstract

The five-chapter thesis model developed by Dr. Chad Perry has become widely accepted as an effective basis for writing successful PhD, Masters and Honours theses, research reports, and journal articles. This paper identifies a theoretical weakness in the methodological section of the model that is important for those involved in inter, multi, or cross-disciplinary study.

The paper first describes Perry's five-chapter model. The methodological aspects of the model are then reviewed as the basis for clarifying the problem and identifying ways of addressing it. The paper concludes with suggestions for modifications to Perry's five chapter model that resolve this weakness and extend the use of the model for students and staff working in complex theoretical scenarios involving different disciplines and/or domains.

Introduction

Thesis writing is widely regarded as one of the most difficult aspects of candidature for a research-based postgraduate award (Perry, 1998; Phillips & Pugh, 1992). The five chapter model of thesis writing devised by Perry (1998) has become widely established as one of the main tools for easing this difficulty (See, for example, Academy of Marketing, 2000; Kerlin, 1999; Literati Club, 2000).

This paper proposes modifications to Perry's five chapter structure to support its use in situations where a greater level of clarity or detail is needed with respect to the theoretical and methodological foundations of a research project, and to extend its use to multidisciplinary situations.

Perry's primary intentions in developing his original five-chapter model of thesis were to:

- Provide a structure to aid students in writing good-quality theses.
- Help students avoid the main problems identified by examiners that result in theses being rejected or returned for modification.
- Support students in completing their research and their thesis submission in a timely fashion - preferably close to the minimum time permitted for the award.

- Reduce attrition and improve research and educational outcomes.

Perry's five-chapter model is especially helpful because it removes much of the opacity and unnecessary complexity that disguises theoretical, epistemological and ontological inconsistencies in research. It improves research efficiency by reducing the amount of time that candidates and supervisors spend in resolving these inconsistencies. Perry's thesis writing model has also proved beneficial for writing reports, research proposals and journal articles, and offers a more consistent way of writing theses that included data from action research. The modifications presented here also offer benefits in these other uses of the five-chapter model.

Perry's model is limited because it is grounded in research methodology rather than theoretical perspective - of which methodology is a part. This paper focuses on the role of theoretical perspective in the five-chapter model, especially in relation to documents that report complex research. The author argues that the usefulness and validity of the five-chapter model is significantly improved where:

- The epistemological foundation of the model is grounded on theoretical perspective rather than methodology
- The model allows the inclusion of multiple theoretical perspectives.

Background – Perry's original 5 Chapter Model

In 1994, Perry (Perry, 1994) developed a five-chapter/section model of thesis document that offered a fast, straightforward, and well-developed process for creating successful postgraduate theses. The five chapters of Perry's thesis model are:

- **Chapter 1: Introduction.** This provides the reader with an executive summary of the PhD candidate's research. In it the researcher outlines the research problem, the research questions that need to be addressed to resolve this problem, the methods the researcher has chosen to gather data to answer the research questions, the findings, and the implications of these findings for resolving the research problem. Chapter 1 also includes the justification for the research, the definitions of terms and key concepts, and the delimitations of the research.
- **Chapter 2: Review of Literature.** In this chapter the candidate reviews the main bodies of existing knowledge and literature that relate to addressing the research problem. It is during this review that the candidate identifies the research questions that form the basis for his or her research project.
- **Chapter 3: Methodology.** In Perry's original model, this chapter is used to describe and justify the research methodology used for collecting the data to answer the candidate's research questions.
- **Chapter 4: Results.** In this chapter, the researcher lays out the data gathered via the research methodology described in chapter 3 in a form easily accessible to the reader. Any analyses presented in Chapter 4 relate only to relationships between data and the research methodology.
- **Chapter 5: Conclusions.** In this final chapter the research process is concluded. The researcher describes how the research problem is resolved through ways that the researcher's findings laid out in chapter 4 answer the research questions of Chapter 2. It is in this chapter that the contributions to knowledge, in the realm of theory, are fully developed and described. This chapter also contains a discussion of the limitations of the candidate's analysis, and suggestions for future research.

- All additional material, references, raw data and supplementary analyses are appended after these five chapters.

In this original version of the five chapter thesis model, the focus of Chapter 3 is on the methods and techniques used for data gathering and the research methodology. Where addressed at all, issues associated with *choosing research methodology* are included in Chapter 2.

Overview of Theoretical Perspectives in Research & Thesis Writing

The significance of theoretical perspective for research theses is evident perhaps most clearly in PhD research where the thesis is used as the main means of assessing the academic competence for the award of Doctor of Philosophy in most disciplines ((Biggs, 2000; Nyquist, 2000; Phillips & Pugh, 1992) . The PhD thesis records the analyses and research processes undertaken by the candidate and describes the candidate's work, providing all that is necessary and sufficient for a suitably competent researcher to replicate the research and corroborate the candidate's data, analyses, and theoretical conclusions (Biggs, 2000; Phillips & Pugh, 1992; West & Rubinstein, 1986). A substantial aspect of a thesis for a Doctor of Philosophy is the candidate's epistemologically-based analysis of the background issues that relate to the research problem, and which provide a foundation for the conclusions drawn out in the thesis. These analyses are based on material created by others that the candidate has identified as being relevant, and the theoretical standpoint or perspective from which the candidate undertakes their research (Phillips & Pugh, 1992). This latter is the focus here.

Theoretical perspectives are what, consciously or unconsciously, guide each researcher in the development of their research and thesis. Research projects and their theoretical conclusions are founded on researchers' 'worldviews', human values, theories, and data gathering methods (Flood, 1990; Franz, 1994; Popper, 1976; Reich, 1994). A theoretical perspective consists of the abstract and theoretical factors that shape the sundry decisions that a researcher makes and which determine their choice of analyses, background material, theories and research techniques (Lindsay, 1995; Sharrock & Anderson, 1986; Shipman, 1981). When a thesis is written, it is the researcher's exposition of their theoretical perspective(s) that enable readers and examiners to follow the researcher's arguments, and reach the same conclusions (Phillips & Pugh, 1992). On a larger scale, the explication of the theoretical perspective that has been used by a researcher is what enables peer researchers to replicate the research so as to strengthen confidence in the conclusions that have been drawn (Stegmuller, 1976) . Each research project and conclusions are defined by a particular combination of theoretical and praxical factors that define that research (Reich, 1994). The additional practical/praxical factors that relate to data gathering combine with the theoretical perspective to form the overall theoretical framework for the research (Love, 1998). Together, these reasons make theoretical perspectives an essential aspect of research planning, research, and thesis writing.

Research activities also depend on subjective human cognito-affective processes that interact with the assumptions that underpin researchers' use of theories and data gathering methods and techniques. Together, these issues suggest a seven-part model of research that ranges from the subjective world to the objective world via the theoretical world. The theoretical perspective that underpins research consists of the first four elements in this model below:

1. **The ontological perspective(s)** - consisting of the assumptions, beliefs and collection of human values that together form the candidate's view of what existence and reality are. In Reich's (1994) terms, this is the researcher's 'world view'.

2. **The epistemological perspective(s)** - define how the researcher's ontological perspective(s) on existence/reality relates to theory for each analysis and theoretical proposal.
3. **Theories** - the theories that lay behind, and are utilised in the researcher's analyses, research practices and conclusions.
4. **The methodological perspective(s)** - provide the assumptions that guide the researcher's choices for research methodologies and the connections to the theoretical background of the research. Methodological perspectives are the interface between the underlying theory, and the research methodology, methods and the techniques that the researcher uses in the objective world.
5. **Research methodology** - guides the researcher's choices for research methods and techniques.
6. **Research methods** - coherent processes of data gathering and analysis techniques.
7. **Data-gathering and analysis techniques** - the basic practical elements of research.

A traditional singular theoretical perspective and framework may be appropriate for researchers whose research lies wholly within a paradigm for research of the natural sciences (Lindsay, 1995), where research subjects and analyses all lie in a contiguous mathematically-mappable continuum, and do not involve any of the human or subjective considerations that are explicitly excluded from the natural science research paradigm (Crane, 1989). The argument that the natural sciences perspective - as logical positivism - is the only approach for all research that involves human considerations is now widely discredited (see, for example, Crane, 1989; Phillips, 1990; Popper, 1976). A heritage of this prior logical positivist era, however, is the relatively widespread assumption that a singular theoretical perspective is sufficient in most research, and particularly in the writing of PhD and Masters theses. This outlook is evident in guides to PhD research that promote the use of a single "epistemology", or "research methodology" and has two main weaknesses:

- The theoretical foundations of post-positivist research that involves human values and subjective considerations contain more issues than are encompassed under "epistemology" or "research methodology".
- Most PhD-level research involves more than one theoretical perspective, especially for candidates who utilise two or more approaches to data collection to "triangulate" their research.

In many research areas, researchers are required to address human subjective considerations alongside the physical properties of objects. These research foci require different theoretical perspectives, and in many cases, researchers address several theoretically different aspects of the research problem. For example, researching the designing of (say) a new communications device may involve issues relating to interpersonal collaboration, individual cognition, socio-cultural forces, technical and economic issues - each of which may be viewed from several theoretical perspectives. This requires the researcher to choose the theoretical perspectives most appropriate to the context of the research problem that they are tackling. Having decided on particular theoretical perspectives, the researcher may also decide that it is advantageous to gather data via different methodologies. For example, the collaborative arrangements for designing a communication device might be explored by combining quantitative behavioural and informatic data about collaborative activities with qualitative data drawn from semi-structured interviews with participants. These explorations involve three theoretical perspectives: one for each of the data gathering activities, and one for analysis of the combination of the two data streams.

In addition to these theoretical perspectives associated with the different facets of the research questions and data, the researcher writing the thesis must also maintain a single over-arching

theoretical perspective that shapes and guides their overall approach to addressing the research problem and writing the thesis document. In almost all cases, the main characteristic of this background theoretical perspective is that of critical analysis, but it may also include a variety of other ontological and epistemological characteristics depending on the research problem being addressed and the researcher's individual outlook. The overall validity of the research depends to a large extent on the researcher maintaining this consistent background theoretical perspective throughout their research and thesis writing, whilst also utilising the other theoretical perspectives necessary for undertaking, or writing about, various data gathering processes and analyses.

The **overarching perspective** has an hierarchical relationship with the other theoretical perspectives:

- **Single 'personal', background theoretical perspective** - aimed at research problem
- **Multiple theoretical perspectives** - needed to address ontological, epistemological and theoretical aspects of the research problem and the research questions.
- **Multiple theoretical perspectives** each associated with individual research methods and techniques used to gather data to help answer the research questions.

Regardless of how these multiple theoretical perspectives are arranged in undertaking the research, their description and justification form an essential aspect of candidate's analyses, data gathering, and derivation of research conclusions. Without this, a researcher's 'thesis' remains without adequate foundations. Researcher's that inappropriately attempt to 'shoe horn' a research project into a singular theoretical perspective are unlikely to be satisfactory, and unlikely to make a useful contribution to knowledge, because the inherent compromises increase conceptual and analytical confusion in the field.

The Modified Five-chapter Thesis Writing Model

The above analyses indicate firstly, that issues of theoretical perspective have a more significant role than they have been accorded in Perry's original five-chapter model, and, secondly, the model could be usefully extended by allowing the inclusion of multiple theoretical perspectives.

Most of these changes can be undertaken by modifications to the third chapter. The third chapter can be extended to contain the ontological, epistemological, theoretical, and methodological analyses that identify and describe the most appropriate theoretical perspectives for undertaking the research, and addressing the research questions identified in Chapter 2. Chapter 3 then also contains the researcher's descriptions of the analyses and justifications underpinning their choices of practical research processes for gathering new data to enable them to answer the research questions they have set.

For clarity, some researchers may choose, in Chapter 3 and perhaps Chapters 1 and 5, to graphically map out the structure of relationships between the chosen theoretical perspectives, and the different aspects of the research and thesis. Representing the different aspects of the foundations on which the research project is based in this way is useful because it provides a ready-made structure for writing Chapter 3 (and supports the writing of sections of Chapters 1 and 5). It is an approach that aligns well with Perry's recommendation for PhD candidates to include visual representations of the relationships between different aspects of the background knowledge in their literature review in Chapter 2. Many researchers and PhD candidates are likely to find that one or more of their research questions relate to theoretical perspectives, and the answers to these research questions naturally emerge (to be reported in Chapter 4) as a result of the analyses undertaken and reported in this modified Chapter 3.

Conclusions

The paper identifies weaknesses in Perry's five chapter thesis model, and proposes modifications to resolve these weaknesses and extend the use of the modified five chapter thesis model to more complex research scenarios.

References

Academy of Marketing. (2000). *AM2000 Academy of Marketing Doctoral Colloquium 4 July 2000 Programme*, [html document]. Academy of Marketing. Available: www.am2000.org.uk/dc.htm.

Biggs, M. (2000). *The general form of a thesis*, [Pdf document]. Available: <http://www.michaelbiggs.org.uk/lundres.pdf> .

Crane, J. A. (1989). The Problem of Valuation in Risk-Cost-Benefit Assessment of Public Policies. In E. F. Byrne & J. C. Pitt (Eds.), *Technological Transformation: Contextual and Conceptual Implications* (Vol. 5, pp. 67-79). Dordrecht: Kluwer Academic Publishers.

Flood, R. L. (1990). *Liberating Systems Theory*. New York: Plenum Press.

Franz, J. M. (1994). A critical framework for methodological research in architecture. *Design Studies* , (15 4), 443-447.

Kerlin, B. (1999). *Writing Your Thesis or Dissertation*, [html document]. Kerlin, B. Available: <http://web.pdx.edu/~kerlinb/myresearch/graded/writing.html>.

Lindsay, D. (1995). *A guide to scientific writing*. (2nd ed.). Melbourne: Longman.

Literati Club. (2000). *A structured approach to presenting thesis: notes fro students and their supervisors by Chad Perry (revised on 8.4.00)*. Literati Club. Available: <http://www.literaticlub.co.uk/writing/theses.html> [2000, .

Love, T. (1998). *Social, environmental and ethical factors in engineering design theory: a post positivist approach*. Unpublished PhD thesis, University of Western Australia, Perth.

Nyquist, J. (2000). *Promising Practices in Doctoral Education*, [online]. University of Washington. Available: <http://depts.washington.edu/envision/>.

Perry, C. (1994, February 1994). *Notes for Candidates and their Supervisors (with additions 1996)*. Paper presented at the ANZ Doctoral Consortium, University of Sydney.

Perry, C. (1998). A structured approach to presenting theses: notes for students and their supervisors. *Australasian Marketing Journal*, (6 1), 63-86.

Phillips, D. C. (1990). PostPositivist Science: Myths and Realities. In E. Guba (Ed.), *The Paradigm Dialog* . California: Sage Publications Inc.

Phillips, E. M., & Pugh, D. S. (1992). *How to get a PhD: A handbook for students and their supervisors*. Milton Keynes: Open University Press.

Popper, K. (1976). *Unended Quest*. Illinois: Open Court.

Reich, Y. (1994). Layered models of research methodologies. *Artificial Intelligence in Engineering Design and Manufacturing*, (8, 263-274).

Sharrock, W., & Anderson, B. (1986). *The Ethnomethodologists*. Chichester: Ellis Horwood Limited Publishers.

Shipman, M. D. (1981). *Limitations of Social Research*. (2nd ed.). UK: Longman Group.

Stegmuller, W. (1976). *The Structure and Dynamics of Theories*. New York: Springer-Verlag.

West, P., & Rubinstein, S. L. (1986). *The Commonsense Guide to Writing the Research Paper*. New York: MacMillan Publishing Company.