Reflections on How to be a Theoretical Researcher in Business and Management Studies

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The owl was the wisest of animals. A centipede with 99 sore feet came to him seeking advice. 'Walk for two weeks one inch above the ground; the air under your feet and the lack of pressure will cure you,' said the owl. 'How am I to do that?' asked the centipede. 'I have solved your conceptual problem, do not bother me with the trivia concerning implementation,' replied the owl.

(Shubik, 1999: 615)

ABSTRACT

This is a reflective or theoretical paper, which examines some of the ideas that underpin the practice of non-empirical or theoretical research. The paper explores different ways in which the word theory is used, defines theoretical research and describes the limits of theoretical understanding. It then discusses discourse and reflection, and proceeds to describe how empirical and theoretical research strategies differ. The paper offers a suggestion as to how to undertake theoretical research and points out how such research may be evaluated.

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INTRODUCTION

This paper discusses an approach to conducting research that relies on a non-empirical paradigm, which we will refer to as theoretical research[1]. All academic research[2] requires strong theoretical underpinning of some form. This is especially relevant to doctoral research, on which this paper focuses. For this reason we have used the term non-empirical or theoretical to describe research which predominately relies on an examination of the literature, reflection and discourse with knowledgeable members of the appropriate academic community. The authors, who have jointly some 50 years experience in supervising and examining at doctoral level, propose a practical approach to this form of research and suggest how it is possible to ensure rigorous results from such endeavours. Before addressing how to conduct theoretical research the paper clarifies the role of theory in academic studies and indicates its limitations.

The creation, development and application of theory is the backbone of academic activities. Without theory academic activity would not exist in the form that we know it. Theory informs not only academe but also the application of ideas in each field of study. It is therefore of paramount importance to understand the nature of academic theory and its purpose or role[3].

THEORY UNDERPINS ACADEMIC THINKING

Academics attempt to work in general conceptual structures that offer a wide understanding of the concepts in the discipline. For this reason academic thinking involves rooting knowledge in theoretical frameworks. Without a theoretical framework, knowledge can only be quite specific and although such knowledge can be useful in a particular set of circumstances it may have restricted application.

Theory is therefore an integral part of any academic study and even in introductory university courses the teaching of theory will play an important role. In such courses theory will often be expressed as laws, principles or theorems. An introduction to Economics may address the Law of Diminishing Marginal Returns or the Law of Demand and Supply. In Physics it may be Archimedes'

Principle, in Chemistry it may be Arrhenius' Theory and in Mathematics it may be the Binomial Theorem[4].

Little time or attention is normally given to defining the meaning of the concept of a theory or describing its nature, or even looking at what sort of limitations it may have. The term 'theory' is so deeply rooted in everyday language that it is assumed that its meaning is clear. But, like many other assumptions in academe, this is not always the case, as the notion of theory is neither obvious nor simple. When dictionaries are consulted it is revealed that there are a number of different meanings associated with the word theory and this certainly can be confusing.

DIFFERENT MEANINGS OF THE WORD 'THEORY'

Of the various different meanings of the word 'theory', listed here are a few that demonstrate the wide range of situations in which the word is used:

- A theory is a speculation – my theory is that the first horse to lead the pack in the race will very seldom finish first.
- A theory is a belief – my theory is that if you spare the rod you will spoil the child.
- A theory is a guess – my theory is that he will come later this afternoon.
- A theory is abstract reasoning – my theory demonstrates how value is associated with the perception of utility.
- A theory is a series of inter-related concepts – the concept of a black hole brings together a number of different astronomical issues and relationships.
- A theory is an explanation – Newton's Third Law of Action and Reaction explains why motor vehicles are wrecked when they collide at speed.
- A theory is an aid to comprehension – Einstein's Theory of Relativity allows us to better understand how time and space are interconnected.
- A theory is a component of a body of knowledge – Modern Architectural Theory rejects the linear structures fashionable in the 1960s.

Theory is an example of one of those words of which one has to be very careful if its meaning is to be understood.

It is the last five usages, listed above, of the word theory that are primarily used by academics. In our view a definition of theory is that:

> A theory is systematically organised knowledge applicable in a relatively wide variety of circumstances, using a system of assumptions, accepted principles and rules of procedure devised to analyse, predict or otherwise explain the nature or behaviour of a specified set of phenomena. But it is also often simply the best explanation which is available at that time.

It is sometimes argued that theory needs to deliver some degree of utility or practical application. In this respect a theory is often looked to as a means of being able to predict and thereby giving the user of the theory some degree of control (Alvesson and Sköldberg, 2001). Predictability is not a *sine qua non* and there is much useful theory which expands understanding by explaining but which is not capable of, or simply does not lend itself to, prediction. The Darwinian Theory of Evolution is a clear example of this (Darwin, 1986).

Theory may be developed by the process of induction or deduction. Whether induction or deduction is the chosen stratagem is really a function of the type of research question. In general, deduction would be used when there is an established theory to explore further and induction is used when a new theory is being developed (Remenyi et al., 1998). Deduction may be described as moving from a general concept to a specific situation, while induction involves moving from a specific situation to a more general principle (Whetten, 1989). This is well discussed by Alvesson and Sköldberg (2001).

THE LIMITS OF THEORETICAL UNDERSTANDING

It is not necessary for a theory to be a complete explanation of a phenomenon. In fact many theories are only partial explanations. The full complexity of the situation may not be apparent when the theory is being developed. Even when a theory appears to be comprehensive it

may not be able to encompass all the issues in its immediate domain. This point has been made by several philosophers of science, including Feyerabend (1993: 39) who said:

> We may start by pointing out that no single theory ever agrees with all the known facts in its domain. And the trouble is not created by rumours, or by the results of sloppy procedure. It is by experiment and measurement of the highest precision and reliability.

Feynman (1995: 2), describing the lack of comprehensiveness of our understanding or knowledge, points out:

> Each piece, or part, of the whole of nature is always merely an approximation to the complete truth, or the complete truth so far as we know it. In fact, everything we know is only some kind of approximation, because we know that we do not know all the laws as yet. Therefore, things must be learned only to be unlearned again or, more likely, to be corrected.

In effect, at any given moment our theoretical understanding of any subject is always contingent on our current level of thinking or our current cognitive capacity. Our current level of thinking is nearly always in a state of transformation or development. It is often a struggle to articulate our current best understanding and any given state of knowledge needs to be thought of as an interim position. New ideas and new developments can arrive at any time and these can profoundly change our view of the world or even the universe[5].

Checkland (1986: xii) provided an elegant statement of the lack of finality in respect of our understanding of the world when he pointed out:

> Obviously the work is not finished, and can never be finished. There are no absolute positions to be reached in the attempt by men to understand the world in which they find themselves: new experience may in the future refute present conjectures. So the work itself must be regarded as an on-going system of a particular kind:

> a learning system which will continue to develop ideas, to test them out in practice, and to learn from the experience gained.

Thus in the majority of cases theory provides useful but limited explanations and understandings of the world. It is important to realise that by their very nature theories and theoretical assumptions and explanations are likely to change continually. Nothing is ever fully settled for any length of time (Feyerabend, 1993).

RESEARCH PARADIGMS

There are a number of different research frameworks that every researcher needs to be aware of and from which a specific strategy should be chosen. Two of the more important approaches are empirical or theoretical research. As mentioned previously empirical research, which is by far the most common, draws on experience or primary evidence in order to understand a phenomenon. Here the research question is studied by means of direct observation, accounts of phenomena recalled by informants or experiment. Empiricism may be described as an approach to research which postulates that all knowledge comes from, and must be tested by, sense experience (Locke, 1974). Empirical research requires the evidence collected to be analysed and then synthesised, which leads to adding something of value to the body of knowledge[6]. There are many ways of conducting empirical research and so it may be positivistic or it may be interpretivistic, to mention two major approaches.

Enthusiastic support for Empiricism leads in its extreme form to the conclusion that, not only has all knowledge to start with the observation of experience, but also that Empiricism cannot take the researcher beyond actual experience. In short this means that it is not possible to know anything other than that which comes directly or indirectly from observation.

This position is sometimes referred to as a form of scepticism, according to which, claims about subatomic particles or physical forces are just as doubtful as claims about supernatural entities. Those who hold this position would argue that science then, has to be seen as the discovery of relationships between the phenomena of observable experience. This is a very limiting point of view.

However it should be noted that, from an academic point of view, empirical research needs to be conducted within a theoretical framework and needs to have as its objective the addition of something of value to the body of theoretical knowledge.

NON-EMPIRICAL[7] OR THEORETICAL RESEARCH

In contrast to empirical research, there is theoretical research, which is often cited as an important methodological strategy in business and management studies. The following is our understanding of theoretical research.

> Theoretical research involves drawing on established ideas and concepts from published and non-published sources,[8] especially the literature, and through a process of reflection and discourse[9] develops, extends or in some other way qualifies the previous work to create new explanations, insights and theories, which provides better or fuller explanations of the issues and the relationships being studied.

Through theoretical research, it is possible to make a considerable contribution to the body of knowledge without having to collect or analyse primary data or evidence. For theoretical research data may of course be used by reference to already-published sources, which will thus be, by definition, secondary data.

In the business and management studies world, theoretical research is not always well received. In fact some academic researchers would argue that the process described above as theoretical research should not be regarded as 'proper' academic research. The basis of such a claim is that this type of theoretical research does not have a test component. This implies that theories cannot be postulated without any 'proof' or confirmation. For this type of researcher, 'proof' needs to be empirical and without the activity of 'proving' theory, it does not have academic status. In some cases this is referred to as theorising and is not seen as rigorous academic research. However this type of thinking is a misunderstanding of the nature of research. All research processes require conceptualisation. It is the starting point without which research and especially academic research cannot take place.

The cerebral nature of research is well demonstrated by reference to Ashall (1996: 12) who pointed out that:

> Once, when asked by someone if they could see his laboratory, Einstein took a fountain pen from his pocket and said, 'There it is!' On another occasion he commented that his most important piece of scientific equipment was his wastepaper basket where he threw much of his paper work containing mathematical computations.

Clearly Einstein was talking about theoretical research. Equipment or large volumes of data are not a prerequisite for theoretical research. Theory is created in the mind and this is perfectly respectable academic research. In a sense theoretical research is the modern equivalent of Rationalism. Thus rationalism is a philosophical view. It regards reason as the primary source of understanding. Believing that reality has an inherently logical structure, rationalists assert that a class of knowledge exists that the intellect can understand (Honderich 1995).

There were various schools of Rationalism including the Continental School begun by Descartes and the British School of Empiricism, which is said to have begun with the work of Locke[10]. Rationalism or theoretical research has long been the rival of Empiricism. In contrast to Empiricism, Rationalism holds reason to be a faculty that can access truths beyond the reach of sense perception, both in certainty and generality. The roots of Rationalism can be traced much further back in history than René Descartes. In his *Republic,* Plato points out that empirical evidence is problematic and he uses the notion of ideal forms to point out some of the difficulties with Empiricism[11]. In turn Galileo, although he was primarily an empiricist, takes this point further and moved science distinctly beyond the observational[12]. Thus even in the seventeenth century it was already becoming established that observations alone will not supply an entirely satisfactory explanation of the physical world. This is not to say that science in most instances did not and still does not rely heavily on observations (Feynman, 1995).

Another aspect of theoretical research important to consider is that the material with which the theorist works need not be especially

original. It is of course correct that doctoral research is required to demonstrate originality. A paper will not be accepted by a peer-reviewed journal unless it has something new to say. However there are degrees of originality and although theoretical research can produce quite novel results, i.e. new insights into aspects of the field of study, this is not the only criterion for success. One of the primary roles of theoretical research is to re-work already established ideas in order to improve insights into the subject matter. Such improvements would constitute adding something of value to the body of knowledge. This is what Proust[13] was referring to when he said, 'The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.'[14] This comment is not much different to the message of Eliot (1942, cited in E. Knowles, 1999: 294):

> And the end of all our exploring
> Will be to arrive where we started
> And know the place for the first time...

UNDERTAKING THEORETICAL RESEARCH

The next step is considering how theoretical research is undertaken and what steps may be made to ensure that this type of research successfully produces sound useable theories.

An eight-step approach is proposed:

1. Research question formulation;
2. Literature review;
3. Explain why a theoretical approach is being taken;
4. Concept identification and reflection;
5. Theoretical conjecture formulation;
6. Discourse with peers and other knowledgeable individuals;
7. Theoretical conjecture refinement and acceptance;
8. Discussion on the impact and implications of the theory.

Research Question Formulation

The starting point of all research is to establish an unambiguous research question. Without a clear research question, any research effort will simply wallow without direction (Winston and Fields,

2003). It is a question of *If you do not know where you want to go then any route will take you there*[15]! It is surprising just how many doctoral research projects suffer from either not having a research question or having such a poorly articulated research question that it is of little value to the research process.

The research question may be triggered by an empirical observation, although this need not always be the case, as a remark or comment in the literature is often just as good a place to start. Wolpert (1993: 6) cites Aristotle as saying: 'For everyone starts by being perplexed by some fact or other...'

Research questions are seldom established after a single attempt. They often evolve as the researcher explores the field of study through understanding the literature and engaging in discourse with knowledgeable informants. During this process it is valuable to articulate who will benefit from the successful conclusion of the research. These individuals will be the stakeholders of the research and they may be called upon later to comment on the research.

Literature Review

One of the key characteristics of theoretical research is the emphasis on established ideas and concepts. Thus the researcher needs to be well read in all aspects of the literature surrounding the research question. Reviewing the literature continues throughout any doctoral degree but it is especially intensive when a theoretical degree is being undertaken.

A metaphor which some researchers find useful when thinking about the literature review aspect of theoretical research is to see this research process like developing a jigsaw puzzle. This jigsaw puzzle does not come in a box with a clear picture of the required result[16]. With this jigsaw puzzle there is only a very rough idea of what the final picture will look like. Also the number of the pieces required to complete the jigsaw puzzle is unknown. Using this idea the literature review is equivalent to finding the pieces of the jigsaw puzzle. Of course the researcher will find it very hard to tell when all the pieces have been found and at any one time the researcher is likely to have many redundant jigsaw pieces that

cannot be ignored. Thus the researcher is truly dealing with a non-trivial puzzle.

Explain Why a Theoretical Approach is Being Taken

As a theoretical approach is relatively unusual, it is important for the researcher to indicate why he or she has taken this approach to their research. The most common reason is to consolidate, extend or clarify previous works, either of the researcher or of others. In business and management studies researchers may wish to draw together different ideas from different research activities to produce a more comprehensive understanding of a situation.

Concept Identification and Reflection

Once a material amount of the literature has been read, the researcher can then begin to seriously reflect on what is known about the research question and to begin to develop new ways of looking at the issues involved and new ideas to describe the relationships between these concepts. Using the jigsaw puzzle metaphor this is like beginning to fit the pieces together to form a picture. This is one of the more creative aspects of the theoretical research process and there is no cookbook recipe for this work. The researcher may obtain some help by discussing ideas, concepts and definitions with peers, colleagues and his or her supervisor(s). Reflection plays an important role. According to Alvesson and Sköldberg (2001: 6): 'Reflection can be defined as the interpretation of interpretation and the launching of critical self-interpretation of one's own interpretation.' They go on to point out the importance of reflexive interpretation and suggest that: 'Four aspects appear to be of central importance: creativity in the sense of ability to see various aspects; theoretical sophistication; theoretical breadth and variation; and the ability to reflect at the meta-theoretical level' (p. 250).

Theoretical Conjecture Formulation

The process of concept creation, reflection and theory identification will lead to the formulation of a new theoretical conjecture. Again this is a highly subjective and creative process and as DiMaggio

(1995: 393) pointed out, 'the formulation of theory is a function of our values'. This is strongly supported by Gould (1988: 21) when he said: 'Science is not an objective, truth-directed machine, but a quintessentially human activity, affected by passions, hopes, and cultural biases. Cultural traditions of thought strongly influence scientific theories.'

Imagination and creativity play an important role in how the theoretical conjecture is formed as they offer access to different possibilities. One of the key tasks of the researcher is to map evidence onto potential explanations – and potential explanations are created by imagination. Thus the more possible explanations the researcher can think of, the better. However, one must remember that imagination and creative thinking need to be tempered, as the theoretical conjecture has to be convincing and the academic community, which needs to be convinced, will be a highly critical if not actually sceptical group of individuals. Any new explanation needs to be supported by a well-argued case. Old explanations may also be eliminated by appropriate argument.

The researcher may make a theoretical conjecture at any time. The theoretical conjecture is nothing more than a researcher's suggestion as to how the ideas and relationships in the field of study actually work. Theoretical conjectures can be used again and again as stalking horses, i.e. targets to be shot down by the researcher him or herself or in debate with colleagues. This process is actually one of concept refinement and the debate engendered is an example of the dialectic in practice[17].

But finally the researcher makes his or her contribution by developing a new theory or by producing a better or fuller theory or explanation of the issues and the relationships being studied. This theoretical conjecture is the outcome of this phase of the research and will now be formally presented for scrutiny by the community and the stakeholders that the researcher has previously identified. Using the jigsaw metaphor the pieces that fit have now been put together to form a picture and the question is now how 'good' or useful a picture is it[18]?

Discourse with Peers and other Knowledgeable Individuals

The new theoretical conjecture needs to be exposed to and scrutinised by other enquiring minds that are knowledgeable in this field

of study. The completed theoretical conjecture will often be presented at seminars held in the Department, the Faculty or the University at large. Where applicable the researcher should also present his or her ideas to professional bodies by means of holding seminars. The researcher for a senior research degree needs to have at least one paper[19] describing his or her research accepted at a suitable academic conference. It is also useful if the researcher can have some part of the research finding published in a quality peer-reviewed journal.

The more exposure the researcher's ideas are given the more likely different and perhaps contrary views are to emerge. It is most important for the researcher to listen carefully to these other views and to ensure that they are accommodated in the theoretical conjecture. This is again the process of the dialectic, which is essential for sound research. Collins (1994) comments on the importance of this process when he says:

> It is important to note that there is always a judgement to be made; that scientific discoveries are not made at a single point in time and at single places and with single demonstrations. They are made through a process of argument and disagreement. They are made with the scientific community coming slowly toward a consensus.

Sutton and Staw (1995: 373) make a similar point: 'Build strong theory over time'. Research cannot be rushed. It takes time and hard work for a researcher to derive sound results. The stories of instant flashes of research genius such as those told about Archimedes and Newton are most unlikely to be anything other than fantasies. Thus the final output of a piece of theoretical research needs to be allowed to mature in the mind of the researcher and perhaps even in the collective mind of the academic community.

On a cautionary note it is worth pointing out that research, both theoretical and empirical, will not always lead to a suitable or acceptable conclusion. Some problems are quite intractable. There are aspects of our environment that offer great challenges and sometimes it is difficult to produce a suitable theoretical explanation. Sacks (1991: 188) made this point strongly when he wrote: 'You are also going to have to bow your head, and be

humble, and acknowledge that there are many things, which pass the understanding.'

With this comment Sacks was reflecting on the fact that he, even as a leading international authority in the field of psychology, was unable to understand his own personal reaction to a major leg injury he had sustained as a result of being savaged by a bull.

There are indeed limits to science and our resulting knowledge (Medewar, 1986). From the point of view of a doctoral degree it is not necessarily a disaster if the research degree candidate does not produce a new viable theory. A doctoral degree could still be obtained without a fully developed new theory in the originally envisaged form provided the degree candidate could clearly demonstrate the fact that the process through which he or she had been did actually result in something else having been added to the body of theoretical knowledge. A research degree candidate in such a position would need to make a case that the research, despite its failure to deliver a new theoretical explanation, still made a contribution. Making such a case need not be that difficult.

Theoretical Conjecture Refinement and Acceptance

The process of discourse described above will almost certainly produce suggested amendments to the new theoretical conjecture and the researcher needs to accommodate these. Using the jigsaw metaphor some of the pieces may not have fitted as well as originally thought and need to be discarded. Other new pieces may need to be found. This phase of the research could be short, requiring only minor amendments, or it could be extensive, needing a considerable amount of rethinking and re-evaluation of the theory.

Discussion on the Impact and Implications of the Theory

Theoretical research would not be complete without a detailed discussion on the impact of the theory on both practice and on other related theories. This discussion is a major part of the research. It has been argued that the face validity of the research is reflected in the degree to which this discussion produces a convincing argument. The discussion needs to address the locus of the new theory and its impact on

current thinking. Of course, in a theoretical dissertation or paper, this section will inevitably be speculative, but it could be the basis for future research in the field of study concerned.

THE EVALUATION OF RESEARCH

The evaluation of research in general is difficult. In the academic world, it is probably more challenging than in the commercial world because it is not always easy to see the immediate short-term benefits of the research findings. Of course this problem is more prevalent in some fields of study than in others. In business and management studies, research problems and questions are often directly related to actual business situations and, as such, business and management studies research is often referred to as applied research. When the findings of this research lead to a new insight, which, it is believed, will help solve a problem, this facilitates the evaluation of the research. However in the academic environment finding a solution to a problem is not enough. In addition, the research needs to demonstrate a high level of scholarship.

In this context we define scholarship as follows:

> The main characteristics of scholarship are that the research needs to demonstrate that the researcher has a thorough knowledge of the literature; he or she needs to clearly show that there has been a considerable amount of reflection concerning the established knowledge of the subject; and that there is a convincing argument (or rhetoric), expressed plainly and clearly in accessible language, based on a rigorous methodological process pointing to the findings. The final attribute of scholarship is that the research needs to be presented with regard for the highest standards of integrity. This means that the researcher needs to be completely honest in his or her presentation of the results.

EVALUATING THEORETICAL RESEARCH

There is not much difference between the evaluation of empirical and theoretical research. However, because of the fact that theoretical

research does not rely on data or evidence collection, but on analysis and synthesis, it is sometimes often said to be more difficult. With empirical research, there are better-established steps to review and techniques to assess. Theoretical research relies heavily on reflection, creativity and imagination. Although these attributes are still required for empirical research they are often required to a greater extent in theoretical research. Either research strategy can be evaluated by the following tests to see if a piece of work qualifies as doctoral level research.

- Is there a clearly articulated research question, which seeks to establish a new theoretical understanding, refute an old theory or develop an extension to an old theory?
- Is the work framed within the body of current theoretical knowledge?
- Has the research been conducted with appropriate reflective procedures supported by adequate discourse?
- Has the contribution to the body of theoretical knowledge been expressed clearly using a convincing and reflective rhetoric?
- Has it been demonstrated that the new theoretical knowledge has some potential practical validity and utility?

SUMMARY AND CONCLUSION

Theory underpins academe and, although there are many theories, laws, principles, theorems and models, the idea of theory is seldom directly discussed or explained. Because the word is so frequently used in everyday conversation, it is often incorrectly assumed that these concepts are well understood by faculty, researchers and examiners. There is actually a material amount of confusion about this vocabulary, especially when it is used in the context of higher academic degrees.

A theoretical research strategy is a powerful approach to adding something of value to the body of knowledge. It is an approach to research which, if used correctly, can deliver material benefits to the field of study and to the researcher. It is unfortunately not employed extensively. As mentioned above, there are researchers, especially those who are new to the field, who believe that if there is not a set of primary data collected, then there isn't proper academic research

going on. This is at best a naïve view and this paper intends to put the record straight.

At the end of the day academic research has to demonstrate that it has resulted in something of value having been added to the body of theoretical knowledge. This needs to be done through a carefully constructed and convincing argument or rhetoric, which displays all the characteristics of scholarship discussed above. If this is done, the findings of the research will be acknowledged by the academic community as being valuable and an appropriate degree will be awarded. It needs always to be kept in mind that any evaluation of a research degree or, for that matter, a research paper needs to start and end with the view that academic research should not only be scholarly, but should also add something of value to the body of theoretical knowledge.

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1 Perhaps the single most important difference between theoretical research and empirical research is the fact that the theoretical researcher does not directly collect primary data or evidence. The theoretical researcher does not conduct experiments or collect data through questionnaires. The nearest a theoretical researcher may come to this is to employ the idea of thought experiments as pioneered by Einstein, which involves the application of imagination and creative thinking to a hypothetical situation (Gribbin, 2002).

2 The range of academic research usually includes work conducted for a masters or doctoral degree, research conducted for the purposes of publishing in a peer-reviewed journal or work produced during a post-doctoral appointment. Of course research conducted by a university in terms of a commercial contract would not usually be regarded as academic research. The principles discussed in this paper apply mostly to doctoral research. However they are also relevant to other academic research endeavours.

3 Views of what theory is and how it works can be quite negative. It is frequently announced in a pejorative way that something might work in theory but not in practice. On the other hand Kurt Lewin contradicted this when he said, 'Nothing is as practical as a good theory', http://www.phrases.org.uk/bulletin_board/10/messages/ 290. html, viewed on 7 February 2006. John Maynard Keynes (1936) made a similar point. Garret FitzGerald, the former Taoiseach of Ireland, is said to have exclaimed

at a suggestion made to him that 'This may well work in practice but does it work in theory?'

4 Distinguish between different types of theory. It is said that there is Normative theory – what to do; Descriptive theory – how things are; Analytic theory – why things are the way things are, how things work; and Critical theory – how things should be. In addition in the field of business and management research there is the question of Mode 1 and Mode 2 research/theory (Hair et al., 2005).

5 Burke (1985) provides many clear and convincing examples of this phenomenon over a period of hundreds of years.

6 What qualifies as evidence is a question which is dealt by numerous authors. An interesting insight to the various problems related to this complex issue may be found on http://www.alternativescience.com/evidence-for-darwinism.htm.

7 It is sometimes said that there is a halfway house between theoretical and empirical research. Research based on Delphi studies or scenario discussions have been described as non-empirical research without being classified as theoretical research. This view relies on the opinions of the informants not being regarded as direct observations (Clarke, 2001).

8 In certain subjects it might be appropriate to include in the scope of sources traditional knowledge such as folklore, which may not yet have been reduced to writing.

9 The term discourse in this context implies conversation with numerous knowledgeable informants constituting a dialectic type exchange.

10 Modern empiricism is regarded as having begun with John Locke (1632–1704) with his clear attack on metaphysics in his essay 'Concerning Human Understanding', published in 1690.

11 For further information see http://www.wsu.edu/~dee/ GREECE/PLATO.HTM, viewed on 7 February 2006.

12 Galileo's Empiricism – and beyond. http://www.ldolphin.org/ geocentricity/Haigh.pdf, viewed on 7 February 2006.

13 http://www.brainyquote.com/quotes/authors/m/marcelprou129874.html viewed 1 February 2006.

14 The danger here is that selective perception, influenced by prejudice, may introduce bias.

15 One of the best expressions of this is to be found in Lewis Carroll's Alice's Adventures in Wonderland: 'Would you tell me please, which way I ought

to go from here?' 'That depends a good deal where you want to get to,' said the Cat. 'I don't much care where...,' said Alice. 'Then it doesn't matter which way you go,' said the Cat. 'So long as I get somewhere,' Alice added as an explanation. 'Oh you're sure to do that,' said the Cat, 'If you only walk long enough.'

16 In academic research there is usually no unique answer or required result. We are always working within our cognitive capacity, which is limited.

17 The dialectic, originally attributed by Plato to Socrates in his *Republic*, who called it the 'midwife of knowledge', was also used in ancient times by Aristotle. However in recent, if not quite modern, times, the dialectic was further developed by Hegel and eventually adopted by Karl Marx and others. In modern research methodology argument or disagreement usually replaces the term dialectic.

18 At doctoral level the creation of new theory is regarded by some academics to be too ambitious and a modification or development of an established theory is seen as being adequate.

19 Many universities would not regard one paper as sufficient at doctoral level.

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