Some Philosophical Assumptions Underpinning Academic Research

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Abstract

Many researchers take for granted that they can apply research methodology principles and research methods without first carefully examining the assumptions underpinning their chosen methods. However, the practice of rigorous research should be informed by a philosophical position. There are a number of philosophical assumptions that need to be known and considered before research begins. Without being aware of these assumptions and understanding their implications research cannot proceed effectively. This consequently would lead to inadequate research outcomes. This paper describes some of these philosophic assumptions and explains their implications.

Keywords: Academic research, philosophical assumptions underpinning research, logic of research, rational argument in research, research objectivity, research models, research variables

Background

From a scientific perspective, philosophy is primarily concerned with the way in which scientists rigorously establish, regulate and improve the methods of knowledge creation in all fields of intellectual endeavour (Chia 2002). The first step in understanding the implications of the methodological options in any research undertaking is to review the main features of the principal philosophical schools of thought. Having knowledge of these different options has become an integral part of the study of social science research.

Scientific research is one of the main drivers of the success of our society (Smith & Marx 1994). It has been described by Medawar (1985) as 'incomparably the most successful enterprise human beings have ever engaged upon'. Research has delivered knowledge over a wide range of intellectual domains from physics to anatomy to astronomy, to mention only a few fields of study. In the social sciences success has also been achieved in fields of study such as psychology, education, economics, business and management studies. With such a fine record of achievement it is ironical that some research scientists are either not fully familiar with the basic philosophical assumptions which underpin all research activities, or alternatively knowingly conduct research in a philosophical vacuum . During a series of research seminars, the first author of this paper asked academic researchers, 'What philosophical assumptions should underpin research?' Answers included, inter-alia, assumptions concerning the type of research question, the equipment used to capture the data or evidence, and the statistical procedures employed. Although these are all relevant issues for competent research they are all operational in nature and thus do not address the more philosophical side of research.

The practice of academic research is fundamentally driven by an epistemic imperative or the quest for the creation of knowledge. Epistemology[1] derives from *episteme,* the Greek word for 'knowledge'. Henning (2004) avers that epistemology is the philosophy of knowledge or '*how we come to know*'. A scientific inquiry involves the pursuit of knowledge in which we seek as close an approximation of the truth as possible (Babbie & Mouton 2001). The epistemological positions of researchers are influenced by their ontological stance which, literally translated from its Greek derivative, means '*the study of being'.* Epistemology and research methodology are intimately related. The former involves the *philosophy* of how we come to know the world, and the latter involves the *practice* of coming to know and how we study this practice

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[1] Epistemology, or theory of knowledge, is the branch of philosophy that studies the nature and scope of knowledge. The term 'epistemology' is based on the Greek words episteme (knowledge) and logos (account/explanation); it is thought to have been coined by the Scottish philosopher James Frederick Ferrier.

(Henning 2004:15). Thus an innate understanding of philosophy is a cornerstone of knowledge creation. As such the researcher must make an informed choice in respect of a number of philosophical assumptions.

A philosophical assumption is a vision of the world; it is a belief that a basic condition will be present which is needed for an activity to function in the way that is required. The words *basic condition* are important as philosophical assumptions involve intellectual conditions rather than practical ones. Thus the belief that the researcher will be able to understand and interpret the evidence gathered via a knowledgeable informant, or from other sources is a philosophical assumption, while a belief that the researcher will be able to make contact with organisations which have adequate experience to be able to offer information about the research question is a practical assumption. Philosophical assumptions are made continuously throughout life, and are akin to having an ingrained set of principles, values and mores as to how one interprets activities in everyday life. For example we assume that democracy delivers a more just society than one controlled by a dictator; we assume that education will lead to an enriched[2] life style; we assume that obeying the law will kept us out of difficulties with the criminal justice system. The more abstract the ideas we are working with the more philosophical assumptions there are likely to be. It is worth noting that different researchers will have different views as to which assumptions are more important. There will also be controversy as to the nature of a philosophical assumption itself. As Ewing (1965) pointed out 'philosophy, is a subject where very wide differences of opinion exist between competent authorities'. These differences may be seen as a function of basic values which can be difficult to reconcile.

Academic research is rooted on a number of philosophical assumptions and this paper will discuss only some of them. Although the following philosophical assumptions are the principal ones that underpin academic research, it should be noted that this is not an exhaustive list. These include a belief that:

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[2] In this context enriched is not synonymous with materially enhanced as it includes a wide ranging set of issues which could improve satisfaction with life.

1. The world is understandable;
2. We want to understand the world about us;
3. We have an open minded approach to the research;
4. The researcher is capable of objective reasoning;
5. We can seldom if ever incorporate in our research all the issues or variables concerned with the phenomenon we are studying;
6. A simple model of reality may sometimes provide more understanding than a complex one;
7. Our cognitive capacity is limited and changes over time;
8. It cannot be said that our findings, or the theory produced therefrom, are indisputably correct.

Each of these assumptions can be explored in some depth. However, a more detailed discussion of each assumption is beyond the scope of a single paper, and thus a limited discussion of each point follows.

1. A Belief that the World is Understandable

In modern times it was Rene Descartes who pointed out that we need to question our senses and to doubt our cognitive abilities. He concluded that we cannot be certain of anything other than that which he expressed in his famous maxim, Cogito ergo sum – I think therefore I am. Descartes believed that everything else about our world should be subject to doubt. Today we do not usually take this idea of doubt to the extreme position used by Descartes but nonetheless we question what it is that we can understand about the world around us. As a result, and notwithstanding an element of doubt we largely take the view that the world about us is not the product of some evil genius whose purpose is to trick us. As such we assume that the world is, at least to some extent, understandable. This suggests that by and large most of us are not sceptics who would argue that we are unable to say that we know anything about the world. This does not mean that we are not cautious about any claim to knowledge.

The degree to which the world can be made understandable is a function of various philosophical choices which are available to the researcher. Researchers in the social science arena can be realists or constructivists; a theorist or an empiricist; a positivist or an interpretivist to

mention only a few possible positions or orientations which may be assumed. A realist positivist would claim a greater degree of knowledge in his/her research findings than a constructivist or an interpretivist. Of course the concept of degree of knowledge is itself problematic but in this context it is being used to indicate the extent to which the researcher would be able to recount facts about the entity being studied. But whatever choices are made about our approach to the creation of knowledge many researchers would normally agree that there is sufficient commonality in our experiences of the world to allow us to engage in a discourse concerning our understanding of how most things function. There are, of course, some individuals who would deny this proposition and would argue that these different stances or approaches to research produce results which are so dissimilar that there can be little or no meaningful discourse between the protagonists of these schools of thought. It is important to note that research usually tries to answer a specific question of how something, or some situation, or some individual functions and it does not often attempt to answer the question *why* which can provide a much greater challenge[3]. In fact some scientists would say that the *why* question is not always appropriate in their specific fields of science and might be better answered in some other field of study, such as those associated with the meta-sciences.

There have been some reservations about how much of the world around us is knowable, especially in the natural sciences, and to a lesser extent in some areas of the social science. There are fundamental problems in a number of fields of study such as particle physics and cosmology. The more particle physicists learn the more problematic the explanations of the nature of matter become. String theory which is the latest contender as an explanation of sub-atomic theory is regarded by some scientists as simply imagination. In order to make cosmology appear a coherent body of knowledge the concepts of dark matter and dark energy were created[4]. Now there is a need for another entity which is referred to as dark flux.

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[3] Feynman offers some insights about the difficulty in answering the 'why' question in a video available on TED.com at http://www.ted.com/talks/lang/eng/richard_feynman.html.

[4] There is an interesting explanation of dark matter and energy available at http://www.youtube.com/watch?v=pHXv-NuSnP0.

In the social sciences, the fields of education, and business and management studies are but two areas in which there are disputes about what is really known and there is controversy about how well these aspects of our society function[5]. There are many theories in both these areas and not much ability for testing them. A scan of the average academic journal will indicate that as compared to papers which apply theories developed by others , the number of papers which develop new theories or test existing ones are far and few between. This points to a reluctance to forge ahead in creating new knowledge to understand the unknown. Rowland (2001) points out that there are many things which we do not know, and he uses the Latin word Ignoramus to describe this lack of knowledge. He goes on to say that there are things about which we will not know which he refers to as *ignorabimus*, the Latin future tense of *Ignoramus*. Thus, according to Rowland, humans may be described as *Ignoramus et ignorabimus*[6].

The question which arises is what aspects of our lives is it reasonable to expect research to be able to study and thus produce for us useful knowledge? Medawar (1985) makes the point that science is not good at addressing issues related to where we came from and to where we may be destined when we cease to function in this world but for the main part of our lives Medawar sees scientific research as delivering all that is expected of it. This would appear to be reasonable enough.

Sacks (1991) also reflected on the fact that we should not believe that scientific research will provide all the answers we would like when he said:

> You are also going to have to bow your head, and be humble, and acknowledge that there are many things which pass the understanding.

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[5] For example in the field of Information Systems management, there has been considerable difficulty in being able to measure success and it has been suggested that the search for appropriate metrics has resembled the proverbial search for the Holy Grail (Arnold, 1995).

[6] The expression 'Ignoramus et ignorabimus' – 'we do not know and will not know' was used to describe the limits of knowledge by Emil du Bois-Reymond, in *Über die Grenzen des Naturerkennens* ('On the limits of our understanding of nature') of 1872. Wikipedia at http://en.wikipedia.org/wiki/Emil_du_Bois-Reymond.

There are many scientists who would disagree with Sacks. There are 'optimists', sometimes referred to as Panglossians[7], who believe that we will eventually understand the entire universe and all that of which it is composed. Although we may never reach a stage at which we will actually agree that we understand *everything,* the average academic researcher can benefit from becoming bolder in his/her quest to pursue the unknowns rather than remaining in a comfort zone in which we test and apply a few theories. Alvesson & Sköldberg (2000:16) provide sound advice when they argue that:

> … not only geniuses and theoretical capitalists[8] can be creative in social science research. Even ordinary mortals can generate creative input as scientific entrepreneurs; they do not have to act as a verifying proletariat serving intellectual big business.

2. A Belief that We Want to Understand the World About Us

Our desire to understand the world, i.e. to acquire knowledge about it and how it works, is reflected in the efforts which are made by the scientific community. Hundreds or thousands if not millions of people are employed directly or indirectly in research activities. Internationally, billions of dollars are spent annually by universities, research institutes and by governments in the pursuit of new knowledge. Scientific research has become an industry and a big and powerful one at that. What needs to be considered when reflecting on the question of our desire to understand the world is the range of subject matter which we explore by way of this research. Within the confines of what we regard as 'proper' science as opposed to pseudo science we explore a substantial range of disciplines and topics. Considering the university environment alone, a university may have many different Faculties. Each Faculty could have several different Schools and each School could have a number of different research groups or even centres. Outside the university environment there are many research institutes making

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[7] *Panglossian* is a word derived from the philosophy of Professor Pangloss who is one of the principal characters in Voltaire's Candide. Pangloss is an extreme optimist.

[8] The use of the word capitalist here does not refer to any financial situation but rather to the accumulation of theories.

important contributions to the body of knowledge. In addition many large organisations including corporate entities and public sector organisations are committed to multiple research programs.

However, it is necessary to point out that some people would argue that the confines of 'proper' science are too narrow. Homeopathy, acupuncture, chiropractic therapy, herbal medicine and other complementary medical treatments are omitted from the main stream of scientific enquiry as are subjects such as extra-sensory perception, unidentified flying objects and communications with those who have passed away. In *Bad Science* Ben Goldacre, (2008) provides a detailed critique of some of these pseudo scientific domains and finds them lacking in credibility. Richard Dawkins of Oxford University has built an international reputation for what he believes to be the debunking of those who would inappropriately claim scientific backing for their beliefs[9]. Kathy Sykes[10] of Bristol University is another champion in the struggle against pseudo science.

It is interesting to note that at the same time Simon Singh (2008) is being sued by the British Chiropractic Association for claims concerning the inefficacy of chiropractic therapy to deliver relief from certain ailments. The boundary between science and pseudo science is a difficult one. Some of the so-called pseudo sciences, such as homeopathy and acupuncture have a large and convinced following.

Within the scientific establishment there are other concerns about what areas are appropriate for scientific research. In the medical world there are a number of lines of enquiry which are highly controversial. The practice of embryonic stem cell research is not legal in all countries. It was only in 2009 that President Obama lifted the ban against this in the USA. Research into reproductive cloning of mammals was given a great boost when Scottish scientists at Roslin Institute created a lamb known as Dolly, in 1997.

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[9] Dawkins takes a narrow view of what constitutes science which he demonstrates by aggressively questioning people such as homeopaths as to whether they have proved the efficacy of their medicines through scientific experiments. Furthermore he enthusiastically refers to belief in the Genesis as nonsense. He also refers to claims of those with whom he disagrees as anti science.

[10] Wikipedia at http://en.wikipedia.org/wiki/Kathy_Sykes

However cloning of human beings is not allowed and there are powerful objections to any suggestion that this type of research will ever take place. Of course it is not possible to know if this sort of research is taking place surreptitiously.

Whole body transplants and head transplants are regarded as morally unacceptable in most countries. Objections to this type of work are reminiscent of Mary Shelley's (1818) *Frankenstein.* Shelley cautions us against the inappropriate use of knowledge and this topic was considered so controversial that the first edition of the book was published anonymously. Another later Victorian author, Rider Haggard, explicitly stated his unease with acquiring 'too much wisdom' in his novel *SHE,* which was first published in 1887, Haggard (1995) comments:

> Too much wisdom would perchance blind our imperfect sight, and too much strength would make us drunk, and over weigh our feeble reason until it felt and we were drowned in the depths of our own vanity.

This theme has been repeated by others over the years since Haggard. The question of nuclear science is another issue where there is controversy. Few disagree about the efficiency and effectiveness of nuclear power. All would agree that a nuclear war would threaten the future of the entire human population. However there is considerable debate among different parts of the community as to the wisdom of the extensive peaceful use and further exploration of this technology. The argument here is often expressed in terms of society's ability to contain harmful nuclear radiation in the event of an accident.

But there are also groups of people in our society which on principle do not honour scientific progress. These groups are normally religious in nature an example of which are the Amish. Such people do not constitute large parts of the population. Nonetheless these groups remind us not to take for granted that new knowledge is always welcomed by everyone.

Being open minded is nothing more than being prepared to consider new or different ideas and concepts. It also involves being able to work with others in such a way that new ideas will be generated. There are degrees of open mindedness and some researchers have said that being fully open minded requires a commitment to being prepared to actively seek evidence

which would challenge the researcher's own personal beliefs and values. However there is a potential paradox with regards to this issue. Being too opened minded will detract from the focus required for successful research and thus could lead to unsatisfactory results.

3. We Have an Open Minded Approach to the Research

Being open minded would also mean being aware of and attempting to counteract the confirmatory bias whereby researchers have a tendency to look for evidence to support their established ideas and theories. This is a major problem in academic research and the situation is exacerbated in social science research as the evidence collected can often be interpreted in multiple ways and as such the biases of the researcher may be unknowingly supported.

The opposite of open mindedness is the n*ot-invented-here* syndrome. In this case new ideas are rejected, not for their lack of value but rather for their origin. The *not-invented-here* syndrome can be triggered by insecurity which causes concern that ideas from the outside could disturb established processes, procedures and relationships. Of course it is seldom openly stated that a new idea is unacceptable because of the source from which it came and thus the n*ot-invented-here* syndrome may not be entirely obvious.

It is sometimes said that an excess of open mindedness is an indication of a lack of strength in one's convictions. If a researcher is prepared to change his/her mind continually this may imply that prior beliefs held minimal meaning for him/her. While this may not necessarily be the case at all times, too many changes of view may in any event be a source of concern or confusion.

Establishing and maintaining an appropriate balance between these two positions of open mindedness and resistance to change present difficult challenges to researchers. However without an open mind research can be very ineffective and inefficient. The grounding of the researcher's though process within an appropriate philosophical position could be one way in which to maintain a suitable medium.

4. The Researcher is Capable of Objective Reasoning

The issue of a researcher's ability to reason objectively or think rationally is

a paramount consideration for valuable research. Without being assured in this regard it would be considerably more difficult to have confidence in the outcome of the research. However reason, judgement and objectivity are not often defined and thus there can be difficulties in knowing precisely what is being referred to when these words are used.

In the case of reason we are discussing the researcher's ability to construct a rational argument i.e. move from one concept to another in a logical fashion and to be able to draw deductions or inferences on the basis of data or evidence supplied. Such processes are based on judgement and the validity of judgements is often a matter of personal values and therefore will be viewed differently by each individual. It is difficult to keep values and judgements separate. There seems to be a natural tendency to project one's personal values into any arguments which one is developing and there does not appear to be a simple method of preventing this.

Objectivity offers similar challenges. We tend to say that an opinion is objective when it appears not to have been influenced by a bias or a prejudice. Reflecting on that proposition carefully, it might really mean that we consider an opinion to be objective if it agrees with our biases and prejudices. This sort of problem is tackled at least to some extent by the fact that research findings are subject to review and that their credence is only finally established when a substantial part of the research community supports the findings. Community support is one of the primary hallmarks of successful research. It should not however be thought that community support is exclusive proof of the validity of a scientific theory. History is replete with examples of theories which were completely accepted by the scientific community but were in fact wrong.

Returning to the notion of reason and that of arguments based on reason, it is possible to find that even those who have a reputation for excellence in these matters can make mistakes. There are several factors which directly affect any individual's reasoning ability. Errors can be made due to tiredness, forgetfulness, being rushed or just simply not fully understanding the issues involved. It is in this instance that the researcher who has carefully grounded his work in an appropriate philosophical position will mitigate many of these common errors.

5. An Understanding that We can Seldom if Ever Incorporate in our Research All the Issues or Variables Concerned with the Phenomenon We are Studying

The world about us is so complex that it is seldom possible to examine all the variables which have an impact on the entity/artefact/subject we are researching. It may not in fact be possible to grasp all the issues and variables involved. It is for this reason that the concept of *ceteris paribus* was established. The Latin phrase ceteris paribus is usually translated as *all other things (the variables which are not easily incorporated into our research design) being equal* and is frequently explicitly used in social science although it is fundamental to all scientific endeavours.

This complexity of the world and thus the situation facing scientists was eloquently expressed by Einstein (1950) when he said:

> Science is the attempt to make the chaotic diversity of our sense-experience correspond to a logically uniform system of thought. In this system single experiences must be correlated with the theoretical structure in such a way that the resulting co-ordination is unique and convincing.

As conceived by Einstein science is a most complex and demanding endeavour and we have to be careful about claims which are made concerning our having added anything of value to the body of knowledge. By evoking the *ceteris paribus* principle we focus on what we consider to be the principal variables or issues under consideration and we do not pursue other, less important aspects of the situation being studied. The problem is that it is sometimes not easy to recognise the relative importance of all the variables.

With regards the power of science Einstein (Hoffman 1973) made the following remark:

> One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike–and yet it is the most precious thing we have.

The lesson to be taken from Einstein is the need to be careful with

regard to our expectations from research. Referring to research as 'primitive and childlike' is, of course, a luxury which most researchers cannot afford but the point would be recognised by many. Russell (1925) who was also a scientist of international repute made a similar point when he said:

> …. we know very little, and yet it is astonishing that we know so much, and still more astonishing that so little knowledge can give us so much power.

Both the Einstein and the Russell point of view are certainly intriguing and if they are correct, what an interesting life there may be in store for our progeny who will eventually acquire a considerably larger body of knowledge.

6. An Understanding that a Simple Model of Reality May Sometimes Provide more Understanding than a Highly Complex One

Simple models often work more effectively than large and complex models. They are easier to develop than large, complex models and they show more clearly what the model can tell us.

There are two main reasons why we need to strive for simple models. The first of these is that in any situation there are usually only a small number of important issues or variables which are central to the research and thus of significant importance. If these are identified and our research focuses on these issues or variables then our objectives are much more likely to be realised.

This notion of focusing on the important issues is an old one and is similar to the idea expressed in Occam's Razor which states that a simpler explanation is often the better one. Hand in hand with this explanation is the fact that when complex models are operationalised mathematically they can exhibit unusual and difficult to explain results. Large models may crash when in computers which means that no result at all is achieved. The Pareto Principle, also known as the 80-20 rule, is another manifestation of the same sort of thinking regarding the need to keep models simple.

In this context, research philosophy provides the researchers with a basis on which to make better sense of the ontological perspective of the research. This in turn provides a lens through with which one is able to hone in on the most critical aspects of a problem domain, and thence a simpler model and explanation of results.

7. A Belief that Our Cognitive Capacity is Limited and that it Changes

Our ability to understand any phenomenon is a function of our intellectual development which we refer to as our cognitive capacity. It is possible to envisage a personal cognitive capacity which considers how individuals see the world as well as a social cognitive capacity which refers to society's ability. Using this notion we can see that Copernicus' cognitive capacity was somewhat ahead of his time. Fortunately both individual and societal cognitive capacity develops and thus issues which are difficult to address today become more readily amenable to understanding tomorrow.

In *Critique of Pure Reason*, Immanuel Kant (1781) comments:

> Perception relates not only to senses but to human interpretations of what our senses tell us; our knowledge of the world is based on understanding which arises from thinking about what happens to us, not just simply from having had particular experiences; knowing and knowledge transcend basic empirical enquiry; distinctions exist between scientific reason (based strictly on causal determinism) and practical reason (based on moral freedom and decision-making which involves less certainty).

Human cognitive capacity develops at different paces for different fields of study. What is clear is that it changes and so does our ability to learn (Latour 1990). Matching human and social cognitive capacity is important as, if the human capacity is ahead of society's , the ideas produced may be ahead of their time and just not recognised as being of value. It is important that the researcher does not rush ahead of the rest of his/her society (Stanovich 1999).

8. It Cannot be Said that our Findings, or the Theory Produced Therefrom, are Indisputably Correct

The notion of indisputably correct does not rest well with scientific researchers. Science operates on the basis that it attempts to provide the best possible explanation for the phenomena which it is studying. In other words, all research findings are presumed to be as best as possible an approximation of the truth, until such time it is proven otherwise. It cannot ever be presumed that all the facts which are pertinent to our enquiry are known to us and this is the reason why ceteris paribus is an important assumption. For this reason alone our findings cannot be ensured to offer 'the complete' picture. Competent researchers do not talk or think in these terms. Feynman (1995) expressed this as follows:

> 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.

Feynman's caution is appropriate for all research but it is especially pertinent to social sciences where there can be a very large number of variables involved and where the context of the research is so important. The extent to which we may be confident that we are approaching the whole picture will of course vary from situation to situation. But even when we are reasonably sure that we have a comprehensive understanding of the situation we still have to recognise that any theory which we develop will not account for all the anomalies which regularly occur in normal life. A number of particularly insightful discussions on the subject of anomalies are provided on the internet. The first is by Noam Chomsky[11] and the second is by Imre Lakatos[12].

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[11] Noam Chomsky anomalies on 9/11, at http://www.youtube.com/watch?v=BzGd0t8v-d4.

[12] Imre Lakatos on anomalies at http://www.lse.ac.uk/collections/lakatos/scienceAndPseudoscienceTranscript.htm.

Taking a different approach Feyerabend (1993) commented on the universality of anomalies in science generally when he pointed out that:

> Considering now the invention, elaboration and the use of theories which are inconsistent, not just with other theories, but even with experiments, facts, observations, 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 result of sloppy procedure. It is created by experiments and measurements of the highest precision and reliability.

Of course, the problem of anomalies is a thorny one which needs to be approached with caution. What one researcher might consider being a justification for rejection of the theory, as defined by Popper's falsification (Popper 2002), another scientist might consider being merely an insignificant anomaly. When a number of anomalies occur concerning the one theory then the thinking of Kuhn (2008) comes into its own. Kuhn pointed out that we tend to live with anomalies until some, difficult to define, point is reached where our theory has to be discarded and a new theory or paradigm accepted.

Another aspect of the issue of having confidence in the correctness of our research is that fact that both evidence itself and the way we understand evidence is subject to a process of evolution. There is continuous work undertaken to develop new ways of collecting data, processing it and understanding it. At the same time some of the assumptions mentioned above are being revisited to establish if they may be understood in different ways. Habermas (1993) lent his authority to these movements when he said:

> Now we think more tolerantly about what might count as science.

It is reasonable to expect that our ability to engage in academic research will continue to develop in coming years and that there will be improvements to both its breath and depth.

Conclusion

Most activities may be seen to be based on some sort of philosophical ideas and assumption. Recalling *Candide*, Voltaire (1947) made him behave optimistically as a result of Dr Pangloss' philosophy which could be

summarised as we live in the best of all possible worlds and everything which happens to us is always for the best. Voltaire shows these assumptions to be rather inadequate to equip the youthful Candide for all that is happening to him. The story does show how the philosophical assumptions are all pervasive in Candide's life.

Another view which emphasises the importance of philosophical ideas is provided by Keynes (1936) who commented that:

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist.

What is said here about economists is true of many other professions and activities. Philosophical considerations often provide the direction that individuals take even when they are not aware of them.

In research this is even more important. Philosophical assumptions are all pervasive in research. This was well summarised by Hughes (1990) when he remarked:

> Every research tool or procedure is inextricably embedded in commitments to particular versions of the world and to knowing that world. To use an attitude scale, to take the role of a participant observer, to select a random sample … is to be involved in conceptions of the world which allow these instruments to be used for the purposes conceived. No technique or method of investigation Is self-validating … they operate only within a given set of assumptions about the nature of society, the nature of human beings, the relationship between the two and how they may be known.

Hughes' comments cover a wide spectrum of issues which many researchers would not immediately see as having philosophical underpinning. They would consider, for example, the choice between a questionnaire and an interview as a practical issue or consideration. But this is due to the fact

that many researchers find these issues challenging and the way they cope with this is to ignore them. However research is generally improved by facing these issues even when the researcher is unable to comply with the assumptions. As Crossan (2003) points out, the indirectness and circular nature of philosophical questioning in itself is helpful, as it often encourages in-depth thinking, and generates further questions in relation to the topic under consideration.

This paper has covered a number of important philosophical assumptions which address the condition which should be present if competent academic research is to take place. It is appreciated that in practice it is difficult to ensure that these are operating in the way they should. Sometimes it is only possible to achieve the requirements of these assumptions in part. However without an understanding of these assumptions academic research may be less than satisfactory.

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Some Philosophical Assumptions Underpinning Academic Research

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