

# **An Introduction to Research Methodology: Western and Buddhist Perspectives**

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## **Introduction**

Research might be defined as 'systematic investigation to gain knowledge about something.' This something can be 'phenomenon or relationship.' The word research derives from the French word 'recherché,' meaning 'to search.' It is obvious that research is an activity, and human activity for that matter. As human activity, research is bound for possible error. No human is infallible. It is to avoid error, as much as possible, that systematic methods are used in research. There is no one method, but several of them.

The plurality of methodology has arisen because of the diversity of matter – phenomena or relationships – that we investigate. The diversity may require different methods to be used on the same thing or a particular method selected depending on the nature of the matter that we investigate. For example, there is a considerable difference between natural phenomena and social phenomena. The methods of social sciences thus differ from the methods of natural sciences, e.g. in physics or chemistry. Again the different branches of social sciences or natural sciences differ from one to the other in terms of the methods that they employ for research or systematic investigation. However there are increasing areas where they overlap and interbreed each other in terms of the usage of methodology (Grix 2001:2). Although both humanities and social sciences deal with the society and behavior of the people, the former relates more to the 'spiritual' or subjective sphere, while the latter deals more with the material or objective realm of the society and the people.

Research methodology is in fact a generic term to cover a host of research methods and in addition indicating the philosophy behind the various research methods that we now-a-days use. This introduction to research methodology focuses mainly with the second part of the above interpretation to mean the philosophy behind various research methods.

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The rationale of the National Centre for Advanced Studies in Humanities and Social Sciences' (NCAS) preoccupation on 'research methodology' derives from the fact that methodology is crucial to successful research. We call it our *Niche*. There cannot be any research, even bad ones, without a methodology. The methodology here denotes the use or the process of the method. However, the selection of an appropriate methodology – not any methodology - is the key to success. The difference between bad research and good research might depend on the researcher's grasp of research methodology. The quality of research, the knowledge outcomes of that enterprise, or the 'scientific' applicability of the conclusions derived would largely depend on the methodology that it pursues. Before the selection of any particular methodology or methodologies there is a pressing need to understand the genesis or the philosophy of research methodology in generic terms. The importance of methodology to research is like the importance of theory to practice. If research is the practice, methodology is the theory.

## The Genesis

Many accept that systematic or structured attempt to gain knowledge on various natural and social phenomena dates back to the Greek period. It is apparent that rudiments of these attempts existed in many civilizations before and after.<sup>2</sup> In the case of the Ancient Greece, Plato and Aristotle were two prominent figures in seeking knowledge through investigation and contemplation. Plato (428-347 BC) was the founder of the **Academy** in Athens and the author of the *Republic* among many other writings. He was a brilliant writer and a thinker. However, he cannot be considered the founder of research methodology. It was his student Aristotle (384-322 BC) who invented the first systematic method of investigation called Syllogism (See AllPsych ONLINE on Research Methods). Perhaps Plato could be considered the founder of humanities but not social sciences. The difference between Plato and Aristotle in a way is the difference between humanities and social sciences. Plato's approach did not stick to a particular method. It was contemplative and imaginative. He was more concerned about normative matters than the actual ones. In his *Republic*, he was investigating the parameters for an ideal state/society and argued that 'until philosophers rule as kings, the cities will have no rest from evils.'

Aristotle was somewhat the opposite. He did contemplate and commented on normative matters, but his primary concern was on actual institutions and processes when he wrote *Politics* among other writings. Having considered the actual workings of political societies of his time, he considered 'politics' to be primary of all activities based on organic nature of things. He called 'politics' to be the 'master science.' Concepts and ideas were not uncommon to Aristotle but he focused more on empirical facts and relationships. When he said 'man by nature is a political animal' he was not talking about the future or the ideal but the present and the actual. But Aristotle is important to our discussion not because of his various theories or arguments but because of his methodology.

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<sup>2</sup> Ancient China, India and Mesopotamia are some examples where mathematics and medicine were developed.

Syllogism that Aristotle developed refers to a structured method of reasoning or investigation from an accepted or a known premise to an unknown or a new premise. According to him, knowledge develops from the known to the unknown. His method is mostly explained as a linear logic as follows.

Major Premise	:	All humans are mortal
Minor Premise	:	Socrates is human
Conclusion	:	Socrates is mortal

It is true that the deductive reasoning even today has the above linear character which at times may prove to be untrue, unrealistic or defy even commonsense. The following is an example.

Major Premise	:	Jackals hoot
Minor Premise	:	University students also hoot
Conclusion	:	University students are Jackals

The reason for the erroneous conclusion in the second example is the incompatible connection between the major premise and the minor premise. While hooting is a major behavior of the Jackals, it is not fortunately the case of the university students! In deductive reasoning, one cannot connect incompatible premises to deduct conclusions. Whatever the inherent or circumstantial weaknesses of Syllogism as linear logic, as an overall methodology it has much validity in all research. Deductive reasoning is important in developing hypotheses or even theories. Through deductive reasoning, some tentative conclusions or hypotheses might be attained or even theories might be built. However, those should be further investigated, tested or verified through empirical research before making inductive or final conclusions.

When John Locke developed his theory of Social Contract he apparently used a form of deductive reasoning. The state of nature was his major premise. The state of civil society (built presumably on social contract) was his minor premise. From this connection between the major premise and the minor premise he deducted rules and norms for a system of government. This is only one example from history of research and scholarly writings to elaborate on the above point. Even in today's research, the deductive reasoning is much used, for example, in literature reviews. The whole purpose of literature review is to deduct reasoning focusing on a particular problem, area of investigation or subject matter for further investigation. The methodology however works only when the connection between the major premises of the literature is compatible with the minor premises that the particular research is attempting to investigate. There is no purpose of a literature survey which is not relevant to the subject under investigation.

## The Buddhist Reasoning

It is not correct to say that all knowledge or methodology pertaining to research is of Western origin. There are useful insights from the East and some of the philosophical propositions can be considered useful basis for today's scientific investigation. One example is *Kalama Sutta* by the Buddha (See translation by Thanissaro Bhikkhu). He lived in fact before Aristotle and expressed concern over any major premises (that Aristotle talked about) to derive knowledge without experiencing or experimenting the truth. The sermon was delivered to Kalamas of Kesaputta while he was on a 'filed voyage' to that particular locality. Kalama's asked the Buddha:

Lord, some teachers come to Kesaputta, expounding and glorifying their own doctrines. But as for the doctrine of others, they abuse them, disparage them, deprecate them, and pull them to pieces. Other teachers, on coming to Kesaputta, do the same thing. When we listen to them, we feel doubt and uncertainty as to which of these teachers are speaking truth and which are lying.

Of course the question posed to the Buddha was not directly on research methodology or scientific knowledge. Nevertheless, the research methodologies expounded by some scholars today based on particular theories or ideologies are like the doctrines that Kalamas confronted in the ancient times. However, the Buddha's answer to the question was based on his 'theory' or rather understanding of knowledge which is valid equally to research methodology or theory of knowledge of current circumstances. The following was what the Buddha said.

Come, Kalamas. Don't go by reports, by legend, by traditions, by scripture, by logical conjecture, by inference, by analogies, by consistency with your own laws, by probability, or by the thought, 'This contemplative is our teacher.'

It is not correct to say that the Buddha wholesale rejected any authority of knowledge by report, legend, tradition, scripture, logical conjecture, analogy, inference, consistency with law, probability or thought. What he said was to be circumspect and not to take them on the face value. This is extremely important in research and what he asked was to research or reinvestigate the existing knowledge. One even might say that this is similar to what is pronounced as 'deconstruction' today with a difference.<sup>3</sup> The difference perhaps is that the Buddha's advocacy of methodology was constructive and not destructive. This is clear from his advocacy of four noble truths with optimism of resolving the world's most pressing problems. What he said was: don't give final authority to what is written in books or what is advocated by philosophers. You have to test them through your own experience and contemplation. What he mentioned as 'contemplation' in the context of the present day research can be considered as empirical investigation and scientific verification of propositions.

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<sup>3</sup> Jacques Derrida coined the term 'deconstruction' in the 1960s (*Of Grammatology*, 1967) and since then the term has been much misused than used.

## Scientific Method

Research methodology took a dramatic turn beginning the modern era with the invention of inductive reasoning in the West. Francis Bacon (1561-1624), an English thinker, was the pioneer of this venture who in fact turned Aristotle's syllogism upside down. Rather than moving from the general to the specific, Bacon argued that human knowledge better proceeds from the specific to the general. In comparison to deductive reasoning, the inductive reasoning can be explained as something similar to the following.

Specific Premise 1: David, Ram and Nirmala underwent NCAS training  
Specific Premise 2: David, Ram and Nirmala completed PhDs in three years  
Conclusion : NCAS training results timely completion of PhDs

The inductive reasoning is the preferred method obviously in natural sciences today. However as a scientific method it has inspired social sciences as well. It appears that only the inductive method that would allow new premises to be established and new theories to be constructed. If we follow only the deductive reasoning, our knowledge might suffer the defect of circularity. It would only be within the existing major premises that the knowledge would circulate. Deductive reasoning might be useful for practical purposes in life, but not for revolutionary changes in knowledge or society.

Similarly, the inductive method may confront similar predicaments if it is applied in isolation to what can be deducted from the existing knowledge, theories or what can be called major premises. There is no point in completely reinventing the wheel in seeking knowledge when new knowledge can be at least partly be built on the basis of the existing knowledge. There is a considerable unevenness in knowledge spread in the world today (between the West and the East or the developed and the developing) due to incompatibility of conditions or relations of power and therefore appropriate knowledge transfer may require testing and retesting of the existing knowledge through research. Similarly important is to seek new knowledge as necessary through fresh investigation to avoid dependency on existing knowledge that might be inimical to local conditions or development.

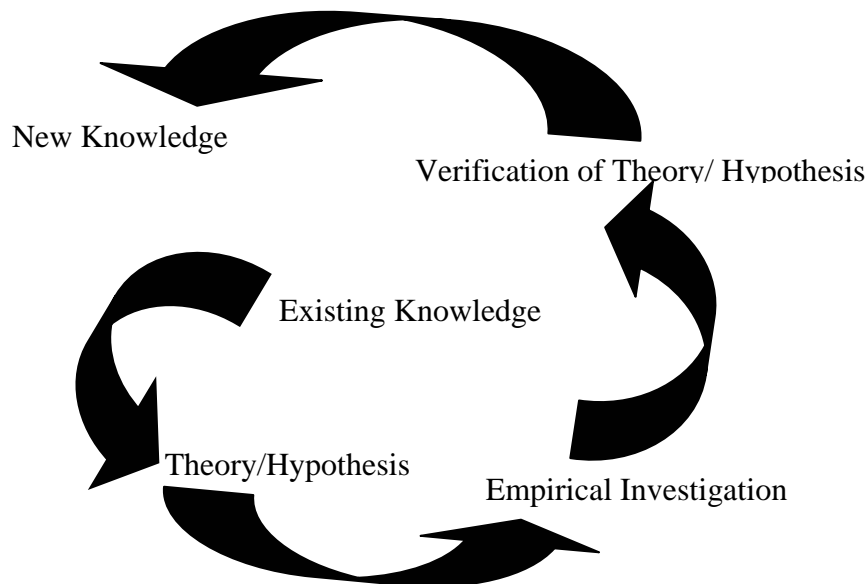
However what has emerged in recent times is a synthesis of the two major strands of logical reasoning as the acceptable scientific method. This method is a broad combination of both deductive and inductive reasoning. One might say, more than a synthesis of the two, this method in fact attempts to use both methods as appropriate in the process of research. The invention of this combined method or its advocacy goes along with the name of the American psychologist, John Dewey (1859-1962). Dewey has had many hats and many contributions to make to society like many others who were mentioned before. However what is important to us is what was invented as 'scientific method' applicable to any research, natural or social, with necessary and appropriate adjustments. He was a pragmatic person to use what is relevant and useful in research. Pragmatism was his philosophy. However, he undoubtedly was bias towards empirical research and also practical or operational research that could bring change in society and people. What he proposed was **deductive reasoning to develop a theoretical framework including**

**hypotheses followed by an inductive methodology to support, refute or go beyond those theoretical premises.** Research methodology in this sense is not a single instrument or method but a process with several steps to achieve the objective of knowledge production as follows.

### Dewey's Research Process

1. Identify and define the problem based on the existing knowledge
2. Determine the hypothesis or reason why the problem exists
3. Collect and analyze data
4. Formulate conclusions
5. Apply conclusions to the original hypothesis/theory

A research process combining the deductive and inductive reasoning can also be illustrated by the following figure.



Dewey's scientific method is in fact reminds us what the Buddha said about the Four Noble Truths (Rahula 1978:16). They are:

- (1) ***Dukkha***, meaning the existence of problems and issues, or the problem of life (suffering) itself.
- (2) ***Samudaya***, meaning the reasons or causes of the problems.
- (3) ***Nirodha***, meaning the possibility to uncover and resolve the problems.
- (4) ***Magga***, meaning the way leading to the understanding and resolution of problems.

Today's research methods are based on the belief in rationality and the possibility of understanding phenomena or relationships in the most objective and scientific manner. In Buddhism this is called *Nirodha* and the concept has a very clear positivist character to it. *Dukkha* of course is the existence of problems, issues, dilemmas and enigmas in nature, society and life and the clear identification and definition of these problems, in Dewey's view, is the starting point of any scientific research process. *Samudaya* in the Buddhist philosophy are the causes and reasons for the existence of problems and as Dewey stipulated they need the determination of hypothesis or tentative theory to proceed with the intended research investigation. *Magga* in Buddhism perhaps is the whole process of scientific investigation and particularly the collection and analysis of data in order that scientific conclusions are made. This is also the process of drawing of conclusions and the application of them into the original hypothesis or theoretical premises similar to what Dewey said and also the possible recommendations for policy making.

## **Concluding Remarks**

The above presentation was only a brief introduction to 'Research Methodology' focusing on some of the philosophical aspects. The objective was to stimulate initial ideas among the participants of a two day workshop (6-7 May, 2008) organized on the same topic by the NCAS and attended by young academics in Sri Lanka's university system. It is only on a chosen direction that the genesis and the development of research methodology were discussed in this introduction. A particular attempt, however, was made to draw inspiration from both the Western and one of the most enlightened Eastern traditions, namely Buddhism, without counter posing one against the other. It is obvious that many of the important landmarks or particular methods were not at all touched upon in this brief introduction and some of these were discussed in other sessions of the workshop. Research methodology is undoubtedly a vast subject. Coverage of all aspects of research methodology is a mammoth task which might require a lifetime commitment. It is this commitment and further self-study that were required from the participating young academics to make their experience at the workshop fruitful and perhaps memorable.

## **References**

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