Introduction to Social Research Methods: A Module for First Years

By

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1.0 Introduction

Universities are said to be the seat of all knowledge. This is saying that is true because whatever is said and done by university professors and lecturers are products of research. Doing research is one profound activity of not only sociologists but all social scientists and the methods used to conduct research are a central part of the social sciences. The term social science arises because its status as ôScienceô is often justified by alluding to the technical aspects of research methods.

Humankind has grappled with the problem of acquisition, expressing and codifying knowledge from time immemorial (Maslow, 1968 Rogers, 1951). Each of us possesses a great deal of knowledge about what happens inside us and what happens outside or what exists. So we know about ourselves; we know about the world around us and we also know about abstract concepts and ideas. The natural scientist and positivist say that the rational process of identifying a problem, collecting data through observation and experimentation, and developing and testing hypotheses yields humanityôs base of useful knowledge. And, they claim, it is our *only* way of acquiring such knowledge. They further claim that we are, after all, physical beings who rely on five senses, and what we receive this way is knowledge of the world and the universe we inhabit. But this is not always true. Donôt we know things by intuition or reasoning (logic) trial and error, imagination or from experience or a past engagement of both or by creativity? However, if we examined the type of knowledge that forms the basis of all that we do or say and what we do not do or not say, we can reduce all knowledge sources in two domains and these are (i) lay sources, which we can call non-scientific sources, and (ii) scientific sources. Let us examine these two sources of human knowledge then.

1.1 Lay Sources of Knowledge

A great deal of things that shape our lives about the world are based on lay sources of information and these include some authorities, media myths, traditions, intuition , reasoning or **logic**,

Authority

There are innumerable authorities that promulgate truths. Parents, teachers and books all have had a great influence on what we know. These sources are readily available, reward us and approve of what we do. If we wanted to get some information, we do not need to use a complex process. The methods are just quick. In our day-to-day life, we get information from teachers and parents. These authorities may have taken some time to learn and their knowledge is often taken as valid. Knowledge from some authority can be identified to exist in three tacit psychosocial mechanisms: Imitation, identification and learning-by-doing. While their knowledge may be authoritative and referred to, this source of knowledge and the knowledge itself has a number of limitations. The knowledge may be outdated, mythical or it may be a plain wrong and at times there may be little truth in what they claim (Manion and Cohen, 1987; Neuman, 2000).

Media Myths

We all have had time to read comics, magazines novels and we do watch television regularly. We cannot underestimate how much we have come to conceptualise the world and how much of what we can now be able to do that we were unable to do before. Crime has been learned from the media mythically. From what has been seen or read, peoples have ended up facing unrealities in life because what are projected are myths.

Tradition (Authority of the Past)

The term traditional knowledge has come to mean the knowledge that has been passed from one generation to the next through oral or written traditions. Tradition describes how knowledge is transferred in a social context. The tradition is a system of values and rules outside the individual. A tradition transfers its patterns of action, rules, values attitudes and norms. These create social order because people can foresee both the action of others and the implied expectations on themselves. An individual defines him/herself as someone by submitting to the tradition. The formation of knowledge within a tradition is done both locally (by master/apprenticeships) and in a larger context through professional bodies (Polanyi, 1964; 1969; 1974).

All cultures have traditional knowledge that is transferred from person to person and generation to generation. A society, which wants to preserve a fund of personal knowledge, must submit to tradition. Traditional knowledge may be transferred in several ways and some include:

- Articulated rules (maxims)

  These are used as for guiding behaviour like texts in manuals or accounting procedures, check lists, handbooks, guidelines for salesmen etc. are also examples of indirect knowledge transfer.

- *Oral Tradition.*

  Knowledge can be passed from one generation to another in a number of ways. It is passed by storytelling and also through writing. It can also be taught without words by showing people how to do things. An oral tradition is the passing of knowledge from one generation to the next orally (by speaking). Until recently, all of the Aboriginal peoples who lived in the area that is now the Northwest Territories of Australia, lived by knowledge that was passed to them through their oral tradition. The skills for survival such as hunting, building houses, making clothes, tools, medicine and religious practices were taught by telling and showing one another how to do these things. Singing, telling stories, and plays are also ways of passing knowledge through the oral tradition. Elders are very important in cultures that teach through the oral tradition. The elders are the people with the most knowledge. They have gained it over their lifetime and they are needed to teach the younger generations. They are the educators.

- *Written Tradition*

  A written tradition is the passing of knowledge through the written word. Examples of this are children learning history from textbooks, or, adults reading a manual to learn to use a VCR.

There are marked limitations with traditional knowledge. Some of it begins with prejudices; some of it, which is correct at the beginning, gets distorted as time goes on. Often times, people who are not adept to change stick to the past. So what we see is that traditional knowledge may cease to hold valid truths. Some of it is outdated. The fact that most of the sources of our knowledge are traditional condemns anti-traditionalism as futile. But this fact must not be held to support a traditionalist attitude: every bit of our traditional knowledge (and even our inborn knowledge) is open to critical examination and may be overthrown. Nevertheless, without tradition, knowledge would be impossible.

Intuition

Intuition is personal spiritual experience. The knowledge obtained through the functioning of the causal body is intuition. Sri Aurobindo once called it the Supermind or Supramental Consciousness. There is direct perception of truth, or immediate knowledge through the Superconscious State. There are many times in life that we come to know things in a flash. In intuition there is no reasoning process at all. It is direct perception. Intuition transcends reason but does not contradict it. Intellect takes a man to the door of intuition and returns. Intuition is divine vision; it is the eye of wisdom. Spiritual flashes and glimpses of truth, inspiration, revelation and spiritual insight come through intuition. For example, the knowledge of God is above intuition. It transcends the causal body and is the highest form of knowledge. Intellectual intuition are most important, but they are not reliable: they may show us things very clearly, and yet they may mislead us. They are indispensable as the main sources of our lay theories; but most of our lay theories are false anyway. The most important function of intuition and imagination, is to help us in the critical examination of those bold conjectures which are the means by which we probe into the unknown.

Logic or Reasoning

Reasoning is the philosophical idea that mental processes are the primary source of knowledge. Reason is higher than instinct and is found only in human beings. It collects facts, generalizes, reasons out from cause to effect, from effect to cause, from premises to conclusions, from propositions to proofs. It concludes, decides and comes to final judgment. It takes you safely to the door of intuition and leaves you there. Belief, reason, knowledge and faith are the four important psychic processes. Most of the times we come to know things after processing arguments mentally. This is called logical reasoning. In ordinary language, logic (ancient Greek logice = sense/think) is the reasoning used to reach a conclusion from a set of assumptions. More formally, logic is the study of inference-the process whereby new assertions are produced from already established ones. Let us examine the following situation when you are unwell. First you have belief in a doctor. You go to him for diagnosis and treatment. The doctor makes a thorough examination of you and prescribes certain medicines. You take them. You reason out: "Such and such is the disease. The doctor has given me some iron and iodide. Iron will improve my blood. The iodide will stimulate the lymphatics and absorb the exudation and growth in the liver. So I should take it."

There are five types of reasoning which are inductive reasoning, deductive reasoning, abductive reasoning, retroductive reasoning and pragmatism (though the traditional types are inductive and deductive reasoning). For simplicity sake, only deductive ad inductive reasoning will discussed here and the other forms of reasoning are discussed much more elaborately later in the chapter.

Deductive Reasoning

Deductive reasoning began with Aristotle (384-322 B. C.). Aristotle argued that a great mind has formed a great original system of thinking in order to provide proof of what is spoken deductively. In his conception of deductive reasoning, he argued that knowledge is the product of reflection based in fundamental general formal (and hence indubitable) principals or axioms, or premises from which subsequent truths are logically derived (Popper, 1959, 1963; 1979). What this entails is that in deductive reasoning, a particular statement is only able to be conclusive if a valid argument is constructed were two basic premises are true. In essence, deduction operates on a foundational principle of justified true belief. Logical deductivists believed that an important group of foundational concepts must exists and that these are known intuitively/deductively through reason, and factual analysis as opposed to experience, faith, dogma or religious teaching (Popper, 1959; 1979). We can give an example here of

deductive reasoning to see how the mind operates to know one position or thing. I was once told to be *careful of a wasp because it might sting.* This warning was based on the logic that all the observed wasps as a class of insects had stingers; therefore each individual wasp will have a stinger. This conclusion is freeing in that we do not have to examine each and every wasp I would ever encounter in future to ascertain what characteristics it may have. This assumption may be well-accepted or it may be rather shakier and nevertheless, for the argument it is not generally questioned. Because of the validity of deductive reasoning, we may make an assumption that is both useful and efficient. So what we see is that deductive reasoning, or deduction, starts with a general case (wasps sting) and deduces specific instances (wasps have stingers).

Inductive Reasoning

"*Men have sought to make a world from their own conception and to draw from their own minds all the material which they employed, but if, instead of doing so, they had consulted experience and observation, they would have the facts and not opinions to reason about, and might have ultimately arrived at the knowledge of the laws which govern the material world.*"

Francis Bacon (1561 - 1626), an English philosopher of The Enlightenment best known for his political philosophies, steered scientific methodology toward the future. Francis Bacon, who wrote in the early 17th century, is often thought of as the originator of induction. He developed induction after so much criticism of Aristotlean deductive logic. Bacon observed that for us to be sure that we know something truly, we should primarily start with one observation then another, then another..... another, then another.....making inference from these repeatedly observed instances to some as yet unobserved instances and these would lead to a hypothesis and eventually to a generalization. From these inferences, one builds laws, hypotheses and theories. As seen in the deduction section, deductivists rely on foundational premises, or axioms, that have been formed *a priori* and one could argue that the wealth of foundational truths that they inherit from the past are an asset upon which they can account for the data they have at hand. To the contrary, Bacon argued that *a priori* axioms or premises are a hindrance to knowing. Bacon said that the premises or axioms that people had were leading them astray. He did not want people to use them; he wanted them to build knowledge based on *a posteriori* (fore knowledge) knowledge or direct experience. Mouly (1978) explains it like this: Baconôs basic premise was that if one collected enough data without any preconceived notion about their significance and orientation thus maintaining complete objectivity inherent relationships pertaining to the general case would emerge to be seen by the alert observer. For us to assert clearly and distinctively that we see to be true must indeed be true, Bacon argued that we do not have to build truthful knowledge on a little experience, or on unsystematic experience, but on a great deal of systematic experience based on forward sampling. So the premise that he set was that from particular experiential instances of something, we would move on to all others to say that all particular instances are the same (Barnes, 1974; Popper, 1979; Honderich, 1993) and this is the science of inductive inquiry.

We might observe eighty different children at a school birthday party and note that all the girls initiate more conversations than the boys. We futuristically tentatively speculate that 'girls are more confident communicators in than boys. That is to say by considering a range of specific cases we make a general statement (law) that tries to sum up all those specific statements. Not only does this occur in research environments we also make inductions all the time in everyday life - for example, we have listened to a number of specific cases of concerts on TV concerning Julio Iglessias and come to the general conclusion that Julio Iglessias is the best idol, after sampling just a few other idols like Nasty D, Madona and MC Wabwino.

Unfortunately, from this reasoning, there are two insuperable problems with induction as a guiding principle of science (Chalmers, 1982). The first is that it is impossible to have pure observations: what we observe and how we observe it are, implicitly or explicitly, based on

theory. This phenomenon is known as the theory-dependence of observation. The second problem is that there is no logical basis for the principle of induction. Because something has been observed to happen on 10 occasions, it does not necessarily follow that it will happen on the eleventh. This means that Laws can never be conclusively verified by a depth of temporarily corroborated evidence. The philosopher, Karl Popper, who was a contemporary of Freud and Adler in the 1920s in Vienna, put up this point of view forcefully dismissing induction not as the best way of reasoning. It is worth giving an extended quotation, which is of enduring relevance to health workers or novice researchers:

> I found that those of my friends who were admirers of Marx, Freud, and Adler, were impressed by a number of points common to these theories, and especially by their apparent explanatory power. These theories appeared to be able to explain practically everything that happened within the fields to which they referred . . . .The most characteristic element in this situation seemed to me the incessant stream of confirmations, of observations which verified the theories in question; and this point was constantly emphasized by their adherents. . . . The Freudian analysts emphasized that their theories were constantly verified by their clinical observations. As for Adler, I was much impressed by a personal experience. Once, in 1919, I reported to him a case which to me did not seem particularly Adlerian, but which he found no difficulty in analyzing in terms of his theory of inferiority feelings, although he had not even seen the child. Slightly shocked, I asked him how he could be so sure. Because of my thousand fold experience , he replied; whereupon I could not help saying: And with this new case, I suppose, your experience has become thousand-and-one fold.

Another argument against induction follows like this: We heard the British at one time making a general claim on the basis that in the previous hundred years, all Prime Ministers in Britain were males and they asserted by induction that it would be so eternally. It was also held in Africa by induction that there would never be a female President. However, what can we say about the reliability or universality of accepting the Law induction based on limited experience when Lady Thatcher became the British Prime Minister? The same was true in Africa in Liberia when Mrs Ellen Johnson Sirleaf defeated the famous footballer George Weah in an election and became the first female President in Africa. What we can then say is that pure induction could be relied on to formulate universal laws only to some extent. So from what has just been said about induction, one would see that the term is not just as simple as it appears.

1.2 Scientific Sources of Knowledge

There is no definite list of sources of knowledge in science or social science. However, scientific knowledge is generated using scientific methods and this may rely on the lay sources of knowledge described above.

1.3 What is the scientific method?

The first characteristic of the scientific method is its conventional nature which serves as a framework of the generation of either objective or subjective knowledge. The expression scientific method is used with different meanings, and, very often, abuses it in order to justify a specific personal or social position with relative ignorance about the complexity of the concept. As its very name indicates, it represents the methodology that defines and differentiates scientific knowledge from other types of knowledge like lay knowledge.

The philosophy of science creates the scientific method in order to exclude all that is common sense**.** Clearly not everyone will agree with this line of argument as there are various trends of logics of analysis in the philosophy of science that are, in turn, derived from the different ontologies, epistemologies , methodologies and concepts about reality, perception, theories, etc.

1.4 Key Concepts, the Nature of Science and philosophical Assumptions of Social Research

There has been considerable debate in the research community with respect to philosophical assumptions that guide research. Considerable attention has been paid to the issues of monism in research and the diversity in methodological pluralism (e.g. Hirschheim and Klein, 1989; 1992; Galliers, 1991; Klein et al., 1991; Olaisen, 1991; Walsham, 1995a; Hirschheim et al ., 1996; Wicks and Freeman, 1998; Cook and Brown, 1999). However, before examining the nature of science and these philosophical assumptions, we need to describe some key concepts.

1.4.1 Empiricism

Empiricism (əmpĭ´ĭsĭzəm) [Gr., = experience] (or naturalism) originated in England in the seventeenth century and is linked to Francis Bacon, Thomas Hobbes and John Locke. Empiricism was later developed by and John Locke, when it was a materialist trend and it directed attention to the observation of Nature as opposed to Holy Scripture or introspection. If empiricists assert that all knowledge comes only by virtue of experience, can we say so about our feelings, faith in God? Certainly not so empiricism could not give us "certain knowledge" about our inner worlds. Empiricism entails a general *ontology* of an ordered universe made up of atomistic, discrete and observed events which can only be observed (i.e., experienced by the senses) and which can be regarded as real and therefore worthy of attention of science. From what has been stated, empiricism proposes that our knowledge comes from *experience perse* of the natural world. The term also refers to the method of observation and experiment used in the natural sciences (Aune, 1970; Turner, 1993; 1991; Ayer, 1996; 2001).

To see what empiricism is like as source of knowledge entails, let us begin with the Empiricism Thesis: Empiricists say that at the outset and at all times, we have no source of knowledge in a thing S or for the concepts we use in S until we experience the first instance by observation, the second instance again by observation and so forth. For most empiricists, experience includes inner experience-reflection upon the mind and its operations-as well as sense perception through; hearing, seeing, touching, tasting and smelling. Empiricism denies the existence of innate ideas. The chief defect of empiricism is that it views experience passively. It is true to assert that experience does not by itself give necessary and universal knowledge. Experience must be supplemented by the activity of reason and interpretation (Turner, 1963; Ayer, 2000).

It therefore follows from the above descriptions that the *empirical approach* is an evidence-based approach that relies on direct observation and experimentation in the acquisition of new knowledge (Kazdin, 2003). In the empirical approach, scientific decisions are made based on the data derived from direct observation and experimentation. The empirical approach, with its emphasis on direct, systematic, and careful observation, is the approach of doing research in the natural sciences. Empiricism is a philosophy based on experience and facts encountered in social life; however, Comte repudiated empiricism. Sociology is not a science that accumulates mere fact; rather it seeks to interpret and connect them with each other through theory. This is extremely important: facts are not, strictly speaking, based on observation but are constructed by the guiding hand of theory. Real knowledge can never be based on observed facts alone but on laws. No real observation is possible, wrote Comte, óexcept in as far as it is first directed, and finally interpreted, by some theoryô Observation and laws are óindispensably connectedô

1.4.2 Positivism

Positivism originated in the 18th century, when Berkeley denied the reality of theoretical objects such as the Newtonian forces of mechanics (Losee, 1993: 168). Positivism was subsequently disseminated by two influential 19th century philosopher-scientists: the sociologist Comte, who asserted that ósscience must study only the laws of phenomenaô and the physicist Mach, who attempted to purge all theoretical terms from Mechanics (Losee, 1993:170). The intellectual origins of positivism are to be found in the Enlightenment project of Durkheim (1798-1857), (Bernstein, 1976). Emile Durkheim argued that sociologists should apply the methodologies of the natural sciences such as physics to the study of human beings (Booth et al., 1996), seeing the scientific method as the only valid and reliable source of knowledge. This implies that scientific sociological research produces collection of facts, and that sociologists should aim at establishing general laws describing human behaviour from which predictions could be made. This perspective is known as positivism and often underpins quantitative research methods. Positivist sociology originated with the work of Augusté Comte who believed that the social world closely resembled the natural physical world. He believed that both the social and natural worlds were made up of objective facts that were independent of individuals and waiting to be discovered. Positivism formed an integral part of the Enlightenment tradition: science and facts opposed metaphysics and speculation; faith and revelation were no longer acceptable as sources of knowledge. As a philosophical and sociological movement, positivism embraced a number of different meanings, including:

- A belief in natural science as the basis of all knowledge (a belief called scientism).
- The use of statistical analysis.
- The search for a causal explanation for social phenomena and the
- Fundamental laws of historical change and of human nature itself.

Positivism is based on an understanding that reality is objective, tangible and singular and experiences are what can be observed ï a science that is value free (Robson, 2002). It attempts to find regularly occurring events or patterns in order to generate predictions.

Positivism is a logical system based on direct, systematic observation. Positivists claim that it possible, and desirable to study humans in approximately the same way that natural or empirical science investigates the physical world. This is based on the belief that behaviour in the social world follows certain laws that are discoverable using empirical quantitative methods to get to the sources as used by the natural sciences. So positivism is the method of science in the social sciences. This method particularly impressed 19th and early 20th century sociologists such as Comte and Durkheim (Coser, 1977). Comte and Durkheim witnessed the growing ability of the natural sciences to understand and predict the workings of the natural world and believed that if there were basic laws or relationships between phenomena in the natural world similar laws and relationships must be discoverable in the social world.

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Positivism therefore asserts that only what can be seen in the body social are the only factors that are worth studying. Fuzzy things like love, hatred, happiness; value, trust, etc are metaphysical or are outside the physical world and to these, there are no sources of knowledge amenable to the methods of data collection inherent of the positivisms methodology. These fussy elements or variables though important in a society, cannot be observed, manipulated or measured by experimentation (Schutz, 1966; Hammersley and Atkinson, 1995). A positivist researcher has a belief that the world conforms to fixed laws of causation; that there is a complexity that can be tackled by reductionism; and that asserts an emphasis on objectivity, measurement, and repeatability. These researchers have both a realist and an objective view of the world. The methodologies most often used by positivist researchers include quantitative analysis, confirmatory analysis, deduction, laboratory experiments, and nomothetic experiments (Fitzgerald and Howcroft, 1998).

As seen, positivism is not different from empiricism. The only difference is that its focus is not on the natural world as empiricism espouses but the social world. The ontology it deals with is that of the outside world. Only that which can be observed (i.e., experienced by the senses) can be regarded as real and therefore worthy of attention of social science.

In its *epistemology*, called positivist epistemology, knowledge of social reality[1] is derived from sensory experience, and concepts and generalisations summaries of particular observations. A correspondence is posited between observation statements and theoretical statements. Importantly, there is a distinction between the language of observation and the language of theory; in this epistemology observations are not theory-laden.

1.5 What is Science?

A science is often thought of as being a coherent body of thought about a topic over which there is a broad consensus among its practitioners and there is a methodological and systematic approach that is to the acquisition of new knowledge. Alan Chalmers (1999: 1) for instance notes the popular view of science: When it is claimed that science is special because it is based on the facts, the facts are presumed to be claims about the world that can be directly established by a careful, unprejudiced use of the senses. Science is to be based on what we see, hear and touch rather than on personal opinions or speculative imaginings. If observation of the world is carried out in a careful, unprejudiced way then the facts established in this way will constitute a secure, objective basis for science. Yet the actual practice of science shows that there are not only different paradigmatic views on a given phenomenon, but also alternative methods of gathering information and of analysing the resultant data across paradigms. While these differences do affect the natural sciences, we are concerned here with the history and practice of the social sciences.

A paradigmatic view of science holds that historically, there are sets of core ideas which dominate a scientific field until inconsistencies and difficult and awkward modifications force a new set of ideas to direct scientific research and hence influence system methodologies and design. Core ideas guide us to make operative assumptions and implicit normative content of the type of scientific approach we are espousing (see Creswell, 2003, 2005; Guba, 1990; Guba and Lincoln, 1994; Schwandt, 1994). Implicit here is the notion that in order to understand the thinking and processes in social research, one needs to understand "how the assumptions scientists bring to their subject of investigation guide, and influence what is seen and studied" (Morgan, 1990:13). What this means is that in order for research to be most

[1] Social reality is viewed as a complex of causal relations between events (e.g., crime, poor diet and unemployment), which are depicted as an emerging patchwork of relations between variables. The causes of human behaviour (e.g., domestic violence) are regarded as being external (say, poverty or drunkenness) to the individual (as we noted in behaviourism).

convincing, we need certain guidelines that ought to be followed since each paradigm provides unique attributes for different purposes of scientific inquiry; the same argument could also be applied to each methodology. In this way, we are likely to design and answer all our research questions In social science research, nothing is completely believable and nothing is completely worthless and therefore we need to make informed decisions on what we want to study.

As social scientists, sociologists are "brought up" in a tradition dominated by research methods from the natural sciences and are used to conducting research in a quantitative tradition. When studying feelings and thoughts in sociology for instance, qualitative research approaches are often just as appropriate. The possible outcome of a research project is closely related to how the project is performed. There are several research logics or ñstarting pointsò, each with different epistemological and ontological basis. To deliberately select data analytic approach or software for analyzing any type data may be crucial to some researchers no matter the varying perspectives and the research questions guiding the study. Most researchers do know that various research questions and logics of inquiry exist and serve to lead the researcher down different roads. Most researchers do not know that with the same research questions and varying the logics of inquiry, they would come up with different types of outcomes. By studying the logics of inquiry, we will not only settle for differing methods, we shall obtain different insights in the discussion. We will also, by getting different results and drawing differing conclusions that would not have been visible by selecting a method deliberately.

2.0 Philosophical Assumptions of Social Science Research

Before looking at the philosophical assumptions of research, it would be prudent to define research. The sixth edition of the OECDôs (2002) Frascati Manul defines research and experimental development as a creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications

Vaishnavi and Kuechleer (2004) define research as ñan activity that contributes to the understanding of a phenomenonò. Research, in its most conceptual sense, is nothing more than the search for understanding (Hirschheim, 1992). Research is systematic, self-critical inquiry that is founded in curiosity and driven by a desire to understand arising from a stable, systematic and sustained curiosity and subjected to public criticism and, where appropriate, empirical tests (Stenhouse 1981).

Based on these perspectives it appears that a major aim of research is to generate and evaluate knowledge. Various perspectives on the nature of that knowledge, itôs purpose, validity, novelty, utility etc exist.

It therefore follows that anyone who does research in any field must come to grips with two fundamental problems in his/her pursuit of knowledge. They are often referred to as the ñessential problem in scienceò. That is: ñhow do we know what we know'', and following on from that, ñhow do we acquire knowledge''? This age-old problem has been at the core of science since its inception. And the solution to the problem is, arguably, as contentious now as it has been for centuries (Goles and Hirschheim, 2000:250) and it borders on philosophical assumptions. It must be stated from the outset that the philosophy of social science is a notorious minefield, encompassing not only traditional philosophies of (natural) science but a variety of other ontological and epistemological positions

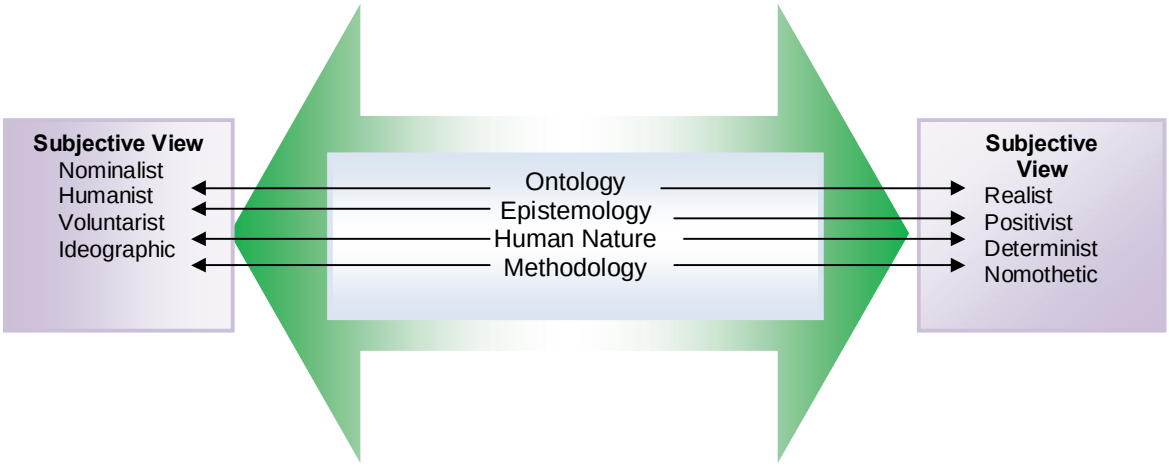
In all scientific disciplines there is a history of philosophical paradigmatic discourse at the heart of which poses the question, what is science? Since we have already dealt with the nature of

science and the foundational issues related to what paradigms are, we can then examine the philosophical assumptions upon which knowledge about social science is based by focussing on paradigmatic typologies advanced by Burrell and Morgan (1979) and Flood and Jackson (1991). These authors have advanced the most influential texts on the philosophical debates in social research which may hold some responsibility for the belief that the nature of social research can be split into two camps. These authors described some issues concerning the nature of social research - including ontology, epistemology, and methodology ï and described for each the extreme views that one could hold on each issue. I must be quick to point here that the paradigms that these scholars espouse (objective and subjective theses) are not the only ones. Mixed paradigms and pragmatism have not been addressed. This fact aside for the moment, these scholars have observed that if social scientists were to do research, they required to be guided by four social science research assumptions. These assumptions are the bases that any knowledge claim would fit into what is called social science. We have bundled together four pairs of strands of philosophical assumptions implicit in social science thought, arguing that the strands of these philosophical assumptions may usefully be labelled in three theoretical axes of schemas as ósubjective' óobjective' and ómixedô approaches of doing social science research. These philosophical assumptions and their three axes are shown in table 2.1 and their critical elements are expressed in figure 2.2.

Table 2.1 Schema of philosophical assumptions

Strands of Theoretical Assumptions	Subjective Axis	Objective axis
Ontology	Nominalism	Realism
Epistemology	Anti positivism	Positivism
Human nature	Voluntarism (Free will)	Determinism
Methodology	Idiographic	Nomothetic

Figure 2.2 Illustration of the two axes at the core of Burrell and Morganôs two axes and four paradigms



If you look at the two axes, you will notice that all social research (refers to research conducted by social scientists) methods may be divided into two broad categories based on the types of data they deal with and these are quantitative and qualitative research :

1. The objective axes relates to quantitative research. Quantitative designs approach social phenomena through quantifiable evidence, and often rely on statistical analysis of many cases (or across intentionally designed treatments in an experiment) to

create valid and reliable general claims. We may have look at a simple example of this type of research to get a picture. If, as a buyer of research, you need numbers ï if you need to be able to say that ó23% of people said Yesô to disbanding the Zambia National Football Team or ó a quarter of the population say they wantô all rapists to be castrated ï you need quantitative research.

2. The subjective axes relates to qualitative research. Qualitative designs emphasize understanding of social phenomena through direct observation, communication with participants, or analysis of texts, and may stress contextual and subjective accuracy over generality. An example of this type of research will be like this. On the other hand, if you don't need numbers but need a particular sort of understanding ï if you want to know not only what people do but why they do it or how they go about doing particular things , not what they want but why they want it ï you need qualitative research.

Now let us look at the main tenets of the four pairs of social science research assumptions and we discuss these in the preceding sections.

2.1. Ontological Assumptions[2] - What World Is Of Concern of What Reality Looks Like

The word ontology is derived from the Greek *ontos* (being) and logos (theory or account or reality). I must state from the outset that reality is a most difficult issue to grasp, so I will devote a quite a bit of space elucidating it. Consider for a moment the question: *What do you mean when you say that something is real?* Is electricity real? Are stones or trees real? Is poverty and homelessness real? Are your thoughts, dreams and perceptions real? Are myths and fables real? Is salvation by the blood of Jesus real? What factors are likely to frame your answers to all these questions? Is it the phenomenon's relative accessibility to others? Is it its relative separateness from, or independence of you, the knower – in a word, its objectivity? Is it its tangibility or relative permanence? Alternatively, might it be the phenomenon's clarity of definition, or its intelligibility, meaningfulness to the knower or speaker – in a word, its subjectivity? If you privilege tangibility, objectivity, and accessibility, then your thoughts, dreams, and perceptions are not real. If you privilege usability, then learning and electricity might seem more real than stones and trees. On the contrary, if you privilege clarity of definition, then learning and electricity might seem *less* real than stones and trees. Nevertheless, what does it mean to say that something is less real? If a thing is less real, does it still exist? Are there things that exist that are *un*real? Do our understandings of what it means to be real shape in any way what we might do as researchers? For instance, if a thing is "less real" does that mean that it is not worthy of being studied? On the other hand, does it simply mean that it needs to study in a different way? In addition, ultimately, does it matter at all (to the conduct of your analysis) whether things are real and how things are real?

All these questions relate to ontology. So ontology asks, "What is the form and nature of reality and what can be known about this reality? Is reality something tangible that exists "out there" and is it independent or dependent of the researcher? Alternatively, is there a single reality that is measurable on the basis of an instrument or are there multiple realities that are constructed and interpreted in the minds of the researcher and the other stakeholders in the research? Therefore, what we can see from these questions is that ontology refers to that slice of reality which the scientist chooses to address be it the outer world or the inner world. This is generally, what reality looks like irrespective of our precise knowledge of it. This covers assumptions of knowledge that we come to posses in relation to the nature of the phenomena that could be studied and in other words it refers to the nature of the world around and inside us - what it contains and what it looks like.

[2] Ontological assumptions concern the nature and form of reality and determine what constitute ólegitimate,ö researchable questions (Guba and Lincoln, 1994).

2.2 Epistemological Assumptions (The way To Justify the Belief We have about reality).

Now that we know what type of reality we want to talk about and show knowledge of it, the problem that we have is to select the theoretical assumptions that are going to make us appreciate the type of social reality and in what ways are we going to explain or understand this reality. The epistemological debate concerning how knowledge can be held about the world, is presented in a similar way like we have done for ontologyï either knowledge about the social world can be proved or disproved, leading to the uncovering of laws about its workings (objectivism or positivism) or perhaps knowledge can only be held by an individual, and uncovering an individualôs subjective knowledge about the world is all research can do (relativism or anti-positivism). The term epistemology comes from the Greek word epistêmê, their term for knowledge. In simple terms, epistemology is the philosophy of knowledge or of how we come to know. Epistemology is asks questions like: "what can we know?" "What can we be sure of?" "How do we get beyond mere opinion to real knowledge?" According to (Nutter, 1987), epistemology covers:

1. The nature of knowledge: what *is* knowledge? What do we mean when we say that we *know* something?
2. To what extent can knowledge exist before experience? Do we know what we know about our world by observing it? In other words, can we *know* something without having experienced it by thinking and logic? The primary issue here is whether there exists an innate knowledge as claimed by many language acquisition theorists.
3. What particular properties and relations can we describe of reality and what methods can we use to get to that reality.
4. The sources of knowledge: where do we get knowledge? How do we know if it's *reliable*? When are we justified in saying we *know* something?
5. To what extent is knowledge universal? Is knowledge out there just waiting for us? Some theorists assert that all knowledge exists and need only be discovered as the unchanging truth. The UNIVERSALISTS espouse such a perspective and believe that shortcomings in theories are simply the result of not having yet discovered sufficient knowledge. The RELATIVISTS believe we will never be certain because there is no unchanging universal truth to be discovered.
6. The scope of knowledge: what are the *limits* of knowledge? Are there any in the first place?
7. By what process does knowledge arise?

How is knowledge obtained best? There are six basic schools of thought on this issue of knowledge claims advanced by social science researchers: rationalism, positivism, interpretivism, constructivism, pragmatism, and advocacy and participation. Rationalism and inductive realism are embraced by the positive epistemology; interpretivism and constructivism are embraced by the subjective epistemology whereas pragmatism, and advocacy and participation fall in one domain-pragmatism.

2.3 Human Nature Assumptions — Our Being and What We Intend to Know

The dispute as to dheô appropriate way to study human social behaviour is a dispute about human nature. In most, if not all, subjects concerned with human behaviour there is a fault line between determinism and free will. The division is most marked in subjects such as philosophy, theology, sociology, psychology and biology. From the writings of Burrell and Morgan and Flood and Jackson (1991), the human nature strand concerns the implicit or explicit model of humans and their relationship with their environment. To this end, there is a plethora of literature on the subject of the nature of human beings and how it may influence getting into research. At the centre of an investigation on the subject is the question "what is the nature of (wo) man?" For indeed a discussion of human nature is rich with probing the

meaning and purpose of life; what goals we set and achieve; what we ought to do; and what we can hope to do. All of these inquiries are fundamentally affected by how we answer the question about what is the 'real' nature of (wo) man (Stevenson, 1974:3). However, it is quite possible for individuals to hold beliefs that are in conflict with each other. This can be accomplished by either not allowing any scientific or logical evidence to count against the belief or by separating the belief as a 'closed system' that is isolated from critical investigation (Stevenson, 1974:12). For example, there are many non-lunatics who believe in Christianity. A critic might say that if God is omniscient, he is aware of the evil in the world. If He is omnipotent, He is capable of removing it; and if He is benevolent, then surely He will remove it. However, evil continues to exist in the world (Stevenson, 1974:10). A typical reply would be that what seems bad may be ultimately for the best. This reply dismisses scientific criticisms of the existence of God through the underlying assumption that 'God' is a closed system that we cannot critique with scientific methods. The point is that a researcher could hold a view of human nature which conflicts with his or her choice of methodology and design. This calls into question Flood and Jackson's (1991) assertion that a person's view of human nature directly influences the methodological approach that is chosen.

Flood and Jackson just like Burrell and Morgan characterise the two opposing views of how we view the nature of human beings as follows. Either the view an individual subscribes to is deterministic which postulates that humans are mechanistic, determined by situations in the external world; human beings and their experiences are products of their environment; they are conditioned by external circumstances. Or the view is voluntarist, which postulates that humans have a creative role and have free will; human beings create their environment (Flood and Jackson, 1991: 247). Let us examine each of these. This is drawn from two assumptions about human nature and these are as follows:

2.3.1 Determinism

Determinism refers to peopleôs behaviour being determined for them by some external force in as far as they lack originating powers as actors. The word ódeterminismô is further used to describe the position that cause and effect are related by laws that exist outside of human subjectivity or action , together forming a timeless grand theory (Morrow and Brown, 1994). The pursuit of grand theory via causal laws is based on the Humean tradition that scientific explanation involves relating phenomena to be explained to other phenomena via such causal laws (Frankfort-Nachmias and Nachmias, 1992). This principle of causality is a central concept in natural science (Popper, 1982) and tends to explain that laws or social facts determine all social actions and man has no control for them. It has been observed that an assumption of the field is that ówell defined laws govern behaviourô (Flood and Jackson, 1991: 33) and that ôForrester talks about fundamental laws of nature and the social sciencesô (Bloomfield, 1982: 13).

The nature of the external force varies from subject to subject but in all cases, the key point is that the element of choice is removed from us, as humans, and lies beyond our capacity to change it. It is important to understand, however, that our inability to do things differently is not because we are physically compelled but because we literally do not believe or know that alternative possibilities exist. Determinism has people responding in an almost mechanistic way, functioning as products of an environment, or social structure, which both forms the situations, which they encounter, and the conditioning, which they imbibe (Van Inwagen, 1975; Honderich, 1993:11-18).

The following are examples of deterministic views.

1. At the core of Freud's theory is the assumption that within the realm of the mental, every event is preceded by sufficient causes. Dreams, slips of the tongue, faulty

actions and physical language are determined by hidden causes in an individual's mind (Stevenson, 1974: 64).

2. Religion: Some religious belief systems emphasise that human behaviour is directed by a supra natural being. An example of this is the Calvinist belief in pre-destination; the belief that God has already selected who will be saved, and that there is nothing that can be done by humans to change this.
3. Biology: some biologists argue that human behaviour is determined by genetic or hormonal inheritance. We are prisoners of our bodies and our actions are beyond our control. Examples here might include the debate on the nature of homosexuality, or perhaps the definition ôcriminally insaneô

So what we see in the above examples is that throughout a lack of choice is emphasised. A deterministic view of social life can be seen as seriously pessimistic in that change seems remote, even if desired, and in many cases also a prop to conservatism since it can appear that the way things are is the way things were ómeantôto be.

2.3.2 Voluntarism

At the other end of determinism would be the voluntaristic, free-will view that ôindividual decision making is unaffected by context and consequences of the system in which it takes placeõ (Bowen, 1994: 88). The voluntarist approach ascribes a much more creative, free-will approach to humans, treating them as agents able to create their environment by their thoughts and actions. The voluntarist approach ascribes the following cardinals: a much more creative free will approach to humans, having them act as agents able to create their environment by their thoughts actions and culture. Aune and Lehrer (1967); Flood and Jackson (1991) and Glor, (1997, 1998a, 1998b) write that in this view, humans have a creative role but it certainly could be the case that an individual is determined to have a creative role. Indeed very few people would deny that people create their environments to some extent. The characterization of free will requires careful wording and distinctions. There are some definitions of free will that are not in conflict with determinism (Honderich, 1993:2). What is not seriously disputable is the kind of freedom referred to in traditional discourse on free will. This freedom is in some sense a precondition of moral responsibility (Campbell, 1966: 446). A person could be said to have exercised free will if his chosen act is one of which he is the sole cause or author, and only if in the straightforward, categorical sense of the phrase he could have chosen otherwise (Campbell, 1966: 448). Flood and Jackson's argument requires more clarification.

Examples of voluntarism are:

Religion: some religions emphasize that we can chose our own destiny and come to God via a free choice.

Sociology: some perspectives rather than viewing people as puppets with society pulling the strings, sees people as actively and creatively interpreting the social scripts that society provides for us. One example of this type of perspective is one that draws the analogy between humans as actors in society, and the way in which a dramatic actor would work in the theatre.

2.4 Methodological Assumptions[3]— How We Go About Collecting What We Want

Becoming a social scientist involves learning techniques and modes of collecting and analysing data through which the merits of various competing versions of reality can be assessed. Most people have knowledge of the society that is out there for all to see whereas others have the knowledge of society that is in the minds of people that no one sees. In order to have this type of reality appreciated, we have to select a particular methodology and this has to be driven by some assumptions. Methodological assumptions relate to the processes researchers have to use in generating the knowledge they want. In essence it addresses questions like: How can the researcher go about finding out whatever she or he believes can be known? What tools can and should be used in the research to advance knowledge and promote change? Again, the research methods that one chooses depend upon one's assumptions about ontology and epistemology and one's ideology or values.

Let us set the premise by looking at the crow problem. If we believe that all crows are black just because the grandma says so? Do I need to see the crow myself in order to believe it? Do I need to become a crow myself to be sure? Do I need to observe a crow from the moment it is born, to find out when exactly its colour becomes black? Let us see how we can set ourselves going by looking at two examples. The first one is the crow example, ñseeing is believingò, I see one black crow hoping on the ground. At one other moment I see a black crow pecking the woods. At one other short moment I see a black crow nesting. Now, how do I ensure that the two crows, which I saw earlier on and the one I heard, were not one and the same? One crow playing hides and seeks with me, to hoodwink me in believing that all crows are black? If they were three different crows, how do I know, that they were actually crows, not some other bird painted black by Pinkerton agents?

The second one is the milk van. What we know about the van labelled ôMilkô expresses phenomena about it from two aspects of social worlds and these are: either the speaker is expressing facts about the van from the outer world of knowledge (what Durkheim called a social fact) or from the inner world, what we could term as the cognitive world or inner world. Since we can see that we may possess knowledge about the van with the label ôMilkôfrom two different types of worlds, we are then compelled to decide how we could go about collecting the information about the realities of the milk van. From the arguments that were presented in chapter one, what will constitute the ôknowsôof the matter of the outer world (objective or realist ontology) would be the following: Do I need to make any observations that the vehicle labelled ñMilkò has a design fit to carry milk and it is going about its business picking up milk from the farms to be delivered to the dairy. Do I need to stoop inside, and if did and I saw nothing else but the white liquid and when I taste it, I am convinced that it is milk. The matter adduced here is positive knowledge, which relates to what exits and is tangible and it is not based on imaginations. On the other hand, what will constitute matter of the inner world (subjectivism) would be the following: I may not take the first position presented above because I have this conception within me that the vehicle labelled ñMilkò actually is the name of the van. But what does this presumption depend on? This is what I believe the van to be. I do have this picture that because some vehicles have names written on them, this van too has a name, which does not refer to carrying milk. The matter adduced here is subjective knowledge that is based on imaginations, beliefs and past experiences.

The reasons just adduced above include reference to my personal experience or my personal knowledge. If I am challenged to verify my belief all that I need to do is (i) look inside the van. Again, what makes looking any more certain or corroborative than the reasons I have already

[3] Methodological assumptions deal with the structured set of procedures researchers use to investigate what they believe can be known, as well as the procedures they use to analyse what is known and the rationales behind these procedures.

offered? I may still be deceived because I may find something else. What should I conclude if the van was full of whisky instead of milk? Accuse the drive of smuggling? If so and I found whisky, would I conclude that I had misunderstood the label all along and that milk refers to a bright brownish liquid that comes from Scotland and not to a white thick liquid that comes from cows?

But whatever conclusion I may have, the point is that I would be embroiled in questions about the nature of obtaining evidence ï how we know certain things, believe others, how we know things to be true or false, what inferences can legitimately be made from various kinds of experiences, what inferences consist in and so on. Of course, in doing so we begin to lose something of our sense of direction; familiar experiences become doubtful and even the most self-evident, certain, commonsensically true features of our everyday world begin to take on a puzzling air.

When I attempt address these doubts, I am dealing with methodological concerns. In practice, there are two different forms of methodology which are specified indicating the processes by which phenomena are investigated and knowledge obtained for a given body of theory. The nomothetic schema promotes the search for universal laws by a process of identifying tangible concepts and then constructing tests that allow the concepts to be measured. An ideographic schema is concerned with accessing the unique understanding that individuals use to interpret the world around them.

2.4.1 Nomothetic Methodology

Flood describes the methodological ideas that would be consistent with a hard objective view of an external world: The processes by which phenomena are investigated and knowledge obtained about the external world in the realist ontology rely on nomothetic theory. The nomothetic theory promotes the search for universal laws by a process of identifying tangible concepts and then constructing tests, which allow the concepts to be measured. Nomothetic theory is appropriate to analyse relationships and regularities between the elements of which the world is composed; the concern is the identification and definition of the elements and the way relationships can be expressed. The methodological issues are concepts themselves, their measurement, and identification of underlying themes. In essence, there is a search for universal laws that govern the reality that is being observed. Methodologies are based on systematic process and technique (Flood and Jackson, 1991:248).

This is a more popular research assumption for quantitative researchers. Researchers use logical positivism or experimental as well as quasi experimental methods and quantitative measures to test hypothetical generalizations (Hoepfl, 1997), and they also emphasize the measurement and analysis of causal relationships between variables (Denzin and Lincoln, 1998).

Nomothetic research is characterized by group-centred and controlled environmental contexts and by quantitatively based indirect measures such as questionnaires and structured interviews (Luthans and Martinko, 1987). Importantly, under the nomothetic approach, an *etic* perspective is taken whereby the researcher defines the situation and develops the research questions (Morey and Luthans, 1984). The focus in on indirect measurement and sophisticated statistical analysis that are testing predetermined hypotheses. The statistical methods are used in order to find the average in variations within human behaviour, and they are also very concerned about using random and large samples. The experiment is the preferred research method. However, this dominant nomothetic approach is not without some limitations. For example, one problem with a nomothetic approach is the over dependence on questionnaire gathered data. Over the years, questionnaires used in organizationally based

studies have been heavily criticized in terms of design, usability (van Maanen, et al., 1982), and, especially, reliability and validity (Schriesheim and Kerr, 1977; Schriesheim, et al., 1979).

2.4.2 Idiographic Methodology

The idiographic methodology is meant for qualitative research and it is concerned with exploring uniqueness, i.e. what makes a person distinctively individual unlike fining an average person as seen in nomothetic approaches. The methodology of qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as "real world setting [where] the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2001: 39). Qualitative research, broadly defined, means "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss and Corbin, 1990:17) and instead, the kind of research that produces findings arrived from real-world settings where the "phenomenon of interest unfold naturally" (Patton, 2001:39). Unlike quantitative researchers who seek causal determination, prediction, and generalization of findings, qualitative researchers seek instead illumination, understanding, and extrapolation to similar situations (Hoepfl, 1997).

Idiographic research uses fewer cases, and looks at them more in depth using flexible, long term and detailed procedures such as the case study method. This approach does not rule out general principles, but the idea is that gaining a thorough and subtler understanding of a few people will lead to more general understanding of others. Freud within the psychodynamic perspective and Rogers within the humanistic perspective are in favour of the idiographic approach. The idiographic methodology takes a subjective *emic* view of the world and regards experience as a basis for knowledge. This methodology is characterized as follows:

The processes by which phenomena can be explained are rooted in the inner world. An ideographic approach is concerned with accessing the unique understanding that an individual uses to interpret the world around them. The principal concern is to understand the way an individual creates, modifies, and interprets the world. The experiences are seen as unique and particular to the individual rather than general and universal individuals. An emphasis is placed on the relativistic nature of the world to such an extent that it may be perceived as not amenable to study using the ground rules of the natural sciences. Understanding can be obtained only by acquiring firsthand knowledge of the subject under investigation (Flood and Jackson, 1991:248).

So what we can now see is that different modes of research questions allow us to understand different phenomena and for different reasons (Deetz, 1996). The methodology chosen depends on what one is trying to do rather than a commitment to a particular paradigm (Cavaye, 1996). Thus, the methodology employed must match the particular phenomenon of interest as guided by the objectives. Different phenomena may require the use of different methodologies befitting a particular ontology and epistemology. By focusing on the phenomenon under examination, rather than the methodology, researchers can select appropriate methodologies for their enquiries (Falconer and Mackay, 1999).

So while Burrell and Morgan's paradigms should dictate the methods we use to investigate the social world, it appears to me that Burrell and Morgan did not intend to suggest that only extreme subjectivist and objectivist point of views were valid. Their model, in a sense, was more descriptive than prescriptive, and meant to invite researchers to question rather than create the positions from which they conducted research. If we stuck to their typology, we would have to divorce retroduction and pragmatism.

3.0 Introduction to Data Collection Tools in Research Methods

Research methods are a central part of the social sciences. They constitute an important part of their curricula and provide a means through which their intellectual development is enhanced. Indeed, their status as ósciencesô is often justified by alluding to the technical aspects of research methods, while the very term ósocialô carries with it ideas of areas of study which are accessible only to those who have undergone a lengthy training process in order to understand their inner workings. At the same time there are also those within these disciplines who might characterize themselves as ótheoristsô rather than óresearchersô. The latter concentrate on the process of research, while the former might argue that they gain an advantage in having a distance from the empirical world in order to reflect upon those processes and their products. A data collection method refers to both the selection of sampled units and the way data is collected from them. Ideally, researchers use a variety of data collection tools and techniques in their studies as strategic tools to gather information on participants or respondents, programs, and other elements. The data collection method influences a number of factors[4]. The data collection method also has a bearing on the timetable of the research process and on the quality of the final results. These aspects interact with each other in many ways. The method chosen to collect data must be determined from an extensive literature search to determine what tools are available that will get at the question which has been asked. The methods to collect the data must be reliable and consistency must be obtained. Different data collection methods allow for very different sample sizes, and the number of respondents determines the degree of reliability with which the results may be generalised to various population segments. However, it must be remembered that each data collection method has its own set of strengths and weaknesses (relative tradeoffs) and these should be taken into account in determining which method(s) the researcher wishes to use. Below are the characteristics of pertinent data collection methods.

3.1 Personal Interviews

At the most basic level, interviews are conversations (Kvale, 1996). Kvale defines qualitative research interviews as "attempts to understand the world from the subjects' point of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations. Personal Interviews are most often used to gather detailed, qualitative descriptions of phenomena how social actors perceive them. Personal interviews are conducted one-on-one. Interviews can be conducted in person or by phone. Questions are generally open-ended and responses are documented in thorough, detailed notes or transcription. However, some interviews use structured quantitative response categories.

There two types of personal interviews which researchers may apply in any research design. These are traditional interviews or directive interviews and ethnographic interviews or non-directive interviews. In a traditional interviews which are used by positivists and post positivists, the interviewer operates from the perspective were he takes himself as the expert claming that he knows what he wants to find out, so he sets up the agenda knowing what is best for the respondent. In contrast, in ethnographic interviews, the respondent has the greatest opportunity to select the important information to share. The researcher does not take himself as an expert and he operates from an I donôt know much about the respondentôs point of view, so I need to encourage them to set the agenda" hoping to see if I can thoroughly understand the respondents point of view (Cohen and Mannion, 1998; Bernard, 2000; Neuman, 2000).

[4] The choice of data collection method is not an isolated decision in survey design, as it influences the whole statistical survey process. For instance, it has an impact on the design and preparation of the questionnaire, on the quantity and quality of the data that are to be collected, and on the cost and the timetable of the survey.

In ethnographic interviews, researches employ non-directive or descriptive open-ended questions when they want respondents to offer a descriptive account. Descriptive questions are broad and general and allow people to describe their experiences, their daily activities, and objects and people in their lives (Denzin and Lincoln, 1994; Fetterman, 1998). These descriptions provide the interviewer with a general idea of how individuals see their world. Ethnographic interviews begin with descriptive questions like ñPlease describe to me how you prepare this type of food?òAs you can see, the interviewer begins with a grand tour.

Responses to the descriptive questions will enable the interviewer to discover what is important to respondents. As interviewers listen to answers to descriptive questions, they begin to hear words or issues repeated. These words or issues represent important categories of knowledge. The interviewer may then want to understand the relationships that exist among these categories. The desire to understand these specific issues will warrant the researcher to ask directive or closed ended questions (Kvale, 1996; Gold, 1997).

Table 3.1.1 Relative Tradeoffs of Personal Interviewing

Method/Procedure	Strengths	Weaknesses
Personal Interviewing	▪ "Personal touch" helps establish subjects' "buy-in;" can build rapport and confidence ▪ Researcher can clarify subjects' questions and help ensure that any complex instructions are correctly followed ▪ Researcher can probe for additional clarification information as needed ▪ Researcher can "multimethodly" combine interviewing with his/her own observations (i.e., subjects' body language, visual, non-verbal cues) ▪ Provide rich data that paint a broad picture. ▪ May highlight issues not previously considered or information that is useful for interpreting quantitative data collected through other methods. ▪ It is a good approach for ensuring a high response rate to a sample survey or census, and trained interviewers gather better quality data.	▪ May be more costly in time and money than some other procedures ▪ *May necessitate identifying and training assistants on-site ▪ Some "hard-to-reach" samples (i.e., those who work outside the home; high-level professionals) may be difficult to reach. ▪ However, there are some disadvantages to this approach. Respondents may not always be available for interviews and the travel costs of the interviewer could be high.

3.2 Focus Group Discussions

Focus group discussions originally developed in marketing. A focus group is a group interview or discussion. The focus may be on a particular topic of interest, for example a health problem, or the group may be focused, in the sense that its members have common characteristics. The term is increasingly used to refer to any group discussion where group interaction is used to generate data. Focus groups tend to be open-ended and have less structured protocols (i.e., researchers may change the data collection strategy by adding, refining, or dropping techniques or informants). They rely more heavily on iterative interviews; respondents may be interviewed several times to follow up on a particular issue, clarify concepts or check the reliability of data. They use triangulation to increase the credibility of their findings (i.e., researchers rely on multiple data collection methods to check the authenticity of their results). Their findings are not generalisable to any specific population; rather each case study

produces a single piece of evidence that can be used to seek general patterns among different studies of the same issue.

The focus group technique uses a small group to explore issues in depth. It is a group interview research tool that is based on facilitating an organized discussion with a group of individuals selected because they are believed to be representative of some class. The interview is not based on a question and answer type of format but on the interaction within the group. The discussion is used to bring out insights and understandings in ways which simple questionnaire items may not be able to tap (Krueger and Casey, 2000; Mertens, 2000). Focus group research has long been prominent in studies that seek to tap emotional and unconscious motivations not amenable to the structured questions of conventional survey research. The interaction among focus group participants brings out differing perspectives through the language that is used by the discussants. People get caught up in the spirit of group discussion and may reveal more than they would in the more formal interview setting. As discussants ask questions of each other, new avenues of exploration are opened. In discussions, multiple meanings are revealed as different discussants interpret topics of discussions in different ways. Interaction is the key to successful focus groups. In an interactive setting, discussants draw each other out, sparking new ideas. The reactions of each person spark ideas in others, and one person may fill in a gap left by others. One may even find a form of collaborative mental work, as discussants build on each other to come to a consensus that no one individual would have articulated on their own (Krueger, 1988; Flores and Alonso, 1995; Krueger and Casey, 2000).

Ideally, in focus group studies, there is no standard instrument to guide the topic as we may see in survey interviewing or direct personal interviews; only a topic is explored through the exchange of group discussion.

3.3 Document Reviews

Document reviews analyse existing program records and other documents not gathered or developed specifically for the evaluation. Examples include recruitment and attendance records, budget, staff records, annual reports, standardized test scores, court records, personal diaries, videos, news papers, photographs and community demographic data *inter alias*.

Table 3.3.1
Relative Tradeoffs of Documentary Reviews

Method/Procedure	Strengths	Weaknesses
Document Reviews	▪ Records are tailored to programs ▪ Save on evaluation time and costs ▪ May elicit a high degree of accuracy from staff if they are also used for accountability purposes May be less biased than perceptions or opinions ▪ Can save administrative time and costs. ▪ Data easy to manipulate. ▪ Facilitates discovery of nuances in culture. ▪ Facilitates validity checks and triangulation	▪ May not be applicable for some indicators ▪ May be incomplete due to staff time ▪ Obtaining records often requires special permission from parents and school officials ▪ Some national datasets charge access fees ▪ Can let the researcher miss the forest. ▪ Cultural differences may lead to misinterpretation of data.

3.4 Surveys Questionnaires

Survey questionnaires are collected by researchers to gather specific information from participants, families, staff and administrators, teachers, community members, and other stakeholders. Data collected often include demographic information, satisfaction levels, and opinions of the program. Survey questionnaires are usually administered on paper, in a structured or semi-structured format. Respondents often choose from among a set of forced-choice, or provided, responses. These can include yes/no or scaled responses. Survey questionnaires can be administered in person, by mail, over the phone, or via email/Internet or they could be in form of interviews.

Three factors are usually considered when surveys are classified into the above different types: the general survey design, the data collection method, and the technology for data acquisition. Perhaps the most important division, however, is that between longitudinal surveys and cross-sectional surveys. In longitudinal surveys, data are collected more than once from the same sampling units, at more or less regular intervals, whereas in cross-sectional surveys, data are collected only once. In longitudinal surveys data may be collected the same way each time, or the data collection method may vary. A panel survey is a special type of longitudinal survey.

It is important to make a distinction between the modes of administration of data collections and the technology applied in data acquisition. In the administration modes one distinguishes whether interviewer-administration is used or whether respondents are to answer by themselves (self-administration). In the interviewer-administration mode interviewers read out the questions and mark down the responses. Interviews may be conducted either by telephone or face-to-face. In the self-administration mode respondents themselves read the questions and fill in the questionnaire. In both administration modes two technologies of data acquisition may be applied: the responses are either marked on paper questionnaires or on electronic media (see Table 3.4.1).

Table 3.4.1 Survey Types By Mode Of Administration and Data Capture Instrument

Mode of administration	Data Capture Instrument	
	Paper questionnaire	Paper questionnaire
Self-completion	Self-administered questionnaire, diaries	
Interview	Interviewer or researcher -administered questionnaire	

Surveys are less time consuming and expensive to administer than other methods. They can be administered to large groups of individuals. The challenges are that data entry and analysis can be time consuming; they are difficult to receive completed surveys from stakeholders. Usually, a range of incentives can be offered on return of completed surveys to boost the likelihood of response, from financial compensation for providers and families to parties for youth participants.

Mail survey

This is a common method of conducting widespread data are surveys. It is a relatively inexpensive method of collecting data, and one that can distribute large numbers of questionnaires in a short time. It provides the opportunity to contact hard-to-reach people, and respondents are able to complete the questionnaire in their own time. Mail surveys do require

an up-to-date list of names and addresses, however. In addition, there is also the need to keep the questionnaire simple and straightforward.

A major disadvantage of a mail survey is that it usually has lower response rates than other data collection methods. This may lead to problems with data quality. Also, people with a limited ability to read or write may experience problems.

Hand-delivered questionnaire

This is a self-enumerated survey where questionnaires are hand-delivered to people and mailed back by the respondent after completion. This method usually results in better response rates than a mail survey, and is particularly suitable when information is needed from several household members. The hand-delivered with respondent mail-back method can reduce the cost of collecting forms and gives a greater sense of privacy for respondents concerned with someone entering their home or business to collect the forms.

Table 3.4.2
Relative Tradeoffs of Survey-Self Administered Standard Structure Questionnaire

Method/Procedure	Strengths	Weaknesses
Survey-Self Administered Standard Structure Questionnaire	▪ Can include visual aids, handouts, etc. for the subject to consider in his/her "package." ▪ Can ask questions requiring 'lengthy' responses, prior thought, etc. ▪ Convenient for asking "batteries of similar questions. ▪ Can add the "privacy/safety" factor. ▪ Subject may feel freer to respond more candidly this way, rather than in a 'personal' contact (i.e., face-to-face or telephone interview). ▪ Data easy to manipulate and to categorise when doing analysis. ▪ Easy and efficient to administer. ▪ Amenable to statistical analysis. ▪ Easy to establish generalisations.	▪ Researcher needs to exercise extra care in constructing very clear directions and survey materials. ▪ Subjects need to possess exceptional reading, writing and thinking skills to 'self-administer' the data collection materials accurately. ▪ Researcher is not present for "extra quality control;" i.e., answering questions, clarifying directions, or following up on ambiguous responses. ▪ Data open to misinterpretation. ▪ Requires expensive equipment

3.5 Observations

Observations are a generally unobtrusive method for gathering information about how the program or initiative operates. They are usually conducted by external evaluators or researchers and are often used to verify and supplement information gathered through other methods. Observations can be highly structured, with protocols for recording specific behaviours at specific times, or unstructured, taking a ñlook-and-seeò approach. They are most reliable when they are conducted over a period of time to minimize the chances of the observation day(s) being atypical.

Observations are of three types. The first one is passive participant observation[5]. In this one, the researcher is present at the scene of action but does not interact or participate in all

[5] When the researcher decides to apply ethnography as a tool to collect data, passive participant observations are used to guide sensual data collection during the earlier parts of the study, which is the getting to know phase of the study (Ragin, 1994:43-44). This is the application of Schültzian phenomenology when one has to get on at a low key since the research issues are unclear.

activities and does not try to influence the direction of the group. The researcher finds an observation post and assumes the role of a bystander or spectator. To acquire such knowledge and to identify the personal interrelationships between the actors in this context, passive participant observers would require much regular contact time unlike active complete participant observers. The second one is the observer as participant. In this one, the researcher exhibits a balanced participation meaning that the researcher maintains a balance between being an insider and being an outsider. One would see that the researcher participates in a one-time activity but then takes a back seat to any further activities. The third one is the complete active participant observer. In complete active participant observer, the researcher participates in all activities and goes on to actively influence the direction of the group. This is the highest level of involvement and usually comes about when the researcher studies something in which he or she is already a natural participant. While beginning with observation to learn the rules, as they are learned the researcher becomes actively engaged in the activities of the setting (Ragin, 1994; Sarantakos, 1995; Cromwell, 1996; Babbie, 2002; Gillham, 2000).

It's difficult to say which of these three roles are the most common. The key point behind all of them is that the researcher must operate on two levels: becoming an insider while remaining an outsider. They must avoid becoming over socialized, or "going native,ò as well as being personally revolted or repulsed by the group conduct. Going native is sometimes described as giving up research and joining the group for life, but in most criminological circles, it means losing your objectivity and glorifying criminals. Generally, it takes time to carry out participant-observation, several weeks or months to 2-4 years.

Table 3.5.1
Relative Tradeoffs of Observations

Method /Procedure	Strengths	Weaknesses
Observations	▪ Provide highly detailed information from an external perspective on what actually occurs in programs. ▪ Trained evaluators may provide less biased descriptions than program staff or stakeholders ▪ First hand information. ▪ Allows the participant to tell the lived story what is meaningful or important to him or her using his or her own words rather than being restricted to predetermined categories; thus participants may feel more relaxed and candid. ▪ Cooperation from researched is guaranteed ▪ Allows for immediate follow up ▪ Allows a wide range of data and informants. ▪ Useful for discovering complex interconnections in relationships. ▪ Data are collected in a natural setting. ▪ Allows collecting non-verbal data. ▪ Allows data collection on unconscious thoughts and behaviour. ▪ Facilitates triangulation, data collection and analysis. ▪ Allows evaluator to probe for more details and ensure that participants are interpreting questions the way they were intended. ▪ Interviewers have the flexibility to use their knowledge, expertise, and interpersonal skills to explore interesting or unexpected ideas or themes raised by participants. ▪ Sometimes no existing standardized questionnaires or outcome measures are available that are appropriate for what your program is trying to accomplish.	▪ Can be time consuming, labour intensive, and expensive. ▪ Observers must be trained and be consistent with one another. ▪ Observations conducted on a sample of days may not represent the range of program practices and experiences over time. ▪ May be more reactive to personalities, moods, and interpersonal dynamics between the interviewer and the interviewee than methods such as surveys. ▪ Training interviewers and conducting interviews can be expensive and time-consuming, because qualitative interviewing requires considerable skill and experience. ▪ Analysing and interpreting qualitative interviews is much more time-consuming than analysing and interpreting quantitative interviews. ▪ More subjective than quantitative interviews because the evaluator/researcher decides which quotes or specific examples to report.

4.0 Challenges and Limitations of Social Research

No science is perfect and therefore social research is not a ópperfect science.ôAnd this is because the manner that we go about generating data and how we justify the data that we have for instance are not infallible or Godlike if I may say so. In case we wanted to labour on this matter, it would be prudent to select parameters and use them to outline the limitations of research. There are many parameters but, for simplicity the following stand out:

4.1 Gate Keeping

Gate-keeping is the process whereby people in substantive positions or authority like healthcare providers prevent access to eligible patients for research recruitment. If for instance the director of a hospital declines to grant a researcher permission to conduct research even when the proposal does not have any serious ethical implications, we could to contend that this gate-keeping violates three principles that underpin international ethical guidelines (Department of Health Education and Welfare, 1997; Council for International Organizations of Medical Sciences, 2002) governing research involving human participants. First, the principle of respect for persons or autonomy; second, the principle of beneficence or a favourable balance of risks and potential benefits; and third, the principle of justice or a fair distribution of the benefits and burdens of research. Although we advocate against the practice of gate-keeping, we do not wish to devalue cliniciansô (or other stakeholdersô) concerns. We acknowledge such concerns are important, but assert that gate-keeping is not an ethically sound method of resolution.

4.1.1 Reasons for clinician gate-keeping

Gate keeping refers broadly to the process of controlling information as it moves through a gate or filter and is associated with exercising different types of power (e.g., selecting news, enforcing the status quo in parliamentary committees, mediating between professional and ethnic groups, brokering expert information). The literature on gate keeping is fragmented in terms of epistemologies, theories and models, vocabularies, heuristics, and research challenges both within and between disciplines and fields. This happens because discourse on the topic of gate keeping is conducted within each discipline, in relative isolation. In spite of an extensive literature, few comprehensive reviews are to be found. This chapter follows in the footsteps of two such reviews (Metoyer-Duran, 1993; Shoemaker, 1991).

In this section, I will give reasons for gate keeping and since I have been engaged in medical research foe a long time, I will use the clinician scenarios to enable you understand the challenges that researchers face. Literature review reveals a number of possible reasons for clinician gate-keeping: first, clinicians may lack the time to deal with the paperwork or the extra demands of a trial protocol and recruitment procedures. Second, clinicians may have difficulties explaining trial protocols to patients or with consent procedures (Ross et al. 1999; Grunfeld, et al. 2002; Siminoff et al. 2000; Kornblith et al. 2002; Casarett et al., 2002; Fallowfield et al., 1997). Third, clinicians may have concerns about the quality of the trial design (eg, concerns that the trial would not yield meaningful results) (Langley et al., 1987). Fourth, clinicians may worry about patient burden (eg, patient burden due to extra time or effort, extra financial costs, or transportation difficulties as a result of trial participation) (Siminoff et al. 2000; Kornblith et al. 2002). Fifth, clinicians may feel uneasy about the potential effect of trial participation on the clinician patient relationship (Fallowfield et al., 1997; Ross et al. 1999; Grunfeld, et al. 2002). Finally, clinicians may be uninterested in the trialôs research question (Ross et al. 1999). These six causes work synergistically to promote clinician gate-keeping. I propose three key strategies to address these concerns and reduce gate-keeping: partnership with professional research staff; collaborative research design and clinician education.

Partnership with professional researchers

A solution to the problems of lack of time, difficulties with recruitment processes and clinical relationship concerns is the strategy of partnership with professional researchers who have expert knowledge in clinical trial management and processes (Kornblith et al. 2002; Hudson et al., 2005). If professional researchers are employed to manage clinical trial work, this eliminates the clinician problem of lack of time. Partnership with professional researchers

also solves the problems of difficulties with recruitment processes and concerns about the impact on the clinical relationship as it removes clinicians from trial recruitment and management. While this makes the process of conducting research more expensive (at least in the short term) it has been found to reduce clinician gate-keeping, which may reduce the cost and improve the statistical power of trials in the long term (Siminoff et al. 2000).

Collaborative research design

The strategy of collaborative research design is likely to solve the problems of lack of interest in research questions, study quality concerns and lack of time. For example, involving clinicians in the design phase is likely to result in high-quality research projects that investigate clinically relevant research questions with feasible protocols that integrate easily into the existing clinical setting. Furthermore, collaboration with consumer representatives during research design ensures patient burden is kept to a minimum3 36 and addresses the problem of clinician concerns about patient burden. Hudson et al4 suggest that the strategy of collaborative research design could be implemented by practical methods such as establishing regular contact between researchers and clinicians to promote the discussion of issues or concerns and ensure clinicians are kept up to date. Engaging clinicians as consultants or co-investigators on research projects gives them an opportunity to contribute to the research and to allow for any concerns to be pre-emptively addressed in the study protocol.

Clinician education

Clinician education could address the problem of difficulties in explaining trial protocols to patients or consent procedures. For example, research demonstrates that clinicians trained in discussing randomised clinical trials with patients were significantly more confident discussing clinical trials (Jenkins et al., 2005). Moreover, clinicians who feel more comfortable explaining trials to patients tend to refer more patients for trial recruitment (Siminoff et al. 2000). Therefore, the strategy of clinician education could be enacted by a programme of education focussed on the discussion of clinical trials with patients. Other suggestions for the implementation of the strategy of clinician education include: clinician education to increase understanding of research ethics (Hudson et al., 2005); as well as training in reflective practice to enhance patient autonomy by raising clinician self awareness regarding their influence over patientsôinvolvement in decision-making.

4.2 Data Collection Tools

Researchers face challenges with regards to the tools that they use. There is no single tool that could provide them with all the data they need withstanding the limitations highlighted above. The only possible solution to the tool inadequacies is to triangulate tools. Triangulation of tools calls for the researcher to use tools that are appropriate either within a paradigm or across a paradigm.

4.3 Ethical Issues

Prior to the research, during the research and after the research, ethical principles need to be applied and adhered to religiously. Burns and Grove (2001), state that the conduct of research requires not only expertise and diligence, but also honesty and integrity. It is further said that conducting research ethically starts with the identification of the study topic and continues through to the publication of the study. The researcher must pay attention to issues such as informed consent, anonymity, confidentiality, asking for permission to

conduct the study, asking for voluntary participation, ensuring that there is minimal harm (No physical or psychological harm to subjects).

As you know, research depends on the co-operation of the public. The industry, both clients and agencies, relies on people giving up their time to be interviewed and thus providing information about what they do, and what they would like. Not surprisingly, there are rules about what the research industry can, and cannot, do in collecting this sort of data. In most countries unlike Zambia, there is legislation that sets some limits, and at times Research Societies, like professional bodies, may have a **Code of Conduct** for its members. At this stage all you need to know is that the foundation stone of these rules is that nobody who provides information should be misled about what they are involved in. (So, to give one example of the rules, if itôs a confidential survey research project, there must not be any follow-up sales calls to those who have been interviewed ï itôs research only). As you get more involved in research you should familiarise yourself with the Codes. Researchers need to be alive to the following ethical issues in research.

4.4 The Subjects

Social researchers face many difficulties when researching issues and especially in relation to their subjects. Unlike natural scientists who do not deal with the human element but with inanimate objects (though they deal with life forms), social scientists deal with human life and the social action of human life. They have feelings for themselves and those of the study units. It is extremely difficult to bracket oneôs interests, beliefs and values in the process. In addition, it is difficult to subject people to rigorous experimental designs as you would for rats. However, researchers do strive to control for the personal effects.

Aside these subjective elements, researchers face the problem of adequacy or representative ness of the study units. Ideally research must study whole units (populations) but this is not possible. There are economic advantages of using a sample in research. Obviously, taking a sample requires fewer resources and time than a census. For example, let us assume that you are one of the very curious sociology students around. You have heard so much about the famous UNZA and now that you are there, you want to hear from the insiders the *matusas, masadis or mafosas.* You want to know what all the students at UNZA think about the quality of teaching they receive, you know that all the students are different so they are likely to have different perceptions and you believe you must get all these perceptions so you decide because you want an in depth view of every student, you will conduct personal interviews with each one of them and you want the results in 20 days only, let us assume this particular time you are doing your research UNZA has only 20,000 students and those who are helping are so fast at the interviewing art that together you can interview at least 10 students per person per day in addition to your 18 hours of course work. You will require 100 research assistants for 20 days and since you are paying them minimum wage of K 50,000 per hour for ten hours (K500, 000) per person per day, how much do you need just to complete the interviews, analysis? This will just be impossible from the K 400 000 you may get from the bursaries committee. You may decide to hire additional assistants to help with the analysis at another cost and so on assuming you have that amount on your account. There are six main reasons for sampling instead of doing a census or population bases study. These are; -Economy -Timeliness -The large size of many populations -Inaccessibility of some of the population -Destructiveness of the observation ï accuracy. As unrealistic as the above example is, it does illustrate the very high cost of census. For the type of information desired, a small wisely selected sample of UNZA students can serve the purpose. You don`t even have to hire a single assistant. You can complete the interviews and analysis on your own. Rarely does a circumstance require a census of the population, and even more rarely does one justify the expense.

Ok lets us assume that you have given up on the population study but you decide to sample your population. You may have to think about sampling in quantitative research and sampling in qualitative research. This is difficult now to appreciate but you will get there and it will be like a hot knife passing through butter.

4.5 The Logics Used

We noted that there are five different types of logics of inquiry and that each type except for deduction was born out of the criticisms of an earlier one. Indeed any researcher who will employ one form of logic or ontology will be bombarded with misgivings of the processes and the findings (limitations or shortfalls). Researchers say that there are ways of resolving these inadequacies inherent of ontologies or methods and this is by triangulation. As we had seen in class, a realist deductivist position can provide an ontological justification for triangulation; and triangulation is a necessary element of the logic of retroduction and hence is crucial for operationalising deductivism.

A central element every paradigm (and its associated methods and theories), has an underlying ontology. Thus, the link between a method or theory and its ontology cannot be avoided (Danermark, et al (2002: 152-3) in research. Specifically, positivism and interpretivism both reject methods which do not meet their ontologies. For example, positivism embraces an inductive view of explanation to which value-free or observation of objective reality is crucial. On the other hand, anti-positivism embraces an abductive view of understanding to which values are not free or description of the conscious and not reality is crucial.

Thus, from the deductivist perspective, if both quantitative and qualitative data collection methods and logics were used simultaneously, we could be committing an ontologic, epistemic and methodological fallacy; that is, the two philosophical assumptions conflate. Therefore, some researchers would argue vehemently that the traditional quantitative/qualitative choice can be viewed as unnecessary and, moreover, reflects fallacious thinking. This argument opens up the impossibility of triangulation.

Indeed, pragmatists would bridge this debate. They have a strong view that to associate qualitative methods and quantitative analysis is not limiting and a fallacyï they are look to transcending the dichotomy. Also, research is governed by the need to get to the bottom of a question ï i.e., to uncover generative mechanisms ï and whichever are the best methods to use should be used (Danermark, et al: 162-4). The focus on intensive/extensive research designs in combination seems necessary because of the nature of reality. A number of authors (for example, Olsen, 2003) have talked in terms of a *zoom-lens* approach, in which the investigator necessarily zooms in to focus on critical detail of a case (intensive research) but, for various reasons (including the often necessary relations between an object and other objects), the investigator must then zoom out, to get a wider sense of the objectôs context. Yet, the ontological basis for making such claims seems unclear.

One of the consequences of the above discussion is that óquantitativeô and óqualitativeô approaches are not a dual: they overlap to a degree in underlying logic and can also refer to the same objects of analysis. They can share, or be conditioned upon, the same ontological perspective and are not of necessity wedded to particular, and different, ontological presumptions. Rather, the choice of method is not paradigmatic or one of ontology, because that ontology is shared by the methods, but simply reflects the specifics of the question being asked. If the questions probe different features of a phenomenon then different methods might be needed. It remains that they focus on the *same* phenomenon.

Two conclusions follow from this discussion. The first is that different research methods can be logically employed in a triangulating strategy to reveal different features of the *same* reality without the presumption of being exhaustive.

4.6 Reliability and Validity

Reliability

Researchers may face challenges to present their research out puts because of lack of reliability. Reliability is the consistency of a measurement tool, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the repeatability of your measurement. A measure is considered reliable if a person's score on the same test given twice is similar. It is important to remember that reliability is not measured, it is estimated. Joppe (2000:1) defines reliability as: é The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Kirk and Miller (1986:41-42) identify three types of reliability referred to in quantitative research, which relate to: (1) the degree to which a measurement, given repeatedly, remains the same (2) the stability of a measurement over time; and (3) the similarity of measurements within a given time period. Charles (1995) adheres to the notions that consistency with which questionnaire [test] items are answered or individualôs scores remain relatively the same can be determined through.

Validity

Not only do researchers face challenges to present their research out puts because of lack of reliability, they face challenges with validity also. Validity is the strength of our conclusions, inferences or propositions to the extent that we could even generalise them to the population beyond our sample. More formally, Cook and Campbell (1979) define it as the "best available approximation to the truth or falsity of a given inference, proposition or conclusion." In short, were we right? Let's look at a simple example. Say we are studying the effect of strict attendance policies on class participation. In our case, we saw that class participation did increase after the policy was established. Each type of validity would highlight a different aspect of the relationship between our treatment (strict attendance policy) and our observed outcome (increased class participation). The traditional criteria for validity find their roots in a positivist tradition, and to an extent, positivism has been defined by a systematic theory of validity. Within the positivist terminology, validity resided amongst, and was the result and culmination of other empirical conceptions: universal laws, evidence, objectivity, truth, actuality, deduction, reason, fact and mathematical data to name just a few (Winter, 2000). Joppe (2000:1) provides the following explanation of what validity is in quantitative research: Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bullôs eye" of your research object? Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others.

4.7 Myths of Challenges

Money and Other Resources

Throughout the student social research fraternity, time and resources are said to be challenges of field research. This however is a fallacy. In the event that funds are inadequate

or there it time and other resource constraints, it would be logical to reorganise the research design to suit the, clothô This therefore is not a challenge.

However, we do not want to treat this matter of time and resources with our eyes closed. When it comes to initiating research, time and resources have been a challenge on account of scarcity. Few students in universities have training in social scientific theory or methodologies. Sociologists, anthropologists, political scientists, and economists often lack training in research.

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