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Reflections on Scientific Inquiry and Methodology for Applied Social Sciences and Humanities: *Releasing the Research Creativity and Imagination*

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"The library is like many voices talking to you. All you have to do is listen"

Glaser, B.G. and Strauss, A. (1967). The Discovery of Grounded Theory. Chicago: Aldine.

"What must the world be like in order that man may know it?"

Thomas Kuhn 1962, The Structure of Scientific Revolutions

Abstract

The aim of this paper is to 'ground' and probe into some issues of validity of doing research in applied social sciences and humanities [and at the same time placing this research within them], juxtaposing it to the well-developed methodologies that exist and reflecting all of that vis-à-vis some fundamental question in philosophy of science. The process of generating knowledge can be seen as 'asking why', or 'having a perplexity', and then doing something to answer it. One of the most exciting things about science is its infinite supply of questions. The paper focuses on Case Study Methodology and on Grounded Theory, two leading social science research strategies, design wise and methodology wise (one deductive the other inductive). Also, the paper emphasizes Exploratory Research, which is research conducted for a problem that has been defined by the researcher to gain additional inputs into the phenomenon under study. Finally, the paper offers, for the first time, the main tenants of "Observational Urbanism", a completely new approach for applied social science research (urban planning and urban design) based on Exploration, Observation, Intuition, Imagination and Systematic Seeing.

Introduction: When Science Really Matters

We could open up this discourse by using A. F. Chalmer's book title [which became highly popular and widespread work, especially in the graduate and post-graduate world]: *What is this thing called science?* (Chalmers, 1982) Science, apart from 'assisting' the individual in his/her endeavor or strive towards understanding and mastering the world-environment around him/her, also satisfies another, somewhat non-practical, but nonetheless profound and eternal urge: man's wish for acquiring more and more knowledge and deeper understanding of the society and the world we live in. The prestigious status that science today holds in our society can, without any doubt be attributed to the amazing successes and discoveries, and the widespread scope of activity that was generated by its applications. Many branches of empirical

sciences [derived from experiment and observation rather than theory] give foundations to many supporting technologies, which in turn take the results generated from scientific discoveries into the real world – practice and often supply pure or applied research with even more data, problems and new research tools.

Marx W. Wartofsky [in what became a seminal and one of the most profound works in philosophy of science – *Conceptual Foundations of Scientific Thought*] depicts science as an organized and systemic body of knowledge but also a way of knowing and understanding about the world. It is a process, an inquiry – or if you want, a quest for the eternal truth. Wartofsky characterizes it as a structure or body of accumulated and established truths or truth claims which such inquiry has generated (Wartofsky, 1968). A set of basic questions [ones dealing with perception, justification, inference, conjectures, hypothesis, etc.] arise concerning the status of such knowledge and such claims. The analysis of such questions can be branded as *epistemology* (the philosophical theory of knowledge). Wartofsky makes a very eloquent and important point on epistemology by saying:

> Its relevance to the scientific enterprise should be clear on general grounds, because science itself is both a way of knowing and a body of knowledge claims. The specific relevance of epistemology to philosophy of science concerns the instrumentalities for the acquisition and validation of scientific knowledge, the special aspects of the scientist's ways of coming to know. Thus, the roleof *observation* and *experiment*, of *description* and *classification*, the role of *inference* or *reasoning* in science, the nature of *hypotheses* and the role of *models*, *laws*, and *theories*, the conditions and characterization of *scientific discovery* all concern the ways in which scientific knowledge is acquired and established, and thus also the ways in which some of the claims of science may be critically tested, refuted, and discarded. The *quest for truth* entails also the disposition of falsity. In this sense science is a critical, nondogmatic enterprise subjecting all its claims to test and criticism;broadlyconceived the conditions of generating and testing the knowledge claims of science fall within the province of the epistemology of science [Wartofsky, 1968 pp.12-13].

As regards the different views on epistemology, it can be added that a distinction is usually made between the natural sciences on the one hand, and the humanities and social sciences on the other hand (Föllesdal *et al*., 1993). Natural sciences differ from the latter in that the object of research in natural sciences exists as such, without a human being, and without any meaning by its own. Natural science studies natural objects and natural laws, whereas social sciences tackle concrete or abstract cultural objects (artifacts) created by human beings. Parallel to the view of Carl G. Hempel, different branches of scientific research can be divided into two main groups: empirical and non-empirical sciences. The former has the goal to investigate, describe, explain and predict events in the world we live in. Therefore, their statements and assertions have to be verifiable on the facts of our experience and they can only be acceptable if they are in a certain way substantiated by experiential evidence (Hempel, 1966). We arrive to that evidence by a series of ways: experiments, systematic observation, interviews or questioners, psychological or clinical tests and investigations, careful study of documents and archival records, inscriptions, anthropological evidence and archeological artifacts, etc. This dependency on experiential evidence is exactly what differs the empirical sciences

from the non-empirical ones, as for example logic and pure mathematics whose assertions are verified without the need of calling upon essential experiential facts.

Hempel divides the empirical sciences on natural and social sciences. For him the criteria for this division, is much less clear then the one between the empirical and non-empirical investigations and there seems to be no real general agreement on how and where [to use a military term here] the 'demarcation line' between these two should be drawn (Hempel, 1966). It is usually considered that natural sciences entail physics, chemistry, biology and their borderline fields. When we talk about social sciences we primarily think about sociology, political studies, social and cultural anthropology, economics and social history, experimental and social psychology, human geography, literature, environmental studies, town planning and other related disciplines.

One of difficulties confronting the social sciences, has its source in the fact that the human beings frequently modify their habitual modes of social behavior as a consequence of acquiring fresh knowledge about the events in which they are participating or the society of which they are members. Another difficulty concerns the *validity of conclusions* reached in social inquiry (Nagel, 1979 and Wartofsky, 1968). Particular problem concerns *individuals* vs. *society*. The term human beings could be accounted as an individual one since it is predicated of individual human beings, but nevertheless it could also be accounted as collective term on the ground that it involves reference to forms of activity characterized by the behavior of the groups of human individuals. However, there are no firm principles of deciding between these alternatives nor there is much prospects of developing these rules (Nagel, 1979). Especially important aspect that one has to keep in mind is the problem confronting the social scientists in importing their own values into the analysis of social phenomena, the so-called *value judgment*. The bottom line is that we need to clear out the problems that confront us in the social sciences and see what we can apply and what not.

It would take us too far to go into a more detailed discussion of natural sciences vs. social sciences. Most probably the result would be deemed fruitless on many accounts. Nonetheless, it is important to be aware of these important issues before, during and after embarking on the journey of research inquires in studies that deal with social phenomena. For social sciences to 'start mattering again', as Bengt Flyvbjerg puts it, they need (amongst other things) to stop emulating natural science's success in producing cumulative and predictive theory (Flyvbjerg, 2001). The social sciences cannot make use of experiments. The experience with which they have to deal is the experience of complex societal phenomena. The impossibility of experimenting means concomitantly the impossibility of measurement. It follows that the social sciences can never use experience to verify their statements (Ludwig von Mises, 1942). On the other hand, the unbiased impartial unconcern to philosophical reasoning in the social science, namely the philosophy of science, can have grave consequences and can undermine any social inquiry study from the outset. Chava Frankfort Nachmias and David Nachmias pose the question: 'what does science have to offer people who take an interest in societal problems? They continue by stating that the ultimate goal of the social inquiry in social sciences is in 'producing a body of accumulating-reliable knowledge'. In doing so, we would be able to explain, predict

and understand empirical phenomena of interest. This reliable body of knowledge could, and is used in improving our everyday living conditions. But we also need to think of social scientific knowledge components such as: *explanations*, *predictions* and *understanding* (Nachmias and Nachmias, 1992).

There is clearly a need for a stronger conceptual basis combined with a philosophical perspective of historical consciousness. Otherwise the shaky scientific status of the social sciences will not be overcome. It is not simply that we pose questions - questions come to us, and we need to respond. We therefore must be clearer where and how we have to anchor our thinking (Krombach, 1999). Mario Bunge contends that social scientists such as anthropologists and sociologists ought not to leave philosophy to philosophers who have little expertise in or knowledge of the social sciences (Bunge, 1996). Bunge's reasoning, seen in this way could give way to rather dilettante, 'outsider' types of discourses in social sciences that just scratch on the surface [often bringing fragments of original philosophical works, inappropriate and out of the context and superficially deducting with pretentious and eclectic viewpoints, for the purpose of making fundamental conclusions]. It has to do with far-reaching conclusions that should reshape (in this case rather 'unshape') the social science, as we know it [the case of Bengt Flyvbjerg, 2000 – is a flagrant example]. Unfortunately, it is difficult to go into a thorough discussion here as my vocation is not in philosophy of science, but nonetheless these questions certainly need to be raised. Without a doubt, social sciences play a pivotal role in our society, since they may be defined in a rather broad sense as the 'rational and systematic study of human society in all its forms with the specific aim of arriving at long-lasting understanding, acknowledged as such by a broad consensus of researchers of social phenomena' (Kuper and Kuper, 1996). As Bengt Flyvbjerg points out, that it is not necessary for social science to emulate the methods of the natural sciences in order to be considered a 'science'. It is sufficient for it to lead to objective knowledge (Flyvbjerg, 2000).

Doing research inquiries with various methodological approaches and techniques suitable for different context scenarios we can arrive at results which are not only significant for different social studies and their fields of research which aim at the rational comprehension of human society, but which also are of value for understanding our own lives. Even though, if such (empirical) studies which are largely based on interviews or questioners [any kind of sociometric or quantitative study of social relationships that are sometimes practiced *ad nauseam*], generate masses of data capable of statistical analysis, leading often to no conclusions of any significance for an understanding of society, they still [their results] can have practical value for the functioning and regulation of our society. Marx Wartofsky makes a comment here:

> The result of positivist criticism in the social sciences has often been an abandonment of theorizing in favor of small-bore data collection and analysis, in narrowly delimited areas, and the wholesale rejection of "theorizing" as an empty activity. The issue remains sharp at present in discussions of the philosophy of the social sciences and provides perhaps tile most difficult challenge to critical analysis in contemporary philosophy of science. [Wartofsky, 1968. p.394]

It is necessary for such a scientific social inquiry, or to any social science research methodology, that the activities of its practitioners result in a substantial body of 'organized knowledge'. Emil Durkheim observed that if social science did not arrive at an enduring understanding of social phenomena, acknowledged as such by a broad consensus of researchers, it would fail to qualify as a science (Durkheim, 1982). Mario Bunge states that science is a set of 'scientifically legitimated methods' and the knowledge, which is gathered with their assistance. It presupposes certain stipulations, basic assumptions about material, society, humanity and knowledge (that the existence of the world is independent of our conceptions about it, that our knowledge is limited and provisional and that it is always possible to acquire new knowledge) (Bunge, 1998). Besides inventions and discoveries, the most important achievement of science (in this case for social sciences) is the constitution of new theories and concepts (Lundequist, 1999). Research then becomes an activity that primarily aims to develop theories, methods, concepts, definitions and models. This leads onto certain demands on the research endeavor/project: to make and add a new contribution to an area of knowledge, demonstrating originality and creating a synthesis and being cross-disciplinary by using different methodologies. I will reflect back on these issues a little bit later. Methodological studies flourished in the 20th century with the works of Karl Popper, Milton Friedman, Imre Lakatos, Thomas Kuhn, Paul Feyerabend and other philosophers. Two schools of scientific thought, especially two leading names- Karl Popper and Thomas Kuhn [probably the most important and influential theories of the contemporary history of science] seem to have brought about 'contemporary revolutions in scientific thought'.

Welcome to the Revolution: Human Knowledge and Paradigm Shifts

As we have pointed out before, the goal of scientific research is to ensure the production of knowledge. Epistemology is viewed upon as the study of the foundations of knowledge. Necessary prerequisites for the conduct of scientific discourse are a set of fundamental assumptions on which the scientific approach is grounded. These issues all are present in epistemology (Chalmers, 1992). One of these assumptions is that *knowledge is derived from the acquisition of experience*. In order to understand the real-world problems, we need science and it needs to be empirical [scientific knowledge rests on fundamentals of empirical testability]. In other words, it must rely on perceptions, experiences, and observations. Perception is a fundamental notion of the scientific approach and it is achieved through senses, not just directly observed or experienced. Observation is not immediately given or entirely detached from scientific terms, concepts and theories (Nachmias and Nachmias, 1992). For Karl Popper the growth of (human) knowledge proceeds from our problems and from our own attempts to solve them. These attempts imply the formulation of theories that, [if they are to explain anomalies which exist with respect to earlier theories] must go beyond existing knowledge and therefore require a 'leap of the imagination'. For this reason, Popper places a very special emphasis on the role played by the 'independent creative imagination in the formulation of theory' (Popper, 1963).

The hallmark of a science is *falsifiability* (Popper 1959). A scientific proposition must specify, a priori, predictions that can be refuted, at least in principle. The centrality and priority of problems in Popper's view of science is paramount, and it is this, which leads him to characterize scientists as 'problem-solvers'. Since the scientist begins with problems rather than with observations (facts), Popper argues that the only logical technique, which is an integral part of scientific method, is that of the deductive testing of theories [inductive logic is refuted], which are not themselves the product of any logical operation. In this deductive procedure conclusions are inferred from a tentative hypothesis. For Popper this deductive procedure works at four steps: (1) formal – testing of the internal consistency of the theoretical system to see if it involves any contradictions (2) semi-formal – axiomatizing of the theory to distinguish between the empirical and its logical elements (3) comparing the new theory with existing ones to determine whether it constitutes an advance upon them (4) testing of the theory by empirical application of the conclusions derived from it (Popper, 1963). These conclusions are then compared with one another and with other relevant statements to determine whether they falsify or corroborate the hypothesis. Popper's revolutionary move is towards a shift of the methodological emphasis from induction to deduction. For him science is a creative endeavor, a 'search for new knowledge where the main point is how ideas stand up to various checks, we carry out on them, most importantly, the check of experience' (Popper, 1959). For Popper the scientific community must be and is to a large degree an *open society* in which no dominant paradigm [the generally accepted perspective of a particular discipline at a given time] is ever sacred. Science should be a 'revolution in permanence' and criticism should be the foci of the scientific enterprise. Refutations of claims for knowledge constitute revolutions (Popper, 1971).

Another attempt to describe scientific revolutions from a societal perspective, (definitely worth mentioning here), is Thomas Kuhn's *Structure of Scientific Revolutions* [a descriptive view in sharp contrast with Popper's prescriptive theory]. In 1962 Thomas Kuhn came out in the scientific world in an interesting and 'revolutionary', but not entirely problematic-free manner. Namely he raised interesting questions about the role of social factors in the development of scientific enquiry. According to Kuhn, *paradigm shifts* seldom occur as soon as a new paradigm is invented, but only when the old one is shown to be inadequate. Paradigm change is revolutionary in science. Then a total reevaluation of research is needed. Concepts are turned upside down, earlier research must be reinterpreted and nothing is what it seemed to be, despite it still being the same phenomenon that is described. This is when what we normally call research is made, research that actually yields new results. When the paradigm has been established it is a matter of routine, what Kuhn condescendingly calls *"puzzle solving"*. The greatest part of research falls into this category and is not a creative occupation, but exactly puzzles that can be solved by putting the right pieces in the right order (Kuhn, 1970). Kuhn opposes Popper's falsification and if Popper was correct, that the test of a good theory is whether it can be falsified, then all theories would be discredited at all times, because there are always 'puzzles' that have not yet been solved. Kuhn portrays normal science as a puzzle-solving activity governed by the rules of the paradigm. The puzzles will be of both theoretical and experimental nature (Chalmers, 1982). According to Kuhn the

scientific revolutions are a seldom occurrence. Most of the time devoted by the science community falls within the normal science. Kuhn makes some important remarks on this:

> Normal Science is the routine verification of the dominant theory in any historical period. Verification and testing become part of a puzzle-solving activity. Normal Science means research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time supplying the foundation of its practice…By choosing [the term paradigm], I mean to suggest that some accepted examples of actual scientific practice – examples which include law, theory, application and instrumentation together – provide models from which spring particular coherent traditions of scientific research…The study of paradigm…is what mainly prepares the student fro membership in the particular scientific community with which he will later practice. [The Structure of Scientific Revolutions, p.10]

The existence of a paradigm that is capable of upholding a normal science tradition is the characteristic that distinguishes science from non-science, according to Kuhn. Much of modern sociology lacks a paradigm and fails to qualify as science (Chalmers, 1982). For Kuhn a scientific revolution becomes real when one paradigm is abandoned and a new one is adopted instead. This can only happen when the relevant scientific community accepts it, not just a solitary scientist (Kuhn, 1970). The period of transition between the old and the new paradigms creates a volatile, unstable time in the scientific community – characterized by random research, aimless verification and accidental discoveries (Nachmias and Nachmias, 1992). In his original essay Kuhn introduced *paradigm* to displace the more common philosophical use of *theory*. In response to charges of being intentionally vague and ambiguous in his use of the word paradigm, Thomas Kuhn now wishes to substitute the term by introducing a, 'disciplinary matrix':

> As currently used in philosophy of science ... 'theory' connotes a structure far more limited in nature and scope than the one required here. Until the term can be freed from its current implications, it will avoid confusion to adopt another. For present purposes I suggest 'disciplinary matrix': 'disciplinary' because it refers to the common possession of the practitioners of a particular discipline; 'matrix' because it is composed of ordered elements of various sorts, each requiring further specification. [The Structure of Scientific Revolutions, 1970 Postscript]

A disciplinary matrix has various constituents, including *symbolic generalizations* (formal components), *models* and *exemplars* (concrete problems, which can be solved by the forms provided). Kuhn would rather have the word paradigm refer to this narrower part of the disciplinary matrix, that of exemplars. Exemplars are like the problems found at the ends of chapters in scientific textbooks. They are puzzles. For him the puzzles are, in the entirely standard meaning here employed, that 'special category of problem that can serve to test the ingenuity or skill in solution' (Kuhn, 1977). In any case Kuhn's 'revolutionary paradigm concept' has led to a number of controversies and discussions in the scientific community. It would take a great deal of time (analysis, reasoning and knowledge) to go into these issues, and that is not the task of this work, but let us now reflect just a bit and spend a short moment on some of the issues that could be questionable.

Both in Popper and Kuhn's discussions, science only exists as a 'theoretical consciousness (awareness) of society', completely separated from reality, i.e. from the whole complex relation of actual human life – actual human practice. It seems that their reasoning and discourse tends to separate and abstract science from the historical process of mankind in a way that is completely self-contained. They cannot see (as opposed to old Greek philosophers for example) that science is not only theoretical awareness and abstract thinking but also, just as much, a "sensuous awareness and sensuous need" (Lukacs, 1978). So, they don't view science and scientists under definite historical frameworks, conditions and boundaries. Instead they embark their journey from a very speculative level, on what humans philosophize, think, describe, etc. about these processes. This cannot lead to a real picture of processuality in science, or 'revolutions' and 'paradigms' for that matter. What we need instead is a starting point from *real life – real world* and *real sciences* which are part of that. Everything that Popper and Kuhn talk about is a historical product, a product of an epoch, succession of generations, chain of events and discoveries, multiple works, etc. They are not some virtual, independent or transcendental forms in sciences, but rather integral part of history, our culture, and development of our civilization. The resolution of speculative, abstract and theoretical questions is in scientific practice and human practice in general. Much of the answers to these questions are tied up to what happens in the world-system as social reality. But we must not forget that 'philosophy of science matters' (Wartofsky, 1979), since it directly concerns scientific research. We need to know what constitutes a properly constructed theory, and more to the point, which claims are not theoretical, or perhaps not even scientific. With that goal established, we need to know how to empirically verify the theory in question.

Strategies for Qualitative Inquires:
Releasing the Research Process Cycles and Case Study Methodologies

Knowledge acquired by scientific investigations should be demonstrable both by reason and experience (observation). Logical validity and empirical verification are employed by scientist as criteria to evaluate claims for knowledge. This is then translated into the scientists' research activities via the *research process* (Nachmias and Nachmias, 1992). Research is like a cyclical-self-correcting system. It should be possible to review its results and methods so they can be accounted for in detail. One repeats the stages of the process for a number of times before finally accepting the results (Lundequist, 1999). Chava Frankfort-Nachmias and David Nachmias illustrate the research cycle with the main stages of the research process (Figure 1). Research process seen here consists of seven main stages: problem, hypothesis, research design, measurement, data collection, data analysis, and generalization. Each stage affects theory and is affected by it as well. Nachmias and Nachmias point out that the most characteristic feature of the research process is its *cyclic nature*. This process usually starts with a problem and ends in a tentative empirical generalization. The authors continue by saying that the generalization ending one cycle is the beginning of the

next cycle. This process continues indefinitely, reflecting the progress of the scientific discipline (Nachmias and Nachmias, 1992).

Jerker Lundequist also gives an interpretational diagram [based on Nachmias & Nachmias] of the structure of a research project (Figure 2). Here the structure consists from the starting point in the research problem, pointing out the methods, concepts and theories relevant to one's own project. The problem is furthermore broken into sub-problems where research questions are posed to each of the sub-problems. It is also a point where the hypotheses are formulated as provisional answers to these questions [series of systematically organized questions]. The hypotheses have to be rooted in theory. The researcher should not simply answer the questions on the particular object of study, but also, he/she should be able to develop the theory that is applied. Initially, a research design is formulated with the follow-up task of data collection using a specific and pertinent method to one's own research context. Finally, after the systematization of data conclusions and new problems are formulated on the basis of the researched material (Lundequist, 1999).

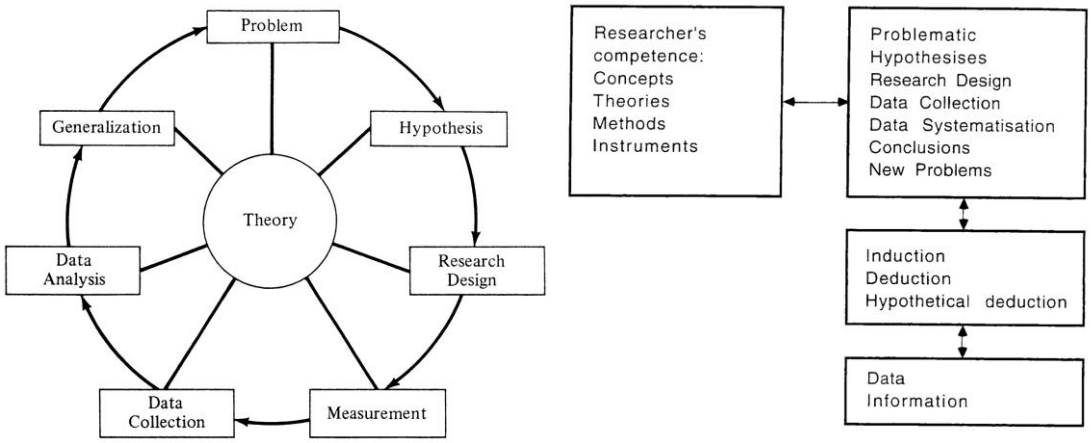

Figure 1: The Main Stages of the Research Process (Nachmias and Nachmias, 1992).

Figure 2: The Structure of a Research Project (Lundequist, 1999)

Mario Bunge gives the most well-known representation and description of the research cycle (Figure 3). He gives the major stages of the way of scientific research, main steps in the application of the scientific method. According to him the following ordered sequence of operations is given: (1) ask well-formulated and likely fruitful questions (2) devise hypotheses both grounded and testable to answer the questions (3) derive logical consequences of the assumptions (4) design techniques to test the assumptions (5) test the techniques for relevance and reliability (6) execute the tests and interpret their results (7) evaluate the truth claims of the assumptions and the fidelity of the techniques and (8) determine the domains in which assumptions and the techniques hold, and state the new problems raised by research (Bunge, 1967).

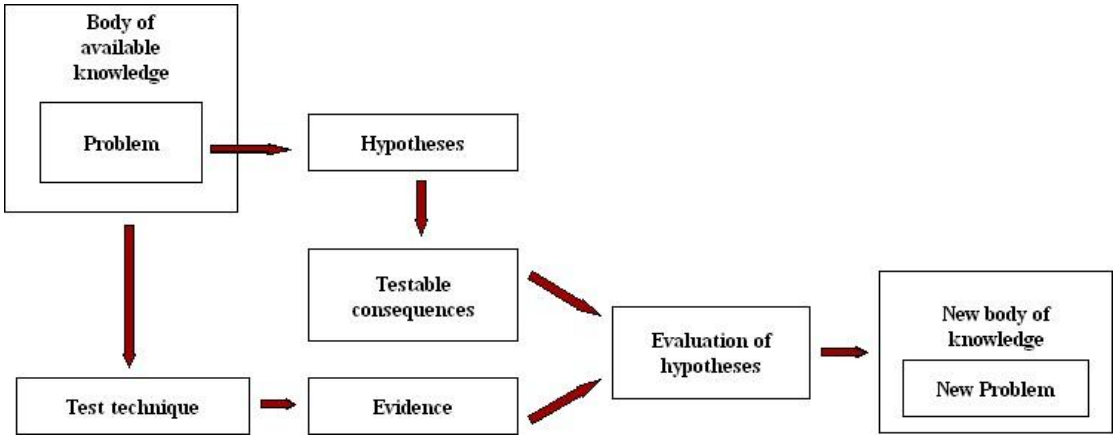

Figure 3: The Research Cycle (Mario Bunge, 1967, p.9). The importance of a scientific investigation is gauged by the changes it induces in our body of knowledge and/or by the new problems it poses.

The starting point in Bunge's research cycle is a certain *problem.* This problem has relation to the (existing) knowledge in the field of study [we want or need *more* knowledge about a certain phenomenon]. All of this means that a research inquiry normally starts with a (theoretical and empirical) literature review to find out what is already known and what ideas have been proposed before. Given the problem and the background knowledge a *hypothesis* is formulated about what the possible solution to the problem might be. In order to test the hypothesis, we need to design a certain procedure [research design] and perhaps construct certain equipment to be used in an experiment. This leads in the end to data collection and systematization and final *data,* which we use to *evaluate* our hypothesis (Bunge, 1967). Finally we come to the question: was the hypothesis true or false? In many cases it might happen that the hypothesis turns out to be partly true - and then we might have a new body of knowledge and a new research problem. So all these three representations of the structure of research cycle share the same things in common. Rolf Johansson mentions, in the context of case study methodology, Bunge's model as one representing a hypothetic-deductive method, which is developed within natural sciences that apply the experimental strategy (Johansson, 2001). At this point we need to say something and look more closely at what constitutes strategies for qualitative inquiry and especially case study methodology.

Despite the recent advances in the methods used in social sciences one of the first things that surfaces when one speaks about social research is whether one's orientation is a quantitative or qualitative one. Researchers have long debated the relative value of qualitative and quantitative inquiry (Patton, 1990). The quality - quantity classification often obscures legitimate concerns that researchers are drawn to designs that oversimplify social reality and take little notice of the sense and meaning of situations from the standpoint of the 'actor' (Berg, 1995). Still, the idea of an interpretive social science that, where appropriate and with the necessary caution, also makes use of statistical methods, is not a novel one: even Max Weber [the father of systematic, interpretive methods in social sciences] advocated an epistemological approach where quantitative measurements were not excluded *a-priori* and where

scientific explanation (in German*: Erklären*) and interpretive understanding (in German*: Verstehen*) could support each other (Weber, 1958). Qualitative methods can be used to better understand any phenomenon about which little is yet known. They can also be used to gain new perspectives on things about which much is already known, or to gain more in-depth information that may be difficult to convey quantitatively (Strauss and Corbin, 1998). Qualitative research (this dissertation also falls under that umbrella) properly seeks answers to questions by examining various social structures, social movements, social settings and the individuals that inhabit these settings. Qualitative researchers are thereby most interested in how human beings/individuals organize themselves and their setting and how inhabitants make sense of their habitats (Berg, 1995). Robert Stake makes an important remark in regards to the distinction between qualitative and quantitative inquiry:

> A distinction between what knowledge to shoot for fundamentally separates quantitative and qualitative inquiry. Perhaps surprisingly, the distinction is not directly related to the difference between quantitative and qualitative data, but a difference in searching for causes versus searching for happenings. Quantitative researchers have pressed for explanation and control; qualitative researchers have pressed for understanding the complex interrelationships among all that exists…the qualitative case study researcher has tried to facilitate reader understanding, an understanding that important human actions are seldom simply caused and usually not caused in ways that can be discovered…Quantitative research methods have grown out of scientific search for cause and effect expressed ultimately in grand theory. To establish generalizations that hold over diverse situations, most social science-oriented researchers make observations in diverse situations. They try to eliminate the merely situational, letting contextual effects "balance each other out". They try to nullify context in order to find the more general and pervasive explanatory relationships. Generalization is an important aim, with relevance to other cases hoped for. Quantitative researchers regularly treat uniqueness of cases as "error", outside the system of explained science. Qualitative researchers treat the uniqueness of individual cases and contexts as important to understanding [Stake, The Art of Case Study Research, 1995, pp.37-39].

Rolf Johansson draws attention to the fact that social science methodology 'shows great diversity'. When social sciences began to take a stronger shape and profile in the 20th century so have the qualitative[1] (softer) case study methods (hermeneutic tradition) and quantitative statistical (natural sciences) methods followed as supporting tools (Johansson, 2002). Johansson gives an overview of first and second generation of case studies within the social science methodology (Figure 4), where for

[1]Several writers have identified what they consider to be the prominent characteristics of qualitative research (Patton, 1990, Nachmias and Nachmias, 1992, Berg 1995, Denzin and Lincoln, 1998, Strauss and Corbin, 1998, Silverman, 2000 and others). The list that follows represents a synthesis of these authors' descriptions of qualitative research: 1. Qualitative research uses the natural setting as the source of data. The researcher attempts to observe, describe and interpret settings as they are, maintaining "empathic neutrality". 2. The researcher acts as the "human instrument" of data collection. 3. Qualitative researchers predominantly use inductive data analysis. 4. Qualitative research reports are descriptive, incorporating expressive language and the "presence of voice in the text". 5. Qualitative research has an interpretive character, aimed at discovering the meaning events have for the individuals who experience them, and the interpretations of those meanings by the researcher. 6. Qualitative researchers pay attention to the idiosyncratic as well as the pervasive, seeking the uniqueness of each case. 7. Qualitative research has an emergent (as opposed to predetermined) design, and researchers focus on this emerging process as well as the outcomes or product of the research. 8. Qualitative research is judged using special criteria for trustworthiness the preferences of qualitative researchers have added some other segments: 1. The preference for qualitative data is understood simply as the analysis of words and images rather than numbers. 2. The preference for naturally occurring data, observation rather than experiment and unstructured rather than structured interviews. 3. The preference toward meanings rather than behavior. 4. The preference towards the rejection of natural science as a model and 5. There is a preference for inductive, hypothesis generating rather than hypothesis testing.

example the work of The Chicago School of Sociology (especially during the 1920's and 1930's) belong to the first generation while Robert Yin and the development of his Case Study Research in the 1980's belong to the second generation (Johansson, 2002).

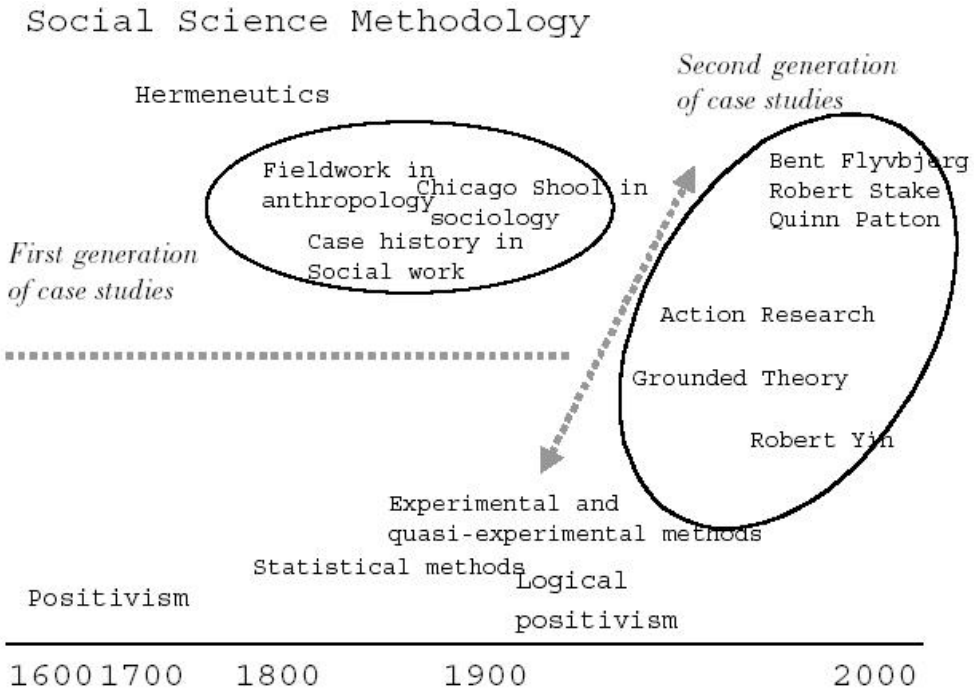

Figure 4: Social Science Methodology. An outline of the historical development of the case study methodology (Johansson, 2002)

The strategies of qualitative inquiry consist of different skills, assumptions and practices utilized from the researcher's side when she/he moves from theories and concepts through research design towards the collection of empirical evidence (data). Norman Denzin and Yvonna Lincoln stress that these inquires 'connect researchers to specific approaches and methods for collecting and analyzing empirical evidence' (Denzin and Lincoln, 1998). Each respective strategy of qualitative inquiry (or 'research strategy' in Robert Yin's words) is a field in its own right with its own specific set of methods, ways and tools. We find The Case Study Approach, Ethnographic and Participant Observation, Grounded Theory [which we will analyze a bit more as it is pertinent to this dissertation], Applied and Action Research, Historical Method and others. We will not go into each and every one in detail but some mention needs to be given to *Case Study Methodology* as it is today one of the most widespread approaches that guides researchers in their investigations.

Within the humanities and historical sciences things such as individual phenomena, events and processes are studied as unique cases. Usually case studies are used to develop concepts and make them more precise through conceptualization (Lundequist, 1999). There are different definitions and outlooks on what a case study

constitutes. Robert Yin offers a very complete and detailed guide (a whole methodology) into conducting case study research [the use of the case study as a 'research strategy']. Yin defines it as 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident' (Yin, 1994). Robert Stake takes a slightly different view. He advocates a case study that is defined by interest in individual cases, not by methods of inquiry used – a choice of object to be studied [and the object of study must be a case] (Stake, 1995). For Robert Yin on the other hand the case study is not just a tactic of data collection or a design feature alone but more a comprehensive research strategy [an all-encompassing method with a specific approach to data collection and analysis]. According to Yin, it is particularly suited to a situation in which there are many variables, and for this reason it uses multiples sources of evidence (six sources of evidence) including: documentation, archival records, interviews, direct observations, participant observation and physical artifacts (Yin, 1994). These sources of evidence can also be used in the data collection phase in grounded theory approach. Yin also makes a distinction between case study methodology and other approaches. For example, ethnographic research involves direct, detailed observations. For Yin the case study research gives the investigator a possibility to examine data from a variety of sources and she/he need not collect evidence first hand. Case study research can be based on any combination of qualitative and quantitative evidence, and can even consist solely of quantitative information (Yin, 1984). There are also opposing views that center on a notion that the case study is not a methodology in its own right but more as a complimentary and initial tool in investigations. Bengt Flyvbjerg views these problems as 'common misunderstandings about the nature of case study research method and gives also counter arguments which we will not go into now (Flyvbjerg, 2001):

> (1) General, theoretical (context-independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge. (2) One cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development. (3) The case study is most useful for generating hypothesis; that is, in the first stage of a total research process, while other methods are more suitable for hypotheses testing and theory building. (4) The case study contains a bias toward verification, that is, a tendency to confirm the researcher's preconceived notions. (5) It is often difficult to develop general propositions and theories on the basis of specific case studies [Flyvbjerg, 2001. pp.66-67].

In the spirit of Robert Yin, Rolf Johansson also perceives case study as a research strategy and in regards to that gives an interesting view where he looks at case studies both as an approach that aims at understanding and explaining a case in its complexity and including as many relevant variables and characteristics as possible (Johansson, 2002). He sees the approach that case study makes as an explicative strategy one (Figure 5):

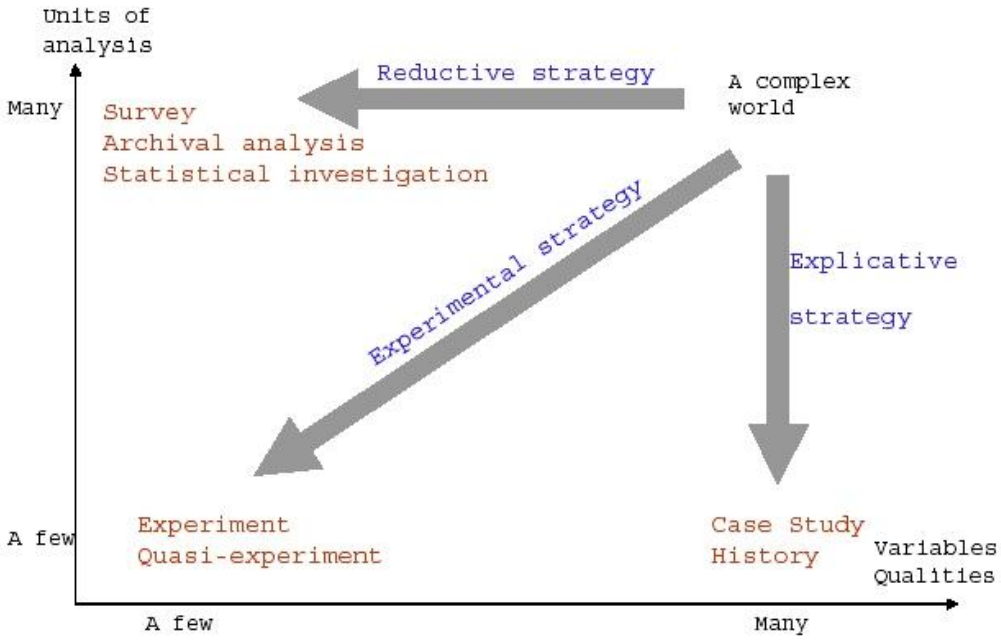

Figure 5: Three Approaches for making reality researchable. The Reductive strategy (many units of analysis but individual variables), the Experimental strategy (a unit of analysis and a number of variables) and the Explicative strategy (one unit of analysis – a case – and many characteristics and variables) (Johansson, 2002)

Sometimes these separate, multiple and different approaches, uses and meanings of methods in qualitative research can make it difficult for the researcher to make up her/his own mind in approaching, conducting and resolving their inquiry. Denzin and Lincoln stress just that:

> Qualitative research is an interdisciplinary, transdisciplinary, and sometimes counterdisciplinary field. It crosscuts the humanities and the social and physical sciences. Qualitative research is many things at the same time. It is multiparadigmatic in focus. Its practitioners are sensitive to the value of the multimethod approach. They are committed to the naturalistic perspective, and to the interpretive understanding of human experience. At the same time, the field is inherently political and shaped by multiple ethical and political positions…The field sprawls between and crosscuts all of the human disciplines, even including, in some cases, the physical sciences. Its practitioners are variously commited to modern nad postmodern sensibilities and the approaches to social research that sensibilites imply [Denzin and Lincoln, 1998. pp.6-7]

Whatever the 'case' [whatever underlying model, approach, method, methodology, etc.] we use it is important that what we use this consequently and to use it in a way that will helps us recognize, if not resolve, the problems that confront us in trying to conduct research. I am not of that opinion that one or the other method should be *a priori* excluded and that methods cannot be combined (the best of both worlds) to create a new synthesis and a new broader umbrella which can enbale us as researchers to understand better the social phenomena we are studying. Let us now look more closely at one of these approaches, *The Grounded Theory*, which has been utilized [with synthesis and integration] in this dissertation (main work & papers alike).

Grounded Theory Inquiry: Breaking the traditional social science research

Barney Glaser and Anselm Strauss, have formulated and developed in great detail *Grounded Theory* perspective on social science research [Key works are: Barney Glaser and Anselm Strauss, *The Discovery of Grounded Theory*, Chicago: Aldine, 1967; Anselm Strauss and Juliet Corbin, *Basics of Qualitative Research*, Newbury Park: Sage, 1990; and Ian Dey, *Grounding Grounded Theory*, Boston: Academic Press, 1999]. Even with the well-expected dose of criticism and skepticism, which follows development of any new idea, method or methodology, I believe grounded theory offers us an attractive and very useful conception of scientific method. It is simply put as 'a systematic generation of theory from data (inductive methodology, process systematically done)' (Glaser and Strauss, 1967). It has the capability to produce theory from data, theories, which areempirically grounded in data from which they arise (Glaser, 1998).

Basically Glaser suggests two main criteria for judging the adequateness of the emerging theory, that it must be acceptable (fit) the place studied and that it works, i.e. helping the people in a particular situation to make sense of their experience and at the same time manage that situation better (Glaser, 1998). The important thing to remember here is that it is not the question of *naïve inductivism*, but rather *sensitive deduction* based on carefully induced ideas. This conceptual induction fosters even more deduction. For Glaser and Strauss, grounded theory is said to emerge inductively from its data source in accordance with the method of 'constant comparison' [an amalgam of systematic coding, data analysis and theoretical sampling procedures]. These procedures enable the researcher to make interpretative sense of much of the diverse patterning in the data by developing theoretical ideas at a higher level of abstraction than the initial data descriptions. This is a very systematic approach, which has a view that all things are integrated, that actions are integrated with other actions, that nothing is mono-variable, that everything is in motion and that patterns are systematically occurring over and over again (Dey, 1999).Glaser and Strauss contrasted grounded theory with logic-deductive theory to argue that the prevailing emphasis on theory testing neglected the process of *theory generation* (Glaser and Strauss, 1967). Another shortfall of social science research in this period was its theory-practice connections. These had grown more tentative as dominant positivist theories became more removed from the social phenomena that they were supposed to explain. Grounded theory, a reaction against this positivist trend, was part of the humanist attempt to tie social science data more closely to the beliefs and concerns of participants so that social-science practitioners would find in theory a more congenial guide to the problems of practice (Haig, 1995).

Glaser and Strauss explicitly note that 'the researcher does not approach reality as a *tabula rasa* - [that he or she] must have a perspective [in order to] see relevant data and abstract significant categories from [it]' (Glaser and Strauss, 1967). Rolf Johansson in his thorough and systematic analysis of case study methodology remarks that there is no hypothesis that directs the data collection in Grounded Theory method [unlike the deductive approach]. Rather the methodology focuses on generating

theory as opposed to validating it. The theory becomes the result, which can give way to making concepts more precise (Johansson, 2002).

Glaser and Strauss hold a dynamic perspective on theory construction. This is clear from their claim that 'the strategy of comparative analysis for generating theory puts a high emphasis on theory as process, that is theory as an ever-developing entity, not as a perfected product' (Glaser and Strauss, 1967). In this regard, Glaser and Strauss advise the researcher to be constantly on the lookout for new perspectives that might help them develop their grounded theory, although they do not explore the point in detail (Dey, 1999).

For the process of building grounded theory [more or less the procedure that was used in this dissertation but with some amalgations] please look at the Table 1. I will not go into each and every step of the procedure here [they are rather self-explanatory from the diagram] but rather focus on the 'grounding' elements of this approach. The three 'grounding' elements of grounded theory are *concepts*, *categories* and *propositions*. *Concepts* are the basic units of analysis since it is from conceptualization of data, not the actual data *per se*, that theory is developed. Corbin and Strauss (1990, p. 7) state:

> Theories can't be built with actual incidents or activities as observed or reported; that is, from 'raw data'. The incidents, events, happenings are taken as, or analyzed as, potential indicators of phenomena, which are thereby given conceptual labels. Only by comparing incidents and naming like phenomena with the same term can the theorist accumulate the basic units for theory.

The second element of grounded theory, *categories*, is defined by Corbin and Strauss (1990, p. 7) thus:

> Categories are higher in level and more abstract than the concepts they represent. They are generated through the same analytic process of making comparisons to highlight similarities and differences that is used to produce lower level concepts. Categories are the 'cornerstones' of developing theory. They provide the means by which the theory can be integrated.

The third elements of a grounded theory are *propositions*, which indicate 'generalized relationships between a category and its concepts and between discrete categories'. Propositions involve conceptual relationships whereas hypotheses require measured relationships. Since the grounded approach produces conceptual and not measured relationships, the former term is preferred (Whetten, 1989). The generation and development of concepts, categories and propositions is an iterative process. Grounded theory is not generated a priori and then subsequently tested (Strauss and Corbin, 1990, p. 23). Rather, it is:

> ...inductively derived from the study of the phenomenon it represents. That is, discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. Therefore, data collection, analysis, and theory should stand in reciprocal relationship with each other. One does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge.

We could conclude this part by some reflections from Ian Dey's thorough study and analysis of *Grounded Theory*. As it is the case with all the research methodologies used by social science: none of them are perfect, nor is the grounded theory. But in this case, this method has been useful to release the research creativity and imagination of this work as well as to connect some fields in a new, dynamic way. As Dey remarks that the basic premise or impulse of grounded theory – 'to generate theory through confrontation with evidence' (in our case it has been a in continuo confrontation and reflection) – can be honored even if the fields of knowledge (disciplines) required for validation [simply looking at it as the act of finding or testing the truth of something] are recognized as more demanding than it allows (Dey, 1999).

The important concept of categories utilized in grounded theory may not be completely adequate, but still the sheer fact of recognition of categorization strengthens this method even more (Dey, 1999). While some might think that the procedure of data coding [Coding refers to the translation of data from its non-processed, raw state to a new state in which it is ready for or responsive to analysis. Glaser and Strauss see this within logic of discovery and it is an activity that generates theory systematically, rather than accumulating evidence (Glaser and Strauss, 1967)] could be a matter of dispute, 'recognition of the importance of holistic and substantive connections can complement the contribution of constant comparison to the generation of categories. Though the analysis of process in grounded theory may seem limited, the use of complement reflective methods in this dissertation, have strengthened even more the 'recognition of emergent properties and the dynamic interplay of structure and how a result is obtained or an end is achieved over time' that grounded theory brings (Dey, 1999). This has been one of the crucial pillars in the approach presented in this thesis [I have directed my efforts to the principles of grounded theory rather than its practice]. All of this could point to a possibility of dissolving grounded theory into something else or something that it is not at all. But Anselm Strauss and Juliet Corbin [in a revisited and refreshed version of the grounded theory, its procedures and techniques] give an accommodating view when reflecting upon which features of methodology are cardinal (Strauss and Corbin, 1998):

> …the grounding of theory upon data through data-theory interplay, the making of constant comparisons, the asking of theoretically oriented questions, theoretical coding, and the development of theory [Strauss & Corbin, 1998.].

Table 1 The phases and process of building grounded theory in this study.*PHASE*		*ACTIVITY*	*RATIONALE*
PARADIGM AND RESEARCH DESIGN			
Step 1	Review of theoretical & technical literature (non tabula rasa approach) Analysis of existing paradigms	Definition of research question Definition of a priori constructs Light theoretical investigation (assertion)	Focuses efforts Constrains irrelevant variation and sharpens external validity Focus on emergence to understand the research situation Forcing and preconceptions allowed lightly, only to strengthen the approach itself Questioning the existing paradigms
Step 2	Selecting cases	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases (e.g., those that test and/or extend theory)
DATA COLLECTION			
Step 3	Develop rigorous data collection protocol	Creating case study database Employing multiple data collection methods (six sources of evidence) Qualitative data Data triangulation	Increases reliability Increases construct validity Strengthens grounding of theory by triangulation of evidence. Enhances internal validity Synergistic view of evidence
Step 4	Entering the field	Overlapping data collection and analysis Flexible and opportunistic data collection methods	Speeds analysis and reveals helpful adjustments to data collection Allows investigators to take advantage of emergent themes and unique case features
DATA ORDERING			
Step 5	Data ordering	Arraying events chronologically	Facilitates easier data analysis. Allows examination of processes
DATA ANALYSIS			
Step 6	Analyzing data relating to the first case	Using open coding Using axial coding Using selective coding	Develop concepts, categories and properties Develop connections between a category and its sub-categories (paradigm model – to think systematically about the data and relate them in complex ways) Integrate categories to build theoretical framework All forms of coding enhance internal validity Selection of a core category – main concept line
Step 7	Paying continuous attention to processes	Dynamic comparison of data and follow-up of constant change	Describing and coding everything that is dynamic Phenomena are changing, moving or occurring over time and are vital to observe dynamically in the research setting
Step	Theoretical sampling	Literal and theoretical	Confirms, extends, and sharpens theoretical

8		replication across cases (go to step 2 until theoretical saturation)	framework (analysis of data from interview transcripts, field notes on observations, memos, diagrams and conceptual maps) Open, variational and discriminate sampling
GENERATION OF THEORY			
Step 9	Reaching closure	Analysis paradigm Theoretical saturation when possible	Relationships among categories, dimensions, Properties, conditions, and consequences Ends process when marginal improvement becomes small and theoretical saturation not possible
LITERATURE COMPARISON			
Step 10	Compare emergent theory with extant literature	Comparisons with conflicting frameworks Comparisons with similar frameworks Linking back to light theoretical investigation	Improves construct definitions, and therefore, internal validity Also improves external validity by establishing the domain to which the study's findings can be generalised Paradigm shifts

(Original table source: Adapted and revised by Tigran Haas 2001-2004 from Naresh R. Pandit, "The Creation of Theory: A Contemporary Application of the Grounded Theory Method". *The Qualitative Report*, Volume 2, Number 4, December 1996. Original process of building grounded theory by: Anselm L. Strauss and Barney G. Glaser, 1967, University of California, San Francisco).

Cross-disciplinary Integration

Qualitative inquires, such as the *Grounded Theory* method and approach are mainly the search for a new place - apart from ready-made theories - to look for the truth. Aside from the study of the particular event or object (which usually commands the process of research), grounded theory takes into account the fact that social phenomena are 'scattered objects, that impose on the researcher the need to be creative not only in what the significance of their choice is concerned but also in order to find the right places to ask for the answers' (Strauss and Corbin 1998, Dey, 1999).

The intention of this dissertation, not wanting to make a claim to or create an appearance of (often undeserved) importance or distinction, is to make a recognizable theoretical contribution [contribution to the scientific literature in this field] as well as to the practice on the ground. In many respects, social science theories tend to prevail under certain time until better ones are proposed which gain broader acceptance, rather than new theories being proposed for every tiny fact that is deduced.

The scientific method (i.e. hypotheses are formulated from observations, and theories develop from these hypotheses) sometimes cited as the one and only way that science is conducted, is not the paradigm that scientific inquiry must always follow, but it often is the best objective procedure. Theories can also be formulated from empirical studies, and that they can be put to test only since they have been worked out. I have not had the intention to test any hypotheses, as to find out if different statements are true or false. Instead, the research should be regarded as *explorative* and *theory building*, as opposed to theory testing (by verification or falsification).

The theory in this research is exposed as a blueprint, not just as a basis for understanding the world and processes around us, but more as a foundation for developing skills and tools needed for application(s). In this way, it becomes a conceptual framework for organizing facts, experiences and observations and interpreting them in a systematic way. According to Fred Kerlinger and Howard Lee, the basic purpose of scientific research is theory (Kerlinger and Lee, 1999). Chris Hart emphasizes that one of the key elements, if not the key one, for a good scholarship is *integration*, in the sense of making connections between *ideas*, *theories* and *experience* In other words, what I intended to do in this dissertation is to apply a method or methodology from one area to another: to placing a specific episode into a larger theoretical framework, thereby providing a new way of looking into the phenomenon (Hart, 2000). In this case it meant drawing and absorbing elements from different theories to form a *new synthesis* and to provide a new insight. It also meant synthesizing ideas and making connections across disciplines. It may also mean re-examining an existing body of knowledge in the light of new development and constant rapid changes in society. The ultimate goal is something that we might phrase as: *making an original contribution to a specific area of knowledge.*

The objective of grounded theory, and the reason its ideas were applied in this Dissertation is the discovery of 'theoretically comprehensive explanations about particular phenomenon' (Glaser and Strauss, 1967) which can enable a researcher to develop a substantive theory that is significant, theory-observation compatible, generalizable, reproducible and rigorous. Grounded theory not only offers a time-honored qualitative research strategy as an alternative approach to more traditional methods of investigation, but provides a viable means for scholars and practitioners to generate theory grounded in the realities of their daily work (Strauss and Corbin, 1998). In this respect grounded theory methodology, as indicated before, is both deductive and inductive. Inductively, theory emerges from observations and generated data. This theory can then be empirically tested to develop forecasts or predictions from general principles (Dey, 1999).

In other words, being a cross-disciplinary effort the approach I have also taken in this dissertation was guided by the systems thinking approach [for a detailed discussion on systems approach and models please turn to chapter 4] reflected in the grounded theory. All of this parallel helped us to borrow theory and concepts from other fields in order to create an own area of study, creating a sort of 'disciplinary matrix'. Thomas Kuhn says that a disciplinary matrix is 'disciplinary' because it refers to the common possessions of the practitioners of a particular discipline; 'matrix' because it is composed of ordered elements of various sorts [including symbolic generalizations, models, values and paradigms]". (Kuhn, 1970)

Observational Urbanism: an Integral part of the Explorative Approach in Research within Urban Planning & Urban Design Applied Social Sciences and Humanities Disciplines

Research in applied social sciences such as urban planning and urban design is the systematic, rigorous investigation of a situation or problem or a (urban) phenomenon geared to generate new knowledge or validate existing knowledge within the field. That notwithstanding, another parallel concern in this field has to do with the discovery and definition of problems than with matters of research design by which hypotheses derived from these problems may be put to test. And in that spirit scientific research is an art, not a science. *Research Design* is an overall plan of how to obtain answers to questions being studied and handle some of the difficulties encountered in the research process. Research design spells out the strategies that the investigator adopts to develop information that is accurate, objective and interpretable. It is a set of flexible guidelines designed to keep the investigator in the right direction (Polit & Hungler, 1999 and Creswell, 2013). The process used to collect information and data for the purpose of doing research is what we call methodology and it may include publication research, interviews, surveys and other research techniques, and could include both present and historical information (Frankfort-Nachmias, & Nachmias, 2008 and Creswell, 2013).

Exploration

This thesis takes the starting point in *Exploratory Research*, which is research conducted for a problem that has been defined by the researcher to gain additional inputs into the phenomenon under study. It often occurs before we know enough to make conceptual distinctions or to posit explanatory relationships (Stebbins, 2001). Exploratory research, not unlike *Grounded Theory* (Glaser and Strass, 1967)develops concepts more clearly, firmly establishes priorities, develops stable operational definitions and improves the final research design. This in turn helps the researcher to determine the best possible research design, appropriate and doable data-collection method (empirical studies) and selection of subjects/objects. It also draws definitive conclusions with the selective subjects. Given its fundamental nature, exploratory research often concludes that a perceived problem does actually exist but can be added on to conclude a protocol or remedial action (Shields & Rangarajan, 2013). The objective of exploratory research is to gather preliminary information that will help define problems and suggest hypotheses (Stebbins, 2001)

As mentioned, this methodology is also at times referred to as a grounded theory approach to qualitative research or interpretive research, and is an attempt to unearth a theory from the data itself rather than from a predisposed hypothesis, *an inductive approach*. Simply put, Grounded Theory is a systematic generation of theory from data, an inductive methodology and a process that is systematically done (Glaser & Strauss, 1967). It has the capability to produce theory from data, theories, which are empirically grounded in data from which they arise (Glaser, 1998). So Grounded

Theory, as Exploratory Research is a strategy of qualitative inquiry, comprising the skills, assumptions and practices used by the researcher when moving from a paradigm and research design to the collection of materials and generation of theory (Denzin & Lincoln, 1998).

The use of multiple sources of data contributed to building up a chain of evidence related to the research questions, ensuring that the study demonstrates linkage between the research procedures used and the concepts under study that is to construct validity. The use of various methods for gathering data (*cross-checking the findings*) in explorative research also enables triangulation. Researchers can triangulate in different ways: by data source, by specific methods, or by data type (Huberman and Miles, 1994). Triangulation is nowadays widely used as a multiple data-gathering technique (usually three) to investigate the same phenomenon. Method triangulation helps to enhance validity and reduce possible bias (Patton, 2001). Contrary to popular belief, explorative research and grounded theory research are not just a pure theoretical inquiry but instead require an understanding of related theory and empirical work in order to enhance theoretical sensitivity (Locke, 2001). The theory becomes the result, which can give way to making concepts more precise (Johansson, 2002). Some see triangulation as a method for corroborating findings and as a test for validity. This, however, is rather controversial (Denzin, 1978). This assumes that a weakness in one method will be compensated for by another method, and that it is always possible to make sense between different accounts. This is unlikely. Rather than seeing triangulation as a method for validation or verification, qualitative researchers generally use this technique to ensure that an account is rich, robust, comprehensive and well-developed (Creswell, 1998).

A qualitative research approach provides a ‘deeper’ understanding of social phenomena than an examination of pure quantitative data (Silverman, 2000). Quantitative research is an investigation in which the researcher attempts to understand some larger reality by isolating and measuring components of that reality (often) without regard to the context. In qualitative research, when researching the context under study, the investigation gains importance as it becomes an inquiry in which the researcher attempts to understand some larger reality by examining it in a holistic way or by examining components of that reality within their contextual setting as well as humanizing problems and data. The holistic approach that qualitative inquiry offers is an important aspect. Researcher seeks a ‘complete’ picture of a total, very complex case and there may be no attempt to isolate specific variables or to answer specific questions. But if specific questions are asked, the answers are sought within the context in which the phenomena naturally occur (Berg, 1995, Denzin and Lincoln, 1998 and Silverman, 2000). The complex reality of a setting can be understood only as an ‘amalgam’ and not as simply a sum of its parts. To be meaningful, inquiry must be holistic and contextual, especially when the research area or study context we are dealing with remains largely ignored from an integrated perspective; with studies in the field tending to concentrate largely in segmented experiential factors. Exploratory research takes place when problems are identifiable. It is used when the topic or issue is new and when data is difficult to collect. It is

flexible and can address research questions of all types (what, why, how). It is often used to generate formal hypotheses. Exploratory research can be linked with the conceptual framework working hypothesis. Skeptics, however, have questioned its usefulness and necessity in situations where prior analysis could be conducted instead (Shields, and Tajalli, 2018)

Observation

Coming to terms with *complexity* and *intensity* is the key to understanding a city. What each of us sees and understands depends on our own experience: where we come from, personally and professionally. Observation can tell more about the observer than about the environment being observed. It reflects the values, beliefs, and worldview of the witness. We see through the lens of our interests and understanding. We recognize patterns that match what we have seen before. Urban observation is also aimed at informing better, and more equitable, plans, policies and political decisions. A historical, interdisciplinary tradition of urban observation, with the modern-day "urban diary", is an experiential method of documenting city life and form. Through evocative photography, use of smartphone apps, and other cutting-edge tools, we can explore and document the urban spaces, structures and human activities around them. According to Merriam Webster's Dictionary to OBSERVE is to watch carefully, especially with attention to details or behavior for the purpose of arriving at a judgment + to make a scientific observation (an act or instance of observing a custom, rule, or law + an act of recognizing and noting a fact or occurrence often involving measurement with instruments); on or off to come to realize or know especially through consideration of noted facts.

Public life studies have been useful for documenting the relationships between environmental design and behavior to inform decision-making and design processes to improve places for people. They enrich our understanding of city life, particularly the quality, performance, and successfulness of a place as well as the needs of people. Such studies assist with documenting existing conditions, identifying issues, developing solutions, and evaluating the impacts of design interventions. Observing people in public space is complex. City life is transitory with people moving and conditions changing constantly. There are extensive variables, such as architecture and design, weather, noise, smell, light, and shade as well as the number, location, and types of people using the space. Proponents of New Urbanism for example visited cities, towns, neighborhoods, and streets that they liked — not only observing but also measuring them in detail. That has been the New Urbanism method ever since — dealing with every kind of community plan, from hamlets to big-city downtowns. New urbanists verify everything with their own eyes, again and again, as Jacobs did. This is what we can truly call "observational urbanism." It is a powerful method and it does not stand in direct opposition to academic theorists who trust ideas and intellectual fashion more than their own observations and experiences, but rather it complements it. This approach was championed by Jane Jacobs and Christopher

Alexander, in which we diligently work to ground our ideas by testing them with the empirical data of *observation and experience.*

Much of the logic of urban planning and urban design thinking is neither deductive nor inductive but what Peirce originally defined as *'abduction'* (Douven, 2011). The logic of abduction is really a form of inference by best explanation where a set of observations leads to a conjecture that explains them. It is a form of reasoning backwards from effect to cause by educated guesswork (Walton, 2014). The logic of abduction in urban design proceeds by observing the ways in which the city works and engaging in educated guesswork about how it works (Pafka & Dovey, 2016). In the changing city of today, during these divisive political times, one can speculate on how the tradition of "looking around and collecting data" (observational urbanism) can make a difference. How compiling visual images, taking notes, doing urban diaries (composed of photographs that capture what we like and dislike, what is working, and what is not) might change our cities for the better. In short, how can observational urbanism influence effective city planning and development outcomes? The answer is in "Seeing is thinking!" Observing and thinking more visually can enhance our ability to understand and contrast differing points of view about the cities we want and better equip us to intelligently discuss—rather than provide a visceral response to—inevitable changes in the urban landscape. In other words, we should strive for a "vocabulary of looking" as the foundation for participation in civic discussion. "Seeing" as a way of learning also seems to reference "critiquing". Of course, appearance is what we see, and with our other senses add up to "experiencing" - the more consequential dimension of what it is like to be "there". If seeing needs our deeper attention, so does all the senses as we are coming and going and being there.

Integration: Intuition and Imagination

Science is supposed to be a rational activity – guided by careful analysis, without undue influence of "gut feelings". While this may be so, it would be useful to keep this in perspective a bit and have an open mind, as well as reflect on what the role of intuition might be for scientists. It relies on a foundation that is made of seven elements of study: *Imagination, Intuition, Observation, Insight, Introspection, Inference, and Supposition.* There are researchers who contend that the word "intuition" is often misunderstood or misused to mean instinct, truth, belief, meaning but rather realms of greater knowledge and other subjects, whereas others contend that faculties such as instinct, belief and intuition are factually related. So, while rational arguments remain at the core of the scientific method (especially for deductive analyses), to operate as a scientist on a day-to-day basis, it is very beneficial to also listen to one's intuition. There are three key areas for intuition and it deals with helping to identify major topic of interest/current affairs in research. When screening the horizon for the next big thing, this is rarely going to be just about a rational analysis. It's what happens before formal (rational) science starts: *we all have to think about which questions are worth asking*. Reading the scientific landscape, in turn, is not just about reading arguments, but also about reading the people behind those

arguments, their power relationships and agendas. Intuition can be extremely helpful for understanding "where things are at". Intuition helps with inductive analysis. The majority of science these days is deductive, i.e. hypothesis-testing oriented. But every so often, and especially when trying to understand complex phenomena, it will be necessary to build new theory. This needs to be based on rational arguments to be defensible, but very likely draws on more than just a couple of reasoned chains of arguments. Most likely, building new theory comes from assembling many experiences in a way that is collectively useful or interesting – rather than singling out individual chains of reasoning. Intuition helps navigate conflicting opinions. With all its emphasis on rational analysis, one would think (naively…) that science is not very controversial. But when you operate in science, you note that people disagree with one another all the time, and things can get quite furious, passionate, or even personal. It takes intuition about people to navigate these situations and make sense of who sits where and why. Often, it is different truths being more or less salient to different scientists that lead to nuances (or even big differences) in their worldviews. This phenomenon can be best understood by drawing on an overall perspective on people in science, based on intuition as well as facts (Beveridge, 1953).

Established theoretical frameworks are frequently used to help organize and interpret exploratory data during the analysis and write-up phases of particular research projects, especially those executed later in the chain of studies when the grounded theory itself is now reasonably well-elaborated (Stebbins, 1997). It is noteworthy in this regard that some exploratory studies rely on these perspectives very little, if at all (Bishop and Hoggett, 1986; Crouch and Ward, 1994). Rather than being explained by a received theoretical framework, such studies are explained only by the framework of the emergent grounded theory. Exploratory research in this thesis relied on techniques as: secondary research - such as reviewing available literature and/or data, qualitative approaches, such as informal discussions with some of key actors, and more formal approaches through dialogues, round tables, debates, projective methods, case studies and pilot studies. When research aims to gain familiarity with a phenomenon or to acquire new insight into it in order to formulate a more precise problem or to develop a hypothesis/assertion, exploratory studies come in handy. If the theory happens to be too general, a hypothesis/assertion cannot be formulated. Therefore, a need for an exploratory research is felt in order to gain experience that may help in formulating a relevant hypothesis or assertion for a more definite investigation. The research process begins with the unveiling of significant themes and issues that people are most concerned about described in narratives and unstructured conversations. Based on these themes a series of *codes* or *projective techniques* are prepared by the researcher to initiate collective reflection and dialogue with different groups involved in the research project, are used to initiate the dialogue process and inspire research participants to tell stories and create narratives based on these pictures.

During the past decades, qualitative research interviewing has become a sensitive and powerful method for investigating subjects' private and public lives and has often been regarded as a democratic emancipating form of social research. Research

interviews are sometimes referred to as dialogue, a concept that has become popular in political, managerial, and educational contexts (Kvale, 2006).The method of *Dialogues,* that was used in this thesis instead of interviews refers to the mutual exchange of experience, ideas and opinions between two or more parties; i.e., *a conversation*. Dialogue is two-way or multi-way communication. It presumes the opportunity to reply on several occasions in order to enhance a line of reasoning. The dialogue concept contains a dimension of simultaneity and direct contact, either physical or via technical aids. In order to achieve genuine civic participation, there must be some form of dialogue between citizens and those in positions of power (Tedlock, & Mannheim, 1995).

Imagination is "possibility thinking"—thinking of things as possibly being other than they are or both what they are and something else simultaneously. It is clearly linked to the capacity for metaphor, in which we draw selectively on knowledge in one domain to illuminate our thinking about an apparently unrelated domain. Imagination can involve visual imagery, as its etymology implies, but it can equally well involve any other kind of feature from the worlds of direct bodily experience, including sound, taste, smell, touch, movement, effort, and change, and of socially mediated experience, including activities, narratives, personalities, and relationships. Imagination is also clearly tied to the emotions in the same way as our sense of aesthetics. This strong affective quality seems to be implicated in our ability to choose relatively productive pathways through a huge range of possibilities. It follows that imagination in qualitative research is not only a means and an object of inquiry but also a perennial obstacle. Researchers are dependent on imagination for the pursuit of insight and understanding, they are continually confronted with the processes and outcomes of imagination in the ways in which people order and make sense of the world, and they must struggle against the tendency of the imagination to become channeled and restricted over time (Beveridge, W.I.B., 1953, Warnock, 1978, Greene, 1995 and Given, 2008).

Coda: Some Final Thoughts, Observations and Societal Unknowables

It is not forbidden to be an idealist and look for a brighter future, perhaps one that you, as a researcher hope will include your tiny bit of 'new knowledge' somewhere in the grander scheme of things. Of building a better world, a safer tomorrow or just rehabilitating a community after natural or man-made disasters for example, is by and large what the social sciences try to help us achieve. With all the scientific rigor and methodologies used, one can still, for all the reasons mentioned before, have quite a difficulty doing research within the social science spectra. Social sciences are not a delimited, autonomous arena of societal action. They belong to a much larger segment of reality, the structures of knowledge of our modern world. They attempt to talk about what is going on in society through the experience of a complexity of phenomena. It is interpreting social reality in such a reflective way that the social reality becomes affected by it. Social reality and social experience are a historical experience as well. It becomes obvious that the multi-disciplinary qualities of social sciences can just play an advantageous role in decision-making and management of societies in general. The progress that the social sciences achieved is mostly due to

their use of particular methods (different from the natural sciences) and nobody will deny that the social sciences are far from being perfect, but 'emulating natural sciences will not put them on the right track' (Flyvbjerg, 2001). Marx Wartofsky provides us with a fundamental insight here:

> The distinction comes to be made, in this context, between the natural sciences (physics, chemistry, biology) and the behavioral and social sciences. Granting the striking continuity of man with all of living nature, it is clear that in essential respects these latter may be called the *human sciences.* An older reductionism, of a generation ago, raised the critical question as to whether such sciences are properly scientific, in the paradigmatic sense in which the natural sciences are said to be scientific; i.e. with respect to the formulability of quantitative laws, the use of experimental method, and the supposedly ideal precision of the "exact sciences. "The distinction between "hard" and "soft" sciences, between "exact" and "inexact" sciences, and between "quantitative" and "qualitative" sciences has also been adduced, usually to the derogation of the "soft," "inexact," and "qualitative" sciences. These are methodological questions, but their resolution lies not in some simple adherence to one or another paradigm within this or that science, nor in defensive departmental loyalty. Rather, it lies in the analysis of the concepts and procedures characteristic of the human sciences, and in concrete and specific judgments of the a equacy o method to subject matter within the given disciplines. This field is perhaps the most challenging in contemporary philosophy of science, both for its complexity and the sharp questions it raises concerning the logic and methodology of scientific knowledge. [Wartofsky, 1968 p.371]

There are also other problems and factors in play, ones that we touched upon at the beginning of this discourse. Questions of subjectivity, theorizing, data collection, model building, conceptualization, interpretation, etc. in social science remain a difficult arena of endless controversies, criticism, disputes, disagreements, etc. We turn again to Wartofsky for an interesting and highly relevant outlook:

> Nevertheless, the pressure of field research, especially among cultures different from those of the researchers, raised sharply the question of how social-scientific data is acquired, and especially how the "subjective" *set* [The Gestaltist term *set* (*Einstellung*) calls attention to the general problem of social perception and to the specific problems of social-scientific observation and research techniques]of the investigator enters into primary data collection, as well as into its interpretation. With the growth of empirical sociology and the development of field-research techniques in anthropological and sociological inquiry, these questions become still sharper, raising methodological issues at the very foundations of the social sciences. When such "entities" of social research as values, customs, and norms arise, then the epistemological and methodological issues become conceptually central to a clarification of exactly what the social scientist is investigating, and how he goes about it…The crucial criticism of all such experimental procedures in the social sciences is that the human material is too complex, involves too many variables, and includes that element of human freedom which makes it unamenable to law-like formulations in the social sciences. The companion to this view is the methodological critique which emphasizes the insufficiency of reliable data for generalization or for the validation of theories in social science. On such a view, it is only the relatively isolated and small-scale social situations which may lend themselves to explanation in the rigorous terms of a hypo thetico-deductive model, with confirmation-procedures and prediction. For the rest, law-like formulations in the social sciences, as in history, founder on the rocks of the relative uniqueness of social and historical events and processes... [Wartofsky, 1968. pp.389, 396]

We need to view our research in (applied) social sciences in terms of processes, how present social structures and functions develop out of earlier ones and how all of that

is reflected in social evolution in society, which are part of larger social systems. What drives us onward in the work of science (be it natural, social or just 'human') is precisely the sense that there are truths out there to be discovered. Truths that once discovered will form a permanent part of human knowledge. As long as there is society, there will be a need for social sciences and to 'reshape and make social science matter' is not a simple task and requires much more than just grounding it on non-contextual grand theories. We must not forget the cross-disciplinary quality that these sciences posses [as this dissertation tried to follow along those lines], as we cannot meaningfully study a problem in one of the social sciences without regarding perspectives from the other. Immanuel Wallerstein makes an important comment:

> Today we find we are in a very different situation. On the one hand, complexity studies is emphasizing the arrow of time, a theme that has always been central to social science. It emphasizes complexity, and admits that human social systems are the most complex of all systems. And it emphasizes creativity in nature, thus extending to all nature what was previously thought to be a unique feature of homo sapiens. Cultural studies is emphasizing the social context within which all texts, all communications, are made, and are received. It is thus utilizing a theme that has always been central to social science. It emphasizes the non-uniformity of social reality and the necessity of appreciating the rationality of the other. These two movements offer social science an incredible opportunity to overcome its derivative and divided character, and to place the study of social reality within an integrated view of the study of all material reality. Far from being torn apart by horses galloping in opposite directions, I see both complexity studies and cultural studies as moving in the direction of social science. In a sense, what we are seeing is the "social scientiza- tion" of all knowledge [Wallerstein, 1996]…What can be said about social science in the twenty-first century is that it will b an intellectually exciting arena, a socially important one, and undoubtedly a very contentious one. It is best we go into this situation armed with a combination of some humility about what we present know, some sense of the social values we hope to see prevail, and some balance in our judgments about the role that we can actually play [Wallerstein, 1999]

The aim of this paper here was to simply probe into some issue of validity of doing research in (applied) social sciences [and at the same time placing this research within them], juxtaposing it to the well-developed methodologies that exist and reflecting all of that vis-à-vis some fundamental question in philosophy of science. At the end we can only say that a certain discipline advances because people (researchers) come up with a better or a more useful idea than the existing body of knowledge. Adding understanding to the field of social science in general and its sub-fields is both exciting and gratifying. The process of generating knowledge can be seen as 'asking why', or 'having a perplexity', and then doing something to answer it. One of the most exciting things about science is its *infinite supply of questions*. There are so many research questions out there to be explored and much of that depends on ones' ingenuity. There are more than enough great discoveries for everybody. Thinking in a wide variety of spectrums and embarking on cross-disciplinary research in social sciences could only be considered as rewarding.

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