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Chapter 1 : Research Approach

It has to be acknowledged that the positivism research philosophy is difficult to be explained in a precise and succinct manner. This is because there are vast differences between settings in which positivism is used by researchers. The number variations in explaining positivism may be equal to the.

Jakobsen Theory of science and methodology are the pillars on which a social scientist stand when conducting research. Succinctly stated, ontology can be said to be the study of reality, or simply the science or philosophy of being, while epistemology is the study of the nature of knowledge. The former is concerned with the nature of being, while the latter deals with the nature and scope of knowledge. Your ontological position is decisive for the logic behind the methods scientists employ. There are two main scientific traditions, and you as a student of the social sciences choose one of these based on your ontological position. These are positivism and constructivism, and are decisive for the logic for which you base your choice of methods on this logic is called methodology. Positivism Positivism in general refers to philosophical positions that emphasize empirical data and scientific methods. This tradition holds that the world consists of regularities, that these regularities are detectable, and, thus, that the researcher can infer knowledge about the real world by observing it. The researcher should be more concerned with general rules than with explaining the particular. This tradition can be traced back to Galileo Galilei – In his work Siderius Nuncius The Starry Messenger he made systematic observations of the Moon, the stars, and the moons of Jupiter. His methods stood in contrast to the prevailing approach of that time, that advocated by Aristotle and the Church. Francis Bacon – In the same century Francis Bacon introduced a combination of induction and experiment into science as he wished to combine experience with record keeping, and thus rejected the deductive method of the time. Francis Bacon, and later John Locke and David Hume, provided the basic framework for the modern naturalist tradition. Based on their works theorists have found fuel to their claim that there exists a real world independent of our senses. Modern scientists following the naturalist tradition argue that the regularities of this real world can be experienced through systematic sense perceptions. Auguste Comte – is regarded as one of the founders of modern sociology. He coined the term sociologie, derived from the Latin words socius companion and -ology science. He also drew a distinction between empirical and normative knowledge. Information or knowledge that was not empirical was not considered by Comte to be knowledge about the real world, and thus fell outside the scope of science. This is denoted as the methodology of the discipline, and consists of its methods, rules, and postulates. Methodology can be understood as the logic behind the methods we chose, that is, the choice of analytical strategy and research design which underpins substantive research. A positivist approach provides us with a hierarchy of methods. Experiments are considered ideal because of their ability to determine causality. However, this method is often difficult to employ in the social sciences due to practical and ethical issues. Statistics is a second best approach, well-suited for making generalizations. Further Reading Hay, Colin Competing Methodologies in Social and Political Research.

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Chapter 2 : Organisation and enterprise – Tom Graves / Tetradian

A type of quantitative (positivistic) research in which a phenomenon is quantified but no intervention is employed by researchers to alter an outcome. odds The ratio in a group of those with an event to those without the event.

Overview of Experimental Research Overview Of Experimental Research The following module introduces experimental research and provides a basic overview of its uses, as well as examples. Describe when and how experimental research is used. Provide examples of the appropriate use of experimental research. The following Slideshare presentation provides an excellent introduction to experimental research and the topics that will be covered in the following modules of Research Ready: Following the Slideshare is a brief introduction to experimental research, including a terminology, basic concepts and examples. This is a traditional type of research that is quantitative in nature. In short, researchers use experimental research to compare two or more groups on one or more measures. In these designs, one variable is manipulated to see if it has an effect on the other variable. Experimental designs are used in this way to answer hypotheses. A hypothesis is a testable statement that is formulated by the researcher to address a specific question. The researcher designs an experimental study which will then support or disprove the hypothesis. To further the discussion of experimental research in future modules, it is important to understand the basic terminology related to experimental research. Following is a list of key terminology: This variable may be an activity or characteristic that the researcher believes will make a difference. The only constraint is that the outcome must be measurable. Experimental Group – The group that receives the treatment being investigated. Control Group – The group that remains the same in order to have something to compare the experimental group against. Experimental research is based on a methodology that meets three criteria that are important if the results are to be meaningful. These criteria are as follows: Random Assignment – Test subjects must be randomly assigned to the treatment groups to control for creation of groups that may systematically differ in another way that impacts the outcome of the treatment. Experimental Control – All aspects of the treatments are identical except for the independent variable. If all other factors are controlled and kept constant, then if measurable differences are found in the outcomes, the researcher can be assured that the difference is due the independent variable treatment. Appropriate Measures – The measures or outcomes must appropriate for testing the hypothesis. The outcome measured must represent the idea being tested in the hypothesis in order for the results to be valid. Considering the definitions and criteria from above, it is now to time to explore an example of experimental research using those concepts. The hypothesis being tested is that the flipped classroom teaching style will result in higher test scores among the students. The researcher will begin by randomly assigning students into two different sections of the course. The first section will be taught using the traditional lecture format. The second section will be taught used flipped classroom teaching techniques. The learning objectives and content for both sections will be identical. Both sections will be given identical exams throughout the semester and the scores between the two sections will be compared to assess student learning. The flipped classroom teaching style is the independent variable. The dependent variable is the test scores. The experimental group is the section of the course where the flipped classroom technique is being used and the control group is the section that continues to utilize the traditional lecture format. This is a classic example of the use of experimental research design. The following modules will delve deeper into various aspects of experimental research. Qualitative and quantitative approaches. Qualitative, quantitative, and mixed methods approaches. How to design and evaluate research in education Vol. Statistical power for experimental research Vol. Introduction to social research: Quantitative and qualitative approaches.

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Chapter 3 : The Research Enterprise : USDA ARS

Positivist research the term has come to mean something more specific when used in relation to research, mainly because of the work of Thomas Khun in the s and s (Hammersley,).

Selection of the Research Paradigm and Methodology Dr. In doing so, it deals with educational questions that can be investigated in a satisfactory manner, and the methods which enable such satisfactory investigation and the utility of results emanating from such investigation Dash, Since theoretical questions in education emerge from different conceptions and interpretations of social reality, different paradigms have been evolved to determine the criteria according to which one would select and define problems for inquiry. During the past century, different paradigms have taken birth due to the remarkable growth in social sciences research. There are mainly two paradigms to the verification of theoretical propositions, i. Positivism The positivist paradigm of exploring social reality is based on the philosophical ideas of the French philosopher August Comte, who emphasized observation and reason as means of understanding human behaviour. According to him, true knowledge is based on experience of senses and can be obtained by observation and experiment. Positivistic thinkers adopt his scientific method as a means of knowledge generation. Hence, it has to be understood within the framework of the principles and assumptions of science. These assumptions, as Conen et al noted, are determinism, empiricism, parsimony, and generality. With these assumptions of science, the ultimate goal of science is to integrate and systematise findings into a meaningful pattern or theory which is regarded as tentative and not the ultimate truth. Theory is subject to revision or modification as new evidence is found. Positivistic paradigm thus systematizes the knowledge generation process with the help of quantification, which is essential y to enhance precision in the description of parameters and the discernment of the relationship among them. The examples of positivist paradigm and quantitative approach are provided in Table 1 at the end. Although positivistic paradigm continued to influence educational research for a long time in the later half of the twentieth century, it was criticized due to its lack of regard for the subjective states of individuals. It regards human behaviour as passive, controlled and determined by external environment. Hence human beings are dehumanized without their intention, individualism and freedom taken into account in viewing and interpreting social reality. According to the critics of this paradigm, objectivity needs to be replaced by subjectivity in the process of scientific inquiry. This gave rise to anti-positivism or naturalistic inquiry. Anti-positivism Anti-positivism emphasizes that social reality is viewed and interpreted by the individual herself according to the ideological positions she possesses. Therefore, knowledge is person all y experienced rather than acquired from or imposed from outside. The anti-positivists believe that reality is multi-layered and complex Cohen et al, and a single phenomenon is having multiple interpretations. They emphasize that the verification of a phenomenon is adopted when the level of understanding of a phenomenon is such that the concern is to probe into the various unexplored dimensions of a phenomenon rather than establishing specific relationship among the components, as it happens in the case of positivism. Anti-positivism is marked by three schools of thought in the social science research. These are phenomenology, ethnomethodology and symbolicinteractionism. All the three schools of thought emphasise human interaction with phenomena in their daily lives, and suggest qualitative rather than quantitative approach to social inquiry. It rules out any kind of objective external reality. Husserl and Schutz are the main proponents of this school of thought. During interaction with various phenomena, human beings interpret them and attach meanings to different actions and or ideas and thereby construct new experiences. Therefore, the researcher has to develop empathic understanding to know the process of interpretation by individuals so that she can reproduce in her mind feelings, motives and thoughts that are behind the action of others. It deals with the world of everyday life. According to enthomethodologists, theoretical concerns centres around the process by which common sense reality is constructed in everyday face-to-face interaction. They are mainly interested in the interpretation people use to make sense of social settings. It basic all y emphasizes the understanding

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and interpretation of interactions that take place between human beings. Human interaction in the social world is mediated by the use of symbols like language, which help human beings to give meaning to objects. As a result, not only human beings change themselves through interaction, but also bring in change in societies. The two paradigms presented here are concerned with two concepts of social reality. While positivism stands for objectivity, measurability, predictability, controllability and constructs laws and rules of human behaviour, non-positivism essentially emphasizes understanding and interpretation of phenomena and making meaning out of this process. Alongside the presence of these two major paradigms, another trend, which got developed during the post-sixties, gave rise to the third paradigm of research namely the Paradigm of Critical Theory. Critical theory The main protagonist of this theory was Jurgen Habermas, who worked at the Frankfurt School in Germany to develop an approach of investigation and action in the social sciences, which could describe the historical forces that restrict human freedom and expose the ideological justification of those forces. Critical theorists like Habermas were critical of the earlier paradigms as they were not tuned to question or transform the existing situation. He developed theories which were built on a typology of interest. Habermas postulated three types of interest which generate three types of knowledge: A technical interest concerned with the control of the physical environment, which generates empirical and analytical knowledge. A practical interest concerned with understanding the meaning of situation, which generates hermeneutic and historical knowledge. An emancipating interest concerned with the provision for growth and advancement, which generates critical knowledge and is concerned with exposing conditions of constraints and domination. Critical theorists suggest two kinds of research methodologies, namely, ideology critique and action research, for undertaking research work. Critical theory has also been criticized by some of the contemporary scholars. Whilst the claim to there being three forms of knowledge has the epistemological attraction of simplicity, one has to question this very simplicity Keat, ; there are a multitude of interests and ways of understanding the world; and it is simply artificial to reduce these to three interests Cohen et al, Research paradigms and research methods Each of the paradigms discussed above has definite research methods which can be used in carrying out scientific investigation. Positivism which emphasizes objectivist approach to studying social phenomena gives importance to research methods focusing on quantitative analysis, surveys, experiments and the like. Similarly, anti-positivism which stresses on subjectivist approach to studying social phenomena attaches importance to a range of research techniques focusing on qualitative analysis, e. Similarly, critical theory suggests ideology critique and action research as research methods to explore the existing phenomena. The following questions may be raised by the researcher: What is the nature or essence of the social phenomena being investigated? Is social phenomenon objective in nature or created by the human mind? What are the bases of knowledge corresponding to the social reality, and how knowledge can be acquired and disseminated? What is the relationship of an individual with her environment? Is she conditioned by the environment or is the environment created by her? Based on the above questions, the researcher can identify whether the research questions pertain to positivism, anti-positivism, and critical theory; and choose the appropriate methodology accordingly. Selection of research paradigms and research methods.

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Chapter 4 : Positivism - SAGE Research Methods

Positivism in general refers to philosophical positions that emphasize empirical data and scientific methods. This tradition holds that the world consists of regularities, that these regularities are detectable, and, thus, that the researcher can infer knowledge about the real world by observing it.

Hence, a qualitative research approach based on observations, document studies and interviews taken from real world modeling projects is argued for in order to meet the research objectives. However, a few alternative research approaches will also be discussed. Logical theoretical research Qualitative, observational research Participatory action research Below, a brief discussion of how each strategy could have been applied is provided. The various approaches can to some degree be combined in the same research project. However, the fundamental views on human inquiry and science underlying them differ in many respects and extensive combination is not common. Four alternative research approaches None of the research strategies are considered to be unconditionally superior or inferior to the others -- they all have qualities that make them preferable for some purposes and research problems. Logical, theoretical research By a logical theoretical research approach is meant formal deduction of logical consequences from a set of initial assumptions axioms. If the axioms are true and the rules are logically sound, the consequences are true as well. This mode of research may be appropriate for formal sciences as exemplified by mathematics and parts of computer science. But the concern in this project is practical enterprise modeling and the study of real world projects. A logical theoretical approach would not draw upon the benefits of empirical work. Also, according to Hirschheim et al. Quantitative, experimental research A quantitative, experimental approach to doing research is within the classical scientific paradigm of natural, "hard" sciences like physics. The scientific method implies postulating hypotheses, doing quantitative experiments, and then either sustain or reject the hypotheses based on statistical analysis of the measured data verification or falsification of hypotheses. The scientific method may be claimed to be the "best" research approach in relatively well known areas of research and when natural laws can be assumed to exist in the sense that phenomena are repeatable and to some degree controllable. Even if there are indefinitely many theories explaining a given set of data, experiments may be repeated and theories can be verified or rather, the confidence in theories may increase. To be able to propose fruitful hypotheses, one must have a well developed understanding of the research area. In addition, in order to gain statistically reliable results, the number of samples must be large for survey studies, in the range 40 and up, according to Galtung. Both these requirements suggest looking for other research instruments: A well developed understanding of enterprise modeling practice is not widely available at least not according to Hirschheim et al. There have also been some critique of adoption of the scientific method as an approach to research on social systems, at least unmodified. Guba and Lincoln, for a discussion. One perspective on quantitative research is as counting. Correlation between variables are estimated using statistical devices. However, in order for counting to be meaningful, one must also know that the variables counted are meaningful in the given setting. Hence, quantitative research requires well developed understanding of a domain in advance in order to judge if variables are meaningful. Qualitative, observational research Qualitative, observational studies refer to traditions that base their research upon qualitative data as opposed to quantitative research and do not actively and purposely manipulate the phenomenon under investigation. Grounded theory studies Strauss and Corbin, ; Strauss and Corbin, and ethnographic methods Atkinson and Hammersley, are examples of this mode of research. Through close contact with the research field in question for a prolonged period of time, the researcher develops a profound understanding and as claimed for grounded theory studies becomes able to formulate a conceptually rich theory explaining the phenomenon under investigation. Contact with the field of research may be based on interviews, observations, or analysis of documents and other artifacts. In addition, literature studies are performed to the extent required to develop sensitivity in observation and interpretation. A qualitative research approach can be used to develop the understanding required for evaluating if a variable

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is relevant or not to a given problem situation. Compared to the perspective on quantitative research as counting, qualitative research can be seen as proposing which variables to count. Participatory action research Reason, ; van Meel, The work of van Meel *ibid*. First, an initial case study is performed for identification of problems, followed by theory development and implementation of a prototype information system. Finally, the prototype is employed in another full-scale project where the researcher participates and reflects upon the use of the prototype with the actors that are studied. This approach to validation of results is interesting, but somewhat questioned by more traditional scientists. A possible adaptation of an action research strategy would be to investigate a few initial enterprise modeling projects, propose a method for enterprise modeling, and apply this in another full-scale project. The principal problems of this approach would be to trace hopefully successful outcomes back to the use of the method and to know what would be the situation without the method as there is no control project. From a more pragmatic point of view, in order to follow a participatory action research strategy one needs access to real world projects being willing to try out the proposed framework for enterprise modeling in practice. This was not considered practically attainable with the resources and time frame of the current research project. Without getting trapped in the often heated debates on what characterizes right and wrong approaches to good research, a few principles that worked as guidelines in the research project are discussed. Narrowing the chosen research approach Before outlining the research principles, the research approach is narrowed a bit further. Strauss and Corbin Non-interpretive, interpretive and theory building. Non-interpretive studies focus on describing the life world that is investigated. Observations are not necessarily analyzed and made sense of by the researcher, but instead left for the reader to interpret. Miles and Huberman Interpretive studies acknowledge the importance of the analysis performed by the researcher to the meaning attributed to observations. The researcher sets out create an account of the empirical observations, consisting of descriptive as well as analytical passages. The intention is to provide the reader with a sense of the "real world". The grounded theory approach, being the prime example of a theory building approach, is a relatively well defined and comprehensive research method that seeks to develop conceptually rich theories grounded in observations from empirical studies. The approach as presented by Strauss and Corbin, is based on a number of rather rigorous procedures and techniques, and adhering strictly to these is claimed to provide valid theories *ibid*.: The research approach followed here is in accordance with the interpretive scheme outlined above 51; observations are analyzed to make sense of enterprise modeling practice; a number of principles are proposed as lessons learned from the analysis of the observations meeting RO1 , and finally, a framework for enterprise modeling is developed meeting RO2. Research guidelines The following guidelines apply to this specific research project: The researcher is assumed to approach the empirical studies with few expectations about what to find. The research questions are allowed to emerge from observations made in the enterprise modeling projects. The researcher as an observer: The role of the researcher is to observe and not to purposely manipulate the projects through active participation. Although project participants must be made aware of the presence and intentions of the researcher, substantial contributions to project work is not made. Hence, frequent alternations between literature studies and analysis of observations are considered preferable. A note on the decision to have a loose research design: There is ample supply of warnings against following this guideline, e. On the other hand, a loose design may be the most pragmatically feasible when studying phenomena that are not under the control of the researcher e. The purpose of adhering to the above guidelines was to reach a practical understanding of enterprise modeling practice, enabling the provision of convincing arguments in favor of features of the proposed framework. Particularities of the chosen research process are discussed in more detail in chapter 10 when evaluating both the outcome and the conduct of the research project. The figure is idealized in the sense that iterations and alternation between activities are not accounted for. Briefly, the activities include the following: Identification and testing out tools for enterprise modeling. The tool studies provided a general foundation for understanding concepts of enterprise modeling. Both general and more specialized modeling tools that claim to support enterprise modeling were tried. Results are

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partially reported in Totland, ; Totland, ; Hansen et al. Literature on enterprise modeling within different areas of research and practice was also studied. Studies of four real world projects employing enterprise modeling as a means to develop understanding of the enterprise. VPT was a project seeking to suggest new ways of working across organizational and disciplinary borders. Gazz developed a modeling and simulation tool for strategic thinking, with focus on the overall Statoil gas production chain. The main empirical study is development of a technology strategy for the Statoil corporation, with enterprise modeling as an integrated part. Focused literature studies concerning areas and concepts emerging as dominating from the empirical studies, e. A more mature understanding of enterprise modeling also led to improved understanding of previously read literature. Formulation of a series of principles that summarize lessons learned from the empirical studies. Development of a methodological framework for enterprise modeling, consistent with the principles developed above. Evaluation of both the outcome and the conduct of the research project in an attempt at validating the proposed framework for enterprise modeling. Selection of projects has been highly pragmatic due to several reasons: The source of projects practically available was limited, and involvement in a project is also time-consuming. The main common trait of the projects is an intention of using enterprise modeling in some way in order to understand aspects of the enterprise better. The most influential empirical study is the one referred to as the main study. At that point in time, the research focus was on modeling as a way to support human sense-making and communication. The first three projects were not focused to the same degree, as data were sampled in a more broad and coarse way.

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Chapter 5 : Positivist | Define Positivist at calendrierdelascience.com

Positivism. Positivists prefer quantitative methods such as social surveys, structured questionnaires and official statistics because these have good reliability and representativeness.

In simple terms, epistemology is the philosophy of knowledge or of how we come to know. Methodology is also concerned with how we come to know, but is much more practical in nature. Methodology is focused on the specific ways -- the methods -- that we can use to try to understand our world better. Epistemology and methodology are intimately related: When most people in our society think about science, they think about some guy in a white lab coat working at a lab bench mixing up chemicals. They think of science as boring, cut-and-dry, and they think of the scientist as narrow-minded and esoteric the ultimate nerd -- think of the humorous but nonetheless mad scientist in the Back to the Future movies, for instance. A lot of our stereotypes about science come from a period where science was dominated by a particular philosophy -- positivism -- that tended to support some of these views. Here, I want to suggest no matter what the movie industry may think that science has moved on in its thinking into an era of post-positivism where many of those stereotypes of the scientist no longer hold up. It is a position that holds that the goal of knowledge is simply to describe the phenomena that we experience. The purpose of science is simply to stick to what we can observe and measure. Knowledge of anything beyond that, a positivist would hold, is impossible. When I think of positivism and the related philosophy of logical positivism I think of the behaviorists in mid-century psychology. In a positivist view of the world, science was seen as the way to get at truth, to understand the world well enough so that we might predict and control it. The world and the universe were deterministic -- they operated by laws of cause and effect that we could discern if we applied the unique approach of the scientific method. Science was largely a mechanistic or mechanical affair. We use deductive reasoning to postulate theories that we can test. The positivist believed in empiricism -- the idea that observation and measurement was the core of the scientific endeavor. The key approach of the scientific method is the experiment, the attempt to discern natural laws through direct manipulation and observation. OK, I am exaggerating the positivist position although you may be amazed at how close to this some of them actually came in order to make a point. Things have changed in our views of science since the middle part of the 20th century. Probably the most important has been our shift away from positivism into what we term post-positivism. A post-positivist might begin by recognizing that the way scientists think and work and the way we think in our everyday life are not distinctly different. Scientific reasoning and common sense reasoning are essentially the same process. There is no difference in kind between the two, only a difference in degree. Scientists, for example, follow specific procedures to assure that observations are verifiable, accurate and consistent. Think of the way most responsible parents keep continuous watch over their infants, noticing details that non-parents would never detect. One of the most common forms of post-positivism is a philosophy called critical realism. A critical realist believes that there is a reality independent of our thinking about it that science can study. Positivists were also realists. The difference is that the post-positivist critical realist recognizes that all observation is fallible and has error and that all theory is revisable. In other words, the critical realist is critical of our ability to know reality with certainty. Where the positivist believed that the goal of science was to uncover the truth, the post-positivist critical realist believes that the goal of science is to hold steadfastly to the goal of getting it right about reality, even though we can never achieve that goal! The post-positivist also believes that all observations are theory-laden and that scientists and everyone else, for that matter are inherently biased by their cultural experiences, world views, and so on. This is not cause to give up in despair, however. That is, post-positivism rejects the relativist idea of the incommensurability of different perspectives, the idea that we can never understand each other because we come from different experiences and cultures. Most post-positivists are constructivists who believe that we each construct our view of the world based on our perceptions of it. Because perception and observation is fallible, our constructions must be imperfect. So what

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is meant by objectivity in a post-positivist world? Positivists believed that objectivity was a characteristic that resided in the individual scientist. Post-positivists reject the idea that any individual can see the world perfectly as it really is. We are all biased and all of our observations are affected theory-laden. Our best hope for achieving objectivity is to triangulate across multiple fallible perspectives! Thus, objectivity is not the characteristic of an individual, it is inherently a social phenomenon. We never achieve objectivity perfectly, but we can approach it. The theories that survive such intense scrutiny are a bit like the species that survive in the evolutionary struggle. They have adaptive value and are probably as close as our species can come to being objective and understanding reality. Clearly, all of this stuff is not for the faint-of-heart. But, in the end, I tend to turn pragmatist on these matters. Philosophers have been debating these issues for thousands of years and there is every reason to believe that they will continue to debate them for thousands of years more. Those of us who are practicing scientists should check in on this debate from time to time perhaps every hundred years or so would be about right. We should think about the assumptions we make about the world when we conduct research. After all, we do have our own work to do!

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Experimental designs are an important part of positivist study, as it creates controls to remove further bias from the results. The analysis of results takes the form of data analysis in which researchers employ statistics to derive succinct answers of causality or correlation.

Auguste Comte Auguste Comte " first described the epistemological perspective of positivism in The Course in Positive Philosophy , a series of texts published between and The first three volumes of the Course dealt chiefly with the physical sciences already in existence mathematics , astronomy , physics , chemistry , biology , whereas the latter two emphasized the inevitable coming of social science. Observing the circular dependence of theory and observation in science, and classifying the sciences in this way, Comte may be regarded as the first philosopher of science in the modern sense of the term. His View of Positivism therefore set out to define the empirical goals of sociological method. This Comte accomplished by taking as the criterion of the position of each the degree of what he called "positivity," which is simply the degree to which the phenomena can be exactly determined. This, as may be readily seen, is also a measure of their relative complexity, since the exactness of a science is in inverse proportion to its complexity. The degree of exactness or positivity is, moreover, that to which it can be subjected to mathematical demonstration, and therefore mathematics, which is not itself a concrete science, is the general gauge by which the position of every science is to be determined. Generalizing thus, Comte found that there were five great groups of phenomena of equal classificatory value but of successively decreasing positivity. To these he gave the names astronomy, physics, chemistry, biology, and sociology. Ward , The Outlines of Sociology , [29] Comte offered an account of social evolution , proposing that society undergoes three phases in its quest for the truth according to a general " law of three stages ". Comte intended to develop a secular-scientific ideology in the wake of European secularisation. God, Comte says, had reigned supreme over human existence pre- Enlightenment. It dealt with the restrictions put in place by the religious organization at the time and the total acceptance of any "fact" adduced for society to believe. This second phase states that the universal rights of humanity are most important. The central idea is that humanity is invested with certain rights that must be respected. In this phase, democracies and dictators rose and fell in attempts to maintain the innate rights of humanity. The central idea of this phase is that individual rights are more important than the rule of any one person. The third principle is most important in the positive stage. Neither the second nor the third phase can be reached without the completion and understanding of the preceding stage. All stages must be completed in progress. Sociology would "lead to the historical consideration of every science" because "the history of one science, including pure political history, would make no sense unless it was attached to the study of the general progress of all of humanity". The irony of this series of phases is that though Comte attempted to prove that human development has to go through these three stages, it seems that the positivist stage is far from becoming a realization. This is due to two truths: The positivist phase requires having a complete understanding of the universe and world around us and requires that society should never know if it is in this positivist phase. Anthony Giddens argues that since humanity constantly uses science to discover and research new things, humanity never progresses beyond the second metaphysical phase. As an approach to the philosophy of history , positivism was appropriated by historians such as Hippolyte Taine. Debates continue to rage as to how much Comte appropriated from the work of his mentor, Saint-Simon. For close associate John Stuart Mill , it was possible to distinguish between a "good Comte" the author of the Course in Positive Philosophy and a "bad Comte" the author of the secular-religious system. Magnin filled this role from to , when he resigned. What has been called our positivism is but a consequence of this rationalism. By carefully examining suicide statistics in different police districts, he attempted to demonstrate that Catholic communities have a lower suicide rate than Protestants, something he attributed to social as opposed to individual or psychological causes. He developed the notion of objective sui generis " social facts " to delineate a unique empirical object for the science of

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sociology to study. Durkheim described sociology as the "science of institutions , their genesis and their functioning". His lifework was fundamental in the establishment of practical social research as we know it todayâ€”techniques which continue beyond sociology and form the methodological basis of other social sciences , such as political science , as well of market research and other fields. Antipositivism and Critical theory At the turn of the 20th century, the first wave of German sociologists formally introduced methodological antipositivism, proposing that research should concentrate on human cultural norms , values , symbols , and social processes viewed from a subjective perspective. Weber regarded sociology as the study of social action , using critical analysis and verstehen techniques. Positivism may be espoused by " technocrats " who believe in the inevitability of social progress through science and technology. Contemporary positivism[edit] In the original Comtean usage, the term "positivism" roughly meant the use of scientific methods to uncover the laws according to which both physical and human events occur, while "sociology" was the overarching science that would synthesize all such knowledge for the betterment of society. Neither of these terms is used any longer in this sense. The extent of antipositivist criticism has also become broad, with many philosophies broadly rejecting the scientifically based social epistemology and other ones only seeking to amend it to reflect 20th century developments in the philosophy of science. However, positivism understood as the use of scientific methods for studying society remains the dominant approach to both the research and the theory construction in contemporary sociology, especially in the United States. Public sociology[edit] especially as described by Michael Burawoy [edit] argues that sociologists should use empirical evidence to display the problems of society so they might be changed. If a public sociologists assumes a multi-lineal interpretation of social change, public sociology will fail to affect social change for three reasons:

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Chapter 7 : Positivism - Wikipedia

a set of assumptions, propositions, or accepted facts that attempts to provide a plausible or rational explanation of cause-and-effect (causal) relationships among a group of observed.

The absolute idealists wrote as if the Renaissance methodologists of the sciences had never existed. In the first, or so-called theological, stage, natural phenomena are explained as the results of supernatural or divine powers. It matters not whether the religion is polytheistic or monotheistic; in either case, miraculous powers or wills are believed to produce the observed events. This stage was criticized by Comte as anthropomorphic. Generally, animistic explanations made in terms of the volitions of soul-like beings operating behind the appearances are rejected as primitive projections of unverifiable entities. Again, Comte charged that no genuine explanations result; questions concerning ultimate reality, first causes, or absolute beginnings are thus declared to be absolutely unanswerable. The metaphysical quest can lead only to the conclusion expressed by the German biologist and physiologist Emil du Bois-Reymond: It is a deception through verbal devices and the fruitless rendering of concepts as real things. *Cours de philosophie positive* because it claims to be concerned only with positive facts. The task of the sciences, and of knowledge in general, is to study the facts and regularities of nature and society and to formulate the regularities as descriptive laws; explanations of phenomena can consist in no more than the subsuming of special cases under general laws. Humankind reached full maturity of thought only after abandoning the pseudoexplanations of the theological and metaphysical phases and substituting an unrestricted adherence to scientific method. In his three stages Comte combined what he considered to be an account of the historical order of development with a logical analysis of the leveled structure of the sciences. He placed at the fundamental level the science that does not presuppose any other sciences viz. Each higher-level science, in turn, adds to the knowledge content of the science or sciences on the levels below, thus enriching this content by successive specialization. Anticipating some ideas of 20th-century behaviourism and physicalism, Comte assumed that psychology, such as it was in his day, should become a branch of biology especially of brain neurophysiology, on the one hand, and of sociology, on the other. In thus insisting on the necessity of objective observation, he was close to the basic principle of the methodology of 20th-century behaviourism. Renan, and Louis Weber. Despite some basic disagreements with Comte, the 19th-century English philosopher John Stuart Mill, also a logician and economist, must be regarded as one of the outstanding positivists of his century. In his *System of Logic*, he developed a thoroughly empiricist theory of knowledge and of scientific reasoning, going even so far as to regard logic and mathematics as empirical though very general sciences. John Stuart Mill, Library of Congress, Washington, D. The outstanding representatives of this school were Ernst Mach a philosophical critic of the physics of Isaac Newton, an original thinker as a physicist, and a historian of mechanics, thermodynamics, and optics and Richard Avenarius, founder of a philosophy known as empiriocriticism. Very much in keeping with the spirit of Comte, he repudiated the transcendental idealism of Immanuel Kant. By contrast, Hermann von Helmholtz, a wide-ranging scientist and philosopher and one of the great minds of the 19th century, held that the theoretical entities of physics are, precisely, the things-in-themselves a view which, though generally empiricist, was thus clearly opposed to positivist doctrine. Theories and theoretical concepts, according to positivist understanding, were merely instruments of prediction. From one set of observable data, theories formed a bridge over which the investigator could pass to another set of observable data. Positivists generally maintained that theories might come and go, whereas the facts of observation and their empirical regularities constituted a firm ground from which scientific reasoning could start and to which it must always return in order to test its validity. In consequence, most positivists were reluctant to call theories true or false but preferred to consider them merely as more or less useful. The task of the sciences, as it earlier had been expressed by the German physicist Gustav Kirchhoff, was the pursuit of a compendious and parsimonious description of observable phenomena. Concern with first or final causes see teleology was to be excluded from

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the scientific endeavour as fruitless or hopeless if not meaningless. Even the notion of explanation became suspect and was at best taken as already in Comte to be no more than an ordering and connecting of observable facts and events by empirically ascertainable laws. Mach and, along with him, Wilhelm Ostwald, the originator of physical chemistry, were the most prominent opponents of the atomic theory in physics and chemistry. Ostwald even attempted to derive the basic chemical laws of constant and multiple proportions without the help of the atomic hypothesis. The anti-atomistic strand in the thought of the positivists was an extreme manifestation of their phobia regarding anything unobservable. With the undeniably great success of the advancing microtheories in physics and chemistry, however, the positivist ideology was severely criticized, not only by some contemporary philosophers but also by outstanding scientists. The Austrian Ludwig Boltzmann and the German Max Planck, for example, both top-ranking theoretical physicists, were in the forefront of the attack against Mach and Ostwald. Boltzmann and Planck, outspoken realists, were deeply convinced of the reality of unobservable microparticles, or microevents, and were clearly impressed with the ever-growing and converging evidence for the existence of atoms, molecules, quanta, and subatomic particles. Nevertheless, the basic positivist attitude was tenaciously held by many scientists, and striking parallels to it appeared in American pragmatism and instrumentalism. In parts of the work of the pragmatists Charles Sanders Peirce, William James, and John Dewey, for example, there is a philosophy of pure experience essentially similar to that of Mach. Although Richard Avenarius has not become widely known, he too anticipated a good deal of what the American pragmatists propounded. His positivism, like that of Mach, comprised a biologically oriented theory of knowledge. From the needs of organisms in their adaptation to the exigencies of their environment develop the conceptual tools needed for prediction of future conditions. The traditional assumption that there must be an underlying substance that has these properties was repudiated. In similar fashion, the concept of causation was explicated not as a real operating principle but as regularity of succession or as functional dependency among observable or measurable variables. Because these dependencies are not logically necessary, they are contingent and ascertained by observation, and especially by experimentation and inductive generalization. The Newtonian doctrine according to which space and time see also space-time are absolute or substantive realities had been incisively criticized by the 17th-century rationalist Gottfried Leibniz and was subjected by Mach to even more searching scrutiny. While Leibniz had already paved the way for the conception of space and time as exclusively a matter of relations between events, Mach went still further in attacking the arguments of Newton in favour of a dynamic and absolute space and time. In particular, the inertial and centrifugal forces that arise in connection with accelerated or curvilinear motions had been interpreted by Newton as effects of such motions with respect to a privileged reference medium imagined as an absolute Cartesian mesh system graphed upon a real space. In a typically positivistic manner, however, Mach found the idea quite incredible. How, he asked, could an absolutely empty space have such powerful effects? The positivist theory of knowledge, as proposed by Mach and Avenarius, impressed many scholars, most notable among whom was probably the leading British logician and philosopher Bertrand Russell in one of the earlier phases of his thought. In a work entitled *Our Knowledge of the External World*, Russell analyzed the concept of physical objects as comprising classes of perceptual aspects or perspectives, an idea that later stimulated the work of Rudolf Carnap, an outstanding philosophical semanticist and analyst, entitled *Der logische Aufbau der Welt*; *The Logical Structure of the World*. Mach remained the most influential thinker among positivists for a long time, though some of his disciples, like Josef Petzoldt, are now largely forgotten. But *The Grammar of Science*, written by Karl Pearson, a scientist, statistician, and philosopher of science, still receives some attention; and in France it was Abel Rey, also a philosopher of science, who, along the lines of Mach, severely criticized the traditional mechanistic view of nature. In the United States, John Bernard Stallo, a German-born American philosopher of science also an educator, jurist, and statesman, developed a positivistic outlook, especially in the philosophy of physics, in his book *The Concepts and Theories of Modern Physics*, in which he anticipated to a degree some of the general ideas later formulated in the theory of relativity and in quantum mechanics. Logical positivism and

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logical empiricism A first generation of 20th-century Viennese positivists began its activities, strongly influenced by Mach, around 1900. This small group was also active during the 1910s in the Vienna Circle of logical positivists, a seminal discussion group of gifted scientists and philosophers that met regularly in Vienna, and in the related Berlin Society for Empirical Philosophy. These two schools of thought, destined to develop into an almost worldwide and controversial movement, were built on the empiricism of Hume, on the positivism of Comte, and on the philosophy of science of Mach. Equally important influences came from several eminent figures who were at the same time scientists, mathematicians, and philosophers—G. Most significant, however, was the impact of Einstein, as well as that of the three great mathematical logicians of the late 19th and early 20th centuries—the groundbreaking German Gottlob Frege and the authors of the monumental *Principia Mathematica*—Russell and Alfred North Whitehead. The earlier positivism of Viennese heritage The confluence of ideas from these sources and the impressions that they made upon the Vienna and Berlin groups in the 1910s gave rise to the philosophical outlook of logical positivism—a label supplied in by A. Blumberg and the American philosopher of science Herbert Feigl. The leader of the Vienna Circle between 1918 and 1926 was Moritz Schlick, who in 1921 succeeded to the chair previously held by Mach and Boltzmann for the philosophy of the inductive sciences at the University of Vienna. The most important addition to the circle was Carnap, who joined the group in 1926. One of its early activities was the study and critical discussion of the *Tractatus Logico-Philosophicus* of Ludwig Wittgenstein, a seminal thinker in analytic philosophy. It seemed at the time that the views of Carnap and Wittgenstein, though they had been formulated and elaborated quite differently, shared a large measure of basic agreement. Parallel, but not completely independent, developments occurred in the Berlin group, in which Hans Reichenbach, Richard von Mises, Kurt Grelling, and Walter Dubislav were the leading figures. Courtesy of the University of California, Los Angeles Both the Vienna and Berlin groups consisted mainly of philosophically interested scientists or scientifically trained and oriented philosophers. Schlick had already anticipated some of the basic epistemological tenets of the groups in his *Allgemeine Erkenntnislehre*; *General Theory of Knowledge*. But the philosophical outlook was sharpened and deepened when, in the late 1920s, the Viennese positivists published a pamphlet, *Wissenschaftliche Weltauffassung: Inasmuch as an extremely ambitious Hegelian type of metaphysics, idealistic and absolutist in orientation, was still prevalent in the German-speaking countries, there were many who believed that the antidote was urgently needed. The logical positivists viewed metaphysics as a hopelessly futile way of trying to do what great art, and especially poetry and music, already do so effectively and successfully. These activities, they held, are expressions of visions, feelings, and emotions and, as such, are perfectly legitimate as long as they make no claims to genuine cognition or representation of reality. What logical positivism recommended positively, on the other hand, was a logic and methodology of the basic assumptions and of the validation procedures of knowledge and of evaluation. An adequate understanding of the functions of language and of the various types of meaning was another of the fundamentally important contributions of the logical positivists. Communication and language serve many diverse purposes: Thus, they distinguished cognitive-factual meaning from expressive and evocative or emotive significance in words and sentences. It was granted that in most utterances of everyday life and even of science, these two types of meaning are combined or fused. What the logical positivists insisted upon, however, was that the emotive type of expression and appeal should not be mistaken for one having genuinely cognitive meanings. In such expressions as moral imperatives, admonitions, and exhortations there is, of course, a factually significant core—viz. Early statements about moral-value judgments, such as those by Carnap or by A. Ayer, a more radical British positivist, seemed shocking to many philosophers, to whom it seemed that, in their careless formulation, moral norms were to be treated like expressions of taste. Equally shocking was their condemnation as nonsense really non-sense—i. More adequate and delicate analyses, such as that of the American positivist Charles Stevenson, were soon to correct and modify those extremes. By proper allocation of the cognitive and the normative motivational components of value statements, many thinkers rendered the originally harsh and implausible positivist view of value judgments more acceptable. Nevertheless, there*

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isâ€”in every positivistic viewâ€”an ineluctable element of basic, noncognitive commitment in the acceptance of moral, or even of aesthetic , norms. In its original form , this criterion had much in common with the earlier pragmatist analysis of meaning as in the work of Peirce and James. But to say instead of speaking of effects that all events have causes is to say something factualâ€”and conceivably false. It should be noted that these rather crude uses of cause and necessity were later replaced by much more subtle analyses. The hypothesis that there exists a universal ether , as a medium for the propagation of light and of electromagnetic waves generally , had been quite plausible and was widely accepted by physicists during the second half of the 19th century. To be sure, there were a number of serious difficulties with the idea: Similarly, it had become impossible, except at the price of intolerably ad hoc hypotheses , to maintain the notions of absolute time and of absolute simultaneity. Thus, Einstein, by eliminating these empirically untestable assumptions, was led to his special theory of relativity. Several important changes in the formulation of the meaning criterion took place in the ensuing decades from to The original version formulated in terms of verifiability was replaced by a more tolerant version expressed in terms of testability or confirmability. It was in coming to this juncture in his critique of positivism that Karl Popper , an Austrian-born British philosopher of science, in his *Logik der Forschung ; The Logic of Scientific Discovery* , insisted that the meaning criterion should be abandoned and replaced by a criterion of demarcation between empirical scientific and transempirical nonscientific, metaphysical questions and answersâ€”a criterion that, according to Popper, is to be testability, or, in his own version, falsifiability â€”i. Popper was impressed by how easy it is to supposedly verify all sorts of assertions; those of psychoanalytic theories seemed to him to be abhorrent examples. But the decisive feature, as Popper saw it, should be whether it is in principle conceivable that evidence could be cited that would refute or disconfirm a given law, hypothesis, or theory. Theories are often bold conjectures.

Chapter 8 : Research Methods Resource - Selection of the Research Paradigm and Methodology

research methods, for example, those used by Ann Oakley () in 'Subject Women' reject traditional, scientific methods and take on a more relaxed and open approach in order to gain a better understanding of social reality.

Chapter 9 : Theory of Science â€” What is Positivism?

View of Criteria for 'Good' Research. The positivist position is grounded in the theoretical belief that there is an objective reality that can be known to the researcher, if he or she uses the correct methods and applies those methods in a correct manner.